

WIRELESS WEEKLY

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Friday, Aug. 13, 1926.



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FEATURES

**LAND
LINE TRANSMISSIONS**
(HOW THEY ARE DONE)

**RADIO UNCLAS
ENTERTAIN**

**THE THEOSOPHICAL
STATION**

**A SUPER-HETERODYNE
RECEIVER**

3^d



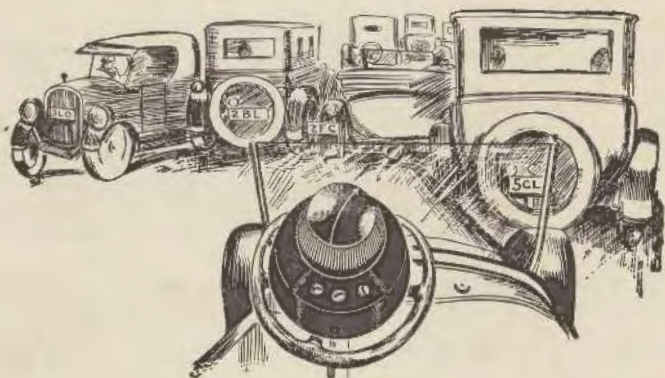
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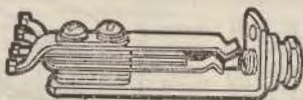


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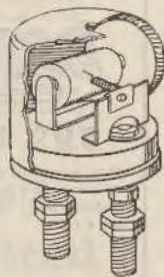
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WIRELESS WEEKLY

AUGUST 13, 1926

When Radio Entered the Pulpit

TO estimate the influence extended over the country by Gipsy Smith last Sunday would be an impossible task. We can only marvel at the way his personality, the remarkable atmosphere of personal magnetism surrounding him, passed through the ether with the passage of his voice and gripped audiences seated as far away as Queensland and as close as Pitt Street.

You will agree that no more perfect example of the transmission of a personality over the air has been as yet given from 2FC. His rich resonant voice elained audience, demanded it. His eloquence had captured thousands, and his emotional qualities often caught his own imagination so that his speech dying away to pathos rose to anger and frenzy. Always he was forceful. Congregations were held silent, spellbound.

Yet he was successful only because every inflection of his ever changing voice was reproduced in perfect detail. If we cannot estimate his personal influence, we have an idea of the influence the transmission has had on the trade.

Not for a long time have dealers received such an excellent advertisement of their wares. This was reflected in the demand for radio sets the following morning. One firm reported that they were inundated with enquiries, and made more sales that day than they had during the last month.

Although to 2FC is due the credit of the excellence of the broadcast,

the thanks of the dealer is due to the amateur who installed and operated the sets. His efforts enabled the members of more than 60 churches to hear Gipsy Smith. His careful tuning made lifelike the tones of the speaker, so that all heard maybe even better than if they had been at the Hippodrome.

While radio must have added 100,000 to Gipsy Smith's audience, probably 25,000 people were present in these churches, for all were filled, and hundreds were turned away from the doors.

How many in this huge congregation left with a favourable impression of radio? Most of them probably, if the expressions on their faces indicated their thoughts. Some sat forward intently with strained ears. Some lay back in keen enjoyment. On every face attention and appreciation was drawn in fine lines, and eyes looked into distance. This was the picture at a small outer suburban church.

Although he had relinquished the pulpit for the loud speaker, there was no more pleased person than the minister himself. He was delighted with the experiment. Usually his congregation numbers about 250. There were 400 in the building to hear Gipsy Smith, and probably 50 failed to gain admittance. His collection was doubled.

"I have learnt my lesson," he said. "Most of these people will come back next Sunday. It will be my sacred duty to make them come here the following week. I can do it if I intro-

duce a novel, fresh and interesting feature into the service."

But there was more than just novelty in Gipsy Smith's broadcast. It proved conclusively that radio can find a place in everything, that in no way does it hurt that which it sets out to help.

The older members of the little suburban church had come with a lurking thought that the ugly grotesque loud speaker defied tradition, and that the crash of static would cheapen the service. But they stayed to wonder that radio could be so clear, and that in the case of familiar and comfortable surroundings they could absorb the wise words of a world famous evangelist. The younger less frequent visitors were attracted by the novelty of the loud speaker preacher, the enterprise of the church, and the reputation of the speaker, and remained to forget the instrument.

Thus did one brief broadcast create for radio hundreds of friends, who will have a good word to say about it, and thus the gospel of wireless will spread even further. To the listener in tuning in on his own set the broadcast was no novelty. The great value of the programme lay in the fact that it introduced to radio for the first time hundreds who may as a result become listeners in. Since more listeners in mean more licence fees, and more fees mean better programmes, then it becomes plain to all the worth of the programme.

However, while such broadcast undoubtedly help the radio cause, broadcasting can look to the future with all confidence.

Transmissions Over Land Lines

HOW THEY ARE CARRIED OUT

FROM time to time the land line transmissions that have been put out by 3LO, 2FC, and 2BL, have aroused a great deal of interest amongst the many thousands of listeners throughout Australia, New Zealand, and even in the islands of the Pacific. So familiar have listeners become with the familiar phrase, "We are now passing over to the so and so," and then being switched over instantaneously to a concert broadcast from some inland town, that the novelty of it has worn off, and most people are apt to enjoy the broadcast without troubling to think of the thousand and one little problems that have had to be overcome before the transmission could be perfected.

These land line transmissions involve not only expert attention by the broadcasting company, but also the best technical brains of the State Engineers' Department, who co-operate with the broadcasting station to ensure that the hundreds of miles of telephone wire are clear, and that the transmission is passing over the line in perfect condition.

One of the earliest long distance transmissions in this State was on the occasion of the Governor, Sir Dudley de Chair, speaking from Sutton Forest one evening, when he gave a special message to the Boy Scouts through 2FC. Other transmissions by 2FC, all within the last few months, include two hours from Wollongong, seven hours from Newcastle, three hours from Goulburn, five hours from Canberra, seven hours from Jenolan Caves, and four and a half hours from Kosciusko. To be added to these is the second concert from Goulburn, a three hours' transmission to take place on August 19th, and a three hours' concert from Dubbo on August 25th. To those readers who have a mechanical turn of mind, it will be interesting to know that the total length of wire used to carry out these transmissions reaches the amazing length of approximately 1500 miles, and this does not include the

transmission of the Prime Minister's speech during the last year's Federal Elections, when Mr. Bruce's policy speech was broadcast from Dandenong, a distance of 600 miles, bringing the total length of wire to well over 2000

First of all, authority had to be obtained from the Tourist Bureau whereby facilities at the hotel at Kosciusko could be used; then the Postmaster General's Department had to be approached to ascertain if a line could be



A splendid view of the Hotel Kosciusko, from which the broadcast from 2FC took place.

miles. 3LO Melbourne has carried out quite a number of land line transmissions, and readers will remember the broadcast from Jenolan Caves of July 24th and 25th, which was put on the air by 2BL.

The Kosciusko Broadcast.

The average reader, and in fact the majority of listeners, have no knowledge whatever of the tremendous detail necessary to carry out a transmission of this nature. Take, for instance, the one fresh in our minds—the broadcast from Kosciusko broadcasted by 2FC on August 1st, when from a balcony overlooking the heights of Kosciusko, and the gleaming mantle of snow, the voice of the announcer was flashed over 300 miles of land line, through repeating stations, and put on the air from the station at Pennant Hills, near Sydney.

provided. After extensive tests by the engineers of the P.M.G.'s Department, in which the line was tested out thoroughly at every stage, the official application was considered, and 2FC advised that the line would be in order. Two days before the actual broadcasting, a mechanic armed with amplifiers, microphones, batteries, etc., and all the equipment necessary for the transmission, was dispatched to Kosciusko from the studio. On arrival there, the local telephone authorities were interviewed, and tests made between Kosciusko and Sydney many hours before the transmission was carried out; these tests, of course, could be made only at times that there was no traffic on the trunk line. At last approached the anxious moment when the transmission was to take place. The voice of the 2FC an-

nouncer could be heard in the studio—"Studio time is now 7.30 p.m. at 7.35 we will cross over to the Hotel Kosciusko, when you will hear the broadcast, etc., etc." The operators

about 150 miles, no repeaters are necessary, but over that distance, on account of the natural loss that takes place over such an immense length of wire, a repeater has to be installed in

pick up and amplify the sound, but it must also eliminate any little line distortion which, however small it may be, would prevent the transmission being entirely successful. The



in the machine room at 2FC made their final test, and spoke through the line to the mechanic at the other end; the various exchanges on the route cleared the line so that a continuous wire was available, and the crossing over took place. Then, to the relief of everybody, there came the voice of the announcer at Kosciusko—"Hello, hello, Station 2FC, we are now broadcasting from the Hotel Kosciusko"—and the whole programme was then gone on with.

State Engineer's Arrangements.

Reviewing the operation of all these record breaking land line transmissions carried out by 2FC and other stations, it is remarkable to think that, owing to the efficiency of the State Engineers' Department, and the wonderful manner in which every little detail is dove-tailed in, the breaks in the transmission have been practically negligible.

A study of the telegraph and telephone line map of the State discloses an incredibly intricate network of wires running in all directions, so that to the uninitiated it would seem almost impossible to separate one wire from the maze, in order to provide a clear line right through to Kosciusko. The task of Mr. H. Weir, of the State Engineers' Department, who was in charge of the line operation of the 2FC transmission, was no light one. It will be seen from the chart appearing in this article that the line passed through five distinct points between Kosciusko and the test room at the G.P.O., Sydney. First of all the best route had to be decided upon, not necessarily the shortest one, but one ensuring the most perfect transmission, and another problem which had to be settled was whether any line repeaters were required. Up to a distance of

order that the signals may be amplified and passed along to the next section at greater strength. Goulburn, which is a big telephone repeating centre, and through which the main trunk lines for Melbourne, Albury, and Wagga pass, was selected by Mr. Weir as his headquarters, for the main reason that all the battery requirements necessary were available. Here a special one-way amplifier was installed, in order to boost up the signals on their long journey from Kosciusko, and pass them on to Sydney at their original strength. This amplifier was one that was specially constructed for the occasion. The

section between Goulburn and Sydney is a direct one, but between Goulburn and Kosciusko, the line passes through four centres, and arrangements had to be made so that an attendant was standing by at each of those four points so that immediate attention could be paid to any little thing that might go wrong.

Problems Overcome.

A little problem had to be overcome here, because while the attendants at Canberra and Queanbeyan could be reached from Goulburn by a second line, the only line passing through Cooma and Jin-



Looking down from the balcony of the Hotel Kosciusko towards the frozen lake.

operation of this amplifier entails a high degree of technical skill, for there must be a continual watch against any change which must at once be compensated for by the repeater. Not only does the amplifier

dabyme was that actually being used for the broadcast. To get over this, therefore, the men on duty at the latter two places wore 8,000 ohm head sets, which were placed directly across

(Continued on Page 48.)



Studio News & Notes

A SPECIAL PLAY.

2FC's programme on Monday, 16th, includes early morning Test Match scores at 7, 8, 9.15, 10, and 11. In the evening, orchestral items from the Haymarket. A play, specially written for 2FC, by Mr. James Donnelly, the plot dealing with the Artists' Ball, which is being held this evening, and characters will consist of Miss G. Fimister soprano, Miss Kitty Elliott soubrette, Mr. Lawrence Halbert baritone, and Mr. James Donnelly tenor, and members of the 2FC Studio staff. Before crossing over to the Town Hall, to broadcast from 9.30 till midnight, the dance music at the Artists' Ball, Mr. Nevin Tusseau, whose poster drawing on the air has created such amusement, will describe a drawing closely associated with the Artists' Ball. The music will be supplied at the Town Hall by the dance band, conducted by Mr. Eric Pesarec.

EXQUISITE IRISH SONGS.

On Tuesday, August 17th, the programme from 2BL will be of more than usual interest, and displays a galaxy of talent. Broadcasters' Miniature Orchestra will play classical numbers. Miss Helena Stewart, the dramatic soprano, whose work is being more and more appreciated. Mr. Alfred Cunningham, the distinguished English baritone, whose association with the Westminster Glee Singers first brought him into prominence; and Professor Randel Woodhouse, that evergreen singer of exquisite Irish songs, will all present items from their repertoire; and Mr. Reg. Harrison, comedian of note, will provide a certain amount of comic relief. Mr. Montague Orr will continue his talks on income tax and the compilation of returns, answering questions on the telephone which will be placed on the air simultaneously. During the evening, Mr. Frank Locke,

J.P., will reply to a series of talks that have been delivered on the Single Tax, answering briefly the arguments that have been put forward, and at the

of "Sticky-Beak Grump." This wireless goblin is the inveterate enemy of all wireless enthusiasts, and pursues the uncles at 2BL with tireless



A Studio study of 2FC, showing Mr. Chapple, accompanist, Mr. Cochrane, and Mr. Anderson, working out details of the Kosciuszko transmission.

same time combatting the Single Tax proposition. As Mr. Locke is an exceedingly able speaker, it is anticipated that an exceedingly interesting 20 minutes will be provided. The Elite old time dances will be broadcast from the Marrickville Town Hall, and the dance programme for the evening will be broadcast by the Palmgrove Orchestra under the direction of Mr. Stan Fotheringham.

"STICKY BEAK GRUMP."

The mythology of wireless, which may have been said to originate with "Hector the Wireless Bird," whose amazing and oftentimes devastating information regarding juvenile listeners-in became a feature of bed time stories, was added to by the creation

malignancy. Striving to join the radio family with his pets—two tadpoles—instead of taking his rejection quietly, he took the greatest possible umbrage, and ever since has impeded Hector in his duty of collecting information, has done incalculable damage by destroying valves, etc., and forwarded to the Studio of 2BL a series of letters filled with outrageous suggestions and comments. These witty letters, with their snatches of "verse" and re-written nursery rhymes, have created a great amount of interest and speculation has been rife as to who is the author. We are now permitted to state that the originator of "Sticky Beak Grumpy," and the writer of the letters, is Mr. Stanley Crittenden, who is well known in

the wireless and photographic worlds. His lectures on photography are listened to with attention, and his creation of "the man with the headphones" has added a new interest to lecturers. This nameless person is the foil for everything that cannot be said directly, and introduces a note of humour at critical moments. It is anticipated that more will be heard of him in the near future, and also that fresh infamies on the part of "Sticky Beak Grump" will be dealt with during bedtime stories. In the long conflict between them, the betting is that in the end Hector the wireless bird will emerge triumphant.

SPECIAL OPERATIC TALK.

During the afternoon session of Wednesday, August 18th, Station 2BL is featuring a special operatic talk illustrated by selected gramophone records. As 2BL is now in co-operation with His Master's Voice Company these talks have become increasingly interesting by reason of the splendid selection of artists available to illustrate the remarks of the lecturer. During the evening programme, the City of Sydney Band will be heard on two occasions for periods of 20 minutes, and as band music is invariably popular, the work of the City of Sydney Band is always greatly appreciated. Mr. Lance Jeffere, tenor, whose successful achievement as Rhadames in the Philharmonic Society's performance of "Aida," will be heard in oratorio and ballad numbers. Miss Mary Neal and Miss Iilda Lane, sopranos, will sing selected items; and Mr. Les. Ship, comedian, will also figure. At 9.30, Mr. J. M. Prentice will comment on the world situation, dealing with foreign affairs, and covering wide ranges of interesting happenings. From 10 until 11, Mr. Cec. Morrison and his Gloomchasers will be broadcast from the ballroom of the Bondi Casino, and from 11 until midnight the Palmgrove Orchestra, under the direction of Mr. Stan. Fotheringham will carry on the dance programme from the Studio.

**BURGESS—"They're on
the Leviathan"—
BATTERIES.**

SOME PUNCH.

The "punch" of 4QG is demonstrated by an incident which took place over the week-end. A member of the staff of 4QG took a portable



"Every one knows of" practice of 4QG."

Uncle Jack of 2BL as seen by Kerwin Macgrath.

set (detector and one stage audio) to Southport (approx. 45 miles airline). On arrival he discovered he had no aerial, so connected the set to an old rusty clothes line, and used a piece of bared flex, buried six inches in the ground for an "earth." 4QG came in sufficiently loud to work a small speaker. To go one better, 18 feet of flex was then connected to the set and tied to the branch of a tree, 7 feet from the ground, and 4QG came in at comfortable headphones strength.

CHORAL SOCIETIES.

Listeners to 2FC are certainly provided with a greater wealth of choral music than any other station in Australia, as such a number of Choral Societies are associated with them. Programmes are regularly supplied by the following Societies:—The Sydney Madrigal Society, Sydney Harmonic Society, Royal Philharmonic

Society, Royal Apollo Choir, Highland Society, and others. On Tuesday evening, August 17th, the whole of the evening will be devoted to the concert in the Conservatorium by the Sydney Madrigal Society. On Saturday evening, August 14th, the evening's programme will be taken from the Conservatorium Hall on the occasion of the concert by the Sydney Harmonic Society. On this occasion, the well-known Australian tenor, Alfred O'Shea, will sing.

It has often been a vexed point with the organisers of these Choral Societies whether broadcasting damages the attendance at their quarterly concerts. Evidently they have satisfied themselves that the quality of their work is such that listeners are often impelled to go to their concerts to hear the complete programme, having been struck by the high standard created at the monthly programmes, which are given from their Studios. The opposition to broadcasting is fast dying out, and several of the important musical bodies in New South Wales recognise the value of it, and 2FC justly claim that their organisations in this connection is more complete than that of any other station. In addition to these Choral Societies, they are associated with 12 of the leading metropolitan theatres. They take regular performances from seven amateur operatic societies; twelve hands play regularly for this service; 15 church services are dealt with, and, in addition, programmes are taken regularly from the various leading halls in Sydney.

APPOINTMENTS OF BRISBANE STATION.

Almost every artist and visitor to Station 4QG on first entering the station comments on the beauty of the main reception hall. This hall is built in the form of a double cross and is capped by a large dome supported by eight fluted pillars. The moulded plaster work in it is exceptionally beautiful, and the lighting system, in addition to being cleverly thought out, is unique. The whole room goes a very long way towards cultivating the quiet and dignified tone always associated with the station.



Radio Auction Bridge

Game No. 4—Broadcast by 2 F C

"Wireless Weekly" has secured from 2FC, Farmer's Broadcasting Service, the exclusive right of publishing the Radio Auction Bridge Games which 2FC commenced broadcasting on Wednesday, 21st July.

There are 24 Bridge Games in the series, and one will be broadcast each Wednesday evening, and the following Friday's issue of "Wireless Weekly" each week will give the game in detail as it should be correctly played. These games were arranged by the United States Playing Card Company of Cincinnati, Ohio, U.S.A., and played by Bridge experts. Some very slight alterations have been made in the original games broadcast in America in order to adapt them to the calling of the Portland Club, which is the most universally followed rule, so far as Auction Bridge is concerned, in Australia.

Mr. W. F. H. Master, an acknowledged expert in the game of Auction Bridge in Sydney, is carrying out the transmissions from 2FC, and if any Bridge enthusiasts, on reading these articles, care to submit any questions or problems arising out of the games as published, arrangements have been made for Mr. Master to answer them through the columns of "Wireless Weekly."

The complete hands held by each of the players of the Radio Auction Bridge Game played on August 11th were as follows:—

"South" holds:—

Spades: K, 6.
Hearts: None.
Diamonds: A, Q, 10, 7, 5, 3.
Clubs: K, Q, 9, 7, 6.

"West" holds:—

Spades: A, Q, J, 10, 7, 2.
Hearts: A, K.
Diamonds: 9, 8, 4.
Clubs: 8, 5.

"North" holds:—

Spades: 9, 8, 5, 4.
Hearts: 8, 5, 4, 2.
Diamonds: K, J, 6, 2.
Clubs: 2.

"East" holds:—

Spades: 3.
Hearts: Q, J, 10, 9, 7, 6, 3.
Diamonds: None.
Clubs: A, J, 10, 4, 3.

The bidding will now begin. South (the Dealer) opens the bidding with one diamond. It must be understood that all original bids (unless preemptive) are simply informatory, that is, they are intended to give information to the partner that the bidder holds at least two sure tricks in his hand, one of which is in the suit bid. An original bid of one, never tells partner that the bidder wishes particularly to have the suit bid as the final trump. If the bidder's partner does not like his original bid, the

partner must so tell him by making another bid in denial of the original bidder's first declaration. In fact, the original declaration becomes the contract only once in 20 times, being usually overcalled by either an opponent or by partner. In this instance, South is prepared, if his diamond bid does not suit his partner, to bid clubs.

West, of course, has only one bid in his hand, that is the spade suit. Therefore, he bids one spade.

While it is tempting to North to help his partner, on account of his four diamonds to the king, knave, and the singleton club, he knows that an assist in his position would tell his partner that he held more than two quick tricks, together with normal assistance in the suit bid. As has been explained in previous Radio Games, normal expectancy is three small cards in partner's suit or their equivalent, that is ace and one, or king and one, or queen and one. As his holding does not warrant an immediate assist, and as he does not wish to mislead his partner, North passes.

East does not hold normal expectancy in partner's suit. Therefore, it is necessary for him to tell his partner of this condition, if it is possible to do so. The only way to inform his partner is to bid another suit in denial of his partner's bid. East's holdings in hearts and clubs amply justify such a denial, and because of his length and strength in hearts, he gives prefer-

ence to the heart suit and bids two hearts.

South, having received no support from his partner for his diamond bid, now shows his club suit by bidding three clubs, trusting that his partner may be able to assist either suit. By this bid of three clubs, he shows his partner that he has a two suiter, with the probability of eight tricks in his hand with either suit as trump.

It is a temptation for West to bid three spades on account of his four honors, but as he holds the ace and king of his partner's suit, and his partner has emphatically denied spades, he unhesitatingly gives up his four honors in spades, and assists his partner by bidding three hearts. If East had passed and South had bid clubs, West would have then rebid his spades.

North bids four diamonds. South's bid of the club suit on the second round has told North that South holds the probability of eight tricks in his own hand with either diamonds or clubs as trumps. North's hand, therefore, takes on a stronger aspect, as his partner was able to bid three without any assistance from him. It is necessary that he only hold two sure tricks in his hand, in order to raise his partner's bid to four. These sure tricks are the king of diamonds and at least one ruff of clubs. In fact, it is usual to estimate a singleton of a suit that partner has bid as being worth two tricks one-half of the time,

and one trick the other half. Consequently, such a singleton is considered as having the average value of 13 quick tricks. Therefore, North bids four diamonds.

not expect his partner to permit it to stand unless his partner's holding is such that East is sure that a large penalty can be gained. North passes. East bids five hearts. While he

mond suit is led by one of the other players, he may make two tricks in diamonds. Also he wants to try to establish a club trick before the diamonds are led, so as to be sure of one trick in clubs. He, therefore, very properly opens with the king of clubs instead of leading the ace of diamonds from the ace-queen ten-ace. There is little hope of his king of spades taking a trick, because of the spade bid on his left. He cannot reasonably expect his partner to have a quick trick, because of his failure to support South until late in the bidding. Therefore, he feels that he must make all that he possibly can out of his own hand.

Dummy plays the five of clubs, North the two, and East wins the trick with the ace of clubs.

With five clubs in his own hand and two in the Dummy, and with the knowledge that South must hold at least five, in order to have bid three clubs, East knows that the two of clubs from North must be a singleton. He also knows that this fact cannot be apparent to South. In planning his campaign, he can count upon seven heart tricks in his own hand, two in Dummy if they are used to ruff clubs, the ace of spades and the ace of clubs, that is eleven tricks in all, and his contract. As no expert Bridge player is satisfied with simply making his contract if there is a possibility of gaining an extra trick, East considers how such an extra trick may be obtained. He knows that South holds the queen of clubs and is not aware of the club situation, thus if East can drive the queen by leading the knave, it will make his ten of clubs good. South, of course, can prevent the ruff of two clubs from Dummy by leading a heart, and if such would happen East would still lose a final club. However, the play is well worth trying, as he has all to gain and nothing to lose by it. Therefore, East leads the knave of clubs. South naturally plays the queen. South cannot place his partner as having no more clubs, as he may originally have held three. South cannot afford to take any chance. He must win every trick possible and as quickly as possible. Dummy plays the eight of clubs, and North discards the knave of diamonds. This

(Continued on Page 50.)



The 2FC Auction Bridge Party, conducted by Mr. W. F. H. Master. This series will be given every Wednesday night until exhausted, and is creating a lot of interest.

East bids four hearts. As he holds five clubs and south must have held at least five to have bid them, the probability is that his partner holds but one or two clubs. He figures also that West has at least a trick in spades and normal assistance in hearts, perhaps one of the missing top honors.

South bids five diamonds. While South has no real expectation of making five odd in diamonds, it appears from the bidding that his opponents will surely go game in hearts. Therefore, he is willing to make a sacrifice to save game by perhaps going down one or two tricks. After his partner's assist in diamonds, he figures that two tricks should be the limit of his loss.

West doubles five diamonds. He holds apparently three tricks in his own hand, and properly assumes that his partner must have at least one quick trick, in order to have rebid his hearts without the ace and king of the suit. Consequently, it appears to West that he and his partner can badly defeat the diamond bid. While West's double is a business double, he does

think that if he lets his partner's double stand that South's diamond bid will be defeated, he must take into account that part of West's business double may have been predicated upon the probability that he, East, holds one or more sure heart tricks. Then North's prompt preference for diamonds, instead of clubs, may mean that North may be void of Clubs, just as East is void of diamonds. Also he feels that if the diamond bid can be defeated for any worthwhile amount, five hearts are probably assured. South passes, West passes, North passes. There East is the Declarer, with five hearts as his contract.

