

WIRELESS WEEKLY

Vol. 9. No. 10.

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Friday, Dec. 31, 1926.

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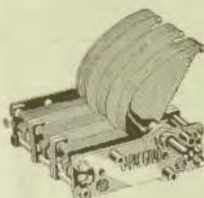
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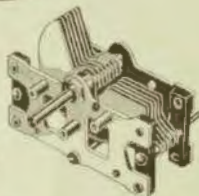
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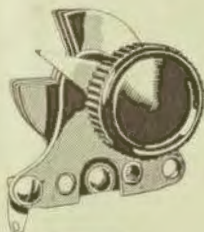
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WIRELESS WEEKLY

VOL. 9. No. 10.

FRIDAY, DECEMBER 31, 1926.

The Truth About Radio

RADIO is wonderful enough as it is . . . without exaggeration. There is a great deal of exaggeration about radio bred by enthusiasm, the lure of the game, its newness and the general lack of knowledge of this newly discovered force. Any radio engineer states frankly that there are many things in radio that no one can yet explain. A real radio expert is very conservative about his claims; while he is familiar with the wonders of this new plaything of man, he also knows its limitations. If all who sell radio would be equally frank there would not be so many dead sets, or so many disillusioned buyers. Radio is wonderful enough as it is, without exaggeration.

First: You cannot get both long distance and quality of reception at the same time. It must be one or the other. If your eyes sparkle at a "squeak" from Perth be satisfied. If however, you want music that is real music, don't try Perth.

Second: You cannot get both high selectivity and quality. If you thrill at bringing in stations from all over the map, be content with that. But if you want clear sweet tones, limit yourself to nearby stations.

Third: Don't buy a radio in a store. Buy it in your home. Your home may be in a radio pocket, if so, the best radio set in the world will not get results. Science cannot yet explain why you might get results and your neighbour in the next street get nothing at all.

Fourth: The broadcasting station has as much to do with radio results as your receiving set. The art of broadcasting is still in its infancy, and you may expect the next big advance from that end.

To be true, there are exceptions in the statements just made. Some night the rankest radio amateur may bring in GWF with music clear as a bell. Sometimes and under certain conditions a cheap crystal set will get better results than a hundred pound wonder, but the exceptions are rare and never certain. In all the clamour of claims for radio sets, valves, speakers, and radio devices without number—in all the talk about distance selectivity, tone and what not—keep your mind clear. With radio you are at the mercy of natural forces entirely beyond the control of your receiving set which dictate your results. Let's be fair about this thing. Exaggeration is so unnecessary. The truth about radio is wonderful enough.



Between You and Me and the Microphone

Conducted by
R. E. CORDER



HE WAS just a small black beetle and he put 2GB off the air for several minutes last week. But he gave up his life to do so, and the engineer found his body between the plates of a condenser.

RADIO RECEIVING SETS are now installed on some Wellington, N.Z., taxi-cabs. The idea is to give added interest to sight-seeing and evening trips round the waterfront drives. An additional 295 metres for the fare is rather an appalling thought.

A SPLENDID CHRISTMAS Box was presented the the Sydney Hospital when 250 volunteers working under the direction of Messrs. R. Maxwell, H. W. Park and E. Telfer, of the Electric Light Department, in one afternoon wired up 400 points providing for a hand telephone at each bed in the Hospital.

THE VOLUNTEERS were members of the Australian Postal Electricians Union and the Amalgamated Postal Union (Construction Branch). The Vidisco Receiver which is being used at present at the Hospital was loaned by United Distributors Ltd.

THE WINNERS of Mr. E. J. Van de Velde's essay competition at 2FC are as follows: First: Dick Cash, Post Office, Thirlmere, N.S.W.; Second: Hilda Ashworth, Avonlea Beach; Third: Bonnie Atkinson, Park Street, Hamilton, N.S.W.; Fourth: Lillian Ward, Oyster Bay Road, Como; Fifth: Kenneth Compagnoni, Grace Street, Lane Cove.

THERE ARE now 513 radio transmitting stations in Canada. Of these, 67 are broadcast stations, 356 are amateur and experimental, 67 conduct regular telegraphic communication between points in the Dominion or with stations abroad and the balance of 48 are operated to provide facilities for communication with an "aid to navigation" service to ships on the Great Lakes, Atlantic and Pacific. All radio communication in the Dominion, including broadcasting, is controlled by the Canadian Government Department of Marine and Fisheries.

THERE COULDN'T have been enough juice in the receiving set which caused this little tragedy in the home of the newly weds on Christmas day.

Husband: "Hm, funny pudding, this."

Wife: "Yes, dear. That's as far as I got with the recipe when the radio broke down."

BUSHEMAN'S TRIBUTE TO 3LO

To just two years since 3LO with wireless came my way.

And for the worth its shown to me, I bless its natal day.
So here's long life to 3LO, the best friend I have met

To help me in my daily work, my worries to forget,
No more the time need bother me, when watch and clock have stopped,

For wireless waves keep passing on the hours I've forgot,
No more need wealth with out-stretched arms forbid my access here.

Where science keen and art supreme have stored their treasures care.

I have had a feast of music, old masters by the score.

And heard the stars of opera, with the well-deserved encore;
And listened in with head breath when Thyne and Clapham met in a bout of strength and counterpoise, which no sportsman will forget.

I have heard the pleasant service on each Sunday afternoon,
And felt with many others such a service was a boon.

Again when falls the eventide, I hear the service sweet
By radio from that stately church beside the busy street,
Sometimes beside an ocean wide, lounge or leagues away.

My travelling friends their ears will lend to 3LO each day.

And so life goes rolling on apace, when lo, one night, behold,
One V. U. Brown with good renown, his tales of old unfold;
So well did he portray the past, the gloried days of old.

When peer and peasant, side by side, joined in the search for gold.

That I felt I was back on the old bush track, with the men I need to know

With a horse and a pack in the great out-back where men would a-riding go.

MR. C. D. MACLURCAN, the well-known Australian amateur, has been admitted an Associated Member of the Institute of Radio Engineers (America). We sincerely congratulate 2CM upon this most worthy achievement.

PASSING ALONG the railway line between Brisbane and Townsville it is now a common thing to see an aerial running from a tree to a line-man's camp. No doubt many long evenings under canvas are brightened by programmes from broadcasting stations.

THE SEA has its listeners also, as is demonstrated on the "Wollongbar," a trader between Byron Bay and Sydney. Her purser, a wireless enthusiast, has his set installed in the music room. Another ship with an enthusiast is the "Canberra," who's chief engineer has a fine set.

MR. W. MATON, of Southampton, England, has received permission to erect a wireless exchange and supply broadcasting from his own set to twenty neighbours, for a fee of 1/6 per week, per subscriber. The British Postmaster-General has no objection to the scheme, provided that he has a wireless license himself, and that all his "subscribers" have one.

AN ALL-NIGHT international chess match was held recently between Manila, in the Philippine Islands, and Shanghai, the Filipino chess champion playing a match from a local amateur radio station against a combination of Chinese champions located in Shanghai. The various moves were transmitted by amateur stations in each country, with Mr. Manuel Felizardo, Philippine IAU, handling the transmissions from Manila. The match was won by the Chinese players.

First Subscriber: "Sorry, old man, my cat got mixed up with your wireless set and broke a couple of valves."

Second Ditto: "That's all right. My dog ate your cat."

First Ditto: "Fine! I've just run over your dog."

RADIO in 1977

A New Year Forecast

By E. T. FISK

Managing Director of Amalgamated Wireless (Australasia) Limited



In less than sixty years the art of electrical communication has developed from the stage where Australia was a remote continent, separated from Great Britain by a perilous sea voyage of from two to four months, to its present-day stage, where scores of enthusiastic amateurs in Australia exchange nightly greetings with others in England, America and other parts through the agency of ether waves, which leap from Sydney to London in a twentieth part of a second, and by means of a comparatively simple piece of apparatus which occupies the space of a small table in a private residence and requires no physical conductor to send and receive its messages to and from the remotest parts of the earth.

With the knowledge of the above facts, reinforced by twenty years' active work in all branches of wireless, I am asked to project my mind fifty years ahead from now and to tell the readers of this journal what I think will be happening in the world of wireless at that time. In view of what has occurred during the past fifty years, and of the far greater scientific knowledge which the world holds to-day, and in consideration of the yearly increasing activity and intensity of life shown by all nations and all grades of society, and the growing material wealth of the world generally, the wireless possibilities of the next fifty years almost stagger the imagination.

One great benefit which I believe will arise out of the remarkable knowledge we are now building up of electro magnetic wave action and the electronic theory of matter as a result of our attention to wireless communication, will be an entirely new understanding of the make-up of

the human body and the conditions of human life, which will enable us to overcome many of our present-day limitations and extend the life of the individual far beyond what it is to-day. I think that knowledge will be available to all in simple terms, and will be regularly distributed throughout the world by the greatest scientific minds of the day so that everyone who cares to listen and tries to understand will become more and more his own physician, and will be able to control the conditions of his own life and its duration to a far greater extent than is practicable to-day. A normal life of 120 years, instead of 70 years, does not, to me, seem to be beyond the bounds of possibility by reason of this new field of knowledge and the new means of its dissemination.

One of the greatest desires hidden in the minds of at least 90 people out of every 100 is to travel afar to hear and see the activities of other people in their own country and abroad—to witness by sight and hearing the natural and artificial wonders of the world. In fifty years from now none of these things will be remote from us.

We shall be able to sit in our own homes in any part of Australia and see and listen to any of the important happenings of the world that we may choose as and when they occur. If our fancy lies in the direction of Transatlantic airship races, which should be a common feature then, we shall be able to watch the competitors as they rush at 200 miles an hour along the great arch in the air 3000 miles in length, which corresponds to its curvature with the curved surface of the earth. Since conservative ideas and the love of

THE last days of the old year are rich with retrospect, but the new year brings with it thoughts of the future. Having reviewed past achievements in the wireless world in a recent series of articles in this journal, I will take up the pen as a prophet in this article, which should be in keeping with the spirit of the New Year.

It is less than 55 years since Australia was first connected with the outside world by submarine cable, and it is only 25 years since Marconi first demonstrated his system of wireless communication in England. Ten years ago most people, including wireless authorities, would have looked upon the idea of a wireless wave spanning the distance between England and Australia as an impossible dream, and eight years ago wireless broadcasting, as it is known to-day, was unheard of.

old things will still exist in some people, the ancient ceremony of the Oxford and Cambridge rowing race on the Thames will also find many spectators in Australian homes.

When the leaders of thought in politics, science or art have occasion to speak to the public they will not, as they do now, make themselves uncomfortable by going on a platform in a public building, but they will speak from their own homes and will be seen and heard by a world-wide audience also, in the majority of cases, sitting in their own particular homes.

In short, the ether waves will draw aside the curtain of darkness and distance which to-day separates man from man and nation from nation. Home life will be a more prominent feature of existence than it is to-day, and, perhaps, than it has been in the past, because the scenery of the world, the entertainment of the world, and the knowledge and instruction of the world, will be continuously available at all hours in every home in the world through the medium of the ether waves, which, by their great speed, can travel nine times round the earth in a second, and which, as we know to-day, are capable of carrying with them vocal, instrumental and visual impressions of all kinds and great variety.

The knowledge to make this possible is almost available to-day, and we are witnessing the first stages of this great development in the spread of wireless telephone broadcasting. But in fifty years I believe we shall be able to transmit not only the sounds of the human voice and of musical instruments, but complete pictures, true both in color and perspective, of any sight, whether it be a work of nature, like the Victoria Falls of the Zambesi River, a work of art such as a ballet or theatrical scene, sporting events of all kinds from the winter sports of the Alps to the running of the Melbourne Cup, or political and industrial happenings of sufficient importance.

The sound waves and the light waves which represent such occurrences to those actually present will

be collected in special apparatus and by means of broadcasting stations of world-wide range will be sent almost instantaneously to all parts of the earth. In our homes we shall have simple instruments which will reproduce the sounds faithfully, and which will reproduce the scenes on a small white glass screen on a nearby table or a larger screen attached to the wall.

World-wide broadcasting will have arrived at the stage outlined above. But at the same time the methods of directing wireless energy will have become so perfected that it will be possible to send a wireless beam from London to Melbourne which will not touch the surface of the earth or the ocean at any intermediate point, and which, therefore, will be a channel for confidential and special communications by telegraph or for transmissions by special sounds and sights which are intended for reception at that one spot only. And these beams will be capable of being directed from one city in the world to any other city at will.

All communications such as are at present sent by mail will be transmitted by high-speed wireless telegraph services for little more than the cost of sending a letter to-day; and, in addition to this, we shall have personal and private conversations from our own homes to friends and acquaintances, in their homes, in other parts of the world through the agency of a secret wireless telephone channel. It will go to the nearest central station and there pass along a wireless beam path with hundreds of other similar communications going at the same time to the city for which it is intended, and not touching the surface of the earth or water at any intermediate point. This will be done because our knowledge of the methods of concentrating ether waves will be very considerable, and we shall use the various strata of the upper atmosphere for concentrating and reflecting our beams at will to any point on the earth.

In fifty years' time aerial transport will, of course, be common throughout the world, and one of its most important features will be the

supply of electrical energy to aircraft by means of wireless power beams. If, for the sake of illustration, we imagine a route between Sydney and London—which, of course, will be in the shape of an arc of an enormous circle—we shall have several of these beams at various altitudes, and each beam will carry energy at a particular frequency. The machinery of each aircraft will be equipped to collect and respond to a beam at a particular frequency, and it will follow the path of that beam throughout its route, thus keeping clear of other types of craft going in the same or in other directions.

For some purposes such energy will be transmitted through the earth by means of oscillatory currents at comparatively low frequencies, and for other purposes it will be sent at high frequencies through the atmosphere at various heights from ten to a hundred feet and more, according to the distance to be covered and the nature of the service. This energy will be collected as and when required for use in the dwellings and other buildings along its route, and our knowledge and skill will also be sufficient to design the necessary means of protection against improper or unauthorised use of such energy.

The trend of civilisation is not by any means to make life simpler. It will grow more complex with all these developments. But, at the same time, we shall be well compensated by its greater intensity, by our fuller understanding of Nature and of humanity in general, by the greater control we shall have over our own existence, and by the increasing degree of relief from physical drudgery and discomfort. By far the greatest benefit will come from the annihilation of distance, both in transport and communication, and the resultant far better understanding among mankind generally, the steadily decreasing Tower of Babel, and the consequent increasing tower of mutual understanding and human freedom which will result from the development and application of organised knowledge, which is commonly described by the word "science."

Radio "Props" or Sound Scenery

By Ten Van Eyck



The development of the radio play in America is far in advance of anything yet attempted here. At the request of the Editor of "Wireless Weekly," Mr. Ten Van Eyck, an authority on radio stage craft in the United States, gives here some of his experiences producing scenery from sound. In the picture above radio actors are seen brooding a tense moment in one of Mr. Van Eyck's plays.

NOT the least important personage in the radio drama group is the man who builds scenery out of sound.

It is not enough, in the production of a play by radio, to announce at the beginning of an act that the action takes place indoors or outdoor, at the shore or in the bush. The listener must gain his mental picture of the setting from the lines of the play and from supplementary sounds. These sounds are usually produced by the use of "props" but sometimes the most striking effect is gained by importing the sounds from the scene depicted. For example, the British Broadcasting Company placed a microphone at a busy London street corner and produced these sounds as a background for the lines of the playing cast. There are effects, however, that might be difficult of importation. For example, a forest fire

might not always synchronize with a play. At one American station some time ago, a most realistic forest fire was created by the use of a plumber's blow torch for the sound of flame and wind and by breaking up matches to simulate the sound of cracking, breaking, burning tree limbs.

Since the listener is unable to see anyone enter a scene, the character's presence is generally denoted by the closing of a door or by the lines. For this reason the doors in all the homes of the radio drama characters are apt to be squeaky affairs, and the slamming of doors which has won many a boy or girl a corrective word from parents, becomes a necessity.

I have found that the most difficult problem in the radio drama, demanding most in time and energy, is the production of sound-scenery. Actors readily throw themselves into character and in radio production it is not necessary to memorize lines. At most, two rehearsals of a cast are sufficient for a worthy radio performance.

The scenery is another question entirely, for the obvious sound is not always the most suitable to produce a certain effect. Hours and hours are sometimes devoted to devising a fairly accurate sound production. After the "props" necessary to create the sound have been found or built, radio rehearsals must be held in co-operation with the radio engineers.

The stage "prop" is very rarely suitable for radio use, though the wind and thunder machine of the stage are usually used for the thunder storm effect. In the movies the spectator sees the locomotive and the supplementary sounds produced in the orchestra pit need not be very accurate to emphasize the effect. The picture has registered in the mind of the spectator. On the stage also "prop"-produced noises are often poor imitations of the real thing. The radio microphone is so sensitive that the motion picture theatre or stage props are practically useless. The

passing train must sound like a train and not a motor cycle or a tug boat.