South leads the king of clubs. Ordinarily, the lead of a king, from the king, queen and other small cards of a suit is not a desirable opening, as it usually results in making but one trick in the suit, whereas two tricks are frequently made if the suit is led up to. South realises that North and South must make three tricks in order to set the contract. He cannot count surely upon his partner holding the king of diamonds. If the king of diamonds is held by East, and the dia-

New Station for Sydney

THE INTERFERENCE QUESTION

TOWARDS the end of August, there will be a further station added to the already formidable list which are received nightly by listeners all over this State. The station in course of erection for the Theosophical Society has been entrusted to the hands of Mr. E. G. Beard, Chief Engineer, United Distributors Ltd., and Mr. Beard is full of optimism regarding its future.

Apropos of the report that Mosman Council had temporarily withheld permission for the erection of the station because of the possibility of interference with other stations, Mr. Beard states:—

"This station is licensed by the P.M.G.'s. Department after proper consideration of the design of the station and other matters concerning the interference problem. The Company requested a wave length of 200 metres, or thereabout. The P.M.G.'s. Department, who have better facilities for deciding which wave length will produce the least interference, considered that 326 metres was the most suitable, and have, therefore, allotted this wave length to the station. The difference between this wave length and 2BL's wave length of 353 metres, is a little more than the difference between 2BL's wave length and that of 4QG Brisbane. Observing that 90 per cent of valve sets can receive Brisbane through Broadcasters, no interference should be experienced from this new station.

"Similarly, the difference between 2KY and 2BE is much less than that between this new station and 2BL. Most crystal set owners who can hear these stations can receive them without interference from 2KY. It is absurd for anybody to foretell serious interference to crystal users from this new station unless they are acquainted with the design of the station and the arrangements that are being made to prevent interference occurring. As these designs have been submitted to no one but the P.M.G.'s. Department, nobody outside that Department is in a position to foretell

what will happen when the station operates.

"Just as certain multi-valve sets are extremely selective, and others are very broad, so certain transmitting stations are broad and others are selective. 5 valve sets as made in



Mr. E. G. Beard, who is installing the new Theosophical station.

Australia two years ago, find it impossible to receive Interstate stations through the interference caused by 2BL. Modern receivers on the other hand experience no difficulty at all.

"Similarly, stations designed in accordance with customary practice of three or four years ago are broader than stations designed in accordance with absolutely the latest in modern practice. All those features which make the modern receiver selective, are incorporated in this new station, to make the transmission of this station sharp for the benefit of receiver owners whose sets are not of a selective design. For the information of those who may have some technical knowledge of radio, the following summary of what steps are being taken to make the tuning of this new station ultra sharp may be interesting.

"In the first place crystal control

will be adopted as soon as the wave length of the station is definitely fixed. Secondly, five stages of radio amplification take place between the drive system and the closed oscillating circuits. Thirdly, coupling between the closed oscillating circuit and the aerial will not exceed one half of one per cent. These factors alone would ensure that the wave length of this station is absolutely constant, and that only a sharp wave is emitted. In addition to this, if any harmonics exist, these will be suppressed by means of special harmonic suppressors.

"Again, arrangements are being made whereby it is possible to limit the side bands of the station. Thus, from any of the ordinary stations transmitting at present, inaudible sounds are transmitted which cause interference or barking in conjunction with signals, received from Interstate stations or nearby wave lengths. These side bands will be completely eliminated from this new station. It should be noted that the whole design of the station is not for a maximum noise, but for the sharpest tuning in transmission practicable, and undoubtedly this station will set a new standard for non interfering transmission.

"Naturally these various devices for reducing interference will consume power, and this is the reason why the station is being built with such an apparently high power, in comparison with that of other "B" class stations.

EATING FOR HEALTH.

On Tuesday, 17th, from 2FC, usual morning Test Match scores; Cooking Talk. In the afternoon from Paling's Concert Hall, the pupils of Miss L. C. Finlay will give a recital. From the Oak Hall, a duet by Miss Katherine Beverley and Miss Muriel Humphries. In the evening, a talk by Mr. J. K. Powell, of the Food Reform League, on "Eating for Health." A popular physiology talk, by Mr. B. C. Doig, on "What do dreams mean." Violin solos by Mr. Lionel Lawson during the interval of the concert taken from the Conservatorium Hall by the Sydney Madrigal Society. Choir conducted by Mr. Frederick Mewton. The artists will be Mr. Raymond Ellis, and Madame Vera Tasma, soprano, and others.

BURGESS—"Used by
American Navy"
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We have full stocks of all good apparatus at keenest prices.

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	£	s.	d.		£	s.	d.
Pilot, S.L.F., 13 Plate Condensers	0	12	0	Philips Valves, B406	0	13	6
Pilot, S.L.F., 17 Plate Condensers	0	13	6	Philips Valves, A109	0	13	6
Pilot, S.L.F., 23 Plate Condensers	0	14	3	Philips Valves, C509	0	13	6
R.V.G., S.L.F., 23 Plate Condensers	0	13	6	Philips Valves, A306	0	13	6
Montrose 23 Plate Low Loss Condensers	1	2	6	Mullard Valves, P.M.3	0	13	6
Igranic Square Law .0005 Condensers	1	15	0	Mullard Valves, P.M.4	0	13	6
Igranic Square Law .0003 Condensers	1	12	6	Ooram Valves, H.F. and L.F.	0	13	6
Burgess 45 volt "B" Batteries	1	8	0	Radiotron Valves, UX199	0	13	6
Ever-Ready W.P.40 Batteries	0	12	6	Radiotron Valves, UX201A	0	13	6
American 45 volt Batteries	1	5	0	GECO Valves, RV5	0	13	6
Rayovac 45 volt Batteries	1	16	0	Cunningham Valves, CX301A	0	13	6
Quam Audio Transformers	0	15	9	Radiotechnique, Super Ampli	0	13	6
Signal Audio Transformers	1	12	6	Amplion Loud Speakers.			
Igranic Audio Transformers, 5-1	1	1	0	C.A.V. Loud Speakers.			
Igranic Audio Transformers, 3-1	1	11	6	Quam Loud Speakers.			
	1	9	3	GECOPHONE Loud Speakers.			

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Increases reception all sets. A necessity for super-hets.

Be economical and ask your dealer for particulars.

NEW SYSTEM TELEPHONES

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Sydney, Melbourne, Adelaide

MAJOR H. SANDFORD MORGAN.

Major H. Sandford Morgan, who is delivering from 2FC, on August 22nd, a talk on the "Retreat from Mons," is well able to talk on this great event in the world's history, because he was actually present in the retreat as a member of the "Old Contemptibles." He was, at the time, attached to the



Major H. Sandford Morgan.

Royal Field Artillery, under Sir John Hedsam, V.C., who commanded the Fifth Division of the British Imperial Forces. He served through the Great War until 1915, after which he returned to England for a period, and was then posted to Mesopotamia, and was there during the change-over period, when England relinquished the mandate in favour of King Feisul, son of Hussain, King of Arabia.

Major Morgan was attached to the personal staff of King Feisul, being present at his coronation, and later at the first anniversary of his coronation.

In his position as Artillery Liaison Officer of the Iraq Army, Major Morgan gained a wonderfully comprehensive idea of this fascinating land. He has in his possession many photographs of scenes depicting the age-old civilisation of the world, and is probably better constituted to talk about this part of the world than any other personality in Australia.

Major Morgan actually served in three wars, and, amongst his many other medals, he won the D.C.M. at Mons.

WANTED.—All kinds secondhand Wireless Sets, Parts, Speakers, etc. Best prices given. JACK RAPKEN, 16 George Street West. MA 1198.

WIRELESS TELEPHONE SERVICES AT LIGHTHOUSES.

THE Commonwealth Lighthouse Service recently decided to have wireless telephone sets installed at several lighthouses in Bass Strait, whereby the isolation in which keepers of those lighthouses are placed will be broken down and the men there will be enabled to communicate with the land and with the remainder of the service. At the present time, communication is maintained between some of the lighthouses and the land by means of short submarine cables and land-line telephony. The expense of laying cables and the limitation of the length of cable over which telephonic conversation may be conducted, has prevented the provision of services to all lighthouses. As a result, the keepers of those posts have hitherto been entirely cut off from telegraphic communication with the land.

Wireless telephony is to solve the difficulty, and it is proposed shortly to connect the lighthouses at Clifty Island and Deal Island, Bass Strait, with the mainland by wireless telephony. A wireless telephone transmitter and receiver will be installed in each of these lighthouses, and a third unit will be provided at the lighthouses at Wilson's Promontory, which also has a land-line service. Thus both the Clifty and Deal lighthouses will be able to communicate with the mainland through the Wilson's Promontory Lighthouse. The distances to Clifty Island and Deal Island from Wilson's Promontory are respectively 17 and 49 miles.

The necessary wireless equipment has been supplied by Amalgamated Wireless (A'sia) Ltd. It is of Australian design and manufacture and will be similar to the wireless telephone equipment which has recently been used with great success on trawlers operating between Sydney and the south coast of New South Wales. Each transmitter will have a power unit of 250 watts, and the current necessary to operate it will be produced by a petrol driven generating set. The wireless telephone sets are in Melbourne and will be taken to the lighthouses in the next steamer and one of the Amalgamated Wireless Co.'s engineers will proceed in the same vessel to instal and test the stations.



Shipment Just Landed



We are glad to announce that we have just landed a shipment of this well-known and popular line. Our stocks have been landed, but as these are rapidly booking out, dealers will be well advised to place their orders at once.



Trade Discounts on Application.

RETAIL PRICE - - FIL-KO-STAT - - 12/6
 - - FIL-KO-LEAK - - 12/6

These are two instruments distinctly designed to improve reception through their ability to control valve action—FIL-KO-LEAK to tune the grid by securing correct grid bias—FIL-KO-STAT to tune the plate-filament circuit by its control of electronic flow. Together they assure you maximum audibility, clearer signals and freedom from oscillations and other valve noises. They bring in stations you never heard before.

Recommended by Mr. C. D. MacLurcan in "Radio"

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The Radio Uncles Entertain

SATURDAY MORNING IN A PICTURE GALLERY

EVERY Saturday morning there is gathered together the happiest collection of kiddies in Australia. The meeting place is ideal—a picture gallery filled to overflowing with landscapes and other paintings, with a splendid collection of art objects near by. On the floor, eastern carpets and rugs are spread, and hundreds of children, of all sizes, seat themselves in anticipation. Chairs to the number of several hundred accommodate the grown-ups who bring the children. By courtesy of Messrs. Anthony Hordern Ltd., these are made available in order that the radio family may have an opportunity to meeting the two uncles from station 2BL.

It may be explained that the original practice was for individual members of the radio family to drop into the studio at any old time, to the serious dislocation of the transmission. To overcome this, Saturday morning was set aside and a definite hour fixed. But so eagerly was the invitation to visit the studio and see the Uncles accepted that the accommodation proved all too small. Hence the larger development, which was the outcome of a desire to meet all who listened in and were willing to come and see their usually hidden entertainers.

Always well in the foreground are the hundreds of little faces, aglow with the pleasure of actual contact with their magical and usually etheric Uncles. Decorations include caricatures of the said Uncles, that of Uncle George being particularly libellous, with gigantic presentations of Hector, the wireless bird, and Hectoreen, his wife.

Songs and merriment are the order of the day. Choruses are lustily sung or whistled, with the well known voice of Uncle George leading. Stories are told, to fascinated listeners whose faces grow spell-bound as they hear strange legends of the Samoan woman who lives in the moon, of the Green Goblin who became a good fairy, of Tibble the fish, and so on. But it is the chorus singing which

takes best; a special stunt is to try and extinguish the electric lights by a volume of sound; this is usually accomplished by the aid of a friendly



Mr. Claude Hall, who will give a series of recitals from 3L.O., has long been known as a singer, reciter, and actor. He has acted as adjudicator at various big competitions.

electric goblin who is able to manipulate a hidden switch.

Besides the Uncles, who are the most lasting attraction — "Bringa" also has been heard there; well-known entertainers such as "Cousin Clarice," Daphne Lowe and others have sung and danced and recited. These are only some of the many who have participated.

There are occasions when a moral lesson can be driven home or a civic principle inculcated. The little boy who on one occasion forgot to remove his hat during the singing of the National Anthem will never forget the nicely worded little homily on what the singing of God Save the King signified; any suggestion of "showing off" on the part of the small audience is firmly checked.

From the first appearance of the Uncles, who enter through some drapings, until the last final handshake, the interest and attention of both grown-ups and children are held

throughout. It is a fine and clean entertainment, filled with a spirit of camaraderie, which serves to make the radio family a living reality for those who can attend. One happy feature is the manner in which naturally shy children will go to the Uncles without any trace of self-consciousness, tacitly accepting them as actual relations.

The shaking of hands is a ceremony of importance. All the hundreds of children file past the Uncles and solemnly proffer a hand, more often than not a left instead of a right.

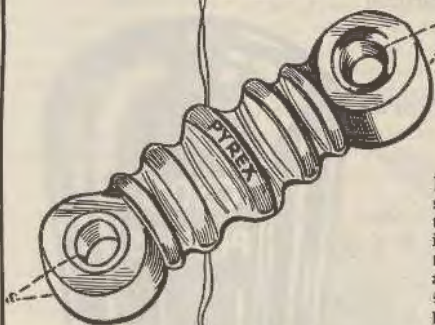
Radio has taken a very definite part in the lives of hundreds of children who will be men and women, citizens, of to-morrow. That they will be all the better for wireless is certain, just a little more inclined to kindness and consideration, a little more generous in social recognition. For in the radio family there is the real spirit of brotherhood — no distinctions of any kind. All are equally welcome, equally loved, and membership carries only one condition — that they listen-in when and as circumstances permit.



"IN A PERSIAN GARDEN."

From 2FC, on Wednesday, 18th, in the afternoon a Dickens' reading, and a recital by the pupils of Madame Ada Baker and Mr. Vost Jansen. The 4th Session of the Radio Bridge Series from the Studio. Orchestral items from the Lyric Winter Garden. The Metropolitan Quartette, consisting of Miss Jean Grant soprano, Miss Mary Bourke, contralto, Mr. Arthur Champion tenor, and Mr. E. G. Ellis baritone, will give for the first time in the Studio, Liza Lehmann's remarkable song cycle, "In a Persian Garden," taken from Omah Khayyam's verses. Final talk on the Commonwealth Radio Photographic Competition by Mr. E. J. Van-de-Velde, announcing prize money.

THE IMPORTANCE OF PERFECT INSULATION EMPHASISED



PYREX INSULATORS have improved his radio reception a hundred fold. Now he gets every bit of energy that is on the air. Pyrex Insulators really insulate—they don't let energy leak away.

PYREX is the trade mark of a special composition possessing distinctive electrical characteristics. It is not an ordinary glass—it contains no lead. It is homogeneous and of a continuous uniform structure, and so does not depend for its insulating properties on the surface glaze.

PYREX does not absorb water or attract moisture, and its smooth permanent surface prevents the collection of dust. It is mechanically strong and light in weight, and undoubtedly is the best insulating material obtainable.

QUAM CONDENSERS—the world's lowest loss condensers use PYREX insulation throughout.

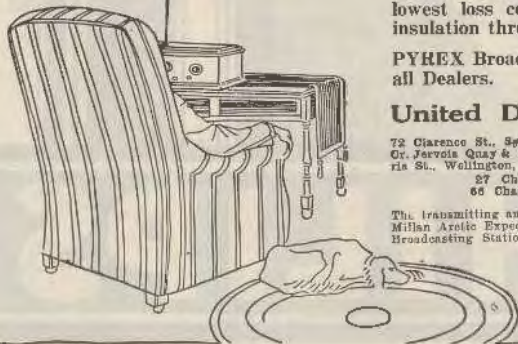
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PHILIPS VALVE -- C 509

PHILIPS Research Engineers, after years of patient toil and care, have evolved a general purpose valve, C509, which will give results to suit the most critical amateur.

On account of its very large output it is specially suitable as a Power Amplifier for Loud Speaker work, yet its design makes it suitable for High Frequency stages. This Valve gives decidedly, a purity of tone with magnificent volume, while no trace of distortion is at any time apparent. Obtainable at all Radio Dealers. Sold with either Standard, English or American Caps, also the New UX Cap.

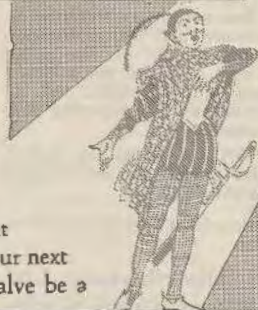
Price 13/6

Makers of the famous PHILIPS LAMPS.

C509 Characteristics :

Filament Voltage	4.5 - 5.3 volts
Filament Current	0.25 amp.
Plate Voltage	20-120 volts
Plate Current	10 m.A.

Let
your next
Valve be a



PHILIPS



MANY requests have been received from time to time from readers of "Wireless Weekly," for simple constructional details for building a Super-Heterodyne receiver. Previous writers have covered the theory and principles governing this circuit, but to the non-technical radio enthusiast, it is very doubtful if the practical help has been as valuable as the writer may have expected.

The actual receiver described in this issue was constructed by the technical editor of "Wireless Weekly," and incorporates every refinement which has been found to improve the all-round efficiency and stability of this wonderful circuit, which is universally recognised as the closest approximation to perfection in radio yet developed.

It has extreme selectivity and sensitiveness, combined with simplicity of operation. But unlike many forms of detector and audio amplification, which give stable operation and good quality reproduction with any old lay-out, the super-heterodyne requires careful attention to engineering details in the lay-out of components, etc.

These features of design have been so perfected in this receiver, that the home constructor can be assured that if he follows our instructions explicitly, he will have no difficulty whatever in duplicating the results. Whilst the set can be made without any great knowledge of the theory of the super-heterodyne, it is advisable to read carefully the following portion of this article, which deals with the analysis of the circuit.

Theoretical Explanation.

The high sensitivity, or long distance range of any receiver is solely dependent upon the use of radio frequency amplification. At relatively long wavelengths this is comparatively simple. But at the short broadcast wavelengths, there is a tendency for the valves to oscillate, due to the internal capacity and circuit couplings. To overcome this tendency, some form of damping is usually employed, which unfortunately not only decreases the signal strength, but also broadens the tuning.

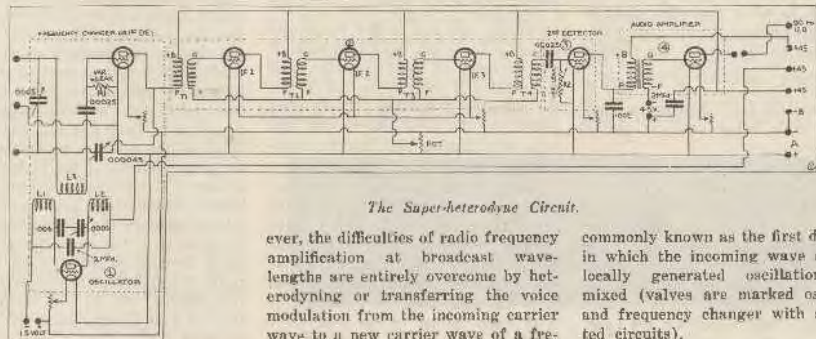
With the super-het receiver, how-

ever, the difficulties of radio frequency amplification at broadcast wavelengths are entirely overcome by heterodyning or transferring the voice modulation from the incoming carrier wave to a new carrier wave of a frequency at which the effect of inter-electrode and wiring capacities disappear. This is then passed through three transformer coupled valves, all of which amplify at maximum efficiency. From this it will be readily seen that all radio frequency amplification is obtained at a fixed frequency, irrespective of the incoming wavelength. This eliminates all tuning controls in the radio frequency amplifier, and thus reduces the actual number of controls to two.

Maximum amplification is obtained only when the intermediate frequency transformers are matched. This is assured, however, by purchasing well known makes of intermediate frequency transformers, all of which are made on automatic precision machines.

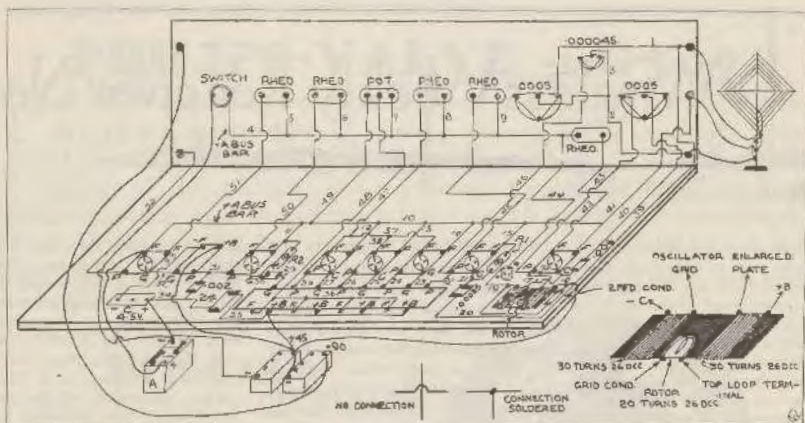
The Super-het Circuit.

Fig. 1 shows the circuit diagram. It can be readily analysed in four sections, which on the drawing are shown in dotted lines, as 1, 2, 3, and 4. Fig. 1 shows the local oscillator circuit, for generating the heterodyne frequency and the frequency changer,



ever, the difficulties of radio frequency amplification at broadcast wavelengths are entirely overcome by heterodyning or transferring the voice modulation from the incoming carrier wave to a new carrier wave of a fre-

quency at which the effect of inter-electrode and wiring capacities disappear. This is then passed through three transformer coupled valves, all of which amplify at maximum efficiency. From this it will be readily seen that all radio frequency amplification is obtained at a fixed frequency, irrespective of the incoming wavelength. This eliminates all tuning controls in the radio frequency amplifier, and thus reduces the actual number of controls to two.



Showing how to wire up the parts.

Dotted portion shown as 2, is the three stages of intermediate frequency amplification (valves marked IF1, IF2, and IF3, and associated transformers marked T1, T2, T3, and T4, 3 is the final detector, and 4 is the one stage of audio amplification, and associated audio transformer, marked AF1).

The frequency changer and detector valves use the customary grid condenser grid leak method of detector action. The values of the grid leaks whilst not being very critical should preferably be of the variable type.

The oscillator coil is made up of two windings of thirty turns of No. 26 D.C.C. wire, wound on a 3in. radium or bakelite tube, each winding being wound the same way and separated by 3/8in. to allow the rotor shaft to pass down through the 3in. tube without damaging the wires. The rotor is made up of 20 turns of No. 26 D.C.C. wire, and should be made so that it will rotate the full 180 degrees, good flexible leads being used as pigtail connections.

Method and Order of Construction.

First make the oscillator coil system (if it is not supplied with kit), after which the panel components should be mounted on the panel per drawing Fig. 3. The drawing shows clearly the position of each component, and allows ample room without cramming. Next mount up the base-board connections, corresponding to

the back of panel view (Fig. 2). It is a good plan to place each of the components loosely on the base at first, until you are sure they are all laid out to the best advantage, after which they can be secured.

This completed, wire the following connections in their numerical order:

No. 1 top loop terminal to fixed plate connection of second condenser. No. 2 moving plate connection second condenser to lower loop terminal. No. 3, moving plate connection of midge condenser to No. 2. No. 4, filament battery switch to left hand terminal of first rheostat. It will be noticed that this connection extends along the panel, and is the common negative A bus bar, which feeds all the rheostats and the potentiometer.

Nos. 5, 6, 7, 8, and 9 are self explanatory, one end of the connection going to the right hand terminals of the rheostat or potentiometer, and the other end soldered to No. 4, viz. the negative A bus bar. These completed, lay the panel on one side, and wire the following base board connections:—

No. 10 is the positive A bus bar, which extends the whole length of the space taken up by the seven valve holders. It will be noticed that the two outside "F" terminals of the first and seventh are joined together. No. 11 is the right hand "F" terminal of sixth valve holder to the positive A bus bar. No. 12 right hand "F" ter-

minial of fifth valve holder to positive A bus bar. No. 13, right hand "F" terminal of fourth valve holder to positive A bus bar. No. 14, right hand "F" terminal of third valve holder to positive A bus bar. No. 15, right hand "F" terminal of second valve holder to positive A bus bar.

No. 16 P terminal of first valve holder to the inside connection of the right hand coil of oscillator. No. 17, G terminal of first valve holder to inside connection of left hand coil of oscillator. No. 18 is the small link which connects the outside end of right hand coil with the two m.f.d. condensers, and also continues on to the positive 45 volts as shown.

No. 19 goes from the outside end of left hand coil to the negative 1.5 volt C battery. (The outside zinc container is the negative connection.) Soldered to No. 19 is another connection which goes to the other vacant terminal of the two m.f.d. condenser. No. 20 goes from the left hand terminal of the rotor or pick-up coil to the grid condenser. No. 21 grid condenser to G terminal of second valve holder. The variable grid leak is then joined between the G terminal and the positive A bus bar. No. 22 links the P terminal of second valve holder to the P terminal of first intermediate transformer. No. 23 G of third valve to G of first intermediate. No. 24 P of third valve to P of second inter-

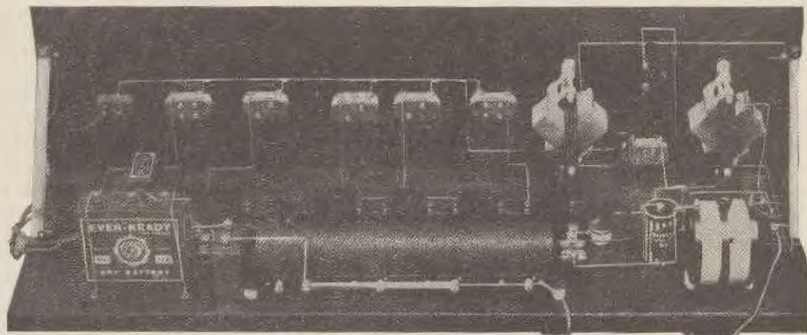
ceiver, and the other to the lower terminal of receiver. These two connections may be reversed without affecting the operation of the set.

Next connect up the A battery, as shown in diagram. Place the valves in the sockets, pull out the filament switch and make sure that the following rheostats control their respective

final adjustment follows later.

Set the rotor or pick-up coil of oscillator unit half way between the maximum and minimum coupling positions. Next place the loop condenser dial which is the right hand one, at the five degree position, then slowly turn the oscillator condenser from zero to 45 degrees. If no stations are

coupling position as possible, without causing a decrease in signal strength. Once this adjustment has been made the rotor need not be altered again, unless the oscillator valve is changed. Four of the rheostats, while not being critical, are very much worth while, and are of considerable benefit if extreme long distance reception is de-



Photograph illustrating the back view of Set.

valves. No. 1 rheostat controls oscillator valve. No. 2 frequency changer. No. 3 the three intermediate frequency valves. No. 4 the detector. No. 5 the audio valve.

Now connect up the negative A and negative B batteries together. There are three connections which go to the positive 45 volts, one from the oscillator coil, one from the common positive B terminal of intermediate frequency transformer, and the third from the positive B terminal of audio transformer. The positive 90 goes to the top load speaker terminal. After all these battery connections have been made, the load speaker leads may be connected to the terminals provided. The set is now ready for an actual operating test.

In normal operation there are only two controls to adjust, viz., the two condensers which tune the loop and oscillator coil. The rotor or pick-up coil, the midget condenser, rheostats and the potentiometer require initial adjustment; but, once set, will probably not need further attention. For

ordinary tuning the midget condenser should be set at minimum (it is, so that stator and rotor are not interspaced). Its

heard, change the loop condenser setting to 10 degrees, and again turn the oscillator condenser from 0 to 20 degrees. This process must be continued until a station is heard, changing the loop condenser setting about 5 degrees each time, and turning the oscillator condenser from a point at least 10 degrees below the loop setting to 10 degrees above the loop setting.

When tuning in long distance stations, the same procedure applies, except that it is necessary to make loop settings every two degrees, or even every degree if the signal strength of the stations to be received is very weak.

If the specifications of the oscillator coil are carried out to the letter, the two condenser dials will approximately match when a loop containing a hundred feet of wire is used.

After one station has been received, it is very easy indeed to pick up every other station within the wavelength range of the loop and oscillator, by advancing or retarding each dial in steps with one another. To adjust the best working position of the rotor or pick-up coil of oscillator, tune in a distant station and gradually turn the rotor to as near the minimum

sired. The rheostat and potentiometer which control the intermediate frequency valves are both very critical, but once the operator has noted just how they do control the whole stability of the receiver, it is child's play to adjust them.

It should be remembered that no reception whatever will be obtained if any of the intermediate frequency valves oscillate, and the whole secret of controlling them with maximum sensitivity lies in the correct filament current (controlled by rheostat), together with the correct amount of bias (controlled by potentiometer).

What the Receiver Will Do.

During "Wireless Weekly's" tests we conclusively proved that a super-het CAN be built which will give SUPER-HETERODYNE results.

During daylight tests, although only one audio amplifier was used, the whole of the description of the Rugby match between Victoria and Tasmania being received at excellent loud speaker strength at Croydon. At night time each and every Interstate station is as strong as the locals, without any interference whatever.

Few Final Words.

Do not be tempted to reduce the size of panel or alter the general lay out of components. Good looks and efficiency unfortunately do not go hand in hand where home constructed multi-valve receivers are concerned.

If you have not handled a super-het before, follow carefully our instructions re operation, and remember it is no use searching for the familiar carrier waves of those distant stations, as you did with your ordinary regenerative receivers. If the two dials of the loop and oscillator condensers do not correspond when receiving a distant station, it is advisable to alter the position of one or other of the dials until they do. Then it is a simple matter to rotate each of them together when searching for other stations.

Note carefully the settings of each and every station, and you will find that every member of your family can repeat your performances by simply referring to your table of adjustments.

Editor's Note.

A complete list of parts necessary to build this receiver may be obtained from any radio dealer advertising in this issue.

STANDARD WECONOMY RADIO SETS.

This is the title of a most attractive booklet, which has just reached us from Messrs. Standard Telephones and Cables (Australasia) Ltd. There are but sixteen pages in this little journal, but its size is easily outweighed by the high standard of its contents, and the quality of its production. Commencing with an article on how to choose a radio set, the reader passes on to a full description of the receivers handled by this well-known concern, together with a vast amount of interesting material dealing with Wecovalves, Standard telephones, broadcasting affairs, carrier current systems, etc. There is a great deal of valuable information in this booklet, which is not only beautifully illustrated and well written, but contains much that the broadcast enthusiast as well as the prospective listener-in should know. Our copy from Standard Telephones and Cables (Australasia) Ltd., 124 Castlereagh Street, Sydney.

David Jones

FOR RADIO SERVICE

We are the agents for "General Radio" Sets and Accessories. Behind the panel of every better built set these parts are to be found—they are the choice of amateurs and experts. Here is a price list of Condensers, Inductance and Coupling Coils and miscellaneous parts; prices for all other Precision instruments will be furnished on request.

CONDENSERS			INDUCTANCE and COUPLING COILS		
Type.	Description.	Price. s. d.	Type.	Description.	Price. s. d.
247-H	.0005, geared	27 6	277-A	50-150 metres	9 6
247-P	.00025, geared	35 6	277-H	100-300 metres	9 6
247-M	.00025, geared	34 0	277-C	200-600 metres	9 6
247-F	.0005, plain	30 0	277-E	300-900 metres	11 6
247-N	.00035, plain	28 0	277-D	Coupling, 250-600	11 6
247-K	.00035, plain	28 0	277-D½	Coupling, 100-800	11 6
247-H	.0005, geared metal	30 0	277-D¾	Coupling, 50-150	11 6
247-P	.00025, geared metal	37 6	277-U	Coil form	5 9
247-M	.00025, geared metal	35 6	274-A	Base, with 3 jacks	7 0
247-F	.0005, plain, metal	32 0	274-B	Base, with 4 jacks	7 6
247-N	.00035, plain, metal	30 0	274-C	Base, with 2 jacks	5 9
247-K	.00025, plain, metal	28 0	274-F	Contact plug	1 3
247-B	.00125, S.L.F.	23 0	274-J	Jack	1 0
247-K	.00025, S.L.F.	22 0	MISCELLANEOUS		
247-N	.00035, S.L.F.	42 0	235	Transformer, 1-6	45 0
247-F	.0005, S.L.F.	52 6	235-L	Transformer, 1-2	45 0
248-F	.0005, Tandem	49 0	271	Medium Frequency transformer	27 6
248-N	.00035, Tandem	46 0	231	Filler transformer	37 0
248-K	.00025, Tandem	43 0	359	Comp. Impedance	27 6
239-H	.001, Laboratory, plain	75 0	361	200 ohm potentiometer	9 6
239-G	.001, Laboratory, with case	101 0	214-A	400 ohm potentiometer	22 6
239-M	.002, Laboratory, plain	97 6	159	Standard socket	7 0
239-L	.002, Laboratory, with case	124 0	299	199 socket	8 9
368	.000012, Micro-Cond.	9 6	349	UX base socket	3 9
362	2½in., metal vernier	13 0	369	Socket cushion	3 0
308	4in., metal vernier	18 9	274	Multi-connector plug	7 6
304	4in., geared, bakelite	15 0	286	0.5 MF by-pass condenser	7 6
310	2½in., metal plain	4 6	367	SEF	2 0
317	4in., metal, plain	11 6	200	Stand off insulator	2 0
			231-M	Modulation transformer	27 5
			178	High frequency buzzer	15 0
			132-Z	N.P. binding post	0 9

Other Parts not Listed, Prices on Request

DAVID JONES
Agents for General Radio

TWO POPULAR STATIONS.

Two of the loudest stations to be heard in New Zealand now are stations 4QG and 3LO (says our N.Z. correspondent). Station 4QG is really the louder of the two, and its volume may be realised by the fact that listeners have remarked that the station often equals the local station in volume.

Radio 4QG has been heard clearly and fairly consistently by one or two listeners in Canada and Alaska. One listener stated that, despite the fact that a raging snowstorm was interfering with him, the volume was too loud on his aerial, and he disconnected it in favour of a loop.

Although 4QG is a "new chum" to the ether, the operators are speedily putting the Brisbane station on the map, and if the programmes and modulation continue to improve, this station should be an easy favourite over here in the Land of the Fern Leaf.

Station 3LO, Melbourne, has also received letters from all over the world from listeners-in who have picked up and appreciated the Melbourne programmes. South Africa, New Zealand, the Pacific, Alaska and California are regular in their notifications of splendid reception, and the latest report came from Canada.

A CYCLE OF SONGS.

A star offering "coming shortly" from 3LO Melbourne will be Claude Hall, in a cycle of songs from his extensive repertoire. The artist of Mr. Hall is equally known in the twin worlds of drama and song, and many a thespian fledgling has been grateful for his enthusiastic instruction in what's what on the boards, while numerous young nightingales have won glowing critiques through the artistic training of their maestro. His success as an angler of the spotted trout and breeder of show pigeons of surprising succulence has earned him further fame and popularity.

BURGESS—"Over twice
the life"—BATTERIES.

BRANSTON AMERICAN SUPER HETERODYNE KIT

TRIED, TESTED AND PROVED
THE ROLLS ROYCE OF RADIO

Kit Complete
with blue
print of the
famous

Branston
Seven Valve
Reflex circuit



Only a few
available
until our next
shipment
arrives.

RECEIVES INTERSTATE STATIONS AT LOUD
SPEAKER STRENGTH OPERATING FROM A LOOP

TUNGSTALITE CRYSTALS

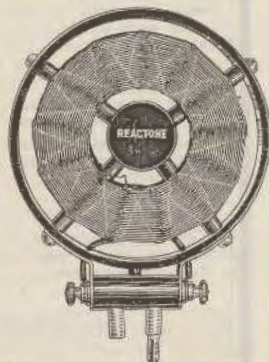
THE WORLD'S SUPER CRYSTAL.
MADE IN ENGLAND

Blue Label 1/6

Gold Label 2/-

New Round Type 3d. extra.

PUT AN END TO YOUR CRYSTAL TROUBLES
BY USING TUNGSTALITE



TRY

REACTONE LOW LOSS COILS

For Distant Reception
Being air spaced, tension
wound and free from shellac.
Means lowest loss, sharper
tuning, and better Reaction.

In all sizes from 25 turns
to 150.

W. MALING & CO.

(Successors to Radio Department of
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30 Market Street - SYDNEY



Tungar

BATTERY CHARGER

Charge Your Own "A" Batteries, "B" Batteries and Auto Batteries

The new model Tungar charges all sizes and makes of storage batteries.

Just clip it on and plug it in on the house current.

The joy of radio is clear reception and full volume all the time. Keep your batteries fully charged always with a Tungar. The first cost of a Tungar is low and the running cost is hardly more than a few pence for an all night charge.

Australian General Electric Co. Ltd.

Wentworth Avenue, Sydney.

Cr. Queen and Little Collins Sts., Melbourne.

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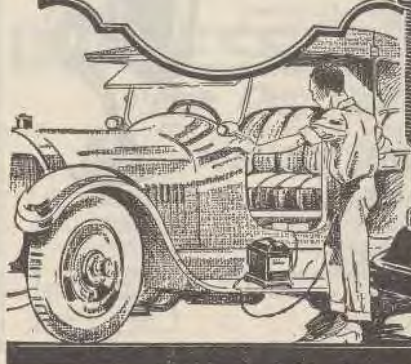
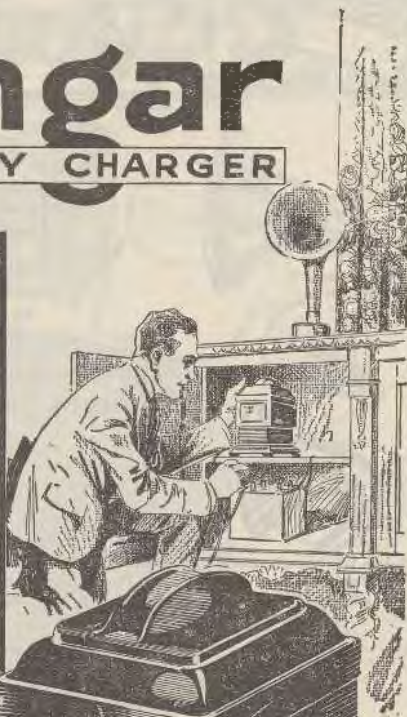
King St., Newcastle.

Agents:

Atkins (W.A.) Ltd., 624 Hay St., Perth.

Oliver & Oliver Pty. Ltd., Hobart and

Lausnerton, Tasmania.



BRITISH Brown THROUGHOUT



Brown Q.
2000 Ohms.
£21/-



Brown Cabinet Model.
2000 Ohms. £8/10/-



Brown HQ.
2000 Ohms.
£8/10/-

The Incomparable Brown in Seven Superb Models

Now that Broadcasting has awakened such an intense national interest, it is only natural to find that Loud Speakers, in common with many other commodities, Radio or otherwise, must be produced in a variety of types at prices that will be within the reach of all. It is for this reason, therefore, that there are now available seven superb models of Brown Loud Speakers.



Brown H1.
2000 Ohms.
£7/10/-



Brown H3.
2000 Ohms.
£4/2/6



Brown H4.
2000 Ohms.
40/-



Brown H2.
2000 Ohms.
£3/5/-

Of all the Loud Speakers on the market to-day, the Brown is unique, because, by a brilliant application of an entirely original principle, it achieves results which can be obtained in no other speaker. Brown principles of design and construction can be found only in Brown Loud Speakers. The famous tuned reed mechanism, which permits the use of a supersensitive cone-shaped aluminium diaphragm as thin as paper, is responsible for a tonal purity and mellowness which must be heard to be fully appreciated.

Obtainable from all Radio Dealers.

Sole Agents:

NOYES BROS.

(MELBOURNE) Pty Ltd

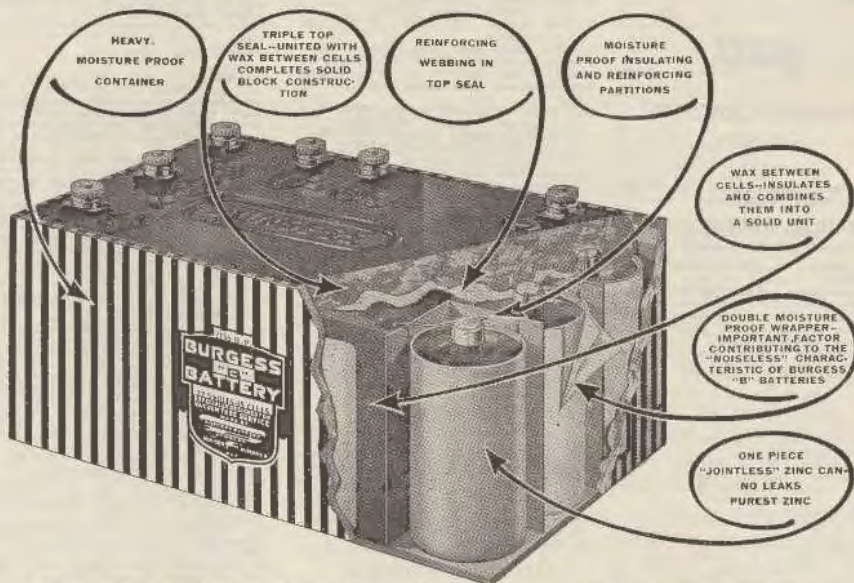
(SYDNEY) Ltd

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Franklin Street
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BURGESS

"The Dry Battery Supreme"



BURGESS "B" BATTERIES

"Ask Any Radio Engineer."

SPECIAL ANNOUNCEMENT

(Extract of cable received from the Burgess Battery Company, Chicago, U.S.A.)

*"Now able meet American demand Batteries,
will ship you limited quantities monthly."*

The first shipments under this arrangement have now come to hand, and the **WORLD Famous** Burgess Battery can be obtained from any Dealer carrying high-class accessories.

Wholesale Distributors :

New System Telephones Pty. Ltd.

280 Castlereagh Street, Sydney

Broadcasting Programmes

for the Coming Week



FARMER'S SERVICE, SYDNEY

Call Sign: 2FC. Wave Length: 1100 Metres.
Power: 5 Kilowatts.

FRIDAY, AUGUST 13.

Early Morning Session.

- 7.—Time Signals. The Chimes of 2FC. Announcements.
7.5.—Cricket Scores of the 2nd day's play, Australia versus Great Public Schools.
7.10.—Weather information. Commercial news, Shipping Intelligence and Markets.
7.40.—"Sydney Morning Herald" news service.
8.—Time signals. Musical items. Cricket scores.
8.15.—Close down.

Morning Session.

- 9.15.—The Chimes of 2FC and Announcements.
9.20.—Cricket scores. Music from the Studio.
9.45.—A morning reading.
10.—Time signals. Music from the Studio. Cricket scores.
10.5.—Late "Sydney Morning Herald" news service.
10.15.—Music from the Studio.
11.—Progress Cricket talk. Cables.
11.15.—A cooking talk by Miss Ruth Purst.
11.30.—Close down.

Midday Session.

- 12.—Time signals. The chimes of 2FC and Announcements.
12.5.—Stock Exchange. First Call.
12.10.—Music from the Studio.
12.40.—Rugby Wireless News.
1.—Time signals. Weather intelligence.
1.5.—"Evening News" midday news service.
1.—Producer's Distributing Society's report.
1.20.—Music from the Studio.
1.30.—Stock Exchange, Second Call. Music from the Studio.
2.—Close down.

Afternoon Session.

- 2.30.—The Chimes of 2FC and Announcements.
2.35.—Broadcast from the Haymarket Theatre, Sydney, operatic orchestra under the baton of Mr. Stanley Purst.
3.30.—From Farmer's Tea Rooms: The Oak Hall Trio.
3.40.—Miss Aileen Bear, mezzo.
3.45.—From Farmer's Tea Rooms: The Oak Hall Trio.
3.55.—Music from the Studio.
4.—Miss Gwladys Fimister, soprano.
4.5.—From Farmer's Tea Rooms: The Oak Hall Trio.
4.15.—Music from the Studio.
4.25.—Miss Aileen Bear, mezzo.
4.35.—From Farmer's Tea Rooms: The Oak Hall Trio.
4.45.—Music from the Studio.

- 4.40.—From Farmer's Tea Rooms: Miss Gwladys Fimister, soprano.
4.45.—Stock Exchange, Third Call. Musical items.
5.—Time Signals. Close down.
5.—Early Evening Session.
6.—Time signals. The chimes of 2FC and announcements.
6.5.—The "Hello Man" talks to the children.
6.15.—A recital by the juvenile pupils of Madame Ada Baker.
6.13.—Vocal and Instrumental Items from the Oak Dining Hall.
7.15.—From the Studio: "Evening News" late news service. Weather Information.
7.30.—Daily Market Reports (wheat, wheat, stock), Fruit and Vegetable Markets.
Night Session.
7.40.—Broadcast from the dressing room at the Palace Theatre. Miss Gwendie Rowe will interview Miss Dorothy Brunton, who will say a few words of farewell before leaving Sydney.
8.—From the Studio: Miss Nella Rodgers, soprano.
8.10.—Broadcast from the Palace Theatre, Sydney: The first act of the Comedy-Drama "The Glumax" featuring the eminent actor, Mr. Guy Bates Post, and Miss Dorothy Brunton.
9.—From the Studio: Mr. Walter Kingsley, baritone.
9.15.—Instrumental Trio: Mr. Linna Lawson, violin solo; Mr. Gladstone Bell, cellist; Mr. Lindley Evans, pianist.
9.20.—Miss Nella Rodgers, soprano.
9.25.—Mr. Gladstone Bell, cello solo.
9.30.—Mr. Walter Kingsley, baritone.
9.40.—Mr. Lindley Evans, piano solo.
9.45.—Mr. Walter Kingsley, baritone.
9.—Instrumental Trio.
10.10.—Broadcast from the Crystal Palace: Items from the musical score of the new film, "Don Q." Conductor: Mr. Harry Stone.
10.45.—Broadcast from the Wentworth Hotel, Sydney—Wentworth Cafe Dance Orchestra, under the baton of Mr. Sydney Simpson.
12.—National Anthem. Close down.

SATURDAY, AUGUST 14.

Early Morning Session.

- 7.—Time Signals. The Chimes of 2 FC and Announcements.
7.5.—Musical Items from the studio.
7.10.—Weather Information, Commercial News, Shipping Intelligence and Market Reports.
7.40.—"Sydney Morning Herald" News Service.
8.—Time Signals; Music from the studio.
8.15.—Close down.

Morning Session.

- 9.15.—The Chimes of 2FC and Programme Announcements.
9.20.—Music from the Studio.
9.45.—A Talk by the 2FC Racing Commissioner.
10.—Time Signals; Music from the studio.
10.45.—Late "Sydney Morning Herald" news service.
10.15.—Music from the Studio.
11.—A Progress Talk on To-day's Cricket match in England.
11.15.—A Gardening Talk by "Redgun," Mr. J. Lockley.
11.30.—Close down.

Midday Session.

- 12.5.—The Chimes of 2FC and Announcements.
1.—Time Signals; "Evening News" Midday News Service; Weather Information; Commercial News.

Afternoon Session.

- 2.55.—The Chimes of 2FC and Announcements.
3.—Time Signals; Musical Items will be transmitted from the studio during the intervals between race results.
4.30.—A complete resume of the afternoon's sporting events.
5.—Time Signals. Close down.

Early Evening Session.

- 6.—The Chimes of 2FC and Announcements.
6.5.—The "Hello Man" talks to the children.
6.45.—Broadcast from the Hotel Australia; Orchestral Items (Directress, Miss A. J. Bean).
7.5.—Late "Evening News" News Service and Sporting Information.
7.40.—Mr. J. G. Lockley will talk on "Old Sydney Ferris."
NOTE.—3.—Broadcast from the St. Joseph's College, Hunter's Hill, the final Rugby Football match between King's and St. Joseph's. Full descriptions of the play will be given during the afternoon.

Night Session.

- 7.55.—The Chimes of 2FC and Announcements.
8.—Time Signals.
8.15.—Broadcast from the Conservatorium Hall, the first concert of the season given by the Sydney Harmonic Society—Conductor: Mr. William Burnie. Chorus: Prologue from "Golden Legend" (Schubert); part song: "My Love Dwelt in a Northern Land" (Kilguy). Sydney Harmonic Society.
8.15.—Solo, tenor: (a) "Vespertine Sembranza" (Bombardieri); (b) "Sunt in tus sinestra" (Dria). (Mascagni). Mr. Alfred O'Shea.
8.25.—Pianoforte: "Concerto in C Major" (Bach). Mr. Alexander Eversley.
8.35.—Ladies' Chorus: (a) "Sound Sleep" (Vaughan Williams); (b) "The Lord is my Shepherd" (Schubert), Harmonic Ladies' Choir.
8.40.—Recitation: (a) "Not Understood" (Breakers); (b) "The Foreign Legion" (Milton Hayes). Mr. Harry Thomas.
8.52.—Part song: "The Parting Kiss" (Pinto), Harmonia 16 voice party.
9.—From the Studio: During the interval at the Conservatorium, Mr. H. K. Palmer, late secretary of the Essex County Cricket Club, will forecast the final test to-morrow.
9.10.—Part songs (a) "Coromach" (Hantock); (b) "The Bells of St. Michael's Tower" (Seward).
9.20.—Solo, tenor: "Nocturne" (Michael Head) Mr. Alfred O'Shea.
9.25.—Pianoforte: "Polonaise Brillante E Flat Major" (Chopin). Mr. Alexander Eversley.
9.42.—Ladies' Chorus: (a) "Fly Singing Bird" (Eliac); (b) "The Two Cloaks" Harmonia Ladies' Choir.
9.45.—Recitation: "The Quarrel Seem" (Julius Caesar) (Shakespeare), Mr. Harry Thomas.
10.—Part song: "Good Night Beloved" (Pintelli), Harmonia 16 voice party.
10.10.—National Anthem.
10.11.—From the studio: The winning of the toss in the final Test match, broadcast from the ground by the 2FC special cable service.
10.15.—2FC Dance Band, Conductor: Mr. Eric Pearce.
11.10.—Dance to the luncheon adjournment in the final Test match by 2FC's special cable.
11.15.—2FC Dance Band.
11.20.—Broadcast from the Wentworth Hotel, Sydney: Wentworth Cafe Dance Orchestra, under the baton of Mr. Sydney Simpson.
12.—National Anthem; Close down.