One of the most stubborn "sound" problems faced by the radio dramatist was the production of a speeding express train. This particular train was supposed to be on a single track railway where the roadbed was none too smooth and where a flat wheel or two was not considered an offence. The player-director proceeded to make a sound study of trains and after he was satisfied that he had learned all the sounds in their proper sequence, he tackled the problem of producing those sounds so faithfully that the listener many miles away would know that he was listening to the passing of a steam-engine drawn train.

A real locomotive bell and a creditable whistle were readily produced. To these were added boards covered with sandpaper, which, when rubbed one against the other, produced what may be described as the chug-chug of the engine. A flour sieve helped to define the sharp first sound heard as the engine puffs.

Then came the problem of producing the roar of the passing train and the pounding or bumping of the wheels on uneven track. A metal panel, five feet long and an eighth of an inch thick, was decided upon for the roadbed. A couple of youngsters on roller skates speeding over the uneven surface of the sidewalk suggested the rolling stock and a pair of roller skates was utilized as a train. In the first rehearsal, the control engineer suggested that a couple of heavy cords be stretched over the metal panel. As the roller skates passed over the panel one couldn't tell the sound from that of a train bumping over uneven rails. The volume of sound was regulated in the control room. The listener first heard the distant whistle and

(Continued on Page 41.)

Coming Features in the Broadcasting Programmes



Miss Dorothy Lane, of the *Revere Kelly Company*, who broadcast from 3LO recently.

CLEMENT HOSKING, the well-known baritone and teacher of singing, has joined the staff of 2GB. Besides singing frequently over the air himself, Mr. Hosking is engaged training a vocal quartette appearing weekly, and conducting a ladies' choir composed of pupils from his studio. He will also give illustrated talks on music, and arrange occasional programmes.

LESSONS ON DRESSMAKING through 2GB are proving successful. The patterns discussed are designed to help, not only country women, but also business girls who make their own clothes. Miss Madden, the lecturer, answers questions, and queries sent in three days before her broadcasting period are replied to over the air on Wednesday nights.

BAND MUSIC is a prominent feature in programmes at 4QG. Acting upon the result of the recent popular musical item ballot, band entertainments in the studio have been extended, and listeners-in now hear the Federal, Excelsior, and Metropolitan bands, in addition to the popular Sunday band programmes from the Botanic Gardens and Wickham Park.

BETWEEN JANUARY 3 and 9, 3LO will broadcast several performances by the band from St. August-

ine's Orphanage, Geelong. The band is a well-known organization in Geelong, and has been splendidly trained, and has won golden opinions from the leading bandmasters in Australia.

ALTHOUGH THEY have but recently embarked upon their season from 3LO, Arthur Wendling and Molly Molloy have established themselves as film favourites. Mr. Wendling's adaptation of popular airs, sung so effectively by his partner, and accompanied by him on the melo-piano, is a feature which caters for musical tastes of all descriptions and all ages.

A DELIGHTFUL musical entertainment is promised from 3LO by the Estelle Mark Trio, late of the Tivoli, where they have had a successful season. Their repertoire consists of musical trios, duets and solos, interspersed with vocal items. They range from grand opera to jazz, and there is not a dull moment whilst they are in possession of the programme.

IN CONNECTION with the 3LO Girl Competition, arrangements have now been completed with the leading hotels in the towns to be visited on the trip, and everything that can be done to ensure the comfort and well being of the successful contestants will be carried out. Complete lists of the gifts from the leading firms are now to hand, and the booklets may be secured on application to 3LO.

ON NEW YEAR'S DAY, results of Sydney, country, and Interstate races, cricket, etc., will be announced from 2BL. The evening programme will include the Ambassadors' Instrumental Salon Quartet (under the direction of Mr. Claude McGlynn), Mr. Peter Sutherland (basso), Miss Hilda Walker (soprano), Will Cherry (imitator of birds and animals), Miss Amy Ostringa (contralto), Mr. Stanley R. Catlett (tenor), Mr. H. Hinchcliffe (baritone).

ON SUNDAY, JANUARY 2, 2BL will broadcast at 11 p.m. the service

at Christ Church, St. Lawrence. There will be the usual Bible Class at 3.30 p.m., to be followed by an organ recital. The Petersham Baptist Church service will be transmitted at 7 p.m. The evening concert will begin at 8 by selections from Broadcasters' Trio. Artists' programmes are the Lyric Quartet, Miss Heather Kinnaird (contralto), Mr. Bryce Carter (cellist), Mr. David Smith (baritone), and Miss Ella Goodman (soprano).

FLINDERS BARR, the 2FC lecturer, will conduct a nautical night from that station on January 12. An authority on sea charters, he promises an unusually fine programme.

MR. H. A. FRY, late secretary of the Philharmonic Society, is busily engaged in training a body of men to do the shanties. "Flinders Barr" is an autocrat when it comes to the question of seafaring matters, and he insists that these shanties must be done correctly or not at all, with the result that he has been securing the water fronts of Sydney, and he writes to the studio as follows: "Getting hold of a real shanty man has been like looking for a needle in a haystack, but I think I have located a gem of the first water, though whether he will have stage fright and lose his voice when away from his pals, and with Mr. Fry's singers, I don't know."

(Continued on Page



Miss Ada Brook, 2GB's popular pianist.

A Few Words About Batteries

Taken from a Talk Broadcast from 3LO

By H. K. Love, President of the Victorian Division of the Wireless Institute

FOR the country set owner one of the most worrying problems is the charging of batteries. This will not prove so trying if the essential points in the care of batteries are watched and the original choice of a battery made on the correct lines.

The first point to be considered by a listener is what size battery is it necessary to purchase to feed his receiver? It is almost as important that the battery should not be too large as it is that it should not be too small.

Batteries for radio work can be divided into three groups:—

1. "A" batteries to light the valve filaments which may be of the dry cell type or the alkaline type of accumulator. For the choice of an "A" battery for dull emitter valves if not more than two are employed, dry cells of a fairly large capacity would serve, but if more than two valves are used, an accumulator should be connected to the receiver so that all the valves are in series.

For the general purpose valve, I advise an accumulator. Accumulators of the lead cell type need a good deal of care and attention. Many people buy a large type of battery, these seldom prove satisfactory as they are designed for special work, i.e., the starting of a motor car engine, this requires a very big current supply in a very short space of time. For this reason the plates of this type of battery have a fairly large area, but are very thin. Radio batteries are required to supply very small currents for a long period—if the car battery is used the thin plates will not stand being left inactive for prolonged periods and will in a comparatively short time fall to pieces. Batteries which have been especially designed for radio work should be chosen, and the following sizes are suggested. For a one valve receiver, a 20 ampere hour battery;

for two valves a 30 ampere hour, for four valves, 60 ampere hour; and for any receiver employing more valves, at least 100 ampere hours battery should be used. Alkaline batteries are a type which use soda as a solution in place of acid used in a lead cell. They are very expensive but they are practically fool proof, cannot be overcharged, and can be left for long periods without charging without damage to the battery.

* The lead cell is more generally used because it calls for less capital outlay. Unless it is carefully handled, however, it may prove a bad investment. A lead cell accumulator should never be left discharged for any longer than a day or so. It should not be allowed to run down too far before recharge. The plates of the battery should be always covered by the electrolyte and should any of the

cells become dry, distilled water should be added until the plates are again covered from a quarter to half an inch.

If the batteries are charged at home, be very careful that they are never charged the wrong way round; a few hours of this treatment will completely ruin a battery. Always make absolutely sure that the red or positive wire of the charger is connected to the red or positive wire of the battery to be charged. Always keep accumulators fully charged if long life is desired.

2. "B" batteries used to furnish the high tension plate supply of the valves. As in the case of "A" batteries, the life and service rendered by "B" batteries largely depends on the type of battery chosen in the first instance. "B" batteries can be very well chosen by the proportion of their weight to their voltage. This simply means that a battery should be selected which has large individual cells. Some good batteries will give good service until they run right down. A poor battery will often begin to cause noise long before the life of the majority of the cells is exhausted. When a battery is found to be in this condition it has to be scrapped.

As long as a battery is in condition to render further satisfactory service there will be no difference in reception, but when it is approaching the end of its useful life, the operator will probably find that he experiences some difficulty in tuning in long distance stations.

It is, therefore, the personal factor that determines the renewal of the the "B" or high tension battery, and every radio user has his own opinion as to when it is time to strengthen the signals with new high tension batteries.

3. The third battery for use with a modern receiver is the "C" battery. I will make a special talk on this subject next week.



The Queensland Radio Service claims to have the best designed studio and station in Australia. We know the station from its transmissions, and above is seen a glimpse of the entrance to the studio, designed in white marble and polished bluchwood.

S.P. Bookmaker Duped by Radio Race Results

WITHIN the last week, radio has been used to work a race-course "joke," and has proved the means of assisting towards the prevention of duping unwary punters.

Since the practice was initiated of describing the principal horse races by broadcasting direct from the course sportsmen interested in receiving the results at the earliest moment have found a radio set invaluable, because they learn the names of the placed horses as the animals dash past the winning post.

It is reported in racing circles that a starting price bookmaker in Sydney was severely bitten a few days ago by the following ingenious method. A man arranged to collect bets for him on a commission basis. About five minutes before an important race was timed to start the agent arrived at the starting price merchant's office, and began to read out a long list of bets which he had taken, insisting so that there could be no mistake that the starting price bookmaker should write down the list. The writing was still proceeding a minute or two after

starting time, when the music of a violin was heard from the street.

The violin played a few bars of Home Sweet Home, changed to Yankee Doodle, then to Rose Marie, and then ceased. But the agent for the starting price bookmaker continued to give his principal a number of substantial bets, mostly for first place, others for places. Lo, and behold, most of his bets were winners—and for good round sums.

Later it transpired that the playing of the street musician was the "office" to the agent as to first, second, and third horse in the race. Home Sweet Home was the code for the name of the horse that won, Yankee Doodle for the second horse, and Rose Marie for the third. The musician was working in co-operation with the driver of a motor car in the street, who by means of a portable radio receiving set on his car had picked up the description of the race three seconds before.

So elated were the "jokers" with the success of their coup that after collecting the spoils they could not

refrain from celebrating, and it was their celebrations that led to the giving away of their secret.

On the other hand, radio is proving a potent instrument for cleaning up undesirable practices connected with betting. When making arrangements for broadcasting descriptions of the races, the broadcasting officials have discovered several "private and unofficial" telephone lines, by means of which starting price bookmakers in the city have been advised of the progress of the races. Now that it is possible for any listener to have a full description of the principal races while they are being run, several of these underground channels of information have been closed.

1927 RADIO EXHIBITION PLANS.

THE radio and electrical exhibition that is to be held in the Sydney Town Hall, from February 23 to March 5, promises to be a record show. Last May, an exhibition was held in the basement of the Town Hall, but for this occasion the hall and vestibule have been engaged, and so far as space is concerned the exhibition will be just half as large again as the last.

The period of the exhibition is 10 days, as compared with six previously. Although the arrangements are not yet complete, it is already apparent that the collection of radio and electrical appliances will outdo anything of the kind hitherto seen in Australia. Great progress has been made in wireless and the most up to date apparatus—besides innumerable novelties—is being manufactured and imported for the exhibition. The exhibition committee is preparing a display of electric cooking stoves, sweepers, cleaners, irons, refrigerators, fans, and everything which makes the modern up to date home. During the ten days both the A class broadcasting stations will broadcast programmes from the Town Hall platform and three B class stations (2GH, 2KY, and 2BE) will also assist to entertain visitors.



Your first impression of ABC studios is obtained when you pass through the entrance doors pictured on Page 1. This is the entrance hall leading to the studio, transmission, and control rooms.

Broadcasting Sport Events

How the broadcasting companies are meeting the increasing demand for broadcast sporting events is told in this article.

IN the beginning it was expected that broadcasting would be used mainly for entertainment. Authorities said broadcasting would be confined to musical items with some talks and news items interspersed. It was not expected to go far beyond that. But the experience up to date has shown that the broadcasters explore every possible avenue, and acquire all possible means of providing a service for their diversified audience.

Perhaps the most unexpected development has been the attention that has been given to sport. It should not be altogether surprising, however, to Australians, to find a constant demand for sporting news! Listeners were satisfied with broadcast sporting results, and looked eagerly for them. But broadcasting spoilt the listeners when they began giving more details of cricket matches, football matches and racing fixtures. Now they are never satisfied, and true to its promise to give their listeners what they desire.

One of the best illustrations of the success that attends the broadcasting of sport is the description of the wrestling events at the Melbourne stadium by 3LO. At first, it appeared that the item would not be a success. Subsequent events proved that not only was it appreciated, but hundreds of people were converted to broadcasting. Proud listeners who were able to boast of the privilege of following the remarkably clear description of the match, told their friends of it, and the inevitable result was that the friends began to think about getting a set of their own.

One meets many people who talk of those descriptions and their pleasure

and excitement in following the matches. And, needless to say, they have friends "in for the evening" the next time a stadium feature is announced.

The programme director gets the usual budget of critical letters from those who object to sport in most of its forms. He also gets a great many letters and telephone requests for more of the wrestling items. And as Australians are almost without exception "good sports," 3LO wisely continues to put the item on occasionally.

If there is one sport more than another that the Australian loves, it is horse-racing. It is not surprising, therefore, that descriptions of the principal fixtures are standing items of importance, of concern to the broadcasting director. Listeners are not satisfied with the results of races; they want a description of the race in progress. Some of these events are very costly to the broadcasting company, when long telephone lines have to be rented. 2FC has gone to endless trouble to broadcast from racecourses throughout the State.

In America the broadcasting stations give considerable attention to sporting fixtures. Some of these are very costly matters to the people sponsoring the items over the air. The recent world's championship boxing match between Jack Dempsey



Mr. A. W. Jackson, 3LO's golfing expert.

and Gene Tunney in Philadelphia was broadcast by no less than 33 stations.

All these stations, scattered throughout the United States from New York to San Francisco, were tied together by telephone lines hired for the purpose. Two of the big New York stations, WEAJ and WJZ, did the primary broadcasting and each station had about 15 other stations connected to it for simultaneous broadcasting. For instance, while the WJZ station was broadcasting other stations in Washington, Boston, and Chicago, connected by telephone lines, also broadcasted the description at the same time on their own wavelength. Two specially selected sport announcers were sent to the ring side in Philadelphia. Their microphone was connected by telephone to New York. (The use of so much telephone wire in the event almost made the description "wireless" inappropriate.)

The important event went off with great success, due to careful plan-

(Continued on Page 37.)



Miss Agnes Fortune,
3LO pianist.

Meanderings

By H. ELLO

Our 3LO correspondent discusses "stunt" transmissions this week. After all, he says, it is the general excellence of the programmes that counts most. Those who criticise indirect advertising from our broadcasting are answered here.



Mr. P. Dugard, a
new 3LO artist.

WHAT is it that the public really appreciate in broadcasting? I am led to ask this question by a perusal of the advertisements and publicity of various stations, not only in this country, but abroad.

We Saxons are a sporting race, and to break a record appeals to us tremendously. When a station advertises that it has been the first to broadcast the breathing of fishes at the bottom of the Tasman Sea, the first to let the people hear the love-making of a couple of ants in the bush, the first to do this and the first to do that, I think we are all inclined to say—"Good man" and leave it at that. What we really do appreciate, in the way of broadcasting, however, is that station that keeps right on making a general success of its programmes, without worrying about records.

After all, it is the general excellence of the programme that tells the real story. Listeners may give fifteen minutes surprised attention to the male cicada singing to his mate, but the moment the insect has put away his saxophone, they are going to reach for the "Listener-In" or some such paper and ask—"Well, what's on the programme for to-night?"

It is the wearing qualities of the entertainment, rather than its surprises that gets the public to install wireless sets and take out licenses.

I have been reading over some of the "stunts" put over by other stations by way of records, and I have come to the conclusion that our Victorian station 3LO offers the best entertainment, week in and week out. It has had its fair share of out of the way broadcasting, but it has apparently found that you cannot beat

music, song, story and instruction as the best basis for pleasing the mixed tastes of an audience. As long as it does this, it can well afford to leave the record breaking to others.

By the way, I was talking the other day to an Englishman not long in this country. He happened to mention 3LO Melbourne and criticised that station for advertising music warehouses, book shops, theatres, and so on. I listened to him with surprise, for a moment doubtful whether he was in earnest, for stations abroad, especially in America, live on the advertisements they unobtrusively put on the air.

I found that he was referring to the inclusion in 3LO's programmes of singers connected with a certain music house, of a speaker whose interesting talks on books are a feature of the programme, but who happens to be connected with a leading bookseller's. How can this sort of thing be possibly avoided? Service to the public is the preponderating factor in broadcasting, and if it had to be the case that the programme manager had to take all music shops in rotation to supply singers and songs, lest any one should get the kudos, the result would be a very mixed bag. Similarly with books. This particular speaker happens to have a good radio voice, besides unusual qualifications for reviewing the books he selects. That he is known to be employed by a certain house may be an advertisement for that house, but no suggestion is ever made that the books he speaks of may be obtained only from that shop.

It may be taken for granted that every singer and every speaker has a particular recommendation. They all become well-known in the course

of time, and their characteristics with them. All of them, if successful, are an advertisement for something or someone, whether it is a teacher of music, or an employer. Are nonentities to be engaged so as to avoid the hubbub of advertisement? When service is the watchword of a studio, it can well afford to allow any advertising incidental to the individual giving that service to be "thrown in" as it were.

Listeners will be sorry to hear that Miss Elsy Treweek will not be much longer with us. Her singing has given pleasure to countless thousands since she was engaged by 3LO, and she has set a standard that, unfortunately, can rarely be kept. She will be passing through Melbourne on the 27th of this month, and advantage is being taken of the fact to get her to give one farewell performance through 3LO. It will have to be in the day-time, but I am sure that as many as possible will arrange to listen in on that occasion. Her husband, Fred Collier, by the by, has just made another sensational success in British opera, one more feather in the cap of musical Australia.

The controversy over the suitability of boxing and wrestling matches still goes on. How queer it is that people are so determined to impress their own ideas on the whole body of listeners. Mr. Norman McCance's extraordinarily interesting accounts of the progress of these sporting fixtures have attracted wide notice. He has developed a technique that is surprising, and surely would be hard to surpass. It would, I feel sure, be safe to assume that in the far Outback,

among the "hard doers," nothing is listened for with so much expectation as these word-pictures of the Homeric conflicts at the Stadium.

Indeed, I have heard women who would never dream of going to the Stadium itself admit the excitement and the pleasure these second-hand battles gave them. I have listened to them in a room with three or four women, and it was interesting to watch the gradual dawn of interest in faces that at first expressed merely disgust. As the battle went on, interest became excitement, which increased until the final result was announced.

It is, perhaps, in the military hospitals that these accounts cause most joy. Here poor fellows, once active and athletic themselves are lying like logs, and this vicarious enjoyment of a stirring physical conflict is all they can taste of the activity of a life that has passed them by, leaving them merely spectators. It would be a cruel deprivation were the censors of wireless to bring it about that only the innocuous, unexciting portion of a wireless programme should be broadcast. What a world it would be if it could be made ever in the way these gentle meedlers would have it, shorn of all that could bring excitement, stripped of everything strenuous, all the perspiration of physical effort evaporated out. Ye gods! What a world! I hope that 3LO will always resist any attempt to cut Norman McCance's epic descriptions out of their entertainment.

I have heard complaints that there is not enough original work being given over the radio. It was thought that this would be a great encouragement to creators of original art. I think it would be an interesting experiment during the third year of 3LO's existence if they organised a competition in music and story, wherein only composers and authors could compete. It is extremely likely that some very excellent work would emerge.

A Merry Christmas

— and —

Prosperous New Year

to All



You are all cordially invited to
inspect our new and elaborate
Showrooms

The best fitted out Radio Shop
in Sydney

SYDNEY RADIO COY.

60 CASTLEREAGH STREET (next Carlton Hotel)

Agents for *Mingay's Super Radio Sets*

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

A ONE VALVE SET

is simple to build and costs practically no more than a crystal set. Here are two worth while building.

No. 1. SET.		£ s. d.	No. 2 SET.		£ s. d.			
1 Bakelite Panel, 12 x 9 x 3/16 inches	0	7	0	1 Bakelite Panel, 12 x 6 x 3/16	0	5	3	
2 .0005 Quaker S.L.F. condensers at 10/9	1	1	6	1 .0005 Quaker S.L.F. condenser	0	10	9	
1 Pilot Midget condenser	0	5	9	1 Pilot Midget condenser	0	5	9	
1 Lissen variable gridleak	0	4	3	1 Watmel variable gridleak	0	4	3	
1 .00025 grid condenser	0	1	9	1 .00025 grid condenser	0	1	9	
1 3 megohm gridleak	0	1	6	1 Coil plug	0	1	3	
1 Valve socket, 199	0	1	6	1 250 turn H.C. coil	0	3	0	
1 Choke (250 H.C. coil)	0	3	0	1 Valve socket, 199	0	1	6	
1 Terminal board	0	2	9	1 30 ohm Rheostat	0	2	1	
1 Baseboard, 11 x 7	0	1	0	3 inch length Radion Tubing	0	2	6	
1 30 ohm Rheostat	0	2	1	1 lb. 24 D.C.C. wire	0	1	7	
4 oz. 24 D.C.C. wire	0	1	7	1 Terminal board	0	2	9	
1 Dozen square Buswire	0	0	10	1 Baseboard, 11 x 7	0	1	0	
				1 Dozen square Buswire	0	0	10	
		£2	14	0		£2	4	3

VALVES

to use with the above efficient sets. Radex 199 or 201A valves £0 6 9
If Radex valves are used UX sockets are required.

Econotron 199 valves, suit 199 socket 0 5 9
This valve is highly recommended.

BATTERIES

"A" Batteries: Ever-Ready 4½ volt	0	9	0
Columbia 4½ volts	0	8	3
"B" Batteries: 42 volts Ever-Ready	0	12	6
40 volts Hellenes	0	11	9
30 volts Ever-Ready	0	9	6

OUR BATTERIES ARE ALWAYS FRESH

LOUD SPEAKERS OF QUALITY

	£ s. d.
The Amplion Dragonfly	1 5 0
The Amplion Swanneck	3 0 0
The Amplion Dragon	6 10 0
The Towers Spitfire	1 5 0
The Browns H4	2 2 0
The Browns H3	4 2 6
The Farrand Cone Speaker	4 0 0
The N. & K. Rosewood De Luxe Speaker	6 6 0

Don't forget when ordering that all goods carry a money back guarantee.

We pay carriage on all orders of 10/- and over, except on batteries, loud speakers, and cabinets.

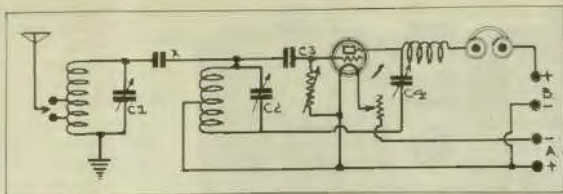
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The circuit employed in this receiver is a form of the Reinartz.

A Capacity Coupled One-valve Receiver

This neat little receiver is capable of eliminating a near-by high powered station and bringing in others. A novel arrangement of coupling is used to ensure maximum selectivity. Extremely sharp tuning is a feature.

THERE are quite a number of radio enthusiasts who are the possessors of single valve sets which are by no means selective. Some of these people living close to a high power broadcasting station find it extremely difficult to eliminate the local station and bring in others. That not a few are despairing of ever hearing other than the close-by station is true, but here is a receiver which will eliminate the high power near-by station and bring in many others. Again there are those whose all-fashioned sets need remodelling and who are only waiting for a suitable design to proceed with this work. This receiver will therefore be welcomed.

In appearance it is very presentable, the front of the panel being nicely and evenly balanced. The two vernier dials, which by the way are absolutely essential, in tuning this receiver, placed on each side of the panel with the rheostat between and the other controls, one each beneath each condenser, altogether conform to neatness in appearance. No terminals whatever are shown on the front, the aerial and earth, and even the telephone terminals being found at the back of panel.

The circuit is not new, in fact it is rather old, being a modified form of the well-known Reinartz circuit, but the method of coupling between the two coils is somewhat new, in this country at least. Taking the form of a very small capacity con-

denser comprising two short pieces of busbar arranged close together maximum selectivity is assured. This condenser is shown marked X in the diagram. The time once was when the standard plain aerial (P.1) type of receiver was perfectly satisfactory in this State, but with the advent of new broadcasting stations and of higher power this receiver, around

any broadcasting station at least, was found to be absolutely useless for its purpose. Inductive coupling was resorted to and has proved even to this moment most satisfactory. Inductive coupling is that well-known method known as loose coupling, and is effected by the installation of another coil, either tuned or untuned, in close proximity to the grid coil.

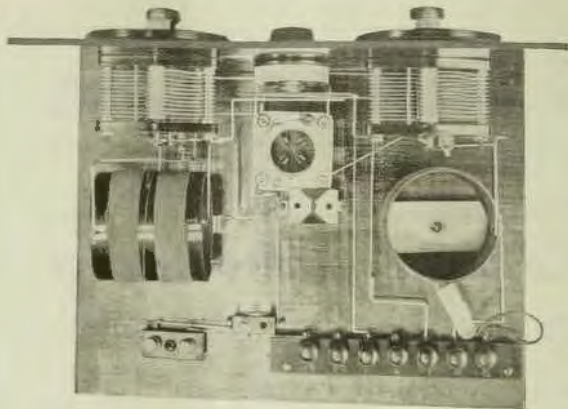
In this receiver there is practically no coupling between the two coils, when we say no coupling we mean that it is of such a low order that if we were dependent on this for conveying energy from coil L1 to coil L2 the signal strength would be so weak that the whole of the merits of the receiver would be non-existent. Hence the system of coupling used in this receiver and explained above.

With regard to the aerial coil the system of coupling adopted here is the well-known method of auto-coupling. This form is extremely selective, and has been described in these pages over and over again, therefore it will be familiar to many of the old readers of our journal.

It is well known that some form of reaction is desired in most single valve receivers, but it must be borne in mind that this reaction should be of a very smooth control. To this end there is incorporated in the circuit a reaction condenser C4, which is a Midget condenser and is used without appreciably affecting the tuning of either of the larger conden-

COMPONENTS REQUIRED

- 1 Panel measuring 14 x 7 x 3/16 inches.
- 2 .0005 Wallace Variable Condensers.
- 2 Emmeo or Pilot Vernier Dials.
- 1 30-ohms. De Jur Rheostat.
- 1 Pilot Midget Condenser.
- 1 Lissen Variable Grid Leak.
- 1 H and H Valve Socket.
- 2 Pieces of Radion or Dilecto Tubing 3 in. in diameter by 3 in. long.
- 1 Fixed Panel Plug.
- 1 .00025 Renrade or Wetless Grid Condenser.
- 1 Terminal Board with six terminals.
- 2 Telephone terminals mounted on small terminal board.
- 2 Small Brackets for L2. Distance pieces for terminal boards.
- 1 Battery Clip with 3 in. of flexible wires.
- 1 Baseboard, 13 x 9 x 1/2 in.
- 6 Sticks of Busbar.
- 4 ozs. No. 24 gauge D.C.C. wire.
- Sundry screws, etc.



A plan view showing the layout of all the parts.

ers. In actual operation this condenser increases the signal strength right up to the point of oscillation, but is so smooth in its action that any desired amount of reaction is gained at will. As a further assistance in this direction, a variable grid leak is pressed into service. With some valves the small reaction condenser in itself is not sufficient to provide reaction over the whole of the wave-band, therefore the variable grid leak plays a most important part and when once adjusted the whole tuning range of the condensers is covered. This variable grid leak is certainly felt in the operation.

In order that reaction is given full effect a radio frequency choke is necessary. This choke takes the form of a honeycomb coil of between 200 and 300 turns. But the constructor can easily decide for himself by trial, and realizing this fact we have mounted in the baseboard a fixed panel plug in order that this choke is interchangeable. Actually in the set illustrated a 200 turn honeycomb coil proved ideal.

The list of components for this set is published, and while it is not our desire to confine the prospective constructor to the actual brands of material specified, at the same time would like to point out that when selecting the parts only use good quality parts.

To ensure this obtain the materials from a reputable trader, preferably the advertisers in "Wireless Weekly." To our sorrow we know of too many instances of failure brought about purely by the use of what really amounts to rubbish. Again, always pay strict observance to the values specified and an excellent receiver will be the result.

Construction.

A very pleasant job, that of coil winding, has to be preceded with first. The two pieces of tubing have to be bound with the 24 gauge D.C.C. wire. To smooth off the edges of the tubing a carpenter's scraper, costing

about sixpence, will be found very suitable, not only for tubing but also for the edges of panels. Coil L1 consists of 50 turns of wire tapped at the 30th and at the 40th turn. Bore two holes in the tubing about half an inch apart, and thread the beginning of the wire through these holes once or twice to hold it securely, and then wind on 50 turns not forgetting to make the taps as specified. The second coil L2 also requires 50 turns of wire, but this time only one tap is taken and that is at the 26th turn. It is a good plan, when making this tap, to continue this turn over a space of approximately half an inch, as shown in the illustration. When winding these solenoid coils always keep the wire taut, to prevent slipping. Perhaps a good scheme is to put the reel of wire in a moderately hot oven for a few moments and wind on the formers when warm. When heated the wire will expand slightly, contraction taking place when it cools down, the result being a tightly wound former.

Prepare the baseboard by giving it one or two coats of shellac or Ezy-wurk polish. While it is drying proceed with the marking out and drilling of the panel. By following out the layout as specified in the diagram a nicely laid out panel will be the result. Use a centre punch or a nail, and mark out the position of the different holes prior to drilling. When drilling, remember to keep the panel on a flat surface and drill with a

WIRING INSTRUCTIONS

Join fixed plates (outside right) of C1 to tap L1.

Join moving plates C1 to bottom of L1 and thence to the earth terminals.

Join one side of rheostat to F minus terminal of valve socket.

Join remaining side of rheostat to A terminal.

Join one side of variable grid leak to F positive terminal of valve socket, and from thence to the middle tap on L2. To this wire join the A positive and B minus terminals of the terminal board.

Join one side of the grid condenser to the C terminal of the valve

socket, the other side of this condenser connect up with the fixed plates of C2, thence to end of L2.

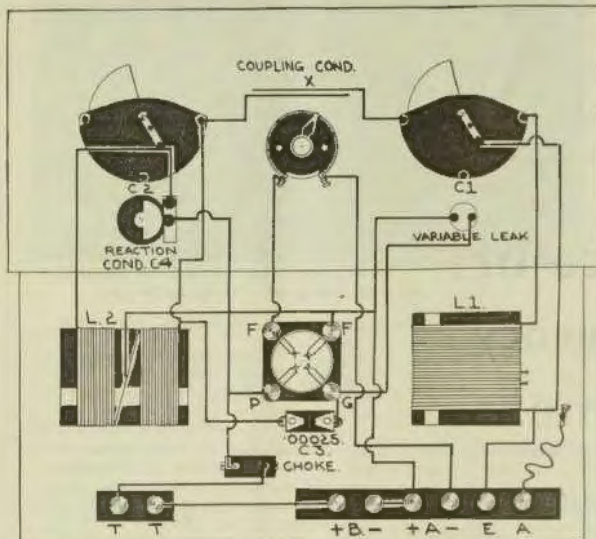
Join beginning of L2 to moving plates of T2 and thence to fixed plate of Midget condenser C4.

Join moving plates C4 to plate terminal of valve socket, from thence to one side of the choke. The other side of this choke connect to one telephone terminal.

Join the remaining telephone terminal to B positive of terminal board.

Join the remaining side of grid leak to G terminal of valve socket.

Join to aerial terminal battery clip with short lead of flex.



Here is the back of panel wiring diagram, from which the receiver may be wired.

high speed and light pressure in order to overcome flaking. Always hold your drill perfectly erect and remember to counter-sink for the fixing screws of the variable condensers. A larger sized drill may be used instead of the usual rosebit.

Next mount the various components. Before mounting the Midget condenser remember to assemble the connecting terminals, which in the Pilot brand, come to you in a separate small envelope. To save log leads, mount the rheostat with the terminals facing downwards.

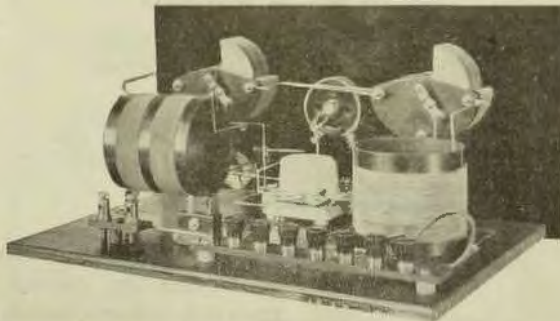
The baseboard layout now requires attention. Coil L1 should be mounted immediately behind condenser C1, and L2 behind condenser C2. Small right-angled brackets are used for L2, whereas a fillet of wood conforming to the shape of the inside of the former, and of the exact size as the inside of this former, is a good method of securing L1 to the baseboard. This fillet of wood should be screwed to the baseboard in the proper position and the coil pressed over this and fitting snugly. The valve socket position is seen behind the

rheostat, with the filament terminals facing towards the panel. Behind this socket, and at the back of L2, screw down the panel plug for the choke. Remember that the three coils should have their magnetic field in juxta position, L1 and L2 being at right angles to each other, and the choke coil being at right angles to both. Follow out the layout scheme as is shown in the photograph with

regard to these coils and you will have the best. Notice the terminal boards for the batteries as well as the terminals. It will be seen that the terminal board employed in the receiver is one of a standard make and provides for two B plus terminals, whereas in this instance only one is required. To overcome any difficulty with this spare terminal, it may either be cut off or the two B plus terminals joined together.