SUNDAY, AUGUST 15.

Early Morning Session.

- 7.—Time Signals; The Chimes of 2FC and Announcements.
- 7.5.—Full scope to the drawing of stumps of the 5th Test Match. These scores will be repeated at 8, 9, 10, and 11 a.m.

Morning Session.

- 11.—Broadcast from St. Stephen's Presbyterian Church, Phillip Street; Morning Service, conducted by the Rev. Hugh Paton.
- 12.15.—News and Cricket Scores.
- 12.30.—Close down.

Afternoon Session.

- 2.25.—The Chimes of 2FC and Announcements.
- 8.—Broadcast from the Town Hall, Sydney. The Third and Vocal Recital by the N.S.W. State Military Band—in aid of the Royal Alexander Hospital for Children.
- 5.—Close down.

Evening Session.

- 6.—The Chimes of 2FC and Announcements.
- 6.5.—Vocal and Piano Recital by Miss Marie Incester (by permission of Messrs. J. C. Williamson Ltd.), and Mr. Ewart Chapple—pianist and accompanist. Piano-forte solo: "Prelude in G. Minor" (Bachmann); song cycle: "Over the Rim of the Moon" (Michael Head); (a) "Ships of Acreoly"; (b) "A Blackbird Sings"; (c) "Beloved"; Piano solos: (a) "Romance" (Sibelius); (b) "Alt Wirt" (Godowsky); songs: (a) "Music when soft voices die" (Boisley); (b) "Early Morn'g" (Graham Fox); (c) "When Daisies Pied" (Dr. Arny); piano solos: (a) "Irish Tune from County Derry" (Arr. Grainger); (b) "Country Gardens" (Grainger); songs: (a) "Go Not Happy Day" (Hibridge); (b) "When Love is Kind"; piano solo: "Study in F. Sharp" (Hensell).
- 6.45.—Broadcast from the Lyceum Hall, Organ solos by Miss Adelaide Coleman.
- 7.—Evening Service from the Lyceum Hall—arranged by the Central Methodist Mission. Preacher: Rev. Foreman.
- 8.30.—Broadcast from the Strand Theatre, Leichhardt; A. Leichhardt District Band, Champion Band of N.S.W. Conductor, Mr. E. P. Kerry.
- 10.—Time Signals; National Anthem; Close down.

MONDAY, AUGUST 16.

Early Morning Session.

- 7.—Time signals.
- 7.—The Chimes of 2FC and Announcements.
- 7.5.—Music from the Studio.
- 7.10.—Weather Information, Commercial News, Shipping Intelligence, and Markets.
- 7.40.—"Sydney Morning Herald" news service.
- 8.—Time Signals; Music from the Studio.
- 8.15.—Close down.

Morning Session.

- 9.15.—The Chimes of 2FC and Programme Announcements.
- 9.20.—Music from the Studio.
- 9.45.—A Moral Reading.
- 10.—Time Signals; Music from the Studio.
- 10.5.—Late "Sydney Morning Herald" news service.
- 10.15.—Music from the Studio.
- 11.—Australian Press Association and Reuters' Cable Services.
- 11.15.—Music from the Studio.
- 11.30.—Close down.

Midday Session.

- 12.—Time Signals; The Chimes of 2FC and announcements.
- 12.5.—Stock Exchange, first call.
- 12.10.—Music from the Studio.
- 12.40.—Rugby Wireless News.
- 1.1.—Time Signals; Weather Intelligence.
- 1.5.—"Evening News" Midday News Service, Producer's Distributing Society's Report.
- 1.20.—Music from the Studio.
- 1.30.—Stock Exchange—second call.
- 2.—Time Signals; Close down.

Afternoon Session.

- 2.30.—The Chimes of 2FC and Announcements.
- 2.35.—A Recital on the Behning Player Piano.

- 3.30.—From Farmer's Tea Rooms: The Oak Hall Trio will play (leader, Mr. Horace Kears).
- 3.35.—Miss Joan Shorter, soprano: "Happy Song" (Del Negro).
- 3.45.—From Farmer's Tea Rooms: Oak Hall Trio.
- 3.55.—Music from the Studio.
- 4.—Eleanor Stanton, contralto: "Traise" (Wood).
- 4.5.—From Farmer's Tea Rooms: The Oak Hall Trio.
- 4.10.—Music from the Studio.
- 4.20.—Miss Joan Shorter, soprano: "Little Ho Poem" (Hughes).
- 4.30.—From Farmer's Tea Rooms: The Oak Hall Trio.
- 4.35.—Music from the Studio.
- 4.40.—Miss Eleanor Stanton, contralto: "Lie there my Love" (McCurry).
- 4.45.—Stock Exchange, Third Call.
- 4.45.—Music from the Studio.
- 5.—Time Signals; Close down.

Early Evening Session.

- 6.—Time Signals; The Chimes of 2FC.
- 6.5.—The "Hello Man" talks to the children.
- 7.—Broadcast from the Hotel Australia, Sydney; Orchestral items.
- 7.15.—From the Studio: "Evening News" late news service, weather information.
- 7.30.—Dalgely's Market Reports (wool, wheat, stock), fruit and vegetable markets.
- 7.40.—A Talk on Esperanto.

Night Session.

- 7.55.—The Chimes of 2FC and Announcements.
- 8.—Broadcast from the Haymarket Theatre, Sydney; Operatic Oubrietas, under the baton of Mr. Stanley Parker.
- 8.25.—From the Studio: for the first time, a musical play written for 2FC by Mr. James Donnelly. Parts to be taken by: Miss G. Gaddy, conductor, soprano; Miss Kitty Elliott, contralto; Mr. Lawrence Halbert, baritone; Mr. James Donnelly, tenor.
- 9.5.—Broadcast from the Haymarket Theatre, Sydney, vocal act.
- 9.20.—From the Studio: Mr. Nevin Tasseau will give his third Poster Drawing, inviting 100,000 to send in their efforts to receive the prize.
- 9.30.—Broadcast from the Town Hall, on the occasion of the Fourth Annual Artists' Ball, which is being held in conjunction with the Red Cross Association. A continuous programme of Dance Music will be given until midnight, supplied by the augmented dance orchestra conducted by Mr. Eric Pearce. During the night a description of the Ball will be given by an announcer.
- 12.—National Anthem; Close down.

TUESDAY, AUGUST 17.

Early Morning Session.

- 7.—The Chimes of 2FC and Announcements—Time Signals.
- 7.5.—Cricket Scores of the second day's play, of the Fifth Test Match, Australia versus England. These scores will be repeated at 8, 9, 10 and 11 a.m.
- 7.10.—Weather Information; Commercial News; Shipping Intelligence and Markets.
- 7.40.—"Sydney Morning Herald" News Service.
- 7.—Time Signals; Cricket Scores; Music from the Studio.
- 8.15.—Close down.

Morning Session.

- 9.15.—The Chimes of 2FC and Announcements.
- 9.20.—Cricket Scores. Music from the Studio.
- 9.45.—A Talk by the 2FC Racing Commissioner.
- 10.—Time Signals; Music from the Studio; Cricket Scores.
- 10.5.—Late "Sydney Morning Herald" News Service.
- 10.15.—Music from the Studio.
- 11.—Progress Cricket Talk; Cables.
- 11.15.—Cooking Talk and Recipes by Miss Ruth Fern.
- 11.30.—Close down.

Midday Session.

- 12.—Time Signals; The Chimes of 2FC and Announcements.

- 12.5.—Stock Exchange—First Call.
- 12.10.—Music from the Studio.
- 12.40.—Rugby Wireless News.
- 1.—Time Signals; Weather Intelligence.
- 1.3.—"Evening News" Midday News Service, Producer's Distributing Society's Report.
- 1.20.—Music from the Studio.
- 1.30.—Stock Exchange—Second Call; Musical Items.
- 2.—Time Signals; Close down.

Afternoon Session.

- 2.30.—The Chimes of 2FC and Announcements.
- 2.35.—Broadcast from Pallin's Concert Hall; Pianoforte Recital by the couple of Miss L. C. Finlay, Soloist, for two pianos: "Romance and Waltz (Arensky); "Fevr Brillant" (Bucuroy); solos: "Frohlic and Fugue B. Flat" (Debussy); "Frohlic in G. Minor" (Rachmauloff); "Study in A. Flat" (Chopin); "Concert study in D. Flat" (Liszt); "Serenade" (Chopin); "Tuba" (Debussy); "Andante and Rondo" (Mendelssohn); "Capriccio" (Mendelssohn); "Country Garden," "Morris Dance" (Forcy Grainger); "Butterfly Lovers" (Liszt).
- 3.30.—From Farmer's Tea Rooms: The Oak Hall Trio will play (leader, Mr. Horace Kears).
- 3.40.—Miss Katherine Beverley, soprano: "Love Lily" (Thompson).
- 3.45.—Oak Hall Trio.
- 3.55.—Music from the Studio.
- 4.—Miss Muriel Humphries, contralto.
- 4.5.—From Farmer's Tea Rooms: The Oak Hall Trio.
- 4.10.—Music from the Studio.
- 4.20.—Duet: Miss Katherine Beverley, soprano, and Miss Muriel Humphries, contralto: "I Love you Truly."
- 4.25.—The Oak Hall Trio.
- 4.35.—Music from the Studio.
- 4.40.—Miss Muriel Humphries, contralto.
- 4.45.—Stock Exchange, third call; Musical Items.
- 5.—Close down.

Early Evening Session.

- 6.—The Chimes of 2FC and Announcements.
- 6.5.—The "Hello Man" talks to the children.
- 6.45.—Broadcast from the Hotel Australia, Sydney; Orchestral items.
- 7.15.—From the Studio: "Evening News" late news service, weather information.
- 7.30.—Dalgely's Market Reports (wool, wheat, stock), fruit and vegetable markets.
- 7.40.—Mr. J. J. Powell, of the Food Reform League, will talk on "Dining for Health."

Night Session.

- 7.45.—The Chimes of 2FC and Announcements.
- 8.—Broadcast from the Conservatorium Hall, The Second Concert of the 1926 Season by the Madrigal Society, conducted by Mr. Frederick Newton, 1, "Evening Scene" (Elgar); 2, "On Hymnals" (Bantock).
- 8.12.—Mr. Raymond Ellis, baritone, by permission of J. C. Williamson Ltd.,
- 8.25.—Mr. Cyril Monk, viola solo.
- 8.30.—From the Conservatorium: Items by the Sydney Madrigal Society: "Leproschaven" (Bantock); (b) "An Idyl" (Orchard).
- 8.40.—Madame Vera Tasma, soprano.
- 8.45.—From the Conservatorium: Items by the Sydney Madrigal Society: "Weep O' Mine Eyes" (Menet); "Hark Jolly Shepherd" (Morley).
- 9.5.—From the Studio, Mr. Lionel Lawson, violin solo.
- 9.15.—From the Conservatorium: Items by the Sydney Madrigal Society: "Amica rose" (Morley); "Breath not His Name" (Wood).
- 9.25.—Mr. Raymond Ellis, baritone.
- 9.35.—Mr. Cyril Monk, violin solo.
- 9.45.—From the Conservatorium: "Weep O' Mine Eyes" (Menet); "Hark Jolly Shepherd" (Morley).
- 9.5.—From the Studio, Mr. Lionel Lawson, violin solo.
- 9.55.—Madame Vera Tasma, soprano.
- 10.—Sydney Madrigal Society.
- 10.10.—From the Studio, Mr. Lionel Lawson, violinist.
- 10.25.—Mr. E. C. Doig will continue his popular Psychology Talks, No. 6.
- 10.40.—Broadcast from Wentworth Hotel: Wentworth Cafe Dance Orchestra, under the baton of Mr. Sydney Simpson.
- 12.—Close down.

WEDNESDAY, AUGUST 18.

Early Morning Session.

- 7.—The Chimes of 2FC and Announcements.
Time Signals.
7.5.—Cricket Scores of the third day's play, Australia versus England.
7.55.—Weather Information, Commercial News, Shipping Intelligence, and Markets.
7.49.—"Sydney Morning Herald" news service.
8.—Time Signals; Cricket Scores; Music from the studio.
8.15.—Close down.

Morning Session.

- 9.15.—The Chimes of 2FC and Programme Announcements.
9.20.—Cricket scores. Music from the Studio.
9.46.—Music from the studio.
10.—Time Signals. Music from the Studio.
Cricket scores.
10.5.—Late "Sydney Morning Herald" news service.
10.15.—Music from the Studio.
11.—Progress Cricket Talk. Cables.
11.15.—Cooking Talk and Recipes, by Miss Ruth Purst.
11.30.—Close down.

Midday Session.

- 12.—Time Signals. The Chimes of 2FC and Announcements.
12.5.—Stock Exchange, first call.
12.10.—Music from the Studio.
12.20.—Rugby Wireless News.
1.—Time Signals. Weather Intelligence.
1.8.—"Evening News" Midday News Service, Producer's Distributing Society's Report.
1.20.—Music from the Studio.
1.29.—Stock Exchange, Second Call; Musical Items.
2.—Time Signals. Close down.

Afternoon Session.

- 2.30.—The Chimes of 2FC and Announcements.
2.35.—Musical Items from the Studio.
2.39.—From Farmer's Tea Rooms: The Oak Hall Trio (Leader, Mr. Horace Keats).
3.40.—Miss Alice Pomroy, soprano.
3.45.—From Farmer's Tea Rooms: The Oak Hall Trio.
3.55.—Music from the Studio.
4.—Miss Phyllis Kaynor, mezzo.
4.5.—The Oak Hall Trio.
4.15.—Music from the Studio.
4.29.—Miss Alice Pomroy, soprano.
4.25.—The Oak Hall Trio.
4.25.—Music from the Studio.
4.40.—Miss Phyllis Kaynor, mezzo.
4.45.—Stock Exchange, Third Call.
4.45.—Music from the Studio.
5.—Close down.

Early Evening Session.

- 6.—Time Signals. The Chimes of 2FC and Announcements.
6.5.—The "Hello Man" talks to the children.
6.45.—Broadcast from the Hotel Australia, Sydney.
7.10.—From the Studio: "Evening News" late news service, weather information.
7.20.—Dalepsy's Market Reports (wool, wheat, stock), fruit and vegetable markets.
7.25.—Mr. E. J. Van-derweide will give final talk in connection with the Commonwealth 1926 Photographic Competition which will close this evening.

Night Session.

- 7.55.—The Chimes of 2FC and Announcements.
8.—The Metropolitan Quartette, consisting of Miss Jean Grant, soprano, Mary Bourke, contralto; Mr. Arthur Champion, tenor; Mr. A. G. Ellis, baritone, will broadcast by special request "In a Persian Garden" a song cycle for four solo voices: Quartette: "Wake for the sun who seethers into flight; who (tenor); "Before the phantom of false morning died"; recit. (bass); "Now the new year reviving old desires"; solo (tenor); "From amidst is gone with all his rose"; quartette; "Come, fill the cup, and in the fire of spring"; solo (bass); "Whether at Nineveh or Babylon"; recit. (tenor); "Ah, not a drop that from our eyes we throw"; solo (contralto); "I sometimes

think that never blows no red"; duet (soprano and tenor); "A book of verses underneath the bough"; solo (bass); "Myself when young did raverly frequent"; recit. (bass); "Ah, make the most of what we yet may spend"; solo (contralto); "When you and I behind the veil are fast"; recit. (soprano); "But if the soul can find the dust aside"; solo (soprano); "I set my soul through the invisible"; solo (tenor); "Alas, that spring should vanish with the rain"; solo (contralto); "The world's hope men act their hearts upon"; solo (soprano); "Each morn a thousand roses bring; you say"; quartette; "They say the lion and the sword keep"; tenor (recit.); "Ah, fill the cup what thou wilt to repeat"; tenor (solo); "Ah, morn of my delight"; solo (bass); "As then the tulip for her morning sun"; quartette; "Alas that spring should vanish with the rose."
8.40.—The 4th Series of the Radio Auction Bridge, in which four players led by Mr. W. F. H. Master, will play through a selected hand of Bridge. The complete play will be broadcast. Mr. Master, who alone has the key to the perfect playing of the hand will answer on the phone and broadcast simultaneously inquiries by listeners during the play. The perfect hand as played by expert players in U.S.A. will be available to Bridge enthusiasts each week after the games are played every Wednesday.

- 9.10.—Mr. Arthur Champion, tenor: "If Thou wert Blind" (Johnston).
9.15.—Miss Mary Barker, contralto.
9.20.—Items A. J. Ellis, baritone.
9.25.—Mr. A. J. Ellis, baritone.
9.25.—Broadcast from Peirce's Concert Hall. Items from the joint recital arranged by Adm Baker and Vest Jansen.
10.—Broadcast from the Lyceum; Orchestral Items.
10.40.—Wentworth Cafe Dance Orchestra.
12.—Close down.

THURSDAY, AUGUST 19.

Early Morning Session.

- 7.—The Chimes of 2FC and Announcements.
Time Signals.
7.5.—Cricket scores of the 4th day's play of the 5th Test Match, Australia versus England.
7.55.—Weather Information, Commercial News, Shipping Intelligence, and Markets.
7.49.—"Sydney Morning Herald" news service.
8.—Time Signals, Cricket Scores.
8.15.—Music from the Studio.
8.15.—Close down.

Morning Session.

- 9.10.—The Chimes of 2FC and Programme Announcements.
9.20.—Music from the Studio.
9.45.—A Talk by the 2FC Racing Commissioner.
10.—Time Signals. Music from the Studio.
Cricket Scores.
10.15.—Late "Sydney Morning Herald" news service.
10.15.—Music from the Studio.
11.—Cooking Talk—Cables.
11.15.—Musical Items from the Studio.
11.30.—Close down.

Midday Session.

- 12.—Time Signals. The Chimes of 2FC and Announcements.
12.5.—Stock Exchange, first call.
12.10.—Music from the Studio.
12.20.—Rugby Wireless News.
1.—Time Signals. Weather Intelligence.
1.3.—"Evening News" Midday News Service, Producer's Distributing Society's Report.
1.20.—Music from the Studio.
1.30.—Stock Exchange. Second call.
1.39.—The latest track work by the 2FC Race Club; Cricket.
1.40.—Music from the Studio.
2.—Time Signals. Close down.

Afternoon Session.

- 2.30.—The Chimes of 2FC and Announcements.
2.35.—A recital of some H.M.V. Records.
3.40.—From Farmer's Tea Rooms: The Oak Hall Trio will play (Leader, Mr. Horace Keats).
3.40.—Miss Florence Grant, soprano.

- 3.45.—From Farmer's Tea Rooms: The Oak Hall Trio.
3.55.—Music from the Studio.
4.—Miss Peggy Dunbar, contralto: "What a Wonderful World it would Be" (Lohr).
4.5.—The Oak Hall Trio.
4.15.—Music from the Studio.
4.20.—Miss Florence Grant, soprano: "If I might come to you" (Squire).
4.25.—The Oak Hall Trio.
4.35.—Music from the Studio.
4.40.—Miss Peggy Dunbar, contralto: "At Dawning" (Cadhona).
4.45.—Stock Exchange, Third Call.
4.45.—Music from the Studio.
4.—Close down.

Early Evening Session.

- 5.—Time Signals. The Chimes of 2FC and Announcements.
5.5.—The "Hello Man" talks to the children.
6.45.—Broadcast from the Hotel Australia; Orchestral Items.
7.15.—From the Studio: "Evening News" late news service, weather information.
7.20.—Dalepsy's Market Reports (wool, wheat, stock), fruit and vegetable markets.
7.25.—"The Art of Speech" by Mr. Walter Hunt—Examiner in Education to the Australian Medical Examination Board; "The Organs of Speech."
7.—Close down.

Night Session.

- 7.55.—The Chimes of 2FC and Announcements.
8.—Broadcast from the Broadway Picture Theatre, Goulburn, the whole of the 1926 Concert by the Goulburn Liedertafel concert to be carried out over a land line of 135 miles: Hon. Conductor, Brigadier General Ramsay MacNicholl. The artists specially engaged for this concert will be Ely Treweek, well-known Australian soprano, who will be broadcast for the first time, and prior to her return to England, also Mr. Raymond Ellis, English organist, baritone (by courtesy of Messrs. J. C. Williamson Ltd.).
8.5.—Overture: "Poet and Peasant" (Suppe), Liedertafel Orchestra.
8.13.—Chorus: "Swift hours of Pleasure" (Gounod), Liedertafel Choir and Orchestra.
8.20.—Aria: "Recitative et air de Lu" (Debussy), Madame Ely Treweek.
8.30.—Solo: "Largo al Fagotino" (Barber of Seville) (Romain), Mr. Raymond Ellis.
8.38.—Chorus: "Born by Memory" (Verdi), Liedertafel Choir and Orchestra.
8.50.—Duet: "Neddi e Silvio" (Lucas-cavallo), Madame Ely Treweek and Mr. Raymond Ellis.
9.—During the interval a few words will be given about the Goulburn Liedertafel.
9.8.—Overture: "Seraglio" (Mozart), Liedertafel Orchestra.
9.18.—Songs: (a) "Over Here" (Wood); (b) "Come and Trip It" (Hendel); (c) "Arioso de Benvenuto" (Diaz), Mr. Raymond Ellis.
9.28.—Chorus: "Grand Finale, Act 2" (Verdi), Liedertafel Choir and Orchestra.
9.40.—Songs: (a) "Over the Mountains" (Quilter); (b) "Daddy Love My Daddy" (Quilter); (c) "Trichas Love, Little" (Fraser); (d) "I was a Lover and His Lass" (Quilter), Madame Ely Treweek.
9.50.—First Song: "The Blow, Thou Winter Wind" (Papagei), Goulburn Liedertafel Choir.
9.58.—Duet: "Wagnogo Pspaceno" (Mozart), Madame Ely Treweek and Mr. Raymond Ellis.
10.10.—Broadcast from the Loric Wintergarden, Orchestra under the baton of Mr. Alfred Monton.
10.40.—Broadcast from the Wentworth Cafe, Sydney, Wentworth Cafe Dance Orchestra, under the baton of Mr. Sydney Simpson.
12.—National Anthem. Close down.

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FRIDAY, AUGUST 13.

Early Morning Session.

- 7.15—Physical Training and Health Exercises.
- 7.30—Talk on Health and Hygiene.
- 7.45—Broadcasters' Special News Service, including news from Rugby.
- 7.55—Musical Programme from the Studio.
- 8—G.P.O. Clock and Chimes. Close down.
- Morning Session.
- 10—G.P.O. Clock and Chimes. Special News Service from the "Daily Telegraph."
- 10.10—Music from the Studio.
- 10.25—Special news from the "Daily Telegraph."
- 10.45—Music from the Studio.
- 11—G.P.O. Clock and Chimes. Special Cricket Session.
- 11.15—Musical Programme from the Studio.
- 11.15—Markets.
- 11.25—London Metal Quotations.
- 11.30—Broadcasters' Information Service, including Mail, Shipping, Weather, Rainfall, Social Fixtures for the following day.
- 11.40—Musical Programme from the Studio.
- 11.50—News from "Sun" Cable Edition.
- 12—G.P.O. Clock and Chimes. Talks to women by Mrs. Jordan.
- 12.30—Broadcasters' Turf Expert will discuss the training operations and horses' form from Randwick.
- 12.45—Hillier's Instrumental Quartette, under the direction of Caryl Castling.
- 1.15—Music from the Studio.
- 1.45—Sydney Stock Exchange Call.
- 2—G.P.O. Clock and Chimes. Close down.

Afternoon Session.

- 2—G.P.O. Clock and Chimes. Weather Report and Social Notes from "The Sun."
- 3.15—Civil Service Restaurant Trio.
- 3.30—A Talk on "Modern English Poetry," by Mr. J. M. Prentice.
- 3.45—Music from the Studio.
- 4—G.P.O. Clock and Chimes. Music from the Studio.
- 4.30—Serial Story, entitled "The Mad Song."
- 4.45—Music from the Studio.
- 5—Early country news. The Producers' Distributing Society's late market report.
- 5.15—G.P.O. Clock and Chimes. Close down.

Early Evening Session.

- 6—G.P.O. Clock and Chimes. Uncle George and the Kiddies. The pupils of Miss Monica Scully will entertain the kiddies.
- 6.45—Broadcasters' Dinner Orchestra. Special Country Session.
- 7.15—Australian Mercantile Land & Finance Co.'s Stock and Wool Report.
- 7.20—Weather Reports.
- 7.24—Talk on Land Subjects.
- 7.30—Stock Exchange Reports.
- 7.35—Producers' Distributing Society's fruit and vegetable report.
- 7.45—Grain and Fodder Report.
- 7.48—Country news from "The Sun."
- 7.55—Close down.

Evening Session.

- 8—G.P.O. Clock and Chimes; Hoyt's Imperial Orchestra, under the direction of Mr. Lionel Hart, broadcast from Hoyt's Picture Theatre. From the Studio; Miss Phyllis Atkinson (mezzo soprano); "Concerning your Valve Set"; Mr. Austin Punch (baritone); The senior sporting expert of "The Sun" will talk on "The Prospects of to-morrow's Races"; Great Love Stories, by Mr. J. M. Prentice; "The Love Story of a Great Sailor"; Cec. Morrison's Cloumchaers' playing from the ballroom of the Bondi Casino. During the intervals between the Dances, News Reports by courtesy of "The

Sun" will be broadcast. From the studio: The Palmgrove Orchestra, under the direction of Stan Fotheringham.

SATURDAY, AUGUST 14.

Early Morning Session.

- 7.15—Physical Training and Health Exercises.
- 7.45—Broadcasters' Special News Service, including news from Rugby.
- 7.55—Musical Programme from the studio.
- 7.55—Musical Programme from the Studio.
- 8—G.P.O. Clock and Chimes. Close down.
- Morning Session.
- 10—G.P.O. Clock and Chimes. Special news service from the "Daily Telegraph."
- 10.10—Broadcasters' Turf Expert will discuss the training operations and horses' form from Randwick.
- 10.25—Special news from the "Daily Telegraph."
- 10.45—Music from the Studio.
- 11—G.P.O. Clock and Chimes. Special Cricket Session.
- 11.15—Musical Programme from the Studio.
- 11.15—London Metal Quotations.

PROGRAMME FEATURES.

Bondi Casino from ZBL, 10.30 p.m., Friday, Aug. 13th.

Hawaiian Melodies from 4QG, 8 p.m., Saturday, Aug. 14th.

Collingwood Band from 3LO, 9.30 p.m., Sunday, Aug. 15th.

Goulburn Liedertafel from 2FC, 8 p.m., Thursday, Aug. 19th.

- 11.25—Broadcasters' Information Service, including Mail, Shipping, Weather, Rainfall, Social Fixtures for the following day.
- 11.35—Musical Programme from the studio.
- 11.50—News from "Sun" Cable Edition.
- 12—G.P.O. Clock and Chimes. Talks to Women by Mrs. Jordan. News reports, by courtesy of "Sun" Newspapers. Sporting information. News reports ("Sun").
- 12.25—Talk on Sporting and Athletic Fixtures for the day.
- 1—G.P.O. Clock and Chimes. Close down.

Afternoon Session.

- 2—G.P.O. Clock and Chimes. Special Sporting Information.
- 3.15—G.P.O. Clock and Chimes. Close down.
- Early Evening Session.
- 6—G.P.O. Clock and Chimes. Uncle Jack and the Kiddies.
- 6.45—Pavilion Dinner Orchestra.
- 7.15—Results of football, lacrosse, and sporting information.
- 7.30—Country news from "The Sun"
- 7.45—G.P.O. Clock and Chimes. Close down.

Evening Session.

- 8—G.P.O. Clock and Chimes; The Our Nigger Minstrel Troupe broadcast from Victoria Hall, Manly; Miss Mary Mooney (comedian); Miss Bobby Watson (comedian); Motor Talk; "Batters' Troubles" by Mr. Fred Brown; Enmore Theatre Symphony Orchestra, under the direction of Mr. F. Watkins; Al. Hammett and the Ambassa-

dors Dance Band, broadcast from the ballroom of the Ambassadors. During the intervals between Dances, News Reports by courtesy of "Sun" Newspapers will be broadcast.

12—G.P.O. Clock and Chimes; National Anthem.

SUNDAY, AUGUST 15.

- Morning Session.
- 10.15—Special Cricket Session.
- 11—Special broadcast from Newtown Congregational Church.
- Afternoon Session.
- 3.30—Bible class, conducted by Mr. W. (Cairo) Bradley.
- 4—Organ Recital from St. Jude's Church, Randwick.
- Evening Session.
- 6—G.P.O. Clock and Chimes; Uncle Jack and the Kiddies.
- 6.30—Service broadcast from Newtown Congregational Church.
- 8.30—Manly Band, broadcast from Rialto Theatre, Manly.
- 9.15—Interval.
- 9.25—Resume of following day's programme.
- 9.38—Weather Report.
- 9.40—Broadcasters' Instrumental Trio.
- 9.50—Miss Dorrie Ward, (mezzo soprano).
- 9.58—Mr. Bryce Carter (cellist).
- 10.12—National Anthem.

MONDAY, AUGUST 16.

Early Morning Session.

- 7.15—Physical Training and Health Exercises.
- 7.30—Talk on Health and Hygiene.
- 7.55—Physical Training and Health Exercises.
- 7.45—Broadcasters' Special News Service, including news from Rugby.
- 8—G.P.O. Clock and Chimes. Close down.
- Morning Session.
- 10—G.P.O. Clock and Chimes. Special News Service from the "Daily Telegraph."
- 10.10—Music from the Studio.
- 10.25—Special news from the "Daily Telegraph."
- 10.45—Music from the Studio.
- 11—G.P.O. Clock and Chimes. Special Cricket Session.
- 11.5—Musical Programme from the Studio.
- 11.15—Markets.
- 11.20—Musical Programme from the Studio.
- 11.25—Broadcasters' Information Service, including Mail, Shipping, Weather, Rainfall, Social Fixtures for the following day.
- 11.40—Musical Programme from the Studio.
- 11.50—News from "Sun" Cable Edition.
- 12—G.P.O. Clock and Chimes. Talks to Women by Mrs. Jordan.
- 12.30—Sydney Stock Exchange Call. Race results broadcast immediately received.
- 12.45—Hillier's Instrumental Quartette, under the direction of Caryl Castling.
- 1.30—Palmgrove Orchestra.
- 1.45—Latest sporting information from the "Sun."
- 2—G.P.O. Clock and Chimes. Close down.

Afternoon Session.

- 1—G.P.O. Clock and Chimes. Weather report and Social Notes from the "Sun."
- 3.15—Music from the Studio.
- 3.30—A talk on "A Course in Philosophical Thought," by Mr. J. M. Prentice.
- 3.45—Music from the Studio.
- 4—G.P.O. Clock and Chimes; Music from the Studio.
- 4.15—Music from the Studio.
- 4.30—Serial Story, entitled "The Mad Song."
- 4.45—Music from the Studio.
- 5—Early country news. The Producers' Distributing Society's late market report.
- 5.10—Shipping Information.
- 5.15—G.P.O. Clock and Chimes. Close down.

Early Evening Session.

- 6—G.P.O. Clock and Chimes. Uncle George and the Kiddies.
- 6.45—Pavilion Dinner Orchestra, under the direction of Cec. Morrison. Special Country Session.
- 7.15—Australian Mercantile Land & Finance Co.'s Stock and Wool Report.
- 7.20—Weather Reports.
- 7.24—Talk on Land Subjects.
- 7.30—Stock Exchange Reports.

7.37—Producers' Distributing Society's fruit and vegetable report.
7.42—Grain and Fodder Reports.
7.45—News (country) from "The Sun."
7.49—"What's On," a guide to visitors and citizens of Sydney.
7.55—Close down.

Evening Session.

8—G.P.O. Clock and Chimes; Newtowna Band, broadcast from Industrial Hall, Newtowna; Miss Marjorie Skill (soprano); Violin solos by pupils from the studio of Mr. Gerald Walden; Photography Talk by Mr. S. Christensen; Mr. Clem Williams, baritone; Duet: Miss Marjorie Skill and Mr. Clem Williams; 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.

TUESDAY, AUGUST 17.

7.15—Usual Early Morning Session.
7.45—Usual Morning Session.

Afternoon Session.

8—G.P.O. Clock and Chimes; Weather Report and Social Notes from "The Sun."
8.15—Civil Service Restaurant Trio.
8.30—Lecture from the Studio.
8.45—Music from the Studio.
9—G.P.O. Clock and Chimes; News.
9.30—Serial story, entitled "The Mad Song."
9.45—Early Country News; The Producers' Distributing Society's Late Market Report.
10—Shipping Information.
10.15—G.P.O. Clock and Chimes; Close down.

Early Evening Session.

6—G.P.O. Clock and Chimes; Uncle Jack and the Kiddies.
6.15—Broadcasters' Dinner Orchestra.
6.45—Australian Mercantile Land & Finance Co.'s Stock and Wool Report.
7.20—Weather Report.
7.24—Talk on Land Subjects.
7.37—Producers' Distributing Society's Fruit and Vegetable Report.
7.41—Grain and Fodder Reports.
7.45—Country news from "The Sun."
7.55—Close down.

Evening Session.

8—G.P.O. Clock and Chimes; Broadcasters' Miniature Orchestra; Miss Helena Stewart, soprano; Mr. Reg. Haselton, comedian; Mr. Orr—resume to answers and correspondence; Mr. Frank Lock; "A reply to the Single Tax"; Mr. Alfred Cunningham, baritone; Professor Handed Woodhouse, tenor; Elite old time dances broadcast from the Merrickville Town Hall; From the Studio; Palmgrove Orchestra under the direction of Stan Fotheringham.
12—G.P.O. Clock and Chimes; National Anthem.

WEDNESDAY, AUGUST 18.

7.15—Usual Early Morning Session.
7.45—Usual Morning Session.

Morning Session.

10—Usual programme.
During the afternoon Race Results will be broadcast immediately after the race.

Afternoon Session.

8—G.P.O. Clock and Chimes; Weather Report and Social Notes from "The Sun."
8.15—Music from the Studio.
8.30—Special dramatic session with explanatory talk by Mr. J. M. Prontice.
8.45—Music from the Studio.
9—G.P.O. Clock and Chimes; Music from the Studio.
9.30—Serial story, entitled "The Mad Song."
9.45—Music from the Studio.
10—Early Country News; The Producers' Distributing Society's Late Market Report.
10.15—Shipping Information.
10.30—G.P.O. Clock and Close down.

Early Evening Session.

6—G.P.O. Clock and Chimes; Uncle George and the Kiddies.

6.45—Pavilion Dinner Orchestra, under the direction of Cec. Morrison.

7.15—Australian Mercantile Land & Finance Co.'s Stock and Wool Report.
7.23—Special Country session; Talk on Land Subjects.
7.30—Stock Exchange Reports.
7.37—Producers' Distributing Society's Fruit and Vegetable Report.
7.41—Grain and Fodder Reports.
7.45—Country News from "The Sun."

Evening Session.

8—G.P.O. Clock and Chimes; City of Sydney Band broadcast from Barlow Chambers; Mr. Lenae Jeffrey, tenor; Miss Mary Edwards will talk on "The Art of Vaudeville"; Mr. Lee Shepp, comedian; Miss Mary Neal, contralto; Mr. J. M. Prontice will talk on "Foreign Affairs"; Miss Hilda Lane, soprano; Cec. Morrison and His Chorus will broadcast from the Bondi Casino; From the Studio; Palmgrove Orchestra under the direction of Stan Fotheringham.
12—G.P.O. Clock and Chimes; National Anthem.

THURSDAY, AUGUST 19.

7.15—Usual Early Morning session.
7.45—Usual Morning session.

Afternoon Session.

8—G.P.O. Clock and Chimes; Weather Report and Social Notes from "The Sun."
8.15—Its in Jones' Tea Room Trio.
8.30—Music from the Studio.
9—G.P.O. Clock and Chimes; David Jones' Tea Room Trio.
9.15—Music from the Studio.
9.30—Serial story, entitled "The Mad Song."
9.45—Music from the Studio.
10—Early Country News; The Producers' Distributing Society's Late Market Report.
10.15—G.P.O. Clock and Chimes; Close down.

Early Evening Session.

6—G.P.O. Clock and Chimes; Uncle Jack and the Kiddies.
6.15—Broadcasters' Dinner Orchestra.
6.45—Australian Mercantile Land & Finance Co.'s Stock and Wool Report.
7.20—Weather Report.
7.24—Talk on Land Subjects.
7.30—Stock Exchange Reports.
7.37—Producers' Distributing Society's Fruit and Vegetable Report.
7.40—Sporting Talk by Broadcasters' Special Turf representative.
7.55—Close down.

Evening Session.

8—G.P.O. Clock and Chimes; Ambassadors Instrumental Salon Quartette under the direction of Mr. Claude McGLYNN; Mr. H. Lando will talk on "The Art of Accompanying"; Miss Daisy Richards, violinist; Operatic programme by Madame Julia Caroli Pessati, soprano; Mr. Robert Harper, tenor, and M. A. Lubin, basso cantante; Mr. Burton, an illustrated talk on Jera; Al Hammett and the Ambassadors Dance Band broadcast from the ballroom of the Ambassadors until midnight.
12—G.P.O. Clock and Chimes; National Anthem.



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Wavelength, 810 metres. Power, 160 watts.

Every Monday and Thursday evening, from 6.30 p.m. to 9 p.m.

6.50 to 7.30—Necrotic Music, consisting of vocal and instrumental items.
7.30 to 8—Lectures, orchestral and vocal items.

STIC will be glad to get into touch with artists willing to give their services to this station.

2 KY

Wavelength, 260 metres.

MONDAY TO FRIDAY.

Luncheon Hour Session.

12.15—Tune in to the ticking of the clock; Luncheon Hour session consists of vocal and musical items, news service and Union matters, closing down at 1.45 p.m.

TUESDAYS AND THURSDAYS.

Afternoon Session.

3.15—Tune in to the ticking of the clock; The afternoon session consists of popular science talks by Mr. A. T. Koebel, B.Sc.; Book reviews; Home talks and special recitals of new Lincoln records, closing down at 4.10 p.m.

MONDAY, TUESDAY, FRIDAY.

Children's Hour.

6.30—Tune in to the ticking of the clock; The Children's Hour is conducted by Mr. Thompson, the well-known hospital story teller.

Evening Session.

7.30—Tune in to the ticking of the clock; The evening session consists of news service; shipping; industrial lectures; Editorial; vocal and musical items from the studio and music by the Palais Royal Californians; from J. C. Bendroff's Palais Royal, Walter Boehm (leader).



QUEENSLAND RADIO SERVICE

Wavelength, 385 metres. Power, 5 kilowatts.

FRIDAY, AUGUST 13.

Midday Session.

12.55—Tune-in.
12.58—Time Signal.
1—Market Reports. Weather Information. "The Daily Mail" news, the "Daily Standard" news.
1.20—Close down.

Afternoon Session.

3.20—A description of the Show.
4.15—"The Telegraph" news.
5.30—Close down.

Early Evening Session.

6.25—Tune-in.
6.30—The Children's Session. Stories by "The Sandman."
7—From the Council of Agriculture. The Farmers' Session. Market Reports. Lectures: "Features of the Royal National Show—Agricultural Produce Exhibits."
7.20—"The Telegraph" news. Stock Exchange.
7.30—Close down.

Night Session.

7.45—From the Demonstration Studio. Exhibition Hall. Lectures, "Experimenters," by Mr. W. L. Monkhouse (President, Queensland Division, Wireless Institute).
8—From the Demonstration Studio, Exhibition Hall. A classical programme arranged by Miss Lottie Richter (supported by the Savoy Orchestra under the leadership of Mr. A. H. Fotheringham).
9—Week-end road information for motorists, officially supplied by the Royal Automobile Club of Queensland. Continuation of Classical night.
9.15— concert continued. "Daily Mail" news service. Close down.
9.30—Weather Information, officially supplied by the Commonwealth Bureau. Announcements.

11—"The Daily Mail" news service. Close down.

SATURDAY, AUGUST 14.

No Midday Transmission.
Afternoon Session.

- 3.25—Tune-in.
- 3.30—A Matinee for Little Listeners.
- 4.30—Close down.
- Early Evening Session.
- 6.25—Tune-in. To-night's programme will comprise 6th broadcasting demonstration by Queensland Radio Service at Exhibition Concert Hall in connection with Wireless and Electrical Exhibition.
- 6.30—"The Children's Session. Bedtime Stories by "Uncle Ben" and "Uncle Jim," assisted by "Mabel Sunshine."
- 7.15—Sporting News.
- 7.30—Close down.

Night Session.

- 8—Popular concert from the Studio.
- 8.50—Weather Information officially supplied by the Commonwealth Weather Bureau. Announcements.
- 9—From Lennon's ballroom, by courtesy of the proprietors of Lennon's Hotel, a programme of music will be relayed from Lennon's ballroom.
- 10—From the Studio: "The Daily Mail" News Service. Close down.

SUNDAY, AUGUST 15.

Morning Session.

- 10.55—Tune-in.
- 11—The complete morning service will be relayed from St. Paul's Presbyterian Church, Spring Hill.
- 12.30—Close down.

Afternoon Session.

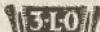
- 3.10—Tune-in.
- 3.15—The concert provided by the Excelsior Band will be relayed from the Botanical Gardens (conductor and cornet soloist, Mr. G. Holmes).
- 4.30—Close down.

Night Session.

The complete service will be relayed from St. Paul's Presbyterian Church, Spring Hill.

Band Concert.

Band Concert—At the conclusion of Church Service, concert by Greater Brisbane Municipal Concert Band will be relayed from Wickham Park. Close down.



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FRIDAY, AUGUST 13.

Midday Session.

- 12—Time signal. Latest cricket news, Public Schools XV, at Lords, by courtesy of Reuters Ltd. British Official Wireless News from Rugby. Reuters 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.

- 1.1—Studio Orchestra.
- 1.2—Arthur Douglas, Scotch comedian.
- 1.17—Dorothy Roxburgh, viola.
- 1.23—Ross Rouco, Siffleur.
- 1.28—Studio Orchestra.
- 1.43—Arthur Douglas, Scotch comedian.
- 1.49—Studio Orchestra.
- 2—Close down.
- 2.40—Public Schools Football, Scotch College v. Geelong College. "The Captain" will speak on the teams, the ground, the crowd, weather conditions, topical remarks.
- 2.45—Close down.

Afternoon Session.

- 3—Latest cricket news, by courtesy of Reuters Ltd.
- 3.1—The Studio Orchestra.
- 3.10—Public Schools Football. "The Captain," quarter-time interval. Story of first quarter-play. The scores.
- 3.15—Miss Frances Fraser, "Rome as a Museum."
- 3.30—Reginald Bradley, violin.
- 3.40—Public Schools Football. "The Captain," half-time interval. Story of second quarter-play. The scores.
- 3.45—Kora Dowle, tenor.
- 3.49—The Premier Four.
- 3.55—Public Schools Football. "The Captain," third quarter starts. News of any special incidents in the interval. The bounce.
- 3.57—Studio Orchestra.
- 4.17—"Au Fait" of Messrs. Hockley & Nunn, Ltd. "Fashion Talk."
- 4.29—Public Schools Football. "The Captain," three-quarter time. Interval. Story of third quarter's play.
- 4.35—Messrs. Haimes and Bannon, duet.
- 4.38—Studio Orchestra.
- 4.45—Latest cricket news, by courtesy of Reuters Ltd. "Herald" news service. Stock Exchange information.
- 5—Close down.

Evening Session.

- 5.45—Children's Hour. Answers to letters and birthday greetings.
- 6—"Billy Denny," "Lillies," fairy story: "The Lost Princess," "Black Beauty."
- 6.40—Latest cricket news, by courtesy of Reuters Ltd. "Argus" and "Herald" news services. Reuters and the Australian Press Association Cables.
- 6.58—Weather synopsis. Shipping movements.
- 6.57—Stock Exchange information.
- 7.2—Fish Market Reports by J. R. Borrett Ltd.
- 7.4—River Reports.
- 7.6—Market Reports by the Victorian Producers' Co-operative Co. Ltd. Haymarket sales. Poultry, grain, chaff, hay, straw, jute, dairy produce, potatoes and onions. Market prices of oranges and lemons, supplied by the Victorian Central Citrus Association Pty. Ltd.

Night Session.

- 7.20—Under the auspices of the Department of Agriculture, Mr. E. A. Kendall, Senior Veterinary Officer, "Mammitis in Cows."
- 7.40—The Harry Green, now playing in "Girls and Takers" at the Theatre Royal, will speak to you from his dressing-room, by permission of J. C. Williamson Ltd.
- 8—Studio Orchestra.
- 8.10—"The Captain," school life and school sport.
- 8.30—Organ Recital by Dr. Floyd, Organist at St. Paul's Cathedral, transmitted from the Cathedral.
- 9—Scene 1, "In the Gloomings," Stately Measures. A ball and a love scene, showing that hearts could still be young, ever so long ago. Studio Orchestra.
- 9.10—Scene 2, A Victorian Drawing-room.
- 9.17—Station Trio.
- 9.27—Syd L. Epton, tenor.
- 9.34—Reginald Bradley, violin.
- 9.40—Clarice Nurdan and Syd Epton, duet.
- 9.49—Scene 3, A Victorian Ball Room. Brunswick City Band.
- 10—Scene 4: A ball room of to-day. Studio Orchestra.
- 10.12—Scene 5: "In the Gloomings."

- 10.23—Robby Paton, baritone.
- 10.25—Latest cricket news, by courtesy of Reuters Ltd. "Argus" News Service. British Official Wireless news. Meteorological information.
- 10.45—Brunswick City Band.
- 11—God Save the King.

SATURDAY, AUGUST 14.

Morning Session.

- 11—Sonora Recital.
- 11.10—Harold Rodgers, pianoforte.
- 11.20—Arthur Douglas, Scotch comedian.
- 11.30—Sonora Recital.
- 11.40—Harold Rodgers, organ.
- 11.50—Arthur Douglas, Scotch comedian.
- 12—Tire Signals. Latest cricket news, by courtesy of Reuters Ltd. British Official Wireless news from Rugby. Reuters and the Australian Press Association cables. "Argus" and "Herald" news services. Shipping intelligence.
- 12.45—Stock Exchange information.
- 12.50—Meteorological information. Weather forecasts for Victoria, Tasmania, South Australia, and New South Wales. Ocean forecast. River reports.
- 1—Time signal.
- 1.1—Studio Orchestra.
- 1.10—Arthur Douglas, Scotch comedy.
- 1.17—Mortimer J. Pettigrove, tenor.
- 1.24—Studio Orchestra.
- 1.34—Beards of Arkatiana Hurdle—Caulfield Races.
- 1.35—Tasma Tieran, cello.
- 1.39—Arthur Douglas, Scotch comedian.
- 1.44—Studio Orchestra.
- 1.51—Mortimer J. Pettigrove, tenor.
- 2—Close down.
- 2.30—Result of Chatsworth Plate.
- 2.40—Close down.

Afternoon Session.

- 3—Latest cricket news, by courtesy of Reuters Ltd. Ern. Lloyd's Collegiate Dance Orchestra, transmission from an aeroplane.
- 3.5—Result of Australian Steeplechase.
- 3.7—Ern. Lloyd's Collegiate Dance Orchestra.
- 3.40—Result of Balclutha Stakes.
- 3.41—Ern. Lloyd's Collegiate Dance Orchestra.
- 4—A description of Melbourne, given from the air in connection with the Civil Aviation Company, on the occasion of the Aerial Pageant at the Essendon Aerodrome.
- 4.30—Result of Knowsley Steeplechase.
- 4.31—Ern. Lloyd's Collegiate Dance Orchestra.
- 4.45—"Herald" news service. Latest cricket news, by courtesy of Reuters Ltd. Result of St. Aubin Welter.
- 5—Close down.

Evening Session.

- 5.45—Sporting Results.
- 6—Children's Hour. "Mary Gumble." Answers to letters and birthday greetings. Poems: "Attracting the Fairies to Town," "My Pal," "The Story of the Littlest ones," "Little Red Riding Hood," Songs by the "Wattle Girl" and "Mary Gumble." Boys and girls, "The Rainbow."
- 6.40—Latest Australian Cricket Eleven scores, by courtesy of Reuters Ltd. "Argus" and "Herald" news services. Sporting results. Reuters and Australian Press Association cables.
- 6.52—Weather synopsis. Shipping movements.
- 6.57—Stock Exchange information.
- 7.2—Fish Market Reports by J. R. Borrett Ltd.
- 7.4—River Reports.
- 7.5—Market Reports by Victorian Producers' Co-operative Co. Ltd.: Grain, chaff, hay, straw, jute, dairy produce, potatoes and onions.
- Night Session.
- 7.20—Mr. Frederick Chapman, "Inroads of the Sea."
- 7.40—Dr. J. A. Leach, "Migration of Birds."
- 8—Waltz, "Boating on the Danube," Collingwood Citizens' Band.
- 8.3 to 10.30—Our Special Old Time Night: Collingwood Citizens' Band, conductor, Mr. F. C. Johnston; Jack Donovan, baritone; Jean Kelly, soprano; Joe Delaney, tenor; Mele Griffin, soprano.

SUNDAY, AUGUST 15.

Morning Session.

- 10.50—Express Train Information.
 10.55—Latest Cricket Scores, by courtesy of Reuters Ltd., Australia v. England, at the Oval.
 11—Service from Scots' Church, Collins Street, Melbourne. Rev. Dr. Borland.
 11.15—Latest Cricket Scores, by courtesy of Reuters Ltd., played at the Oval, Australia v. England.

Afternoon Session.

- 2—Pleasant Sunday Afternoon Service. Central Mission Wesley Church, Chairman, Rev. J. H. Cain.
 4.30—Latest Cricket Scores, by courtesy of Reuters Ltd., Australia v. England, played at the Oval.

Evening Session.

- 5.45—Children's Hour. Answers to letters and birthday greetings. Songs by "Billy Buzzy" and his "Great Babbits." Stories—"Mimosa," "Loveliest Life," and will tell a new one entitled "Contentment."
 6.40—Close down.

Night Session.