Wiring.

Having laid out the baseboard in the proper manner, attach your panel and then proceed with the wiring. To ensure access in this direction a back of panel wiring diagram is provided and a descriptive method of this wiring will be found in a separate position in this article. Wire the receiver in the order laid down in the description, so that components difficult of access will be connected up first, the easier ones being left till later on. When soldering to the centre tap of L2 the cotton covering insulation should be scraped away from the wire, and it is also necessary with all the connections to both coils. Exercise a little care in scraping this insulation, otherwise you may be liable to break the wire, which will cause the whole coil to unwind. Although to most people coil winding is a pleasant pastime at the same time double work should always be avoided. Soldering is called for here and there in the wiring of this receiver, so keep in mind to have a



One view of the back of this receiver—note the bushings acting as condenser X crossing in front of the rheostat.

FACTS

ABOUT

Impedance of Audio Frequency Transformers

THE FAMOUS



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TRANSFORMER

TYPE AF 3

Has the following Impedances :

AT 100 PERIODS . . . 50,000 OHMS.

AT 500 PERIODS . . . 410,000 OHMS.

No better Transformer is available at any price

Dealers please communicate with:

A. BEAL PRITCHETT (Aust.) LTD., Sydney and Melbourne.

WEDMA LTD., Adelaide.

EDGAR V. HUDSON, Brisbane.

- (a) Amplification with any valve and transformer depends greatly on the transformer impedance; the higher the transformer impedance the better the reproduction, particularly of the lower notes.

HENCE IT IS UNNECESSARY TO VARY THE IMPEDANCE OF THE TRANSFORMER TO MATCH THAT OF THE VALVE USED; ON THE CONTRARY, THE HIGHEST POSSIBLE TRANSFORMER IMPEDANCE SHOULD BE USED AT EVERY STAGE.

- (b) IMPEDANCE DEPENDS ON FREQUENCY, AND TO STATE TRANSFORMER IMPEDANCE WITHOUT STATING THE FREQUENCY AT WHICH IT IS MEASURED CONVEYS NOTHING.

A good transformer has a high impedance even at low frequencies to reproduce low notes satisfactorily. A transformer may have a high impedance at a comparatively high frequency, say, 500, and yet be a bad transformer because the whole range of male and female speaking voices, as well as most of the fundamental musical notes are at frequencies below 500.



G.T.P. 285



The front view of the panel—note the resistor dials.

nicey tinned clean soldering iron with some resin cored solder or flux and soft solder. Never under any circumstances use spirits of salts in any radio receiver, otherwise corrosion will set in, and poor results will be manifest. Always keep the hot iron sufficiently warm on the joint to allow the solder to run in, don't simply stick the wires together with a blob of solder.

When the wiring has been completed, the coupling condenser X has to be installed. As was previously mentioned, this condenser is fashioned from two short pieces of busbar, one piece being connected to the fixed vanes of condenser C1, and to that side adjacent to the rheostat. The other piece of busbar is connected to the fixed vanes of condenser C2, and also to the side adjacent to the filament rheostat. Five inches long should be the approximate measurement of each piece of busbar. This will allow for the loop which clamps each side underneath the nut of each condenser. The busbar is then bent back approximately one inch towards the panel and bent again in the direction of the next variable condenser. This is to allow for the clearance of the valve. These two pieces of busbar should run parallel to one another and approximately one eighth of an inch apart from each other for a distance of $2\frac{1}{2}$ inches.

The longer the distance that these two busbars run parallel to one another the greater is the capacity of the condenser, so that in actual practice $2\frac{1}{2}$ inches may be too long, and it may be necessary to cut down

the overlap somewhat slightly by cutting off short lengths of the busbar until the desired amount of coupling is arrived at when the required selectivity is obtained.

Testing.

Having checked and re-checked all the wiring of the receiver, test it out on the aerial. Insert the valve in its socket and connect up the A battery to the A battery terminal. Link up the B battery, remembering of course to adjust just that amount of voltage that the valve maker specifies for detecting purposes. Into the coil plug provided for the radio frequency choke insert a 200 turn honeycomb or spiderweb coil. Connect up the telephones to their respective terminals and also the aerial and earth to the correct terminals, clipping the battery clip on the tap at the 40th turn. Of course, this tap should be cleaned of the insulation. Gradually turn your rheostat, noting that the valve lights.

Tune with both condensers at the

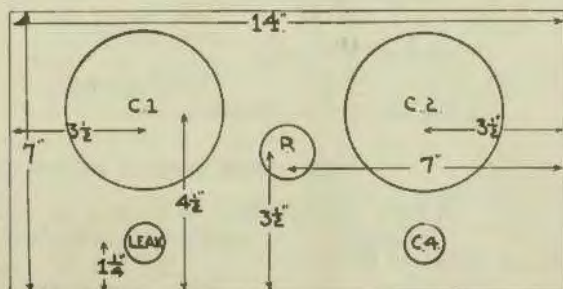
one time. It will be found that both condensers are very critical of adjustment, and unless careful listening is resorted to the local station is apt to be missed altogether. Condenser C2 is, if anything, slightly more critical than its neighbour. Locate the local station, bringing it up to its maximum volume with a careful adjustment of the rheostat, and then confine your attention to the reaction condenser C4. As was previously mentioned this reaction condenser is a most important part, as surprise will be expressed just what extra volume is derived by the proper adjustment of this condenser. Now the grid leak should also be handled carefully, and its effect will be certainly discernible in the signal strength.

Tune in to another station, and it will be noticed just how sharp is the tuning on the condensers. Two degrees either way will lose a station entirely. Increase the plate voltage of the valve to the maximum pitch which yields signal strength without oscillation, and retune from one station to the other, controlling the reaction with the midget condenser. An hour's handling of this excellent little receiver will produce wonderful results. Although it is selective, at the same time the voltage is all that could be desired.

Test Report.

Tested at Marriekville, before the members of the Marriekville District Radio Club, this receiver lived up to all the claims we have made for it. So selective was it that 2BL disappeared altogether in two degrees of

(Continued on Page 37.)



A neatly laid out panel will result by following out these measurements.

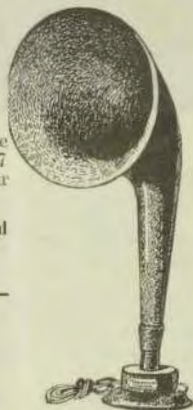
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REGULATOR

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

PRICE 32/6 with 5ft cord

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Height 22 ins.
Bell Mouth 9
ins.

Real Radio Enjoyment

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"B" BATTERIES

Small size, for 1 and 2 valve sets

WP30 volts	9/6
WP40 volts	12/6
WP60 volts	18/6

Heavy Duty type for 3, 4, 5 or more valve sets.

XP30 volts	16/-
XP40 volts	21/-
XP60 volts	31/6

"A" BATTERIES.

Standard, 4½ volts 9/6

"C" BATTERIES.

No. 126—1½, 3 or 4½ volts 2/9

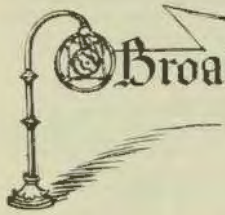
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Broadcasting Programmes for the Coming Week.



Friday, Dec. 31

2 FC

EARLY MORNING SESSION.

- 7.—"Big Ben" and Announcements.
- 7.5—Music from the Studio.
- 7.16—Official Weather Forecast; Rainfall; Temperature; Astronomical Memoranda; Shipping Intelligence; Commercial News; Mail Services.
- 7.26—Investment Market, Mining Share Markets, Metal quotations.
- 7.35—Wool Sales, Produce Markets, International Markets, Produce Markets.
- 7.45—Sydney Morning Herald News Service.
- 8.—"Big Ben." Close down.

MORNING SESSION.

- 8.15—The Chimes of 2FC and Announcements.
- 8.25—Music from the Studio.
- 8.30—Marching Music for the School Children.
- 8.40—Music from the Studio.
- 10.—"Big Ben" and Announcements.
- 10.15—Late "Sydney Morning Herald" News Service.
- 10.15—Music from the Studio.
- 10.15—A Morning Reading.
- 11.—The Chimes of "Big Ben." Australian Press Association and Reuter's Cable service.
- 11.10—Music from the Studio.
- 11.35—Marching Music for the School Children.
- 11.35—Close down.

MIDDAY SESSION.

- 12.—"Big Ben" and Announcements.
- 12.5—Stock Exchange, First Call.
- 12.10—Music from the Studio.
- 12.15—Marching Music for school children.
- 12.40—Music from Studio.
- 12.45—From Farmer's Oak Hall: Instrumental item by the Oak Hall Trio (Under Mr. Horace Kent).
- 12.45—Studio Music.
- 1.—"Big Ben": Weather information.
- 1.8—"Evening News" midday news service, Producers' Distributing Report.
- 1.9—From Farmer's Tea Rooms: The Oak Hall Trio.
- 1.24—Stock Exchange—Second Call.
- 1.30—Marching Music for the School Children.
- 1.40—Music from the Studio.
- 1.40—From Farmer's Oak Hall: The Oak Hall Trio.
- 2.—The Chimes of "Big Ben." Close down.

AFTERNOON SESSION.

- 2.30—The Chimes of 2FC; Music from the Studio.
- 3.15—A Reading.
- 3.40—From Farmer's Tea Rooms: Miss Neta Hallet, mezzo.

- 3.45—From Farmer's Tea Rooms: The Oak Hall Trio.
- 3.56—Music from the Studio.
- 4.—Miss Alice Pomroy, soprano, from Farmer's Tea Rooms.
- 4.15—The Oak Hall Trio.
- 4.15—Studio Music.
- 4.20—From Farmer's Tea Rooms: Miss Neta Hallet, mezzo.
- 4.25—From Farmer's Oak Hall: The Oak Hall Trio.
- 4.35—Music from the Studio.
- 4.40—Miss Alice Pomroy, soprano.
- 4.45—Stock Exchange, Third Call.
- 4.45—Close down.

- 4.15—Miss Marie Cooke, soprano.
- 4.25—Miss Virginia Bonetti, contralto.
- 4.25—Mr. Roy Greenwood, comedian, "My Home is far away."
- 4.35—Mr. Charles Stephens, tenor, and Miss Joyce Hadley, soprano, duet from "Majama Butterfly."
- 4.35—Mr. Brunton Glibb, educational, "The Disagreeable Musician."
- 4.45—Madame Emily Macke, soprano.
- 4.47—Miss Annie Hughes, English character actress, "England."
- 4.53—Some sidelights on 2FC.
- 4.5—Miss Isabel Hatchelor, soprano.
- 4.10—Mr. Alfred Clifton, baritone.
- 4.15—Madame Vera Tanna, soprano.
- 4.20—Mr. Charles Lawrence, entertainer.
- 4.25—Mr. Ernest Archer, tenor.
- 4.30—Madame Evelyn Greig, Some Microphone Musings.
- 4.35—Miss Evelyn Peeries, soprano.
- 4.42—Mr. Russ Garling, oboist.
- 4.50—Mr. Lionel Lawson, violinist.
- 9.30—Mr. Walter Hunt and Miss Eve Warhurst.
- 10.4—Mr. A. E. Y. Benham, bass.
- 10.10—Mr. Ad Crook, Scotch comedian.
- 10.16—Mr. E. Gladstone Bell, cellist.
- 10.25—Mr. Fred Hartman, baritone.
- 10.24—Mr. E. J. Van de Velde.
- 10.35—Mr. Lindley Evans, pianist.
- 10.34—The Metropolitan Quartet, consisting of Miss Marie Cooke, soprano, Miss Mary Bourke, contralto, Mr. A. I. Champion, tenor, and Mr. A. G. E. Hall, baritone in the quartette, "Love Triumphs" (Easthorpe).
- 10.34—Miss Lou Elliott, entertainer.
- 10.45—Mr. Mayo Hunter in steel guitar items.
- 10.47—Miss Daisy Richards, violinist.
- 10.54—Miss Eileen Boyd, soprano.
- 11.—2FC Dance Band in dance numbers, Mr. Eric Devere, conductor.
- 11.10—Some Humour.
- 11.13—A Skit on Ourselves.
- 11.20—2FC Dance Band.
- 11.25—Greetings.
- 12.—The New Year ushered in.
- 12.10—Close down.

2 BL

EARLY MORNING SESSION.

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

MORNING SESSION.

- 10—G.P.O. Clock and Chimes.
- 10.1—Weather Report.
- 10.3—Broadcasters' News Service direct from Rugby.
- 10.8—Musical programme from the Studio.
- 10.25—News Service from the "Daily Telegraph."
- 10.35—Music from the Studio.
- 10.40—Serial Story.
- 11—G.P.O. Clock and Chimes.
- 11.1—News from the "Daily Telegraph."
- 11.35—Rabbit Market Report.
- 11.47—Flesh Market Report.
- 11.48—Vegetable Market Report.
- 11.51—Fruit Market Report.

- Farmer's Service, Sydney, call sign 2FC, wave length 445 metres.
- Broadcasters Ltd, Sydney, call sign 2BL, wave length 353 metres.
- Trades Hall Broadcasting Station, call sign, 2KY, wavelength, 280 metres.
- Theosophical Broadcasting Service, call sign, 2GB, wavelength, 318 metres.
- Burgin Electric Coy. Ltd., Sydney, call sign, 2BE, wavelength, 318 metres.
- Broadcasting Co. of Australia, Melbourne, call sign SLO, wave length 371 metres.
- Associated Radio Co., Melbourne, call sign SAR, wave length 404 metres.
- Queensland Radio Service, Brisbane, call sign 4QG, wave length 485 metres.
- Central Broadcasters Ltd., Adelaide, call sign SCL, wave length 395 metres.
- Radio Broadcasting Co. of N.Z., Auckland, call sign 1YA, wave length 420 metres.
- Westralian Farmer's, Perth, call sign GWF, wave length 1250 metres.
- Tasmanian Broadcasting Pty. Ltd., Hobart, call sign 7ZL, wave length, 468 metres.

EARLY EVENING SESSION.

- 8.50—Chimes of 2FC. The "Hello Man" talks to the children.
- 6.45—Broadcast from Farmer's Restaurant, items from the New Year's Eve Dinner Party, including songs by the well-known comedian, Mr. Ad Crook.
- 7.10—Racing Talk, by 2FC Racing Commissioner.
- 7.20—"Evening News" late news service and weather information.
- 7.30—Dulzety's Market Reports (wool, wheat, stock, fruit and vegetable markets).
- 7.35—Announcements.
- 8.—Broadcast from Farmer's Exhibition Hall, an "All Star" programme, supplied by 2FC leading artists, who are appearing at the Studio Reunion. The following items will be included:—
- 8.5—Greetings.
- 8.5—Mr. Richard A. Bartleman, baritone.
- 9.—Miss Peggy Dunbar, contralto.
- 8.15—Mr. Joe Cahill, entertainer, "Mister Dooley on Plains Playing."

- 11.24—London Metal Quotations.
 11.27—London Dairy Produce and Egg Market Report.
 11.32—Ships in call by Wireless.
 11.34—Information re Interstate and Overseas Mail.
 11.37—Shipping Information—arrivals and departures.
 11.40—Women's Section, conducted by Mrs. Jordan; Social Notes.
 11.59—Mrs. Jordan replies to correspondents.
 12—G.P.O. Clock and Chimes.
 12.1—Talk on "Supper Menus," by Mrs. Jordan.
 12.15—News from the Sun.
 12.30—G.P.O. Clock and Chimes.
 12.31—News from the "Sun."
 12.45—Hilliers' Instrumental Quartet.
 1.00—G.P.O. Clock and Chimes.
 1.01—Weather Report.
 1.22—News from the "Sun."
 1.46—Track Gallops and Sporting information.
 1.52—News from the "Sun."
 2—G.P.O. Clock and Chimes. Close down.

AFTERNOON SESSION.

- Racing information broadcast by courtesy of the "Sun."
 3—G.P.O. Clock and Chimes.
 3.1—Weather Report and Forecast by courtesy of Brit. Meteorologist.
 3.5—Social Notes from the "Sun."
 3.18—"Sun" Newspapers' News Service.
 3.15—Civil Service Stores' Trio.
 3.20—G.P.O. Clock and Chimes.
 3.21—"Sun" Newspapers' News Service.
 3.45—Musical Programme from the Studio.
 4—G.P.O. Clock and Chimes.
 4.1—Civil Service Stores' Trio.
 4.15—Serial Story.
 4.30—Music from the Studio.
 4.45—Producers' Distributing Society's Fruit and Vegetable Report.
 4.50—Shipping information when available.
 4.55—News from the "Sun."
 4.58—Resume of night's programme.
 5—G.P.O. Clock and Chimes; close down.

EARLY EVENING SESSION.

- 5.15—G.P.O. Clock and Chimes.
 5.45—Uncle George and the Kiddies.
 5.48—The pupils of Miss Monica Scully will entertain the kiddies.
 6.00—Pavilion Dinner Orchestra, under the direction of Mr. Gee, Morrison.
 Special Country Service.
 7—G.P.O. Clock and Chimes.
 7.1—Australian Mercantile Land & Finance Co's Report.
 7.5—Weather Report and Forecast by courtesy of Brit. Meteorologist.
 7.9—Producers' Distributing Society's Vegetable and Fruit Market Report.
 7.14—Fruit and Vegetable Market Report ("Sun").
 7.19—Grain and Fodder Report ("Sun").
 7.26—Dairy Produce Report ("Sun").
 7.30—Country News from the "Sun."

NIGHT SESSION.

- 8—G.P.O. Clock and Chimes; Broadcasters' Topical Chorus.
 8.1—Miss Mary Noel, mezzo contralto.
 8.15—The Senior Sporting Expert of the "Sun" will talk on the prospects of Saturday's Racing.
 8.35—Resume of following day's programme.
 Weather report and Forecast by courtesy of Mr. E. J. Mars, Genl. Meteorologist.
 9—G.P.O. Clock and Chimes.
 9.1—Broadcasters' Trio.
 9.11—Miss Phyllis Atkinson, mezzo soprano.
 9.15—Sketch by Miss May Nanacrow and partner.
 9.34—Mr. Roger Jones.
 9.42—Miss Mary Noel.
 9.46—Mr. Douglas Graham, Scottish comedian.
 9.65—Miss Marjorie Skill, soprano.

- 10.6—Interval.
 10.11—Broadcasters' Trio.
 10.17—Mr. Macrae Wilson.
 10.29—Miss May Nanacrow, soprano.
 10.37—Mr. Norman Wright, tenor.
 10.45—Miss Phyllis Atkinson.
 10.53—Mr. Billy Dick, songs at the piano.
 11—G.P.O. Clock and Chimes.
 11.1—Broadcasters' Trio.
 11.11—Miss Marjorie Skill.
 11.19—Mr. Norman Wright.
 11.23—Miss Phyllis Atkinson.
 11.25—Mr. Billy Dick.
 11.31—Mr. Norman Wright.
 11.31—Broadcasters' Trio.
 11.41—Hammott and the Ambassadors' Dance Band broadcast from the Ballroom of the Ambassadors. During the intervals between dance news reports by courtesy of the Sun Newspapers will be broadcast.
 12—G.P.O. Clock and Chimes; close down.

3 10

MIDDAY SESSION.

- 11.30—Interstate Cricket Match—Victoria v. South Australia, at Melbourne. Progress scores will be given every quarter of an hour. Luncheon adjournment, 1.30 till 2.15 p.m. Tea adjournment, 4 till 4.15 p.m. Match finishes each day at 6 p.m.
 12—Time Signal, British Official Wireless News from Rugby, Leicester's and the Australian Press Association cables. "Argus" and "Herald" news services.
 12.45—Stock Exchange information.
 12.52—Meteorological information. Weather forecasts for Victoria, Tasmania, South Australia, and New South Wales. Ocean forecast.
 1—Description of Interstate Cricket Match—Victoria v. South Australia, transmitted from the M.C.C. Ground.
 1.10—Studio Orchestra.
 1.20—Charlie Pope, "Kolooured Komeedy Koon."
 1.27—Description of Interstate Cricket Match—Victoria v. South Australia, transmitted from the M.C.C. Ground.
 1.35—Estelle Mark Trio, in a varied programme of vocal and instrumental items.
 1.42—Studio Orchestra.
 2—Close down.
 2.10—Description of Interstate Cricket Match—Victoria v. South Australia, transmitted from the M.C.C. Ground.
 2.20—Close down.

AFTERNOON SESSION:

- 3—Estelle Mark Trio, in a varied programme of vocal and instrumental items.
 3.20—"At Fair" of Messrs. Buckley & Nunn, "Fashion Talk."
 3.35—Description of Interstate Cricket Match—Victoria v. South Australia, transmitted from the M.C.C. Ground.
 3.44—Linneston City Band.
 3.48—Charlie Pope, comedian.
 3.54—Linneston City Band.
 3.58—Verdell and Molloy.
 4.6—Mrs. M. Callaway Mahood.
 4.21—Linneston City Band.
 4.30—Charlie Pope selected.
 4.35—Verdell and Molloy.
 4.47—Description of Interstate Cricket Match—Victoria v. South Australia, transmitted from the M.C.C. Ground.
 4.45—"Herald" News Service; Stock Exchange Information; B.O. Girl Competition.
 5—Close down.
 5.30—Description of Interstate Cricket Match—Victoria v. South Australia, transmitted from the M.C.C. Ground.
 Close down.

EVENING SESSION.

- 5.40—Children's Hour: Answers to letters and birthday greetings, by "Billy Bunsy."
 5.55—Elsie Day will sing to you.
 6.2—Story for the tiny tots, by "Billy Bunsy," "The Littlest Fairy Story."
 6.12—Rupert Hasell is the funny man that

- you heard earlier in the week—want to hear him again? In again!
 6.20—Story for the bigger children, by "Billy Bunsy."
 6.32—"Arcus" and "Herald" news services.
 Weather report and Forecast by courtesy of Mr. E. J. Mars, Genl. Meteorologist.
 6.45—Stock Exchange Information.
 6.52—Fish Market reports by Messrs. J. B. Barrett Ltd.
 6.55—River reports.
 6.58—Market Reports by the Victorian Producers Co-operative Co. Ltd.; Hammarket Sheep Sales; poultry, grain, chaff, hay straw, juice, dairy produce, potatoes and onions.
 7.10—Market prices of oranges, and lemons, supplied by the Victorian Central Citrus Association Pty. Ltd.

NIGHT SESSION.

- 7.20—Mr. N. Schlichting, "Stomps for Victorian Interstate Eight," "Championship Rowing."
 7.40—Mr. Gus Blaett, now playing the part of Adrin Van Pffel, in "A Cousin from Nowhere," will speak to you from his dressing room, by permission of Messrs. J. C. Williamson Ltd.
 7.40—Charlie Pope, "Kolooured Komeedy Koon."
 7.44—B.O. Melody Masters.
 7.52—Missor Helen will accompany her song on her Uticle.
 8.20—B.O. Melody Masters.
 8.30—Elsie Day, soprano.
 8.42—B.O. Melody Masters.
 8.52—Rupert Hasell would like to give a little talk on love!
 8.56—B.O. Melody Masters.
 9.00—Pat McLean has a very serious story to tell.
 9.10—B.O. Melody Masters.
 9.20—Charlie Pope, selected.
 9.24—B.O. Melody Masters.
 9.34—Mascot Komeedy Koon, near air.
 9.38—B.O. Melody Masters.
 9.42—Elsie Day, soprano.
 9.48—B.O. Melody Masters.

INTERLUDE.

- 10.13—"Cardinal" Mr. H. A. Wolf, Sporting Editor of the "Argus" and "Australasian."
 10.12—Mr. H. K. Love, "A Chat on Technicalities."
 10.17—B.O. Melody Masters.
 10.27—Rupert Hasell assures us that "I'm very fond of my dear wife," and wants you to sing the chorus.
 10.31—B.O. Melody Masters.
 10.41—Pat McLean, selected.
 10.45—B.O. Melody Masters.
 10.55—"Argus" news service, British Official Wireless News, Announcements.
 11.10—B.O. Melody Masters.
 11.15—Charlie Pope, selected.
 11.20—B.O. Melody Masters.
 11.30—Rupert Hasell is in a frivolous mood!
 11.37—B.O. Melody Masters.
 11.47—We will usher the New Year in with the ringing of bells, transmitted from St. Paul's Cathedral.
 12—New Year Greeting, by the Archbishop of Melbourne, Dr. Harrington Lee.
 12.2—B.O. Melody Masters.
 2—Our New Year Greeting.
 God Save the King.

3 A R

MORNING SESSION.

- 11.30—British Official Wireless Press, received from Rugby Super Wireless Station, England, by 3AR's Operator, Express Train information. "Age" News Bulletin, exclusive in 3AR.
 12—Time Signal Chime from G.P.O. Studio.
 Barometer Readings, 1st Weather Forecast, Events of the day.
 12.5—Musical selections from the Studio.

- 12.90—Stock Exchange news. Market reports.
- 12.46—Musical Selections.
- 12.55—Shipping Movements. Mail Notices.
- 1—Close down.
- 2.30—Musical Selections from the Studio: The Ron. Brenzly Quartette.
- 4—Time Signal Chime from G.P.O. The Ron. Brenzly Quartette.
- 4.30—Mr. R. Stanley Holmes, gardening chat to children.
- 4.55—Evening Amusement Guide.
- 5—Time Signal Chime. Studio Barometer Readings. Close down.

EARLY EVENING SESSION.

- 4.48—Children's Corner, by "Uncle Ned."

EVENING SESSION.

- 7.48—British Official Wireless Press. Studio Barometer Readings. Racing Anticipations and Sporting Events reviewed, by "Field Glasses."
- 8—Lionel Davis, pianist.
- 8.10—Mary Fraser, soprano.
- 8.14—Mr. T. R. Noall, elocutionist.
- 8.22—Messrs. Kerr and Owen Jones.
- 8.25—Mr. R. Stanley Holmes will give his Weekly Gardening Talk.
- 8.35—Will Hocking, baritone.
- 8.55—Doris Tobin, soprano.
- 9—Harry Crowe, tenor.
- 9.7—Lionel Davis, pianist.
- 9.15—Amy Wheatland, soprano.
- 9.23—Ken and Owen Jones, Hawaiian Selections.
- 9.30—Will Hocking, baritone.
- 9.37—Mr. T. R. Noall, elocutionist.
- 9.45—Harry Crowe, tenor.
- 9.52—Doris Tobin, soprano.
- 10—Time Signal from G.P.O. Studio Barometer readings, "Age" News.
- 10.1—Leggett's Ballroom Orchestra, raised from Driville Hall, under the leadership of Mr. Harry Bangs.
- 11—Time Signal Chime. Close down.

4 QG

MIDDAY SESSION.

- 12.45—Time in.
- 12.45—Time Signal.
- 1—Market reports; weather information; "The Daily Mail" news; "The Daily Standard" news.
- 1.25—From Hotel Carlton: Lutech music from the lounge, Hotel Carlton, played by Hotel Carlton Symphony Orchestra.
- 3—Close down.

AFTERNOON SESSION.

- 2.30—From Hotel Carlton: Afternoon tea music from the Lounge, Hotel Carlton, played by Hotel Carlton Symphony Orchestra.
- 4.15—From the Studio: "The Telegraph" news.
- 4.30—Close down.

EARLY EVENING SESSION.

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

NIGHT SESSION.

- 7.48—Lecture Session: "A Year of Radio," by J. W. Robinson.
- 8—New Year's Entertainment (in four parts).
- 9.35—From the Crystal Palace. Dance music by the Crystal Palace Dance Band.

- 10—From the house of Mr. W. Donald—"Sensory Hiccup."
- 11 (Midnight)—From the Studio: "A Happy New Year to all from 4QG." Close down.

7 ZL

MORNING SESSION.

- 11—G.P.O. Clock Chimes. The "Mercury" news, stock market, shipping, commercial intelligence, weather information.
- 12—G.P.O. Clock Chimes. Close down.

AFTERNOON SESSION.

- 3—G.P.O. Clock Chimes.
- 3.50—Musical Items from the Studio.
- 3.50—Hobart Stock Exchange quotations.
- 3.55—Weather Information.
- 4—G.P.O. Clock Chimes. Close down.

EARLY EVENING SESSION.

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

EVENING SESSION.

- 8—G.P.O. Clock Chimes. "The Mercury" special Tasmanian news service. Railway auction produce sales. Weather information.
- 8.15—Hobart Stock Exchange quotations.
- 10—Weekly Gardening chat, by Mr. George Nelson.
- 9.30—Concert from the Studio.
- 9.15—Produce reports from Roberts & Co., Ltd., Murray Street, Hobart, Tasmanian District. Weather reports.
- 9.50—"The Mercury" special interstate news service. Weather synopsis. Station announcements; Week-end Travellers' Information; National Anthem.

6 W F

THE WESTRALIAN FARMERS' LIMITED BROADCASTING STATION (6WF).

Wireless Broadcasting Programmes for week ending December 29

(Programmes are subject to any alteration that may be necessary owing to unforeseen circumstances.)

MORNING SESSION.

- 12.30—Time in.
- 12.35—First Local News Bulletin. Market Reports. Cables.
- 1—Time signal from the Perth Observatory.
- 1.1—Weather notes.
- 1.2—Studio Septette.
- 2—Close down.

AFTERNOON SESSION.

- 3.30—Time-in.
- 3.35—Musical programme. Afternoon Tea Concert, relayed from Messrs. Bonas' Ltd. Tea Rooms.
- 4.30—Close down.

EVENING SESSION.

- 7—Time-in.
- 7.5—Musical evening for the Kiddies, by Annie Evelyn and Uncle Harry, Leslie, Perry and Duffy.
- 7.35—Stock and Share Intelligence. Market Reports. Cables, news, by courtesy of "The West Australian" Newspaper Coy.
- 8—Time signal from the Perth Observatory.
- 8.1—Weather Notes, supplied by the Meteorological Bureau of Western Australia.
- 8.2—Sketches by Mr. and Mrs. E. Barraclough.
- 8.5—Health Talk by Mr. H. S. Hatton.
- 11.15—New Year's Eve Illusions.
- 12—Chimes from the Town Hall.
- 12.15—Close down.

2 GB

- 6.44—Talks to children by "A.R.C."
- 7.48—Announcements.
- 7.55—Instrumental Trio.
- 8.8—Address by J. J. Van der Leeuw.
- 8.26—"The story of English Music," told and illustrated by Clement Hocking, assisted by the Ladies' Choir, the Vocal Quartette, and pupils from the Clement Hocking Studio.

2 KY

EVENING SESSION.

- 7—Sporting feature. Turf Topics. Review of Candidates and their Prospects for Tomorrow, Mr. T. G. Hopkins.
- 7.40—Lectures: Notes of the Week, Mr. J. Ryan (Director, Labor Research and Information Bureau).
- 8—A talk on Motor Cycling, by Mr. J. B. Hoekins.
- 8.10—Edison Charters and her melody kids.
- 8.25—Bess Solon, Mt. Ever Ross.
- 8.35—Monologue, Mr. David Edelstein.
- 8.40—Musical Interlude by Palais Royal Californians. Mr. Walter Bobban, leader (by kind permission of J. C. Broadbent, Ltd.).
- 8.50—Sporting feature: Full description of main contest from ringside of McHugh's Leichhardt stadium.
- 9.55—Music from the Studio.
- 10—Special New Year's Eve programme.

SATURDAY, JANUARY 1—CLOSED

MONDAY, JANUARY 3—CLOSED

Saturday, Jan. 1

2 FC

MORNING SESSION.

- 10.30—Sydney Morning Herald' News Service. Weather information.
- 11—"Big Ben"; Music from the Studio.
- 11.15—Close down.

AFTERNOON SESSION.

- Full sporting session will be given, including a description of Handicapped races in the running, by JFC Racing Commissioner. Full details of the Interstate cricket match and local sporting events.
- 4.40—Resume of afternoon's sporting events.
- 6—"The Hello Man" talks to the children.
- 6.45—A talk to the older children.
- 7—Dinner Music.
- 7.10—From the Studio: "Evening News" late news service and sporting information.
- 7.40—Close down.

EVENING SESSION.

- 7.55—Chimes and Announcements.
- 8—Broadcast from the Crystal Palace Theatre, items by the orchestra under the baton of Mr. Harry Stone (by courtesy of the Directors of Union Theatres Ltd.).
- 8.50—From the Studio: Miss Elsie Peeries, soprano, "Caro Name" (Verdi).
- 8.54—Stewart and Lorraine, humorous instrumentalists. Banjo duo, "Kismet"; violin (a) "Perfect Day" (Bond); (b) "Christmasleigh Belle"; (c) "Just one Girl" (Nall).
- 9.44—Mr. Laurence Halbert, baritone.
- 9.48—Reg Pipe Selections.
- 9.53—Miss Elsie Peeries, soprano (a) "Home" (Davies), (b) "The Scottish Blue Bell" (Harmer).
- 9—Mr. Jack Lumsdale, entertainer.
- 9.19—Mr. J. C. Cree, Scottish comedian, "When I meet Macchie" (Lauder).
- 9.18—Stewart and Lorraine, humorous instrumentalists (a) Banjo duo, "Vivian Laurie" (Bost), (b) violin, "The Beauty" (Nevin).
- (c) Organ Chimes duo; (d) Annie, "Solo Mio" (Di Capua).
- 9.26—Miss Elsie Peeries, soprano, "Spring" (Tosti).
- 9.38—Reg Pipe Selections.