- 6.45—Service from St. Paul's Cathedral, Collingwood Citizens' Band, Mr. F. C. Johnston, conductor. Ely Treweek, soprano; A. E. Nelson, F.R.C.M., A.R.C.M., organ; Reginald Bradley, violin. Agnes Fortune, accompanist. Alfred Andrew, announcer.
 6.55—Latest Cricket Scores, by courtesy of Reuters Ltd., Australia v. England, played at the Oval.
 7—Service from St. Paul's Cathedral, Melbourne. Sermon by Archbishop.
 8.40—Collingwood Citizens' Band.
 8.47—Ely Treweek, soprano.
 8.54—Reginald Bradley, violin.
 8.55—Collingwood Citizens' Band.
 9.15—Ely Treweek, soprano.
 9.20—Reginald Bradley, violin.
 9.28—Collingwood Citizens' Band.
 9.40—Ely Treweek, soprano.
 9.47—Cornet duet, with band accompaniment.
 9.55—"Argus"—news service. Announcements. Latest cricket scores, by courtesy of Reuters Ltd., Australia v. England, played at the Oval.
 10—God Save the King.

MONDAY, AUGUST 16.

Midday Session.

- 12—Time Signal. Latest cricket news, by courtesy of Reuters Ltd., British Official Wireless news from Rugby, Reuters and the Australian Press Association cables. "Argus" and "Herald" news services.
 12.45—Shipping Intelligence. Stock Exchange information.
 12.55—Meteorological information. Weather forecasts for Victoria, Tasmania, South Australia and New South Wales. Ocean forecast. River reports.
 1—Time signal.
 1.1—Studio Orchestra.
 1.10—The Premier Four.
 1.14—Vic. Maize, corn solo.
 1.18—Studio Orchestra.
 1.26—Agnes Fortune, piano.
 1.35—The Premier Four.
 1.38—Haines and Barron, duet.
 1.44—Walter Smith, cornet.
 1.50—Studio Orchestra.
 2—Close down.

Afternoon Session.

- 2.30—Ernest Oran and the Tivoli Orchestra. First half of the Tivoli programme, transmitted from the Tivoli Theatre, by permission of Musgroves' Theatres Ltd.
 3.40—Mr. J. R. Locke, "Frontiers of India."
 3.53—Alice Mellon, soprano.
 4.2—Studio Orchestra.
 4.12—Dorothy Roxburgh, viola.
 4.19—Miss Flora Bell, Supervisor of Domestic Arts, Educational Department, will speak on "Domestic Economy."
 4.34—Alice Mellon, soprano.
 4.45—"Herald" news service. Latest cricket news, by courtesy of Reuters Ltd., Stock Exchange information.
 5—Close down.

Evening Session.

- 5.45—Children's Hour. Answers to letters and birthday greetings.
 6—"Little Miss Kookaburra" will tell a story about "Baby Neta's Fairy Flight"; and for the bigger girls and boys the 2nd instalment of "The Girl who Played the Game."
 6.40—Latest cricket news, by courtesy of Reuters Ltd., "Argus" and "Herald" news services. Reuters and the Australian Press Association cables.
 6.53—Weather synopsis. Shipping movements.
 6.57—Fish Market Reports by J. R. Borrell Ltd.
 7.3—Stock Exchange information.
 7.4—River Reports.
 7.5—Market Reports by the Victorian Producers' Co-operative Co. Ltd.: Haymarket sheep sales, poultry, grala, chaff, hay, straw, jute, dairy produce, potatoes, and onions. Market prices of oranges and lemons, by the Victorian Central Citrus Association Pty. Ltd.

Night Session.

- 7.20—Under the auspices of the Develop Australia League, Mr. Alfred J. Brock, "Australia Self-Contained and Self-Reliant."
 7.40—Under the auspices of the Department of Agriculture, Mr. G. S. Gordon, cerealist. "Wheat Breeding—How New Varieties are produced."
 8—Overture, Aullorium Orchestra. Intellectual music to the prologue to the picture, "Stella Davies," by permission of Electric Theatres Ltd.
 8.20—Brunswick City Band, Mr. Hugh Niven, conductor.
 8.24—Syd. L. Exton, tenor.
 8.35—Claude Hall, baritone.
 8.44—Brunswick City Band.
 8.58—Claude Hall, baritone.
 9.3—LL-Cel. Senator B. Sampson, D.S.O.
 9.18—Moana Luo Duo, Hawaiian instrumentalists.
 9.28—Victorian Railways Institute Dramatic Society. One Act play, "The Girl."
 9.48—Brunswick City Band.
 9.53—Announcements. Latest Cricket News, by courtesy of Reuters Ltd., British Official Wireless News from Rugby.
 10—Moana Luo Duo, Hawaiian instrumentalists.
 10.10—Victorian Railways Institute Dramatic Society, dialogue.
 10.25—Syd. Exton, tenor.
 10.35—Cornet Solo.
 10.38—"Argus" news service. Weather forecast. Announcements.
 10.48—Brunswick City Band.
 11—God Save the King.

TUESDAY, AUGUST 17.

Midday Session.

- 12—Time Signal. Latest cricket, Australia v. England, by courtesy of Reuters Ltd., British Official Wireless news from Rugby, Reuters and the Australian Press Association cables. "Argus" and "Herald" news services. Shipping Intelligence.
 12.45—Stock Exchange information.
 12.55—Meteorological information. Weather forecasts for Victoria, Tasmania, South Australia and New South Wales. Ocean forecast. River reports.
 1—Time Signal.
 1.1—Studio Orchestra.
 1.10—Eleanor Armistead, soprano.
 1.17—Walter Smith, cornet solo.
 1.22—Studio Orchestra.
 1.32—Eleanor Armistead, soprano.
 1.39—Reginald Bradley, violin.
 1.46—Studio Orchestra.
 2—Close down.

Afternoon Session.

- 3—Latest Cricket Scores, by Courtesy of Reuters Ltd., Australia v. England, played at the Oval.
 3.1—Studio Orchestra.
 3.10—Ernie J. Wood, baritone.
 3.17—Sallyon Trio.
 3.27—"An Fair" of Messrs. Buckley & Nunn Ltd., will give a Fashion Talk.

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For example, one of the largest radio battery manufacturers in the world, "The Burgess Battery Co.," make available 13 types and designs of "B" batteries, ranging from the small one pound 4156 to the oversize 14 pound No. 10308. Why these types? Well, the 4156 is a small light weight battery of moderate current capacity which makes it adaptable for aeroplane, portable and small cabinet sets. As a matter of fact, this battery is used by the United States Aeroplane Service. The 10303 (oversize) is suitable for sets drawing over 20 milliamps, and where space is not of importance. It gives the longest service in use of any type of "B" battery made.

The most popular type, however, is the 2306, because of its great current capacity over other 45 volt batteries. It is especially valuable for use with multi valve sets and heavy radio duty.

Another battery in good demand is the 2308, which is similar in capacity but is of the upright design, thereby occupying minimum table space and fits in most receiving sets.

The 2156 is a 22½ volt, large block type, usually referred to as "Navy Type," especially suitable for stationary sets and building up high voltages.

The 2158 is also a 22½ volt. It is a large battery of great current capacity. It is convenient in form, for use with dry cell "A" batteries.

From such a complete range it is not difficult to choose the most suitable battery. *

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One of a group of Radio Batteries. Useful in Wireless, Lighting and Amplification. Size, 3½ x 4 x 14. Most useful for Bells, Telephones, Burglar Alarms, Medical Coils, etc. With three Brass Terminals. Voltages, 1.5, 3, or 4.5 volt. Useful for all Wireless purposes, as well as general utility.

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Price:	
Small size, type	WP, 30 volt 5/6
" " " "	WP, 40 volt 12/6
" " " "	WP, 60 volt 18/-
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" " " "	XP, 40 volt 21/-



The New Ever-Ready Radio Battery

This illustrates the new Radio High-Tension "B" Battery which can be obtained in either 31½ or 42 volts. Positive lappings are arranged to suit all required voltages; connections are readily made to fusible alloy simply by using a lighted match.

Price:

Small size type, W. 30	5/6
Small size type, W. 40	12/6
Small size type, W. 42	12/6
Large size type, X. 30	16/-
Large size type, X. 40	21/-

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- 8.37—Marie Leithridge, soprano.
 8.47—Eardley Turner, eleventhly.
 8.52—Thomas Thurman, tello solo.
 9.05—Eric J. Wood, baritone.
 9.16—Studio Orchestra.
 9.24—Matron Moreland, "Infant Welfare."
 9.36—Marie Leithridge, soprano.
 9.45—Latest Cricket scores—Australia v. England, played at the Oval, "Herald" news service. Stock Exchange information.
 9—Close down.

Evening Session.

- 5.45—Children's Hours: "Mary Gumfrest." Poems: "The Reason Why," "The Doll's Tea Party." Story for the Hittest ones, "How Beth lost her Loneliness." Girls and boys, "Little Fairy God Fellow."
 6.40—Latest Cricket Scores, by courtesy of Reuters Ltd., Australia v. England, played at the Oval, "Argus" and "Herald" news services. Reuters and the Australian Press Association cables.
 6.53—Weather synopsis. Aerial mail information by the Australian Aerial Services Ltd.
 6.58—Stock Exchange information.
 7.25—Fish Market Reports by J. R. Borrett Ltd.
 7.40—River Reports.
 7.45—Market Reports by the Victorian Producers' Co-operative Co. Ltd.: Haymarket sales, poultry, grain, chaff, hay, straw, jute, dairy produce, potatoes, and onions.

Night Session.

- 7.20—Madame Soward, French talk.
 7.40—Under the auspices of the University Extension Board, Mr. H. Barkley, of the Meteorological Bureau, "A Total Eclipse of the Sun."
 8—Dr. Loftus Hills, Popular Science.
 8.15—Brighton and District Scottish Society, concert transmitted from Brighton Town Hall.
 Pipe Major Hugh Fraser, pipe solo.
 8.19—Minnie Paton, song.
 8.25—William Roberts, song.
 8.30—G. Anderson Darr, Scottish songs and stories.
 8.40—Ella Riddell, song.
 8.45—Hedra Brunnecke, tello solo.
 8.54—William Cadzow, song.
 9—Minnie Paton and Ella Riddell, duet.
 9.10—Interval. Mr. E. Prescott, Horticultural Branch of the Agricultural Department.
 9.20—Pipe Major Hugh Fraser, pipe solo.
 9.25—William Roberts, song.
 9.30—Minnie Paton, song.
 9.35—Address, Scottish character—W. H. MacLennan.
 9.42—William Cadzow, song.
 9.46—Hedra Brunnecke, tello solo.
 9.55—Ella Riddell, song.
 10—William Cadzow and William Roberts, duet.
 10.5—Auld Lang Syne, by A'body.
 10.15—Latest cricket scores, by courtesy of Reuters Ltd., Australia v. England, played at the Oval. British Official Wireless News from Rugby. Announcements.
 10.25—Geo. Lee, character comedian (by permission of Macgregor Ltd.).
 10.32—E. P. Loft, lingo.
 10.40—"Argus" news service. Announcements. Forecast.
 10.47—George Lee, character comedian.
 10.54—H. P. Loft, lingo.
 11—God Save the King.

WEDNESDAY, AUGUST 13.

Midday Session.

- 12—Time Signal. Latest cricket news, by courtesy of Reuters Ltd., Australia v. England, played at the Oval. Reuters and the Australian Press Association cables. "Argus" and "Herald" news services. Shipping intelligence.
 12.45—Stock Exchange information.
 12.50—Meteorological information. Weather forecasts for Victoria, Tasmania, South Australia, and New South Wales. Ocean forecast. River reports.
 1—Time Signal.
 1.1—Jack O'Hagan, baritone.

- 1.10—Ham Johnson's Monte Carlo Band.
 1.16—Jack O'Hagan, baritone.
 2—Result of Hurdle Race, Bendigo Jockey Club Race. Close down.
 2.40—Result of Bendigo Plate.

Afternoon Session.

- 3—Latest Cricket Scores, by courtesy of Reuters Ltd., Australia v. England, played at the Oval.
 3.1—Lottie Brantall, tenor.
 3.10—Mrs. Marguerite Gallaway Mahood.
 3.25—Result of Amurat Handicap.
 3.26—Lottie Brantall, tenor.
 3.35—"Tell Me More," second act. Musical comedy. Book by Fred Thompson and Wm. R. Wells, music by George Gershwin. Lyrics by E. G. de Sylva. Desmond Carter, and Ira Gerdelwin. Produced by Harry R. Burcher. Transmitted from His Majesty's Theatre, by permission of J. C. Williamson Ltd.
 5—Results of Novice Handicap, Jumpers' Handicap Flat Race, Wilmersdale Handicap, Bendigo Jockey Club races. "Herald" news service. Latest cricket scores, by courtesy of Reuters Ltd., Australia v. England, played at the Oval. Stock Exchange information.
 5.15—Close down.

Evening Session.

- 5.45—Children's hour. "Bobby Bismum" will answer letters and give birthday greetings.
 6—Musical hour for children, arranged by Mr. Fritz Hart. Lillian Gray soprano, Margaret MacGibbin violinist, Ida Scott pianist.
 6.40—Reuters Ltd., Australia v. England, played at the Oval, "Argus" and "Herald" news services. Reuters and the Australian Press Association cables.
 6.43—Weather Synopsis; Shipping Movements.
 6.53—Fish Market Reports.
 7.23—Fish Market Reports by J. R. Borrett Ltd.
 7.40—River Reports.
 7.45—Market Reports by the Victorian Producers' Co-operative Co. Ltd.: Haymarket Sheep sales; poultry, grain, chaff, hay, straw, jute, dairy produce, potatoes and onions. Market prices, oranges and lemons, by the Victorian Central Citrus Association Pty. Ltd.

Night Session.

- 7.20—Under the auspices of the Department of Agriculture, Mr. R. Crowe, Exports Superintendent, "Market Comments."
 7.40—Photographer, Mr. H. R. Slocombe, "Replies to Correspondents."
 8—Captain Peters, "Books, Wise and Otherwise."
 8.15—Second of the series of "National Nights"—a short lecture on "French Music," by Mr. Sweton Crowe, illustrated by students of the University Conservatorium.
 8.45—Mr. W. J. Canny, General Superintendent of Transportation, Victorian Railways, "The Top Ten Truck Question."
 10.5—Studio Orchestra.
 10.10—Announcements. Latest cricket scores, by courtesy of Reuters Ltd., Australia v. England, played at the Oval. British Official wireless news from Rugby.
 10.25—Geo. Lee, character comedian (paraphrase of the Tivoli Theatre).
 10.32—Studio Orchestra.
 10.39—"Argus" news service. Weather forecast. Announcements.
 10.40—Geo. Lee, character comedian.
 10.50—Studio Orchestra.
 11—God Save the King.

THURSDAY, AUGUST 19.

Midday Session.

- 12—Time Signal. Latest cricket scores, by courtesy of Reuters Ltd., Australia v. Leveaux-Gowrie's XI, played at Maidenhead. British Official Wireless news from Rugby. News and the Australian Press Association cables. "Argus" and "Herald" news service.
 12.15—Community Singing, under the auspices of Community Singers and Concert

- Goers' Association, transmitted from the Assembly Hall, Collins St., Melbourne.
 1.45—Stock Exchange information. Meteorological information. Weather forecasts for Victoria, Tasmania, South Australia, and New South Wales.
 2—Result of Trial Handicap, Bendigo Jockey Club Race. Close down.
 2.40—Result of Wilson Handicap, Bendigo Jockey Club Races.

Afternoon Session.

- 3—Latest Cricket scores, by courtesy of Reuters Ltd., Australia v. Leveaux-Gowrie's XI, played at Maidenhead.
 3.1—Studio Orchestra.
 3.10—Alan Bradenell, tenor.
 3.17—Dorothy Rauburger, viola.
 3.23—Result of Brush Steeple.
 3.23—Louise Moorhead and Oliver Rainbridge, one act play.
 3.30—Studio Orchestra.
 3.35—Result of Trefus Handicap.
 3.35—Geo. Lee, character comedian.
 3.55—"Mary Gumfrest." "Choosing a Career for Your Child," with short rentals from the classical poets of China, including the "Tale of Jade."
 4.15—Studio Orchestra.
 4.24—Result of Welter.
 4.25—Alan Bradenell, tenor.
 4.32—Latest cricket news, by courtesy of Reuters Ltd., Australia v. Leveaux-Gowrie's XI, played at Maidenhead. "Herald" news service. Stock Exchange information. Result of Handicap Trot, Bendigo Jockey Club Races.
 4.45—Evening song, transmitted from St. Paul's Cathedral.
 5.30—Close down.

Evening Session.

- 6.45—Children's Hour. Answers to letters and birthday greetings.
 "Mary Gumfrest." Poems: "Dancing in a Fairy Ring," "Rosie's Birthday." For the Hittest ones, "Nursery Rhymes" and special songs by the "Waddle Girl" and "Mary Gumfrest." Story for the girls, "The Flower Fairies." Story for the boys, "The Tale of Two Shillings."
 6.40—Latest Cricket scores, by courtesy of Reuters Ltd., Australia v. Leveaux-Gowrie's XI, played at Maidenhead. "Argus" and "Herald" news services. Reuters and the Australian Press Association cables.
 6.52—Weather synopsis. Shipping movements. Aerial mail information, by the Australian Aerial Services Ltd.
 7—Stock Exchange information.
 7.4—Fish market reports by J. R. Borrett Ltd.
 7.6—River reports.
 7.6—Market Reports, by the Victorian Producers' Co-operative Co. Ltd. Haymarket Sales. Poultry, Grain, Chaff, Hay, Straw, Jute, Dairy Produce, Potatoes and Onions.

Night Session.

- 7.20—Mr. J. Howlett Ross.
 7.40—Under the auspices of the Health Association.
 8—SLO Dance Orchestra.
 8.10—Mr. Ted Collie, Football Talk.
 8.30—SLO Dance Orchestra.
 8.40—Ray Carey, tenor.
 8.47—SLO Dance Orchestra.
 8.57—Geo. Lee, character comedian.
 9.4—SLO Orchestra.
 9.14—A letter from Junbo Sharland on "Australia's Black Friday."
 9.21—SLO Dance Orchestra.
 9.31—Ray Carey, tenor.
 9.35—SLO Dance Orchestra.
 9.46—Latest cricket scores, by courtesy of Reuters Ltd., Australia v. Leveaux-Gowrie's XI, played at Maidenhead. British Official Wireless news from Rugby. Announcements.
 9.58—SLO Dance Orchestra.
 10—Geo. Lee, character comedian.
 10.10—SLO Dance Orchestra.
 10.22—"Argus" news service. Weather forecast. Announcements.
 10.40—SLO Dance Orchestra.
 11—God Save the King.



CENTRAL BROADCASTERS LTD.

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FRIDAY, AUGUST 13.

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 and Cricket scores.
- 12.16—Featuring a *Stock Duo Art Number*;
- 12.30—5CL Studio Orchestra will be heard in a series of classical numbers.
- 1.55 (approx.)—Ward & Co.'s Stock Exchange Intelligence; Weather Reports and Station Announcements.
- 2—G.P.O. Chimes.

Afternoon Session.

- 3—G.P.O. Chimes.
- 3.1—Relay from "Maple Leaf" Cafe—Orchestral numbers.
- 3.45—From Studio—Serial Story.
- 4—G.P.O. Chimes.
- 4.1—Broadcast from "Arcadia" Cafe—Orchestral numbers.
- 4.45—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—Sporting talk by "Old Timer."
- 8—G.P.O. Chimes.
- 8.1—Merrymakers Orchestra in a programme of Classical Numbers and Concert from the Studio.
- 9—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.
- 10.30—Concert continued.
- 10.55—Station announcements and International cricket.
- 11—G.P.O. Chimes. National Anthem.

SATURDAY, AUGUST 14.

Morning Session.

- 10.30—G.P.O. Chimes.
- 10.31—Studio Orchestra.
- 11.45—Ward & Co.'s Stock Exchange Intelligence; Official Weather Reports.
- 12—G.P.O. Chimes; Station announcements.
- 12.30—5CL Studio Orchestra will be heard in a series of classical numbers.

Afternoon Session.

- 5—From the Studio: Football results, local and interstate sporting results.
- 3.30—Vocalion and *Stock Duo Art* numbers.

Evening Session.

- 6.30—G.P.O. Chimes.
- 6.31—Bedtime Stories.
- 7.30—Market Reports.
- 7.40—Resume of the chief sporting results throughout the Commonwealth.
- 8—G.P.O. Chimes.
- 8.1—Studio Concert.
- 8.30—Relay from Palais Royal—Tom Swift's Palais Royal Orchestra.
- 9—G.P.O. Chimes.
- 9.1—Concert continued.
- 9.15—Relay from Palais Royal.
- 9.20—Concert continued.
- 9.30—Tom Swift's Palais Royal Orchestra.
- 10—G.P.O. Chimes.
- 10.1—Concert continued.
- 10.15—Sporting Results continued.

- 10.30—Relay from Palais Royal, Orchestra.
- 10.55—Station announcements and ships within wireless range.
- 11—G.P.O. Chimes. National Anthem.

SUNDAY, AUGUST 15.

Morning Session.

- 11—Relay from Rose Park Congregational Church.
- Evening Session.
- 4.30—G.P.O. Chimes.
- 6.30—Sunday Stories for the children.
- 7—Relay from St Peter's Cathedral—Divine Service.
- 7.15—From the Studio: Holden's Silver Band in a programme of band music.
- 8.45—Mr. P. H. Nicholls will talk on "How to use Imagination."
- 9—G.P.O. Chimes.
- 9.1—Weather Reports.
- 9.3—Holden's Band, continued.
- 10—G.P.O. Chimes.
- 10.1—Holden's Silver Band, continued.
- 10.25—Station Announcements.
- 10.30—G.P.O. Chimes; National Anthem.

MONDAY, AUGUST 16.

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 and Cricket scores.
- 12.16—Featuring a *Stock Duo Art Number*;
- 12.30—5CL Studio Orchestra will be heard in a series of classical numbers.
- 1.55 (approx.)—Ward & Co.'s Stock Exchange Intelligence; Weather Reports and Station Announcements.
- 2—G.P.O. Chimes.

Afternoon Session.

- 3—G.P.O. Chimes.
- 3.1—Relay from "Maple Leaf" Cafe—Orchestral numbers.
- 3.45—From Studio—Serial Story.
- 4—G.P.O. Chimes.
- 4.1—Broadcast from "Arcadia" Cafe—Orchestral numbers.
- 4.45—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—Mr. J. Alexander will talk on "The Leather Industry."
- 7.40—Market Reports.
- 7.40—Mr. W. W. Fredrickson, automotive engineer, of Vacuum Oil Co., will give his weekly motor talk.
- 7.40—Care of the Teeth, by Mr. A. E. Dunzky.
- 8—G.P.O. Chimes.
- 8.1—Musical Items.
- 8.30—Twinbler's Buy' Club.
- 8.40—Relay: Tom Swift's Palais Royal Orchestra.
- 9—G.P.O. Chimes.
- 9.1—Weather Reports.
- 9.3—Palais Royal Orchestra.
- 9.30—Musical Items.
- 9.40—Palais Royal Orchestra.
- 10.15—"Advertiser" news service and ships within wireless range.
- 10.30—Palais Royal Orchestra.
- 10.55—Station announcements and International Cricket.

TUESDAY, AUGUST 17.

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 and Cricket scores.
- 12.16—5CL Studio Orchestra will be heard in a series of classical numbers.
- 1.55 (approx.)—Ward & Co.'s Stock Exchange Intelligence; Weather Reports and Station Announcements.
- 2—G.P.O. Chimes.

Afternoon Session.

- 3—G.P.O. Chimes.
- 3.1—Relay from "Maple Leaf" Cafe—Orchestral numbers.
- 3.45—From Studio—Serial Story.
- 4—G.P.O. Chimes.
- 4.1—Broadcast from "Arcadia" Cafe—Orchestral numbers.
- 4.45—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—Milling talk by Mr. Jackett.
- 7.40—A programme of classical music by the Cadenza Quartette.
- 9—G.P.O. Chimes.
- 9.1—Weather Reports.
- 9.5—Cadenza Quartette.
- 10—G.P.O. Chimes.
- 10.6—Cadenza Quartette.
- 10.15—"Advertiser" news service, and ships within wireless range.
- 10.30—Musical Items.
- 10.40—Cadenza Quartette.
- 10.55—Station announcements and International Cricket.
- 11—G.P.O. Chimes. National Anthem.

WEDNESDAY, AUGUST 18.

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 and Cricket scores.
- 12.16—Featuring a *Stock Duo Art Number*;
- 12.30—5CL Studio Orchestra will be heard in a series of classical numbers.
- 1.55 (approx.)—Ward & Co.'s Stock Exchange Intelligence; Weather Reports and Station Announcements.
- 2—G.P.O. Chimes.

Afternoon Session.

- 3—G.P.O. Chimes.
- 3.1—Relay from "Maple Leaf" Cafe—Orchestral numbers.
- 3.45—From Studio—Serial Story.
- 4—G.P.O. Chimes.
- 4.1—Broadcast from "Arcadia" Cafe—Orchestral numbers.
- 4.45—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—Boy Scouts' corner.
- 8—G.P.O. Chimes.
- 8.1—Quartette, South Plympton Glee Club.
- 8.30—Science Lecture, by Messrs. F. H. Pauling and Co.
- 8.40—Palais Royal Orchestra.
- 9—G.P.O. Chimes.
- 9.1—Weather Reports.
- 9.30—Quartette, South Plympton Glee Club.
- 9.55—Palais Royal Orchestra.
- 10.15—"Advertiser" news service, and ships within wireless range.
- 10.30—Palais Royal Orchestra.
- 10.55—Station announcements and International Cricket.
- 11—G.P.O. Chimes. National Anthem.