- 5.40—Mr. Ad Cree, Scottish comedian, "Chalrman's Remarks" (Tuzler).
 6.44—Mr. Jack Lumsdale, entertainer.
 6.54—Sewary and Larsson, (a) "Sweet Chiming Bells"; (b) Song duet, "Daisy Rose" (Allen); (c) Organ Chimes duet, "Death of Nelson"; (d) "Mary of Araby" (Nelson).
 10.44—From the Crystal Palace Theatre, songs by the orchestra under the baton of Mr. Harry Stone.
 10.50—Mr. Laurence Hallbert, baritone.
 10.51—BBC Radio Band in dance numbers, conductor, Mr. Eric Postre.
 10.42—Mr. Ad Cree, Scottish comedian — "Mary Mack" (Johnston).
 10.52—Further items by the Dance Band.
 11—Announcements; Dance music from BBC Dance Band until midnight.
 12—National Anthem; close down.

2 BL

EARLY MORNING SESSION

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

MORNING SESSION

- Rising information, broadcast by courtesy of the "Sun."
 11—G.P.O. Clock and Chimes.
 11.1—Weather Report and Forecast.
 11.3—Sydney Daily Telegraph News Service.
 11.20—Social Notes from the Sun.
 11.25—Music from the Studio.
 11.40—Daily Telegraph News Service.
 12—G.P.O. Clock and Chimes.
 12.1—Broadcasters' Special Rugby News Service.
 12.10—Music from the Studio.
 12.15—Sports in wireless call.
 12.28—Weather Report and Forecast.
 12.31—Shipping information, arrivals and departures.
 12.44—Information re interstate and Overseas Mails.
 12.58—News from the Sun.
 1—G.P.O. Clock and Chimes.
 1.1—Music from the Studio.
 1.18—News from the Sun.
 1.50—G.P.O. Clock and Chimes.
 1.51—Music from the Studio.
 1.45—Sporting talk.
 3—G.P.O. Clock. Close down.

EARLY EVENING SESSION.

- 5.45—G.P.O. Clock and Chimes.
 5.48—Urric George and the Kiddies.
 5.51—Urric George replies to kiddies' letters.
 5.54—Seasonably selections.
 6.40—Pavillon Dinner Orchestra, under the direction of Mr. Cos. Morrison.
 7.15—Sporting results.
 7.30—Country news from "Sun."

NIGHT SESSION.

- 8—G.P.O. Clock and Chimes; Broadcasters' Topical Chorus.
 8.1—Amateurs' Instrumental Salon Quartet.
 8.50—Mr. Peter Sutherland, basso.
 8.57—Miss Hilda Walker, soprano.
 9.44—Mr. Will Cherry, imitation of birds, &c.
 9.54—Resume of following day's programme; Weather Report and Forecast.
 9—G.P.O. Clock and Chimes.
 9.1—Miss Amy Stanga, contralto.
 9.5—Mr. Stanley R. Catlett, tenor.
 9.15—Mr. Robert Hinchliffe, baritone.
 9.22—Duet, Miss Amy Dattings and Mr.

- Peter Sutherland.
 9.56—Interval.
 9.54—Miss Hilda Walker.
 9.54—Mr. Will Cherry.
 9.45—Duet, Messrs. S. R. Catlett and H. Hinchliffe.
 9.52—Mr. Peter Sutherland.
 10—G.P.O. Clock and Chimes.
 10.1—Miss Amy Dattings.
 10.5—Mr. Stanley R. Catlett.
 10.10—Mr. Herbert Hinchliffe.
 10.15—Al Housneit and Ambassadors Dance Band until midnight. "Sun" News Reports during intervals between dances.
 12—G.P.O. Clock and Chimes; National Anthem.

3 LO

MORNING SESSION.

- Interstate Cricket Match, Victoria v. South Australia, played at Melbourne. Progress notes will be given every quarter of an hour. Match starts 11.30 a.m. each day. Lunch: adjournment 1.30 till 2.15 p.m. Tea adjournment 4 till 4.15 p.m. Match finishes each day at 6 p.m.
 11—Time Signal, British Official Wireless News from Rugby; Reuters and the Australian Press Association Cables; "Argus" and "Herald" News Service; Shipping Intelligence.

Due to unavoidable circumstances we are forced to go to Press without the 3 LO and 5CL Programmes

- 11.15—Stock Exchange information.
 11.20—Meteorological information. Weather forecast for Victoria, Tasmania, South Australia and New South Wales; Ocean Forecast; River Reports, 3LO Girl Competition.
 11.30—Studio Orchestra.
 11.40—Elsie Davies, soprano.
 11.47—Dorothy Roxburgh, viola.
 11.54—Studio Orchestra.
 12.4—Renn Miller, bass baritone.
 12.11—Walter Smith, cornet.
 12.18—Studio Orchestra.
 12.28—Description of Interstate Cricket Match, Victoria v. South Australia, played at the Melbourne Cricket Ground.
 12.38—Agnes Fortune, piano.
 12.45—Renn Miller, bass baritone.
 12.50—Studio Orchestra.
 1—Description of New Year Parade, Flemington Races by "Musket" of the "Sporting Globe."
 1.7—Len Gibson's Nonpuffin Players.
 1.17—Rupert Hazell and Elsie Day in Harmony.
 1.24—Estelle Mark Trio.
 1.35—Description of Standish Handicap, Flemington Racecourse, by "Musket" of the "Sporting Globe."
 1.40—Description of Interstate Cricket Match, Victoria v. South Australia, played at the M.C.G.
 1.50—Len Gibson's Nonpuffin Players.
 2—Close down.
 2.25—Description of Interstate Cricket Match, Victoria v. South Australia, played at the Melbourne Cricket Ground.
 2.35—Description of January Handicap, Flemington Races by "Musket" of the "Sporting Globe."
 3—Close down.
 3.15—3LO Melody Masters.
 3.15—Description of Bursk Handicap, Flem-

- ington Races, by "Musket" of the "Sporting Globe."
 3.25—Description of the Interstate Cricket Match, Victoria v. South Australia, played at the M.C.G.
 3.30—3LO Melody Masters.
 3.30—Description of Criterion Handicap, Flemington Races, by "Musket" of the "Sporting Globe."
 3.35—3LO Melody Masters.
 4.30—Description of January Handicap, Flemington Races, by "Musket" of the "Sporting Globe."
 4.35—Description of Interstate Cricket, Victoria v. South Australia, played at the Melbourne Cricket Ground.
 4.45—"Herald" news service. Sporting results. Announcements. 3LO Girl.
 5—Close down.
 5.30—Description of Interstate Cricket Match, played at M.C.G., Victoria v. South Australia.

EVENING SESSION.

- 5.45—Children's Hour; Answers to letters and birthday greetings.
 6—Eulalie Blong will sing to you.
 6.7—"Mary Gumieal"; Poem, "When a Fairy went down-making."
 6.17—Eulalie Blong will sing to you again.
 6.24—"Mary Gumieal" will talk about her trip to Adelaide.
 6.38—"Argus" and "Herald" news services.
 6.40—Sporting results, Reuters and the Australian Press Association Cables. Weather Synopsis, shipping movements.
 6.52—Stock Exchange information.
 6.57—Fish Market Reports by J. R. Borrett Ltd.
 7—River Reports.
 7.3—Market reports by the Victorian Producers Co-operative Co. Ltd.; grain, chaff, hay, straw, jute, dairy produce, potatoes, and onions.

NIGHT SESSION.

- 7.20—Mr. R. Rawson, "Eperanto Talk."
 7.40—Mr. Bruce Small, under the auspices of the A.S.C., "Preparing a Bicycle for record Breaking."
 8—Launceston City Band, Mr. Chester Edwards, conductor.
 8.15—Tomour Quartet.
 8.18—Moana Luo Duo.
 8.28—Miss Muriel Burton, contralto.
 8.56—Launceston City Band.
 8.48—Wendling and Molloy, Melody Duo.
 8.47—Estelle Mark Trio, in song and musical numbers.
 8.7—Rosina Down, soprano.
 9.14—Launceston City Band.
 9.20—"The Countess from Nowhere" transmitted from His Majesty's Theatre, by permission of J. C. Williamson Ltd.
 10.10—British Official Wireless News from Rugby. Announcements. 3LO Girl.
 10.20—Tomour Quartet.
 10.27—Launceston City Band.
 10.32—Wendling and Molloy, Melody Duo.
 10.39—Launceston City Band.
 10.43—3LO Melody Masters.
 10.52—"Argus" news service. Weather forecast.
 11—Our earnest thought for to-night is—"Orestes is the son's health; sadness is his pain."—Stanislaus.
 11.1—3LO Melody Masters.
 11.40—God Save the King.

3 AR

MORNING SESSION.

- 11.50—The British Official Wireless Press, received by 3AR's operator from Rugby Wireless Station, England. Express train information. "Age" news bulletin.
 12—Time Signal Chime from the G.P.O. First Weather Forecast; Studio Bronzette Readings; Events of the Day.
 12.15—Musical selections from the Studio.
 12.30—Stock Exchange News. Foreign Exchanges of the world, supplied by the cour-

- (192) of Messrs. Thos. Cook & Son; Market Reports.
 12.50—Musical Selections.
 12.55—Mail Notices, Shipping Movements.
 1—Close down.

AFTERNOON SESSION.

- V.R.C. Meeting, Flemington.
 1—Description of New Year's Herald, 2m.
 1.40—Description of Swedish Handicap, 4s.
 2.40—Musical Selections from the Studio.
 2.40—Description January Stepchildren, 2m.
 3.30—Description Bugot Handicap, 15m.
 4—Time Signal Chime G.P.O. 2nd Weather Forecast.
 4.50—Description Criterion Handicap, 4s.
 4.55—Amusement guide for evening Studio Barometer and Outdoor Thermometer readings.
 5—Description January Handicap, 1m.
 Time Signal Chime. Close down.

EARLY EVENING SESSION.

- 6.45—Children's Corner, Uncle Mac.

EVENING SESSION.

- 8—Time Signal Chime from G.P.O. Studio Barometer and Outdoor Thermometer Readings. British Official Wireless Press, Final sporting and racing results. Local news.
 8.15—Dance night. The Rhythmic Dance Orchestra, relayed from the Maison-de-Luxe, Elwood.
 9.30—Week-end travellers' information, supplied by courtesy of Victorian Railways Department and Metropolitan Tramways Board.
 9.50—The Maison-de-Luxe Rhythmic Dance Orchestra.
 10—Time Signal Chime. Studio Barometer and Outdoor Thermometer Readings.
 10.5—The Maison-de-Luxe Rhythmic Dance Orchestra.
 11—Time Signal Chime. Close down.

4QG

NO MIDDAY TRANSMISSION.

AFTERNOON SESSION.

- 9.25—Tune-in.
 9.35—A Matinee for Little Listeners by "Miss Waratah."
 9.40—Close down.

EARLY EVENING SESSION.

- 6.25—Tune-in.
 6.40—The Children's Session: Bedtime stories by "Uncle Ben" and "Uncle Jim," assisted by "Mabel Sunshine."
 7.16—Sporting News.

NIGHT SESSION.

- 7.45—A Sporting Talk.
 8—From Gaiety Theatre, Townong—Orchestral Music.
 8.15—From the Studio: Concerted Items.
 8.45—From Gaiety Theatre, Townong: Orchestral Music.
 9—From Lennon's Ballroom: Dance music by the Ajax Novelty Band.
 10—From the Studio: "The Sunday Mail" news.

6WF

- 12—Tune-in.
 12.5—Musical programme, including piano-forte selections by Miss Evelyn Willis, A.R.C.M.
 12.7—Market Reports. First Local News Bulletin. Cable news.
 1—Time Signals from the Perth Observatory. Weather notes, supplied by the Meteorological Bureau of Western Australia.

CUP DAY.

- Racing Events from the Ascot Racecourse, described in detail:—
 1—(1) Cup Hurdles.
 2.10—(2) High Weight Handicap.
 2.30—(3) Perth Cup.
 3.50—(4) Epsom Handicap.
 4.30—(5) Sapping Plate.

- 5.10—(6) Midland Handicap.
 Close down last race.

- 7—Tune-in.
 7.5—Bedtime stories, by Uncle Duffy.
 7.55—Stock and Share Intelligence. Market Reports. Cable News, by courtesy of "The West Australian" Newspaper Co.; Sports results supplied by kind permission of "The Mirror" Newspaper Limited.
 8—Time Signal from the Perth Observatory.
 8.1—Weather Notes, supplied by the Meteorological Bureau of Western Australia.
 8.2—Concert by the Caledonian Society, relayed from the Perth Town Hall.
 10—Second News Bulletin, supplied by courtesy of "The Daily News" Newspaper Co.
 10.50—Close down.

7ZL

EVENING SESSION.

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

Sunday, Jan. 2

2FC

MORNING SESSION.

- 10.55—Chimes and Announcements.
 11—Broadcast from the Lyceum Hall, the Morning Service by the Central Methodist Mission; service conducted by the Rev. F. H. Saward.
 12.10—From the Studio: News Service.
 12.30—Close down.

AFTERNOON SESSION.

- 2.55—The Chimes of 2FC.
 3—"Big Ben" and Announcements.
 3.5—Captain Fred Aaron will talk, his subject being "Why was Australia not discovered earlier."
 3.25—Broadcast from the Pitt Street Congregational Church, an organ recital by Miss Edith Elliott—Sonata 1, Mendelssohn; Allegro-moderato—Adagio—Allegretto; Pastorale, Pietro Yon; Navareth; Gounod; vocal "March of the Maple Kings," Hubertis (Concerto in F Major, Handel; "The First Newell; Offertine, Adele Fieles, Lorez; vocal "Hallelujah Chorus," Handel.
 4.45—Close down.

NIGHT SESSION.

- 6.25—Announcements.
 6.30—From the Studio: Mr. David Craven, haritone.
 6.34—Miss Barbara Briscoe, contralto, "Recit. "Spoma Euridici," "Aria, "Che Dio" C. W. Gluck.
 6.38—Miss Daisy Richards, violinist, (a) "Holmes Melody" (Ashron), (b) "La Grians" (Kreislcr).
 6.47—Mr. David Craven, haritone.
 6.55—Miss Barbara Briscoe, contralto: "Dut of the Heart of Call" (Martini).
 7—Miss Daisy Richards, violinist: (a) "Fomona" (Wionarski); (b) "Minnet" (Popara-Kreislcr).
 7.3—Mr. David Craven, haritone.
 7.12—Miss Barbara Briscoe, contralto: (a) "Hindoo Song" (Sombarg), (b) "Benide still Waters" (Hambler).
 7.20—Broadcast from St. James' Church of England, King Street, Sydney, the evening service, conducted by the Rev. P. A. Micklem, M.A.
 8.25—Broadcast from the Manly Beach Band, items by the Manly Municipal Band.

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- under the baton of Mr. J. Phelanag.
 9.30—From the Studio: Mr. Sydney Calland, baritone (a) "Have you news of my boy Jack" (German); (b) "The Sweetest Flower that Blows" (Hawley).
 9.35—Miss Eileen Boyd, contralto.
 9.45—Pianne Solos.
 9.50—Mr. Sydney Calland haritone (a) "The Silent Forest" (Torrens); (b) "The Mini-trial Boy" (Moore).
 9.55—Miss Eileen Boyd, contralto.
 10.5—Close down.

2 BL**MORNING SESSION.**

- 10.45—News Service.
 11—Service broadcast from Shriat Church, St. Lawrence.

AFTERNOON SESSION.

- 3.30—Hilbs Class conducted by Mr. W. Cairn Broulley.
 4—Organ Recital.
 5—Close down.
 5.15—Children's service conducted by Ursula George.

EVENING SESSION.

- 7—Service broadcast from Peterham Baptist Church.
 8.15—From the Studio: Broadcasters' Trio.
 8.40—The Lyric Male Quartet.
 8.50—Miss Heather Kinnaird, contralto.
 8.57—Resume of following day's programme: Weather Report and Forecast.
 9—G.P.O. Clock and Chimes.
 9.1—Mr. Bryce Carter, cello solo.
 9.15—Mr. David Smith, baritone.
 9.15—Miss Ella Goodman, soprano.
 9.22—Broadcasters' Trio.
 9.25—The Lyric Male Quartet.
 9.42—Miss Heather Kinnaird.
 9.45—Mr. Bryce Carter.
 9.45—Mr. David Smith.
 10.3—Miss Ella Goodman.
 10.16—Broadcasters' Trio.
 10.20—Close down.

3 AR**MORNING SESSION.**

- 11—Morning Service from Independent Church, Collins Street. Preacher, Rev. J. Ernest James, B.A.

AFTERNOON SESSION.

- 5—Mr. Victor Drinkwater, tenor.
 5.5—Miss Hilba Lewis, contralto.
 6.14—Mr. C. Myers, violinist.
 6.21—Mr. John Ilos, bassitone.
 6.28—Miss Mary Norton, soprano.
 6.35—Mr. Victor Drinkwater, tenor.
 6.42—Mr. C. Myers, violinist.
 6.49—Miss Mary Norton, soprano, and Hilba Lewis, contralto.
 6.56—Mr. John Ilos, baritone.
 6.53—Miss Mary Norton, soprano.
 Close down.

EARLY EVENING SESSION.

- 6—Children's entertainment, by Ladybird.

EVENING SESSION.

- 7—Evening Service from Church of Christ, Swanston Street, Melbourne. Preacher: Dr. J. L. Branit.
 8.10—Miss Kit Mills, contralto.
 8.37—Mr. Wilfred Thompson, tenor.
 8.44—Miss Jessie Mulder, mezzo soprano.
 8.51—Mr. Frank Thomas.
 8.55—Miss Jessie Mulder and Mr. Ernest Mulder, soprano and trumpet duet.
 9.5—Mr. W. E. Bookingsham, Superintendent Pacific Cable Co., will talk on "Cables and Wireless."
 9.20—Miss Kit Mills, contralto.
 9.27—Mr. Wilfred Thompson, tenor.
 9.34—Mr. Frank Thomas baritone.

- 9.41—Mr. Ernest Mulder, trumpeter.
 9.40—"Age" News Bulletin, exclusive to 3 AR.
 9.55—Close down.

4 QG**MORNING SESSION.**

- 11—Morning service. The complete morning service will be relayed from St. Andrew's Presbyterian Church, Brisbane. Close down.

AFTERNOON SESSION.

- 3.15—Concert provided by the Cityrama Band will be relayed from the Botanical Gardens (conductor, Mr. A. Kassar). Close down.

NIGHT SESSION.

- The complete evening service will be relayed from St. Andrew's Presbyterian Church, Brisbane.
 At the conclusion of the Church Service, the Concert by the Greater Brisbane Municipal Band will be relayed from Wickham Park.
 9.20—Close down.

6 WF

- 10.45—Time-In.
 11—Morning service, relayed from the Congregational Trinity Church, Perth.
 8.20—Concert relayed from the Zoological Gardens, South Perth.
 5—Close down.
 7—Time-In.
 7.15—Children's Bedtime Stories, by Mr. Robert Edmondson.
 7.30—Evening Service, relayed from Wesley Church, Perth. Rev. J. W. Grove, M.A., LL.B., preacher.
 8.45—Band programme, relayed from the Government Gardens, by the Perth City Band.

7 ZL**EVENING SESSION.**

- 7—Service from Chalmers Presbyterian Church, Hobart.
 At conclusion of Church Service either Band Concert from St. David's Park or Studio Concert.
 8.45—The "Mercury" Special International news service: Weather Synopses; Station Announcements; National Anthem.

Monday, Jan. 3**2 FC****EARLY MORNING SESSION.**

- 7—"Big Ben" and announcements.
 7.1—Music from the Studio.
 7.10—Official weather forecast, rainfall, temperatures, astronomical memoranda, shipping intelligence, commercial news, mail services.
 7.25—Investment market, mining share market, metal quotations.
 7.35—Wool sales, broadbluffs markets, interstate markets, produce markets.
 7.45—"Sydney Morning Herald" news service.
 8—"Big Ben"; Chorus Talk by Mr. J. K. Powell; Close down.

MORNING SESSION.

- 9.15—The chimes of 2FC.
 9.20—Music from the Studio.
 9.25—"Big Ben" and Announcements.
 9.5—Late "Sydney Morning Herald" news service.
 10.15—Music from the Studio.
 10.30—A talk by 2FC Racing Commissioner.

- 10.45—A morning reading.
 11—"Big Ben"; Australian Press Association and Reuter's Cable Service.
 11.15—Music from the studio.
 11.45—Close down.

MIDDAY SESSION.

- 12—The Chimes of "Big Ben" and Announcements.
 12.5—Stock Exchange, First Call.
 12.10—Music from the Studio.
 12.45—From Farmer's Oak Hall: The Oak Hall Trio.
 1—"Big Ben"—Weather Intelligence.
 1.5—"Evening News"; Midday News Service. Producers' Distributing Society's report.
 1.29—From Farmer's Oak Hall: The Oak Hall Trio.
 1.25—Stock Exchange, Second Call.
 1.40—Music from the studio.
 1.49—From Farmer's Oak Hall: The Oak Hall Trio.
 2—"Big Ben"; Close down.

AFTERNOON SESSION.

- 2.30—The chimes of 2FC and Announcements.
 2.35—Music from the Studio.
 2.40—From Farmer's Tea Rooms, Miss Katherine Beverley, soprano.
 2.45—The Oak Hall Trio.
 4.05—Music from the Studio.
 4.46—From Farmer's Tea Rooms, Miss Margaret Grimshaw, mezzo.
 4.55—Stock Exchange—third call.
 4.45—Instrumental items by the Oak Hall Trio.
 4.15—Studio Music.
 4.20—From Farmer's Tea Rooms, Miss Katherine Beverley, soprano.
 4.25—The Oak Hall Trio.
 4.35—Music from the Studio.
 4.46—From Farmer's Tea Rooms, Miss Margaret Grimshaw, mezzo.
 4.48—Stock Exchange—third call.
 4.46—Close down.

EARLY EVENING SESSION.

- 5.45—Chimes of 2FC.
 5.50—The "Hello Man" talks to the Children.
 6.25—A serial story for the older children.
 6.45—Dinner Music.
 7.10—"Evening News" late news service; Weather information.
 7.30—"Delaney's" Market Reports (wool, wheat, stock), Fruit and Vegetable Markets.
 7.40—Close down.

EVENING SESSION.

- 7.55—Announcements.
 8—"Big Ben"; Broadcast from the Haymarket Theatre, items by the orchestra under the baton of Mr. Stanley Porter, by courtesy of the management.
 8.25—From the Studio: Miss Nora Hill, Irish soprano.
 8.29—Mr. Norman Jansen, baritone.
 8.32—Mr. Walter Hunt and Miss Eva Warhurst in a one act play.
 8.50—Miss Nora Hill, Irish soprano.
 8.55—Mr. Reg. Greenwood, comedian.
 9.5—Haymarket Theatre vocal act.
 9.20—From the Studio: Mr. Norman Jansen, baritone.
 9.28—Mr. Lionel Lawson, in violin solos.
 9.35—Mr. Walter Hunt and Miss Eva Warhurst in a one act play.
 9.55—Miss Nora Hill, soprano.
 9.58—Mr. Norman Jansen, baritone.
 10.3—Mr. Lionel Lawson, violinist.
 10.10—Mr. Reg. Greenwood, comedian.
 10.15—Items by the Haymarket orchestra under the baton of Mr. Stanley Porter.
 10.30—2FC Dance Band in dance numbers, conductor, Mr. Eric Pearce.
 10.53—Mr. Reg. Greenwood, comedian.
 10.42—2FC Dance Band, in dance numbers.
 10.56—Celebrity Records.
 11—"Big Ben"; 2FC Dance Band in dance numbers, until midnight.
 12—National Anthem; close down.

2 BL**EARLY MORNING SESSION.**

- 7.15—G.P.O. Clock and Chimes.
 7.16—Musical Programme from the Studio.

- 7.14—Physical Training and Health Exercises.
7.23—Health Hints.
7.30—Physical Training & Health Exercises.
7.45—G.P.O. Clock and Chimes.
7.46—Weather Forecast.
7.48—Sporting Information.
7.50—Broadcasters' Special News Service.
8—G.P.O. Clock and Chimes; Close down.

MORNING SESSION.

- Racing information broadcast by courtesy of the "Sun."
11—G.P.O. Clock and Chimes.
11.35—Weather Report.
11.35—Broadcasters' Special News Service from Rugby.
11.45—"Daily Telegraph" News Service.
11.53—Music from the Studio.
11.55—"Daily Telegraph" News Service.
11.55—Music from the Studio.
12—G.P.O. Clock and Chimes.
12.1—Rounds in call by wireless.
12.15—Weather Report and Forecast.
12.16—Shipping information—arrivals and departures.
12.8—Information as Interstate and Overseas Mails.
12.12—Social Notes from the "Sun."
12.17—News from the "Sun."
12.30—G.P.O. Clock and Chimes.
12.31—Music from the Studio.
12.45—Hilliers' Instrumental Quartet.

AFTERNOON SESSION.

- 1.30—News from the "Sun."
1.46—Talk on sporting and athletic fixtures for day. Lacrosse, Hockey, Tennis, Cricket, Sailing, Bowling, Athletics, Rifle Shooting, Golf, Bowls, Turfing, Baseball. During the afternoon sporting information will be broadcast by courtesy of the "Sun" Newspapers. Races will be broadcast from local, country and interstate meetings. Results of the Sheffield Shield Cricket matches will be broadcast. Musical from the Studio. During the afternoon racing returns will be given every half hour.
2—G.P.O. Clock and Chimes; Close down.

EARLY EVENING SESSION.

- 5.45—G.P.O. Clock and Chimes.
5.46—Uncle George and the kiddies.
5.51—Uncle George replies to kiddies' letters.
6.10—Uncle George and Aunt (the Solomon Island boy) will entertain the kiddies.
6.16—Pavilion Dinner Orchestra under the direction of Mr. Cox Morrison.
7.15—Results of all sporting information, including Racing, Bowls, Tennis, Swimming, Sailing, Athletics, by courtesy of the "Sun."
7.30—Country news from the "Sun," and results of all Sporting and Athletic fixtures.
7.45—G.P.O. Clock and Chimes; close down.

NIGHT SESSION.

- 8—G.P.O. Clock and Chimes; Broadcasters' Typical Chats.
8.3—The Ahad Duo (steel guitars).
8.13—Miss Alice Prowse, contralto.
8.20—Miss Joy Vase, comedienne.
8.27—Madame Phyllis Howe, soprano.
8.34—Mr. Reg. Harrison, comedian.
8.41—Mr. John Morris, tenor.
8.48—Mr. Gilbert Dobson, basso.
8.55—Resume of following day's programme; Weather Report and Forecast.
9—G.P.O. Clock and Chimes.
9.1—John and Nella Sheen, instrumentalists.
9.16—Interval.
9.21—Ahad Duo (steel guitars).
9.31—Miss Alice Prowse.
9.38—Miss Joy Vase.
9.45—Madame Phyllis Howe.
9.52—Reg. Harrison.
10—G.P.O. Clock and Chimes.
10.1—Mr. Reg. Harrison.
10.8—Mr. Gilbert Dobson.
10.15—Al, Hammit and the Ambassadors

Dance Band, broadcast from the ballroom of the Ambassadors. During the intervals between dances, news reports, by courtesy of "The Sun," will be broadcast.
12—G.P.O. Clock and Chimes; National Anthem.

3 AR

MORNING SESSION.

- 11.30—British Official Wireless Press, received from Rugby Super Wireless Station, England; Express Train Information; "Age" News Bulletin, exclusive to 3AR.
12—Time Signal Chime. Studio Barometer Readings; 1st Weather Forecast. Sporting Fixtures; Events of the day.
12.5—Musical Selections from the Studio.
12.30—Market Reports.
12.5—Musical selections.
12.55—Shipping Movements. Mail Notices.
1—Close down.

AFTERNOON SESSION:

- Mention Racing Club Results immediately after each race, and at ½ hourly intervals. Results immediately after each race, and at half-hourly intervals.
2.30—The Melbourne Piano Trio
2.39—Mr. James Melton, tenor.
2.47—Melbourne Piano Trio.
2.59—Mr. Bert Pettifer, violinist.
2.59—Mr. James Melton, tenor.
3.17—Melbourne Piano Trio.
3.25—Mr. Ronald Barnes, 'cello.
4—Time Signal Chime; 2nd Weather Report; Selections by the Melbourne Piano Trio.
4.55—Evening Amusement Guide.
5—Time Signal Chime; 2nd Weather Forecast; Close down.

EARLY EVENING SESSION.

- 6.45—Children's corner, by Uncle Rad.

EVENING SESSION.

- 7.45—British Official Wireless Press; Studio Barometer Readings.
8—Time Signal Chime. Mr. Walter Quirk, pianist.
8.7—Mr. Len Shanley, tenor.
8.14—Miss Sylvia Macpherson, mezzo soprano.
8.22—Mr. Rex Barnage, 'cello.
8.30—Mr. A. J. Sullivan, travolone, Australia and New Zealand.
8.45—Mr. Cliff Crichton, baritone.
8.52—Miss Leslie Watt, soprano.
8.59—Miss Perry Lester, elocutionist.
9.6—Mr. Walter Quirk, pianist.
9.13—Mr. Len Shanley, tenor.
9.21—Miss Sylvia Macpherson, mezzo.
9.28—Mr. Rex Barnage, 'cello.
9.37—Mr. Cliff Crichton, baritone.
9.45—Miss Perry Lester, elocutionist.
9.52—Miss Leslie Watt, soprano.
10—Time Signal Chime. Studio Barometer readings. "Age" news bulletin.
10.7—Leggett's Ballroom Orchestra.
11—Close down.

4 QG

MIDDAY SESSION.

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

AFTERNOON SESSION.

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

EARLY EVENING SESSION.

- 6—News Service supplied by the "Daily Standard."
6.30—Children's Season: Stories by "The Sandman."
7—Market Reports; Lecturette, "Prospects for the New Year Pig Market," by Mr. E. J. Shelton, Instructor in Pig Raising.
7.30—From the Studio of 4QC, Stock Reports; Announcements; Weather News.

NIGHT SESSION.

- 7.45—Lecture Session "Amateur Wireless" by Mr. N. T. Monkhouse (President of the Wireless Institute of Australia, Queensland Division).
8—Studio Programme. Plantation Sketch; Musical programme.
9—Metropolitan Weather Forecast; Musical Programme.
10—"The Daily Mail" news. Weather news. Close down.

6 WF

- 12.30—Tune-in.
12.45—First Local News Bulletin. Market Reports. Cables.
1—Time signal from the Perth Observatory.
1.1—Weather Notes.
Racing events from the Ascot Race Course will be described in detail—
2—(1) Fremantle Plate.
2.46—(2) Coronation Plate.
3.25—(3) Imperial Handicap.
4—(4) Commonwealth Handicap.
4.46—(5) C. R. Cox Stakes.
5.20—(6) Final Handicap.
Close down.

EVENING SESSION.

- 7—Tune in.
7.5—Bedtime stories, by Uncle Duffy.
7.30—Stock and Share intelligence. Market Reports. Cables, news by courtesy of "The West Australian" Newspaper Coy.
8—Weather notes.
8.1—Tune notes.
8.2—Talks "Australian Literature," by Mr. J. S. Barry, B.A., LL.B.
8.25—All Australian Night.
Mr. Ted Scott, entertainer.
10—Second News Bulletin supplied by courtesy of "The Daily News" Newspaper Coy.
10.45—Close down.

7 ZL

MORNING SESSION.

- 11—G.P.O. Clock Chimes. The "Mercury" news; Stock Market. Shipping. Commercial intelligence. Weather information. Ships within wireless range.
12—G.P.O. Clock Chimes. Close down.
12—G.P.O. Clock Chimes; Musical Items from the Studio.
3.20—Hobart Stock Exchange quotations.
3.55—Weather information.
4—G.P.O. Clock Chimes; close down.

EVENING SESSION.

- 7—Children's Corner. "His Brother" chats to his Pal.
8—G.P.O. Clock Chimes. The "Mercury" special Tasmanian news service. Railway auction produce sales. Weather information.
8.5—Hobart Stock Exchange quotations.
9.10—Concert from the Studio.
9.15—Tasmanian District Weather Reports.
9.50—The "Mercury" special interstate news service. Weather synopsis. Station announcements. National Anthem.

Tuesday, Jan. 4

2FC

EARLY MORNING SESSION.

- 7.—"Big Ben" and announcements.
7.5—Music from the Studio.
7.10—Official weather forecast, rainfall, temperature, astronomical memoranda, shipping intelligence, commercial news, mail services.
7.25—Investment market, mining share market, metal quotations.
7.33—Wool sales, breadstuffs markets, interstate markets, produce markets.
7.45—"Sydney Morning Herald" news service.
8—"Big Ben"—"Cheero" Talk, by Mr. H. K. Towell.
8.5—"Big Ben"; close down.

MORNING SESSION.

- 9.15—The Chimes of 2FC.
9.20—Music from the Studio.
9.45—Racing talk by 2FC Racing Commission.
10—"Big Ben" and announcements.
10.5—Late "Sydney Morning Herald" News Service.
10.15—Music from the Studio.
10.45—A Morning Reading.
11—"Big Ben" Australian Press Association and Butler's Cables.
11.20—Music from the Studio.
11.25—Talk on Home Cooking and Recipes, by Miss Ruth Forest.
11.35—Close Down.

MIDDAY SESSION.

- 12—The Chimes of Big Ben, and Announcements.
12.5—Stock Exchange, First Call.
13.10—Music from the Studio.
13.45—Music from the Oak Hall; The Oak Hall Trio.
1—"Big Ben"; Weather Intelligence.
1.8—"Evening News" midday news service. Producers' Distributing Society's reports.
1.90—Oak Hall Trio.
1.95—Stock Exchange—Second Call.
1.40—Music from the Studio.
1.50—The Oak Hall Trio.
2—The Chimes of Big Ben; Close Down.