THURSDAY, AUGUST 19.

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 and Cricket scores.
- 12.16—Featuring a *Stock Duo Art Number*;
- 12.30—5CL Studio Orchestra will be heard in a series of classical numbers.
- 1.55 (approx.)—Ward & Co.'s Stock Exchange Intelligence; Weather Reports and Station Announcements.
- 2—G.P.O. Chimes.

Afternoon Session.

- 3.—G.P.O. Chimes.
 3.1.—Relay from "Maple Leaf" Cafe—Orchestral numbers.
 3.45.—From Studio—Serial Story.
 4.—G.P.O. Chimes.
 4.1.—Broadcast from "Arcadia" Cafe—Orchestral numbers.
 4.55.—Stock Exchange Reports, General Information, and Station Announcements.
 5.—G.P.O. Chimes.

Evening Session.

- 6.50.—G.P.O. Chimes.
 6.51.—Radio Stories.
 7.15.—Health talk, by Mr. A. M. Whittentbury.
 7.30.—Market Reports.
 7.40.—Poultry talk, by Mr. A. M. Whittentbury.
 8.—G.P.O. Chimes.
 8.1.—Miscellaneous Concert from the Studio.
 9.—G.P.O. Chimes.
 9.1.—Weather reports.
 9.2.—Studio Concert, continued.
 10.15.—"Advertiser" news service, and ships within wireless range.
 10.20.—Studio Concert, Continued.
 10.55.—Station announcements and International Cricket.
 11.—G.P.O. Chimes. National Anthem.



HOBART

Wavelength, 595 metres. Temporary Power.

FRIDAY, AUGUST 13,

Morning Session.

- 11.—"The Mercury" news, stock market, shipping, commercial intelligence, weather information. Records from the Studio.
 12.—Time Signal.

Afternoon Session.

- 2.—Musical Items from the Studio, weather information.
 2.50.—Hobart Stock Exchange quotations.
 4.—Time Signals.

Early Evening Session.

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

Evening Session.

- 8.—"The Mercury" special Tasmanian news service. Railway auction produce sales. Weather forecasts.
 8.5.—Hobart Stock Exchange quotations.
 8.10.—Weekly gardening chat, by Mr. George Nation.
 8.20.—"Sports Budget," supplied by Mr. T. W. Newton, of Hobart Sports Depot.
 8.30.—Miss Ruby Preece, pianist; Miss Jean Hibbard, soprano; Miss Bertha Marshall, soprano; Miss Dulcie Tall, electionist; Mr. Jack Broadbent, baritone; Mr. William P. Harwood, baritone.
 8.50.—"The Mercury" special interstate news service. Weather synopsis. Station announcements. National Anthem.

SATURDAY, AUGUST 14.

Morning Session.

- 11.—"The Mercury" news, stock market, shipping, commercial intelligence, weather information, and sporting anticipations. Records from the Studio.
 11.45.—Hobart Stock Exchange quotations.
 12.—Time signal.

Early Evening Session.

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

Evening Session.

- 8.—"The Mercury" special Tasmanian News Service. Railway auction produce sales. Weather information, and sporting results.
 8.5.—Hobart Stock Exchange quotations.
 8.10.—"Come to Tasmania Movement." Mr. J. B. Reid, Commercial Travellers' Association. "New Era for Tasmania."

8.20.—Palaís de Dance Band, City Hall.

- 9.50.—"The Mercury" Special Interstate News Service. Weather synopsis. Station announcements. Close down.

SUNDAY, AUGUST 15.

Evening Session.

- 7.—Service from Melville Street Methodist Church, Hobart. Preacher: Rev. Robert Williams, Grand Choral service. The choir will render selections from Danica. Conductor, Mr. G. Lumb; organist, Miss D. White.
 8.45.—Concert from the Studio—Miss Ruby Preece, pianist; Miss Dorothy Newton, contralto; Miss Frances Evans, contralto; Mr. W. E. Fuller, recital; Mr. Ch. G. Tennant, baritone; Mr. W. J. Clark, Junr., trumpet.
 9.45.—"The Mercury" Special Interstate News Service. Weather Synopsis. Station announcements. National Anthem.

MONDAY, AUGUST 16.

Morning Session.

- 11.—"The Mercury" news, stock market, shipping, commercial intelligence, weather information. Records from the Studio.
 12.—Time signal.

Afternoon Session.

- 2.—Musical Items from the Studio. Weather information.
 3.30.—Hobart Stock Exchange quotations.
 4.—Time signal.

Early Evening Session.

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

Evening Session.

- 8.—"The Mercury" special Tasmanian news service. Railway auction produce sales. Weather information.
 8.5.—Hobart Stock Exchange quotations.
 8.10.—Mr. G. Lumb, lecturer in music, subject, "European Folk Songs."

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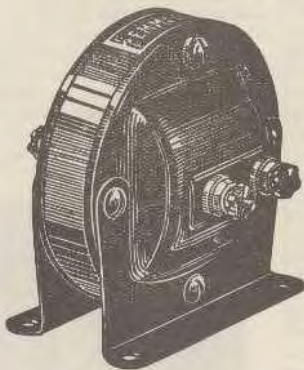
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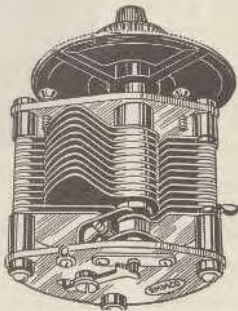


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Mr. J. Scharf.

in Australia to-day. Born in Vienna in October, 1884, and educated at that city, he spent twelve years in the largest engineering organisation in Europe in association with Siemens Halske, of Vienna, Siemens Bros., at Berlin, A.E.G., and with Siemens Schuckert, Berlin. He also spent some time at Budapest and with Zeiss and Company, of Jena — manufacturers of the world-famous glasses.

In 1911 Mr. Scharf arrived in Australia, and after spending two years in the P.M.G.'s Department, he commenced the business of general engineering. From this small beginning has grown the big firm of which he is now the head. The company to-day employs 500 workers and has a large section devoted to the manufacture of EMMCO Radio Parts.

PROGRESS IN CHILE.

In the course of a report prepared recently by the British Commercial Secretary at Santiago, on the industrial and economic situation in Chile, it is stated that wireless telephony continues to make good progress in the country, but that the trade is largely in the hands of the United States manufacturers, followed by Germany.

ADVANCE AUSTRALIA.

A New Zealand paper becomes almost lyrical in its appreciation of Australian broadcasting.

"Owing to the unsatisfactory state of affairs in connection with New Zealand broadcasting," it says, "some hundreds of listeners in the Dominion depend upon the Australian broadcast stations for their nightly entertainment. With, say, a five-valve neutrodyne receiving set, or a four-valve regenerative set, good loud-speaker reception is obtainable in New Zealand from 4QG, Brisbane, 2BL, Sydney, and 3LO, Melbourne. In some parts of the Dominion 5CL, Adelaide comes in with very fair strength. Each of these Australian stations delights New Zealanders with wonderful programmes every night throughout the year. They give performances by superb bands, theatre orchestras, leading vocalists, and instrumental soloists, lectures and theatrical productions. A complete change of programme is made by each station every night. The ubiquitous microphone is placed in many of the principal Australian churches, so that on Sunday evenings we hear the services, the choirs, and the organs. A veritable wonderland is opened up from the west every evening, and many of us look forward eagerly to our nightly entertainment from Australia. Over the 1200 miles of the Tasman Sea, with the speed of light, flash the mysterious ether waves which our receiving equipments transform into music or speech. And what superb broadcasting is accomplished by the Australian stations! It is incomparably superior to that of the makeshift, puny New Zealand stations. The Australian programmes are also above comparison with those of the Dominion. There is one drawback in connection with reception in New Zealand of the Australian stations, and that is their lateness in commencing their evening programmes. When it is 8 p.m. in Brisbane, Sydney, and Melbourne, the time in New Zealand is 9.30 p.m. Taking 2BL, Sydney, as an example, it commences each evening at 9.30 p.m. New Zealand time, and finishes at 1.30 a.m. New Zealand time."

FAREWELLING BY RADIO.

ONE after another, Australia's most gifted artists, after attaining the ranks of stardom in their own country, are flitting away to try their luck in other lands—and with but few exceptions they are repeating abroad the success achieved in their own country. Miss Dorothy Brunton—the charming actress who has been an idol of the Australian stage for the past ten years—will wave farewell to her legions of friends and well-wishers this month, and will thus add one more name to the list of famous Australians in search of fresh laurels in other lands.

Now that the date of her departure for Africa is fast approaching, Miss Brunton is being so overwhelmed with farewell messages and gifts, that she is unable to reply personally to all the



Miss Dorothy Brunton.

well-wishers. Therefore she is gratefully accepting the invitation of 2FC to voice her thanks, and say good-bye to all her friends on Friday, August 13. So, listeners—in at 7.40 o'clock that night may picture the little star—in Adeline's blue check gingham frock—seated in her cosy dressing-room at the Palace Theatre and softly saying good-bye to the country and the people who love her so dearly. "The radio is, in my opinion, the greatest boon of the 20th Century," says Miss Brunton, "and I am so grateful to have the chance of broadcasting my appreciation of the kindness and encouragement I have always received from my fellow-Australians."

STRONG – UNIFORM NON-RIPPLING CURRENT



GOOD batteries *do* make a difference to radio reception. No matter how efficient your radio receiver, the question of strong, clear signals lies conclusively with the batteries you use.

With its rugged strength and over size capacity, a Clyde rechargeable Storage Battery delivers strong, uniform, non-rippling current without hum, roar, or buzz over a remarkably long period of

discharge—an absolute essential for clear, unbroken long-distance reception.

The first cost of a CLYDE is surprisingly low in comparison with its high quality. CLYDE QUALITY COSTS NO MORE, and IT LASTS LONGER.

A MESSAGE TO MOTORISTS.—There is no longer any need to pay high prices for imported battery quality. Let your next battery be a CLYDE—the Australian-made battery that is noted for its dependability and durability. There is a Clyde for every make or model of car.

MANUFACTURED BY

THE CLYDE ENGINEERING COMPANY LIMITED
SYDNEY, N.S.W.

ASK YOUR DEALER FOR CLYDE

The REAL Pure tone Valve

**GIVES EVERY
NOTE IT'S
TRUE VALUE**



DESIGNED to give pure and strong amplification in all L.F. stages. Produces abundant volume free from distortion and will operate all loud speakers.

MULLARD Double Green Ring VALVES

Type D-3 for 2-volt accumulator **EACH 13/6** Type D.06 for 2 or 3 dry cells **EACH 13/6**

NOTE: MULLARD D.3 DOUBLE GREEN RING VALVE IS A 2-VOLT POWER AMPLIFIER.

HF Amplification.				LF Amplification.				Power Valves.				Detectors.
Type	Fil.	Grids	Price	Type	Fil.	Grids	Price	Type	Fil.	Grids	Price	
HP	2.5	2.2	7/6	LF	2.5	2.5	7/6	DPA.1	2.5	2.5	13/6	When extra is followed by
U.44	2.5	2.5	12/6	D.3	2.5	2.5	13/6	DPA.2	2.5	2.5	13/6	an Intermediate Transformer
D.3	1.8	2.3	12/6	DPA.1	5.0	2.5	12/6	PM.4	2.7	2.1	13/6	or Integriplier, use an LF
DPA.4	2.5	2.5	13/6	DPA.3	2.5	2.5	13/6	DPA.5	2.5	2.5	13/6	Amplifier or Power Valve.
PM.3	3 to 4	4.1	13/6	PM.4	2.5	2.5	13/6					When valve is followed
												by a Resistorless Capacitor
												Interstage system, use an
												HF Amplifying Valve.

All Mullard Valves are manufactured at Mullard Works, London, England.
OBTAINABLE FROM EVERY RADIO DEALER IN AUSTRALIA.

Mullard

THE MASTER VALVE

(Aix 2)

Advertisement of the Mullard Wireless Service Co. Ltd., Balham, London, S.W.12, ENGLAND.

REFERENDUM BY RADIO.

THE announcement that the Trades Hall Broadcasting Station 2KY is being used to combat the Referendum proposals of the Federal Government, opens a new vista in the conduct of political campaigns.

It is a vista very much for the better. If it may be assumed that the pro referendum forces will follow



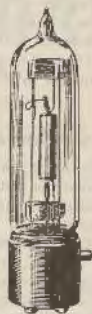
Stuart Peters (bass and Scottish humor), member and manager of the new organization called "The Royal Scots' Kilties." They have been specially engaged to appear at the Caledonian concert at Dabho, on the 25th August, which will be broadcast by 2FC.

the example of the antis by broadcasting their point of view also, the electors will be enabled to receive their politics in much happier circumstances than has sometimes been the case.

Everyone is familiar with the frothing orator on the platform or soap box lashing himself into a fury over the merits of his case, or, more likely, the personal demerits of his opponents. As the crowd cheer he claws the air yet more vigorously; as they hoot him, he thunders forth further objurgations. He talks for an hour and never appeals to reason, playing all the time on the passions of his audience, and in turn being himself guided by the emotions which sway the crowd. It is very different with a man speaking by radio to an audience which he cannot see. He is alone in a muffled room with a microphone. There is no one to cheer his wordy flamboyancies, no one to interject, and provoke him to crushing repartee; his words go out on the cold, unimpress-

Why the new Wecovalves will improve your set!

GREATER sensitivity is assured from Wecovalves, for when operated at a dull red heat, the new patented tape filament used in the improved Wecovalve gives fourteen times the electron emission of thoriated tungsten filaments operating at a bright red heat.



The new Wecovalves are now available from regular radio dealers at

17/6

Owing to the unique rigidity of their construction and the special method of supporting the valve elements, Wecovalves are positively free from the parasitic noises common to other valves of the dull emitter type.

The extremely low temperature at which Wecovalves operate, due to the special oxide coated filament used, ensures longer life than that usually obtainable from ordinary dull emitter valves.

Wecovalves are specially graded as detectors and as radio or audio frequency amplifiers.

**Standard Telephones and Cables
(Australasia) Limited**

FORMERLY

Western Electric Company (Australia) Ltd.,

192-4 CASTLEREAGH STREET, SYDNEY

sionable ether to be heard by the electors singly, sitting calm and comfortable in their own homes, uninfluenced by the opinion of others, critical, weighing the words of the orator impersonally, dispassionately. Under such conditions the man who essays to broadcast an address on the referendum feels impelled to weigh his words. His arguments need to be sound, his logic clear, for there is nothing to help him but the merits

of his case itself. The broadcasting of political speeches must be done by the B class station, which receive no share of the license fees—perhaps no speaker for and one against the Government's proposals will be broadcast by the A class stations, and no more. But one thing is inevitable, the level of politics as expounded by radio will be—and already is—much higher than what the electors are accustomed to hear from the platform.



THE COSSOR VALVE.

One of the most popular valves used at the present time is the Cossor. It has several unique and exclusive features which ensure exceedingly long life. The hood-shaped filament functions within a hood-shaped grid and anode, which allows for the expansion and contraction without the usual springs or such devices so commonly used.

There are several different types, all of which are fitted with English and American anti-capacity bases. Each and every type is evenly matched, so that they are particularly suitable in circuits where matched valves are essential.

The P1 is designed for detector and low frequency work, and the P2 for radio frequency amplification. The well-known Wuncell dull emitter type of valve, which only requires one 2-volt accumulator, is particularly suitable for country conditions.

GILFILLAN NEUTRODYNE RECEIVER

This very attractive model, which is handled by Harringtons Ltd., is claimed to have reasonable selectivity with long distance range and simplicity of tuning, which are the main contributors to its success. A simple device allows the receiver to be adapted to the wavelength of 2FC—1100 metres.

THE UX-171 AMPLIFIER.

To the family of audio amplifier tubes has just been added the UX-171. The tube looks like a 201A but acts

differently. The UX-171 is designed for the last audio socket of receiving sets, and therefore is an "overgrown 201A." In both cases, the stage tube has a lower amplification constant and a bigger filament. Therefore, it will amplify weaker signals less—but it will give better audio quality on all signals, provided there is a decent input ahead of, and a decent loud-speaker after it. It is a particularly attractive tube, and with 90 volts on the plate and minus 16½ volts on the grid, a considerable saving in B battery is effected.

FERRANTI TRANSFORMERS.

Messrs. A. Beal Pritchett (Aust.) Ltd., have been appointed the distributors in New South Wales for the well-known British manufactured Ferranti transformers. This concern are also distributors for Mullard valves, which have already proved so popular in Australia. The distributor in Queensland is Edgar V. Hudson, 55 Charlotte Street, Brisbane.

COLMOVOK THREE-VALVE SET.

A very good idea has been hit upon by Messrs. Colville-Moore Wireless Supplies Limited, who are now manufacturing sets complete with the exception of wiring. All the parts are mounted, so that all that is necessary is for the purchaser to wire-up the parts by following the instructions which are plainly given in blue prints that are supplied with each set. We



have examined one of these receivers, and we find that straight line frequency condensers are used, attractive bakelite sockets and panel, and all parts are made from very good materials. The illustration shows one of the three-valve sets as supplied with polished maple cabinet.

RADIOLUX AMPLION.

A distinctive feature in wireless loud speakers now being produced is the Radiolux Amplion, which strikes quite a new note in the world of radio. The various types which are exhibited at the show-rooms of Amplion (Australasia) Limited re-



presents a range of extremely attractive models so designed as to harmonise with different classes of furniture. The Radiolux is now being partly manufactured in Australia, and is capable of giving tremendous volume, coupled with purity of reproduction.

USE OF TELEPHONE.

For some weeks the Director of 2KY, Mr. C. G. C. Christie, has been putting the station's editorial and other contributions of his own, on the air by means of the telephone from locations around Sydney, and once by trunk line call. The clarity was at all times satisfactory. This shows what a tremendous convenience the telephone can prove to be to broadcasting, provided the apparatus is perfect.

RACING COMMISSIONER.

2KY has been able to retain the services of the well-known and painstaking racing expert, Mr. H. G. Hopkins. Every Friday Mr. Hopkins broadcasts his anticipations for Saturday's race meetings, and on Saturday night puts his criticism of the day's racing on the air. Mr. Hopkins goes on the air other evenings as well, as occasion arises.



INTERVALVE TRANSFORMER

TYPE AF 3

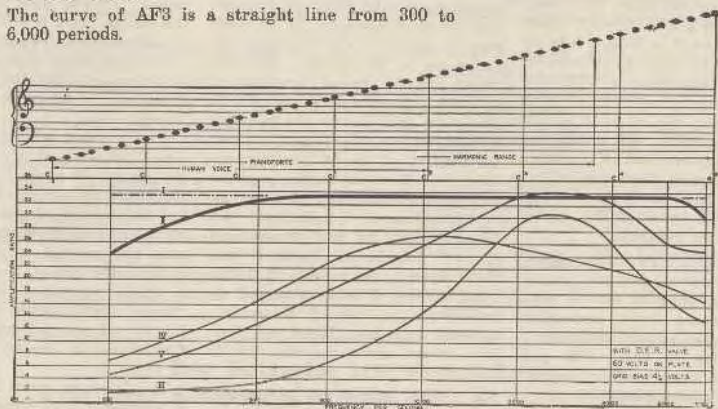
BRITISH MADE



Transformer Amplification curves are of great interest to every Radio user.

The curves must be on the musical scale to give the true value.

The curve of AF3 is a straight line from 300 to 6,000 periods.



Curve I. PERFECTION.

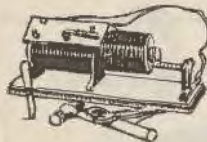
Curve II. FERRANTI AF 3. VERY NEARLY PERFECT.

No BETTER Transformer is available at any Price

Curve III. }
 Curve IV. } Other Transformers on the Market.
 Curve V. }

Distributors for N.S.W., Victoria, South Australia, and
 Tasmania:
A. NEAL FRITCHETT (Aust.) LTD.,
 5 Parker Street, Sydney.

Distributor for Queensland:
EDGAR V. HUDSON,
 55 Charlotte Street, Brisbane.



Beginners' Problems



I have an old car generator which I intend using to charge my "A" battery accumulator, and I would like some advice as to how to fix it up. I do not want to go to much expense, but I think I should have an ammeter and a rheostat to control the charging rate, otherwise one would be in the dark. Could you advise me the type of meter to use, and also how to make a suitable rheostat?

A.: You will need a 10 ohm rheostat capable of carrying four to five amperes, and an ammeter with a scale reading 0 to 10 amperes. We understand Amalgamated Wireless (Asia) Ltd. have some old stock rheostats, capable of carrying large amperage, which they are selling cheaply. (See advt.) The Jewell or Weston 0 to 10 ampere meters may be purchased through any advertiser in "Wireless Weekly."

The ammeter and rheostat should be placed in series with either the positive or negative lead. The charging rate can then be controlled by varying the resistance of the rheostat or altering the speed of the engine which drives the generator.

Q.: I have built the silver super-heterodyne receiver, but am unable to receive anything at all. I have carefully checked every connection with my detailed instructions, which I am forwarding to you. Will you please let me know whether the circuit diagram enclosed is O.K.?

A.: Your circuit diagram is correct, except that it does not show a by-pass condenser across the oscillator, and has no "C" battery in grid return circuit of oscillator valve. Both of these are very necessary. (See our article on super construction printed in this issue. You will notice that we show a 2 m.f.d. condenser right across the coil, and 1½ volt "C" battery in the grid return circuit of first valve (oscillator). These two refinements ensure smooth, even working at all positions of the oscillator condenser.)

If you are in any doubt as to whether the oscillator valve is oscillating, the following is a reliable test. Touch the grid terminal of the oscillator valve, if it is oscillating correctly a click will be heard in the loud speaker when the finger touches the terminal, and again when withdrawn. If it is not oscillating, a click will only be heard when the terminal is touched and not when the finger is withdrawn. Failure of the tube oscillating may be due to incorrect wiring of the oscillator (see our drawings), faulty "C" battery, or sometimes to an old valve that is inoperative. We are returning your drawing with necessary refinements added.

A Manly reader writes in great distress:—Having read in your valuable paper that a "C" battery is an advantage in valve receivers, I bought one for my three-valver. In an April copy of "Radio," I saw described how to connect a "C" battery. It read: "First link the two F terminals of the audio transformers, and take a lead from this link to the negative terminal of the 'C' battery." From the positive of the "C" battery another lead is taken to the negative "A" battery connection. Re the link to transformers, I understand this means to link the only F terminals of each transformer together, and then connect to the negative "C." This being correct, I have connected up accordingly, yet each of the two "C" batteries used have lasted me three days. Please advise me why this is so.

A.: Those instructions are correct. Without the "C" battery, the two F terminals would be joined direct to negative A. The "C" battery simply forms an extra negative bias by joining it in series with this connection, the negative C going to the F terminal, and the positive C to the negative A. You have apparently left your old negative A connection joined to the F terminals as well as adding the new ones. If so, this has short-circuited your "C" battery, and has not effected any improvement in tone. We are forwarding you an explanatory drawing.

D.X.N (Bull): Resistance of potentiometer 400 ohms, grid condenser .0025, by-pass condenser 1 or 2 m.f.d.

I have the two-valve set which was published in "Wireless Weekly," January 1st. It has worked well until a few days ago, when I installed electric light, and now the reception is very much upset. A loud hum is there, which can be cut out slightly by the Bradley leak, but not successfully. Can you suggest a way of eliminating the hum, or at least reducing it to the stage where it would not be so annoying?

A.: You should change the position of your aerial, so that it is as far away as possible from all electric cables. If you have already tried this and the hum is still present, use a counterpoise in lieu of the earth.

Will you please give me some information regarding the qualifications necessary to obtain a transmitting licence?

A.: Receiving and sending Morse signals at a speed of twelve words per minute. A general knowledge of the theory governing the reception and transmission of radio signals. A sound practical knowledge of the circuits you propose to use in transmitter. We are at present running a special course of instruction in "Radio," which should be very helpful to all experimenters, whether they desire to become transmitters or not.

The following query should act as a warning to all home-constructors of super-hets, not to omit any of the fixed condensers recommended by "Wireless Weekly."

W.G.R. (Bundarra): I have wired up a super-het, but cannot get more than faint carrier waves on the second audio. My wavemeter says the

**BURGESS—"Power!
Harmony! Endurance!"
—BATTERIES.**

Reliable Radio Requisites

At the Lowest Possible Prices in the Land

	s. d.		s. d.
Ebonite Sheet for Panels: High grade, 3/16in. thick, per sq. inch	0 ½	Valve Sockets: Standard 201A American	1 11
Bakelite Sheet: Highly polished, ¼ in thick, per sq. inch	0 ¾	Valve Sockets: Standard 201A American, anti-vibration	4 6
Bus Wire: Square tinned copper, per dozen, 2 ft. lengths	0 10	Crystals: Russells Hertzite, 1/6; Neutron	2 3
Headsets: Only a few pairs left, Jacobs' 4000 ohms, pair	12 6	Glass Enclosed Crystal Detector: Beautifully made	2 6
Lead-in Rods: Ebonite with brass terminals, 6 in., 1/-; 9 in., 1/3; 12 in.	1 6	Carborundum Fixed Detectors: The supreme detector	11 0
Valve Sockets: Standard English pattern	0 9	Amperites: The automatic filament control	8 0

RADEX

Type 201A. 6 Volts. .25 Amps.

7/6

VALVES

Type 199, with the New Standard Base as in 201A .06 Amps.

	s. d.		s. d.
Wooden Rotors: For variocouplers, 3¼ in., 9d.; 3 in.	0 7	Jacks: Non solder type, double, 4/3; single	2 6
Phonograph Adaptors: Adapt your phones to gramophone	4 3	Gridleaks: Standard Ajax, 1, 2½, 3 or 5 megohms	1 0
Certified Low Loss Condensers: Size, .00035	12 0	Grid Condensers: With clips, .00025	1 9
Sterling Square Law Variable Condensers: 21 plates	13 6	Fixed Condensers: .0003, .001, .002	1 6
RCC Variable Condensers: With brown ends, .001	10 9	Crescent Audio Transformers: 6 or 3½ to 1	13 6
Midget Low Loss Condensers: Five plates, each	3 0	Extension Phone or Speaker Cords: 20 ft.	5 9
Loop Aerials: Grodan loop aerials	39 6	Extension Phone Cord: By the yard, per yard	0 6
Jacks: Regular type, double 2/4; single	1 9		

Our Batteries are always fresh.

Ever-Ready B Batteries, 60 volts, 18/-; 42 v., 12/6, 30 v., 9/6
 Large Size 60 v., 31/6. * * Large Size 42 v., 21/-

	s. d.		s. d.
Columbia Dry Cells: 1½ volts	2 9	Type DFG, 2 volts, 16/-; 4 volts, 32/-; 6 volts, 45 A.H.	48 0
Exide Accumulator Batteries: A really high grade article in glass containers.		We pay carriage on orders 10/- and over, except on Batteries and Loud Speakers.	
Type DTG, 2 volts, 8/6; 4 volts, 17/-; 6 volts, 20 A.H.	25 6		

"Yours for Lower Prices"

The Economic Radio Stores

25 ROYAL ARCADE

(3 Doors from Pitt Street, right side)

SYDNEY

569 HUNTER ST. WEST

NEWCASTLE

Phone M3409

set is oscillating at various wavelengths, as I alter the first oscillator condenser dial, also there is a shrill whistle all the time, heard on loud speaker. What is the cause of this? After tuning for an hour, I gave the oscillator condenser a spin round, and the movable plates struck the fixed ones and burned out my nine valves. This occurred twice. What can I do to avoid a recurrence?

A.: To avoid burning out valves, place a .006 m.f.d. fixed condenser in series with the oscillator condenser, and be careful to see that the negative A and negative B are linked together.

If a short circuit then takes place you still have an open circuit for the high tension, due to the presence of the fixed condenser. The shrill whistle of which you speak is either an audio howl, which may be caused by using valves with too large an amplification factor. The second audio may be too close to the intermediate frequency transformer, or one or more of the intermediate frequency valves may be oscillating.

Only one stage of audio should be necessary with a receiver of this type, and we would advise you to remove 1 stage. You will then have more room to spread out the other components. Read carefully our article re operation of super, published in this issue.

CHANGE OF NAME.

Some time ago, an amalgamation was effected between the firms of Keith Stokes Pty., Ltd, and Gelston S. Gow. In future, this concern will be known under the name of The Metropolitan Electric Co., Ltd. The firm have recently added to their already extensive factory a more modern plant and further equipment, so that they are in an excellent position to deal with the particular class of work in which they are engaged.

REPLY TO CORRESPONDENT.

"Reader," Melbourne: Thank you for your congratulations. Your good wishes cordially reciprocated.

HOSPITAL RADIO.

In Memory of Nephew.

In memory of his nephew, David Henry Stewart, who lost his life at Corrimal Beach last Easter, after saving a companion from drowning, Mr. F. H. Stewart has presented to the

Western Suburbs District Hospital two up-to-date wireless receivers operating off one aerial. The receivers feed to amplifiers, which in turn provide a service to 67 bedside headphones, in addition to a loud speaker in the children's ward, and another in the nurses' quarters.



MY LADY INCOGNITO.

Miss Marie La Varre, the well-known musical comedy artist, who broadcasted from 2FC on Monday, August 9th. The identity of Miss La Varre was not disclosed, and listeners were invited to send in the name of the artist to 2FC.

Among other hospitals now equipped with radio, or for which funds have been raised for the purpose, are Royal Prince Alfred, Children's Hospital, Ryde Home for Incurables, Waterfall Sanatorium, Royal South Sydney Hospital, and the Lazaret, Coast Hospital. Movements are on foot also to equip Sydney Hospital and Royal North Shore Hospital. Experience has shown that as soon as a patient is well enough to listen-in, the cheering influence of radio substantially hastens recovery.

Following this, Mr. Raymond Ellis, the English baritone, when singing over the radio said that he hoped his singing that night would help to cheer up those who were confined to their beds through the railway smash. Miss Marie Burke has also written to Mr. Ellis, and said that although she had not heard his voice since they were students together in England, it came through on the air with such perfect intonation, that she at once recognised it as that of her old friend. In view of funds having been raised lately to equip so many of our hospitals with wireless, the foregoing incidents demonstrate what a great part radio can play in alleviating suffering.

Manufacturing Products Sales Co. (M.P.)

(H. J. HAPGOOD)

Challis House, Martin Place
SYDNEY

Tel.: BW 6753.

Agents for all styles of Radio Products.
Agents for Clyde Batteries.
Elec. Meter Mfg. Co., "Emuco."
Benrade Condensers, Leaks and Fixed Rheos.
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In New South Wales for Louis Coen Pty. Ltd., Melbourne.

Write for Special Catalogue.
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We represent 34 Foreign Radio
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Slingsby & Coles —Ltd.—

(Opposite Marcus Clark's
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Marvelous Talking Tape, 7/6
Complete Valve Sets and Parts
(Cash or Terms)

Loud Speakers and Headphones,
All Types in Stock



The Reliable Radio House

Foreshadowing a new era
of truly successful reception
for Radio enthusiasts



The World's Highest
Efficiency Valves

Now Obtainable from
All Reliable Dealers



RADIOTECHNIQUE

SCIENTIFIC SUPER VALVES

At Last!—Valves that satisfy in every feature of service—POWER EFFICIENCY and LENGTH OF LIFE. Radiotechnique Valves are the product of years of research and experimentation by the best brains in France, at the famous laboratories of La Radiotechnique at Paris.

Radiotechnique Valves are used throughout the French fighting forces and broadcasting stations; but only now has it been possible to secure them for Australia.

Radiotechnique sets a new standard of SUPER QUALITY VALVES AT LOW PRICES.

RADIO MICRO—

The low consumption detector or amplifier; filament 2-2.5 v.; .60 amp.; plate 40-80 v. PRICE 12/6

RADIO AMPLI—

Detector and amplifier; filament 2.5 v.; .7 amp.; plate 40-80 v. PRICE 8/6

SUPER AMPLI—

Type 201A, Detector; high and low frequency amplifier; filament 3 v.; .25 amp.; plate 40-80 v. PRICE .13/6

RADIO WATT—

Power Valve and Low Power Transmitter; filament 2.5-3.0 v.; .85 amp.; plate 80-200 v. PRICE 32/6

OBTAINABLE WITH ENGLISH OR AMERICAN BASE.

PUT RADIOTECHNIQUE VALVES IN YOUR SET, AND NOTE THE IMPROVEMENT
ASK YOUR RADIO DEALER

If difficulty is experienced in obtaining supplies, communicate with Factory Representatives for Australasia—

BROWN & DUREAU LTD.

BROUGHTON HOUSE, CLARENCE ST., SYDNEY; and at Melbourne, Perth, Wellington and Auckland, N.Z.

LAND LINE TRANSMISSIONS

(Continued from Page 5.)

the line so that if they had been wanted, they could be reached immediately, and at the same time, of course, they were able to listen to the whole transmission taking place. The officials of the State Engineers' Department take a particular pride in the success of these land line transmissions, and some idea of the thoroughness of their preparations may be had from the fact that a rehearsal was held on the night before the actual transmission took place to see that everybody was well instructed, and to guard against any possibility of a slip. This rehearsal was conducted just as if the transmission were taking place, so that success was assured.

Following the Transmission.

It is intensely interesting to trace this Kosciusko transmission right through from start to finish, and it is but another indication of the marvel of broadcasting to realise that the music from the ballroom in the Hotel Kosciusko, after being taken over 300 miles of line passing through the great open stretches of the outback, over hill and dale, until finally it was flashed on the air from the aeriads at Pennant Hills, was heard almost instantaneously by listeners situated thousands of miles away.

At the Hotel Kosciusko, the microphone was placed in the ballroom for the Saturday evening transmission, and on the Sunday morning was removed to the balcony where the announcer, having a clear view of the vast sports area, was able to describe to listeners-in the games as they were actually in progress. From the microphone, the speech and music were passed into an amplifier for the purpose of "boosting" up the strength in order to overcome the resistance of the land line; thence to a second amplifier to add further amplification, and so on, to the line. Studying the chart, the course of the signals may be traced through Jindabyne, Cooma, Queanbeyan, and Canberra, to the telephone room at Goulburn, where they passed into the amplifier operated by Mr. Weir and flashed on the line to Sydney. From the test room at the G.P.O., the music and speech

were carried into a special amplifier at the 2FC studio, thence to the station at Pennant Hills and so out on to the air. From the commencement of the broadcast at the Hotel Kosciusko, the whole transmission was watched and checked up ceaselessly by the officials at seven different points, in addition, of course, to the 2FC engineers stationed at Kosciusko and at Pennant Hills.

While the novelty of land line transmissions may have worn off, the difficulties in the way of each transmission must always be present, and the reader will realise from this article that it is only the resourcefulness and efficiency of the P.M.G.'s. Department, coupled with the modern methods employed by the broadcasting station, which make it possible for listeners in to enjoy them.

LONG DISTANCE "GOOD-NIGHT."

Before the advent of radio, it would have seemed an absurdity if we were told that a child could say "Good-night" to its parents thousands of miles away, but with wireless this is now a matter of every-day use. The significance and wonder of it was emphasised a little more plainly by an incident which happened in the 2FC studios on Thursday night, July 29th. Their Excellencies the Governor General and Lady Stonehaven, having arrived at Longreach by aeroplane on the Thursday, were advised that at the public reception held in their honour that evening, a concert broadcast from 2FC Sydney would be given to the audience. Their Excellencies expressed a hope that it would be possible for their two children to send them a message. A wire reached 2FC Studios on Thursday afternoon, but the two children were at Palm Beach having a picnic. However, Mr. Anderson, the 2FC Broadcasting manager, overcame the scruples of the Aide de Camp, Captain Davison, and the governess, Miss Chamberlain, against keeping their charges out of bed so late, and they were brought to the Studio at 8.30, being very sleepy after a long day in the open air, but very anxious indeed to be able to speak to their father and mother. They could not realise the vast distance separating their parents from 2FC Studios, and the magical mystery

whereby the little black disc in front of them would carry their sleepy "Good-night" message to their parents. The greetings were successfully received in borne out by a telegram received by Farmer's Broadcasting Studios next morning, direct from His Excellency Lord Stonehaven, advising that the wireless message was received and was greatly appreciated.

ALL FORGIVEN.

On Wednesday, July 28th, 3LO broadcast a special loyal message to His Excellency the Governor General, who was at Longreach, Q. The message read, "For the first time in history, Victoria sends you a wireless message personally delivered. It is—
"Come home at once, and all will be forgiven"

2FC'S MAGIC CARPET.

A most novel and interesting night has been arranged by 2FC for listeners-in on August 26, when the feature "From Sydney to Baghdad on 2FC's Magic Carpet" will be presented. Studio artists will illustrate with music the various countries visited, and Major H. Sandford Morgan, D.C.M., assisted by his wife, Mrs. Doctor Morgan—in such travelled people—will describe and give anecdotes of the various towns until we reach "the cradle of mankind."

ANOTHER LANDLINE TRANSMISSION.

Landline transmissions are being taken up very seriously by 2FC, who have now finalised arrangements for broadcasting the Caledonian Concert at Dubbo, on August 25th. A new organisation, known as the Royal Scotch Kilties, have been specially engaged to appear at the Caledonian Concert. The members of this party comprise Miss Jean Graham, contralto; Stuart Peters; Mr. R. M. Baxter, Scotch tenor; Mr. James Brash, accompanist and musical director. The whole of the concert will be given by these artists, who will present songs and stories of Scotland, and 2FC has received the exclusive rights to the transmission from Dubbo—another long distance programme. Dubbo is roughly 280 miles from Sydney.

How the Wuncell defies old age

The Key to the Ether
"ALL BRITISH"

OLD friends, they say, are best. The longer one uses the Wuncell Dull Emitter, the more one appreciates its many sterling qualities—its supreme sensitiveness—its outstanding ability to produce a wonderful mellowness of tone—its complete freedom from microphonic noises—and, above all, its unvarying high standard of performance.

Owing to its unique filament, found in no other valve, the Wuncell is essentially a LONG-LIFE VALVE. It is one you can choose with complete confidence, knowing that it will give you a long period of faithful unremitting service. A Dull Emitter, in fact, worthy of the reputation enjoyed by Cossor throughout Australia.

Wuncell superiority is due to two great fundamental features. The first is its triple-coated filament. This filament, instead of being whittled down to the point of fragility in an effort to ensure low current consumption is built up layer upon layer until it is practically as stout as that used in any bright emitter. Yet so prolific is it in electrons that at a temperature of barely 800°—less than the embers of a dying match—the Wuncell is operating at its best. Compare this with the many types of so-called dull emitters which function only when their filaments are at white heat. Because of this special process of manufacture the Wuncell filament is exceptionally sturdy and able to withstand scornfully all the rigours of everyday use.

But the Wuncell filament is only one feature. It would be of little advantage producing a perfect torrent of electrons at a low temperature if the ordinary type of Grid and Anode were employed. In any valve the only electrons of any importance are those reaching the Grid and the Anode. If the ends of the Anode are open a considerable proportion of the electron stream must escape only to be wasted. For this reason, therefore, the Wuncell utilises standard Cossor construction. Its arched filament functions within a hood-shaped Grid and Anode. Practically every electron given off by its barely-glowing filament is usefully employed.

This greater efficiency—coupled with its triple-coated filament—is responsible for a volume and purity of tone which has yet to be equalled. It is small wonder, therefore, that wireless enthusiasts, disappointed with the fragility and uncertainty of ordinary filaments, have turned eagerly to the Wuncell—the one Dull Emitter which admittedly DEFIES OLD AGE.



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Radio Auction Bridge

(Continued from Page 9.)

discard by North was made for the purpose of telling his partner that he holds the king, and that South will be safe in leading the diamond suit.

South leads the ace of diamonds. If he had had a trump, he would have led it, in order to prevent at least one club ruff, but being void of trumps and with the knowledge that his partner holds the king of diamonds, the three of diamonds is his proper lead, so that his partner may win with the king and lead a trump. Dummy follows with the four, North plays the king, and East trumps with the three of hearts.

East's strategy having been successful, he now proceeds to play along the lines which he had mapped out. He leads the three of clubs, South plays the six, Dummy trumps with the king of hearts, and North discards the two of diamonds.

Of course, North at this stage can read his partner's diamond holding properly. He also knows that his partner has no trumps otherwise he would have led one. Therefore, he can see that South held originally six diamonds, at least five clubs, and probably only two spades.

Dummy now leads the eight of diamonds, North plays the six, East trumps with the six of hearts, and South plays the three of diamonds.

East leads the four of clubs, South plays the seven, Dummy trumps with the ace of trumps, and North plays the four of spades.

Dummy leads the nine of diamonds, North discards the five of spades. North realises that holding only four small trumps, it would be useless to play one of them. Declarer trumps with the seven of hearts. South plays the five of diamonds.

East now spreads his hand, announcing that he will exhaust the four outstanding trumps, and his ten of clubs in his own hand and ace of spades in Dummy are good. Therefore, he makes the remainder of the tricks, scoring a Little Slam.

In Auction Bridge, one of the most powerful hands that can be held is the so-called two suiter, similar to

the hand held by South. When holding a hand of this character, it is advisable, if at all possible, to show both suits to partner, and to let partner make the choice as to which of the two best fits his hand. Also, when bidding a two suiter, it is as a rule, wiser to show the suit of higher value first, even though the higher valued suit be slightly weaker than the other one. In this case, South's higher suit, that is, his diamonds, is stronger and longer than his club suit, so that his original bid of one diamond was correct.

Many players would have been tempted to make a pre-emptive spade bid with West's holding, not taking into account that there are six possible losers in the hand. If you will play this hand over with spades as trumps, and West as the Declarer, you will find that against proper defence, the best he can make is three odd.

South's bid of five diamonds would have been defeated, of course, but it would have been a slight sacrifice in order to prevent opponents obtaining the Little Slam that they did. I suggest that you also play this hand over with South as the Declarer, playing five diamonds as his contract, and see what the result would be.

In the play, your attention is again called to the opening lead by South. Very few players of Auction Bridge pay sufficient attention to defensive play, many tricks being lost by an incorrect lead. Of course, if South had been sure that his partner had the king of diamonds, he could have started at once with his ace of diamonds, which, as it turned out, would have been a good line of defence, but he was wise in endeavouring to establish a trick in clubs just as quickly as possible.

The discard of the knave of diamonds by North, on the second round of clubs, was purely informative, as the play of an unnecessarily high card in this position showed his partner that he held the king of diamonds. Advantage should be taken of every opportunity to give your partner information.

East played very shily as Declarer. There were two courses of procedure open to him, the one which he adopted, and another line of play consisting of leading the three of spades

from his hand and taking the spade finesse in Dummy, with the possibility of discarding three of his losing clubs on Dummy's spades. However, there was a chance that the spade finesse might fail, and if so, he would not have made a Little Slam. Then, too, he did not know that South held no hearts. If he had adopted this second method, you can see that the play would have been quite complicated, although very interesting, and it is still possible for him to make a Little Slam. I think you would enjoy trying to see whether you can make a Little Slam in East's place by leading the three of spades to the second trick and finessing the ten in Dummy.

QUERIES ANSWERED.

"J.C." (High Street, Granville): Your analysis of the hand, broadcast on July 28th, as you consider it should have been played interested me, but I presume you have worked with all the hands exposed. We played without the cards exposed. On the bidding, West could hardly expect to find the knave and ten of spades in East's hand, and without knowing where these two cards were, West would never lead the king of spades, in actual play, with the ace on the table, although as you say he had every expectation of not making it. The lead of the king certainly stops game.

"C.J.S." (Ashfield): Thanks for your suggestion. Have passed it on to Manager of 2FC.

"M.A.P." (Remurk, S.A.): Hope you are still getting the Bridge hands clearly. North, on July 21st, knew on the bidding that South's secondary strength was hearts. He, therefore, bids four hearts, and if he is doubled it would be time enough then to consider going four spades.

"C.C.H." (Cremorne): What is the correct lead when (1) your partner bids, but doubles the opponent's higher bid? (2) Your partner does not bid, but doubles the opponents? In No. 1 lead the highest of your partner's bid. In No. 2 lead from strength, preferably a card that will retain the command so that you can see Dummy without losing the lead. Failing strength lead from absolute weakness; this deceives the declarer, but not your partner.

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MISS MURIEL HUMPHREYS.

The lady whose photograph appears above is Miss Muriel Humphreys, who earned for herself a great deal of popularity as the winner of the 2FC Radio Voice Competition, which listeners will remember was held in 1925. Miss Humphreys is the possessor of a charming personality and a contralto voice, which has made her a great favourite with listeners-in from 2FC.



Miss Jean Hibbard.

A 7ZL STAR.

A young lady, whose talents have won her many admirers from 7ZL is Miss Jean Hibbard, a Tasmanian vocalist, possessing a charming mezzo-soprano voice of individual quality. She is an ardent broadcast enthusiast, is a pupil of Mme. Lucy Atkins, of Hobart, and is a regular feature of the Tasmanian station.

Programme Personalities

MR. S. H. BOWDEN.

The lecturettes on London and the Continent, broadcasted by Mr. Bowden from 2FC, have been character-



Mr. S. H. Bowden.

ised as "the next best thing to travelling." Possessed of a real knowledge of the world's great metropolis, and the highways and byways of the Continent, Mr. Bowden is well able to deal with this most interesting subject. He has already established himself as a firm favourite from 2FC. His association with Madame Emily Marks, soprano, in connection with the "Street Cries of Old London" production from 2FC, was appreciated.

A MUSICIAN ABROAD.

Mr. Cyril Monk, one of Australia's best musicians, has returned to Sydney, after an eight months' trip practically around the world, having in that time visited, in company with other well-known musicians of Sydney, the continent of India, Great Britain, and America. Mr. Monk talks very entertainingly, and a series of these talks have been arranged with 2FC, commencing on Friday evening, August 20th, and continuing each Friday night until the series is exhausted. Mr. Monk will deal each night with the various phases of his trip, and will illustrate with violin solos, the various characters of the different countries dealt with by giving typical national music.

PROMINENT BAND CONDUCTOR.

Amongst the most popular numbers broadcast by 3LO Melbourne, are the band selections by the Malvern Tramways Band. During the last eleven years, the Malvern Tramways Band has won eight top grade competitions against the picked bands of Australia and has also won the championship of New Zealand.

Mr. Shugg, the conductor, has been connected with bands since he was nine, and his father was a bandsman before him. When 19, he became bandmaster of the Geelong Harbour Trust Band. After he had had this band for 10 months, it won the "B" and "C" grade competitions at South Street, and four years later won the



Mr. Shugg.

Australian "A" grade championship. Eleven years ago, Mr. Shugg became bandmaster of the Malvern Tramways Band, which has, since then, won 14 of the 16 competitions in which it has competed. Mr. Shugg is also conductor of the Geelong City Band, and is a well known adjudicator in band competitions. In this capacity, he has travelled all over Australia and New Zealand, and has judged more than 25 competitions.



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CO-OPERATION WITH NEW ZEALAND.

Writing to us on June 30, Ralph Sangster, Managing Editor, "Radio, N.Z.," suggests that co-operation with regard to wavelengths should be secured between the Australian and New Zealand authorities, in order that a comprehensive policy may be adopted. The wavelengths for New Zealand are shortly to be revised. Australian stations are often preferred by the Maoriander with a good set, and it is possible that this feeling may be reciprocated by listeners-in in Australia. In any case, Australian stations are received so well in New Zealand that interference between the carrier waves of New Zealand and Australian stations is quite possible unless co-operation between the two countries ensures its elimination.

FOUND BY RADIO.

A teamster at Coramba, North Coast, who has a small wireless set, was listening in to a concert in Sydney a few nights ago, when he heard a message from the police giving the

description of a man named Harrison, who was asked to return to Sydney immediately as his wife was seriously ill. The teamster gave the message to Sergeant Smede, of Coramba, who, on making enquiries, found a man answering Mr. Harrison's description had passed through Coramba to Coff's. Sergeant Martin, of Coff's, was informed, and found he had left for Macksville. The police at the latter town were notified, but the traveller had moved on to Kempsey. At Kempsey, the police located Mr. Harrison, gave him the message, so that he was able to board the Sydney train immediately.

COUNTING THE COST.

A Canadian contemporary estimates that a broadcasting station that furnishes a regular programme by high-grade artists, and whose equipment furnishes an output of dependable quality and steadiness, costs in the vicinity of from thirty thousand to fifty thousand dollars a year to operate.

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RADIO IN HOTELS.

As a result of the Sydney broadcasting stations devoting practically the whole of Saturday afternoons to the announcing of racing and other

sporting results, as well as giving sport a prominent place on the programmes daily, many licensed victuallers in country hotels are turning their attention to radio as a means of keeping their patrons informed of sporting affairs. A number already have receiving sets installed, by means of which they learn the results of races within a minute or two of the finish. These are posted in the bar

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Messrs. C. C. Wakefield and Company, Ltd., whose head office in London have arranged the flight of Captain Cobham to Australia, have, in collaboration with Farmer & Company, Ltd. (Station 2FC), arranged for an exclusive description of Captain Cobham's landing at Darwin, and his subsequent flight through to Sydney, his reception at the aerodrome by the Aero Club, and his journey to Melbourne, to be broadcast by Station 2FC. A special plant will be installed at the Aerodrome at Mascot to broadcast speeches in connection with Captain Cobham's reception.



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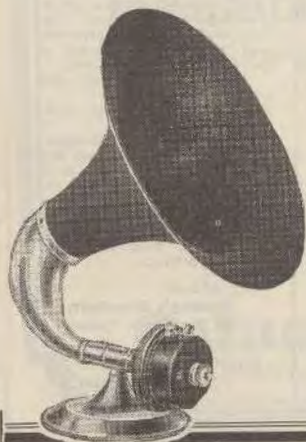
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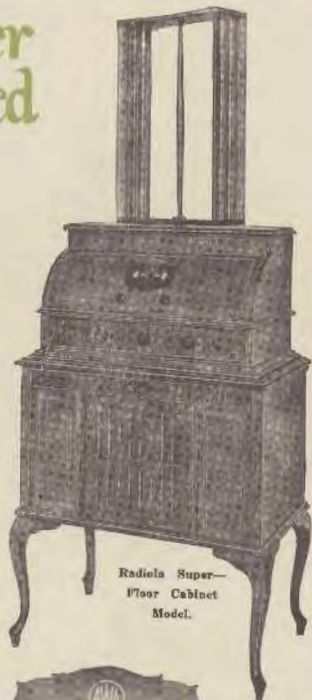
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