AFTERNOON SESSION.

- 2.30—The Chimes of 2FC and Announcements.
2.35—Music from the Studio.
2.40—From Farmer's Tea Rooms; Miss Marjory Cole, soprano.
2.45—Oak Hall Trio.
2.55—Music from the Studio.
3—From Farmer's Tea Rooms; Miss Jeannette Rooney, contralto.
3.5—The Oak Hall Trio.
3.15—Music from the Studio.
3.40—From Farmer's Tea Rooms; Miss Jeannette Rooney, contralto.
3.45—Stock Exchange; Third Call.
3.45—Close down.

EARLY EVENING SESSION.

- 6.45—The Chimes of 2FC.
6.50—"Hello Man" talks to the Children.
6.50—A serial story for the older children.
6.45—Dinner Music.
7—"Evening News" late news service, Weather Information.
7.30—A Talk by a member of the N.S.W. Wireless Institute.
7.40—Mr. F. L. Graingermacher will continue his talks on the "Wonders of Nature," his subject to-night being, "In Australian Spider Land."
7.50—Announcements.

NIGHT SESSION.

- 8—"Big Ben." Broadcast from the Royal Naval House, items by the State Military Band, under the baton of Mr. Ernest Archer.
8.15—From the Studio; Mr. Ernest Archer,

- tenor, "Sometime at Dawn" (Waud).
8.25—From the Royal Naval House; Further items from the State Military Band.
8.40—From the Studio; Miss Suzanne Ennis, contralto.
8.44—From the Royal Naval House; State Military Band.
8.48—From the Studio; Mr. Ernest Archer, tenor, (a) "Look Into Your Garden" (Wood); (b) "Pleading" (O. Anderson).
9—Miss Leslie Elliott, entertainer.
9.10—From Royal Naval House; State Military Band.
9.25—From the Studio; Mr. Branton Gibb, elocutionist.
9.35—From Royal Naval House; State Military Band.
9.40—From the Studio; Mr. Ernest Archer, tenor, "Out of the Darkness" (H. Harle).
9.50—Miss Leslie Elliott, entertainer.
10—Miss Suzanne Ennis, contralto.
10.10—Mr. Branton Gibb and Miss Ethel Lang, in a Comedy Sketch.
10.20—Miss Suzanne Ennis, soprano.
10.25—From the Westworth Hotel, items by the Westworth New Symphony Dance Orchestra, under the baton of Mr. Sydney Simpson.
10.35—From the Studio; Mr. Branton Gibb, elocutionist.
10.44—Further dance numbers from the Westworth Orchestra.
10.52—Celebrity records from the Studio.
11—"Big Ben"; Westworth Orchestra until midnight.
12—National Anthem; close down.

2BL

EARLY MORNING SESSION.

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

MORNING SESSION.

- Racing information broadcast by courtesy of the "Sun".
10—G.P.O. Clock and Chimes.
10.1—Weather Report.
10.3—Musical programme from the studio.
10.20—Daily Telegraph news.
10.35—Studio Music.
10.45—Serial Story.
11—G.P.O. Clock and Chimes.
11.1—News from the Daily Telegraph.
11.15—Rabbit Market Report.
11.15—Yesterday's Market Report.
11.20—Fruit Market Report.
11.25—London Dairy Production and Egg Market Report.
11.25—London Metal Quotations.
11.28—Road in call by Wireless.
11.30—Information re Interstate and Overseas Mail.
11.33—Shipping Information.
11.35—Sporting Talk.
11.40—Women's Seminar; Social Notes by Mrs. Jordan.
11.45—Mrs. Jordan replies to correspondents.
12—G.P.O. Clock and Chimes.
12.1—Talk on Toilet Hints, by Mrs. Jordan.
12.25—News from the "Sun".
12.30—G.P.O. Clock and Chimes.
12.35—Sydney Stock Exchange Calls.
12.45—Sun News Service.
12.45—Hillier's Instrumental Quartets, direction Cyril Costello.
1.20—G.P.O. Clock and Chimes.
1.31—Weather Report.
1.38—Stock Exchange Calls.
1.50—News from the Sun.
2—G.P.O. Clock and Chimes; Close down.

AFTERNOON SESSION.

- Racing information, broadcast by courtesy of the Sun.
2—G.P.O. Clock and Chimes.
2.1—Weather Report and Forecast by courtesy of Prof. Meteorologist.
2.3—Social Notes from the "Sun".
2.10—News from the "Sun".
2.15—Civil Service Stores' Trio, direction Miss G. Courroy Bremer.
2.30—G.P.O. Clock and Chimes.
2.31—Sun Newspapers' News Service.
2.45—Musical programme from the Studio.
4—G.P.O. Clock and Chimes.
4.1—Civil Service Stores' Trio.
4.15—Musical Programme.
4.30—Manical Stage.
4.45—Producers' Distributing Society's Vegetable and Fruit Markets Report.
4.50—Shipping information when available.
4.52—Day's Racing Resumé on Race Days.
4.55—News from "The Sun".
4.58—Resumé of night's programme.
5—G.P.O. Clock and Chimes. Close down.

EARLY EVENING SESSION.

- 5.45—G.P.O. Clock and Chimes.
5.46—Uncle Digger and the Kiddies.
6.40—Pavilion Dinner Orchestra, under the direction of Mr. Geo. Morrison.
Special Country Session.
7—G.P.O. Clock and Chimes.
7.1—Australian Mercantile Land and Finance Co's. Report.
7.5—Weather Report and Forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist.
7.5—Stock Exchange Reports.
7.15—Producers' Distributing Society's Fruit and Vegetable Report.
7.20—Fruit and Vegetable Reports (Sun).
7.23—Grain and Fodder Report (Sun).
7.26—Daily Report (Sun).
7.50—Country News from the Sun.

NIGHT SESSION.

- 8—G.P.O. Clock and Chimes; Broadcasters' Tonal Chorus.
8.3—Mr. Lance Jeffree, tenor.
8.10—Mr. Clem Williams, baritone.
8.17—Mr. J. Crook-Brown, clarinet.
8.24—Miss Elsie Findlay, soprano.
8.31—Broadcasters' Minature Orchestra.
8.41—Miss Madge Helmrich, contralto.
8.48—Miss May Nancarrow, elocutionist.
8.57—Resumé of following day's programme; 9—G.P.O. Clock and Chimes.
Weather Report and Forecast.
9.3—Broadcasters' Players.
9.24—Broadcasters' Minature Orchestra.
9.30—Interval.
9.38—Mr. Lance Jeffree.
9.45—Miss Elsie Findlay.
9.52—Mr. Clem Williams.
10—G.P.O. Clock and Chimes.
10.1—Broadcasters' Minature Orchestra.
10.11—Miss Madge Helmrich.
10.18—Miss May Nancarrow.
10.25—Al. Hainmett 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.

2KY

EVENING SESSION:

- 7.30—Tune in to the ticking of the clock.
7.38—News items.
7.40—A talk on the New Guinea Goldfields by Mr. J. S. Hoskins.
8—Pianoforte Solo, Miss Mary Dean.
8.10—Baritone Solos, Mr. Hugh Willcock.
8.20—Mezzo-soprano, Miss Helen Cameron.
8.30—Musical Interlude, Palais Royal Calliornists.
8.45—Mezzo soprano, Miss Lillian Hallam.
8.53—Mouth Organ, Mr. A. G. Rickard.

- 8—Tenor Solo, Mr. G. Scott.
- 9.15—Soprano Solo, Miss Zara Neilson.
- 9.15—Palata Royal Californians.
- 9.30—Theatre talk.
- 9.40—Hawaiian Steel Guitar selections.
- 9.50—Musical Interlude.
- 10—Closing announcements.

3 A R

MORNING SESSION.

- 11.40—Bellah Official Wireless Press, received from Rugby Super Wireless Station, England. Express Train Information "Ago" News Bulletin.
- 12—Time Signal Chime from G.P.D. Studio.
- Barometer Readings, 1st Weather Forecast: Events of the day.
- 12.5—Musical Selections.
- 12.50—Market Reports.
- 12.40—Musical Selections.
- 12.55—Shipping Movements, Mail Notices.
- 1—Close down.

AFTERNOON SESSION.

- 2.30—Selections by De Studio Quartette.
- 3—Miss Ivy Mill, contralto.
- 3.1—Miss Ruby Stevenson, violin.
- 3.15—Miss Mary O'Meara, soprano.
- 3.25—Miss Ivy Mill, contralto.
- 3.30—Mr. Dudley Thorpe, baritone.
- 3.35—Miss Ruby Stevenson, violin.
- 3.45—Miss Mary O'Meara, soprano.
- 3.55—Mr. Dudley Thorpe, baritone.
- 4—The Studio Quartette.
- 4.55—Evening Amusement Guide.
- 1—Time Signal Chime, Studio Barometer Readings, Close down.

EARLY EVENING SESSION.

- 6.45—Children's Corner, by Uncle Mac.

EVENING SESSION.

- 7.40—Mr. Higgins, Talk.
- 8—The E. K. Venman Trio.
- 8.14—Mr. Kaynor Phillips, baritone.
- 8.21—Mr. Trevor Wilton will commence a series of talks on "Australian Citizenship."
- 8.30—Miss Daphne Patten, violinist.
- 8.45—Miss Jean Ellum, lyric soprano.
- 8.50—Miss Pearl Holt, pianist.
- 8.57—Mrs. John Brennan, lyric soprano.
- 9.1—Miss Marion De Saxe, flautist.
- 9.11—Miss Pearl Holt, soprano.
- 9.19—Mr. Kaynor Phillips, baritone.
- 9.26—Miss Jean Ellum, soprano.
- 9.34—Miss Pearl Holt, pianist.
- 9.40—Mrs. John Brennan, soprano.
- 9.47—The E. K. Venman Trio.
- 10—Time Signal Chime from G.P.D. Studio.
- Barometer Readings: "Ago" News Bulletin.
- 10.10—Leggett's Ballroom Orchestra.
- 11—Time Signal, Close down.

4 Q G

MIDDAY SESSION.

- 12.55—Tune in.
- 12.5—Time Signal.
- 1—Market Reports, Weather Information, "The Daily Mail" and "The Daily Standard" news.
- 1.20—From Hotel Carlton: Lunch Music from the Lounge, Hotel Carlton, played by Hotel Carlton Symphony Orchestra.
- 2—Close down.

AFTERNOON SESSION.

- 3.30—A programme of Music from the Studio.
- 4.16—"The Telegraph" news.
- 4.30—Close down.

EARLY EVENING SESSION.

- 6—News Service supplied by the "Daily Standard": Weather Information, supplied by the Commonwealth Weather Bureau; Announcements.
- 6.30—The Children's Service Stories by "Uncle Ben" and "Uncle Jim."
- 7—Market Reports; Lecture: "Care of

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Price:

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103 Pitt Street

2

SYDNEY

Wednesday, Jan. 5

2 FC

Growing Pullets." by Mr. P. Rumball, Poultry Instructor.
7.50—From the Studio: Stock Reports; Announcements. Weather news.

NIGHT SESSION.

7.45—Lecture Session, Gardening talk, "The Culture of Ferns," by "Tecoma."
8—Studio Concert.
9—Metropolitan Weather News; concert continued.
9.30—From the Centennial Hall, Dance Music.
10—From the Studio: "The Daily Mail" News; Weather News; Close down.

6 WF

MIDDAY SESSION.

12.30—Tune-In.
12.35—First Local News Bulletin. Market Reports; Cables.
1—Time Signal from the Perth Observatory.
1.1—Weather Notes.
1.2—Studio Scraping Orchestra.
2—Close down.

AFTERNOON SESSION.

3.30—Tune-In.
3.35—Musical programme, including classical selections by Miss Evelyn Willis, A.R.C.M.
4—Studio Trio.
4.35—Close down.

EVENING SESSION.

7—Tune-In.
7.15—Talk to the kiddies by Uncle Henry.
7.30—Story for Tiny Tots, by Auntie Kate.
7.45—Stock and Share Intelligence. Market Reports. Cables, news by courtesy of "The Daily News" Newspaper Co.
8—Time signal from the Perth Observatory.
8.1—Weather notes, supplied by the Meteorological Bureau of Western Australia.
8.2—Concert by the Perth City Band.
10—Second Local News Bulletin, supplied by courtesy of "The Daily News" Newspaper Co.
10.35—Close down.

7 ZL

MORNING SESSION.

11—G.P.O. Clock Chimes.
11.12—The "Mercury" News; Stock Market; Shipping; Commercial Intelligence; Weather information. Ships within wireless range.
11.50—Beat Express information.
12—G.P.O. Clock Chimes; Close Down.

AFTERNOON SESSION.

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

EVENING SESSION.

7—Children's Corner, "Big Brother" chats to his pals.
7.15—The Adventures of George, the Book-shelf Cat, by "Aunt Stella."

NIGHT SESSION.

6—G.P.O. Clock Chimes; the "Mercury" Special Tasmanian News Service; Railway Auction Produce Sales; Weather Information.
8.5—Robert Stock Exchange Quotations.
8.10—Literary Lapses and Library Lists, by Mr. W. E. Fuller.
8.30—Musical items from the Studio; Special Request numbers.
9.15—Tasmanian District Weather Reports.
9.30—The "Mercury" Special Interstate News Service; Weather Synopsis; Station Announcements; National Anthem.

EARLY MORNING SESSION.

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

MORNING SESSION.

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

MIDDAY SESSION.

12—"The Chimes of Big Ben" and Announcements.
12.15—Stock Exchange. First Call.
12.10—Music from the Studio.
12.30—Marching Music for the School Children.
12.40—Music from the Studio.
12.5—From Farmer's Oak Hall—The Oak Hall Trio (leader, Mr. Elvace Kratz).
1—The Chimes of Big Ben; Weather Intelligence.
1.3—"Evening News" Mid-day Service; Producers' Distributing Society's Report.
1.25—Oak Hall Trio.
1.25—From the Studio—Stock Exchange, Second Call.
1.30—Marching music for the School Children.
1.40—Music from the Studio.
1.50—From Farmer's Oak Hall; The Oak Hall Trio.
2—"Big Ben" Close Down.

AFTERNOON SESSION.

2.30—The Chimes of 2FC and Announcements.
2.35—Studio Music.
2.50—From Farmer's Tea Rooms; Oak Hall Trio.
3.40—Miss Cecily Audibert, contralto.
3.45—From Farmer's Oak Hall; Oak Hall Instrumental Trio.
3.55—Music from the Studio.
4.—The Oak Hall Trio.
4.15—Music from the Studio.
4.30—Miss Cecily Audibert, contralto.
4.35—The Oak Hall Trio.
4.35—Music from the Studio.
4.40—From Farmer's Tea Rooms; Miss Myrtle Holliday, soprano.
4.45—Stock Exchange, Third Call.
4.46—Close down.

EARLY EVENING SESSION.

5.45—Chimes of 2FC.
5.50—"The Hello Man" talks to the older children.
5.55—A Serial Story for the older children.
6.05—Dinner Music.
7.10—From the Studio: "Evening News" late News Service. Weather information.
7.30—Dairysty's Market Reports (Wool, Wheat, Stock, Fruit, and Vegetable Markets).
7.40—Close down.

NIGHT SESSION.

7.55—"The Chimes of 2FC and Announcements.

8—"Big Ben" Broadcast from the Lyric Wintergarden Theatre, items by the orchestra, under the baton of Mr. Alfred Moulton (by courtesy of Union Theatres Ltd.).
8.40—From the Studio; Mr. Alfred Cunningham, baritone.
8.48—"A Talk, by Mr. G. J. Lockyer, on "Old Pyrenee."
8.52—Mr. Walter Reynolds and Miss Adie Collins, entertainers.
8.55—Mlle. Marie Secur, soprano.
9.5—2FC Dance Band in dance numbers—Mr. Eric Pearce, conductor.
9.15—Mr. Alfred Cunningham, baritone.
9.25—From the Lyric Wintergarden Theatre, further items by the Operatic Orchestra, and the Union Theatres' Master Attraction.
9.35—From the Studio: The Radio Revue. A party of Wireless Entertainers, under the direction of Mr. Laurence Halbert, make their first Studio appearance. They will present a Radio Revue full of diverting situations, and new musical ideas.
10.15—From the Lyric Wintergarden Theatre; items by the Operatic Orchestra, under the baton of Mr. Alfred Moulton.
10.30—From the Studio: 2FC Dance Band.
10.42—Celebrity records.
10.50—More dance items by the 2FC Dance Band.
11—"Big Ben" Dance music until midnight.
12—National Anthem. Close down.

2 BL

EARLY MORNING SESSION.

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

MORNING SESSION.

All race results will be broadcast immediately by receiver by courtesy of the Sun.
11—G.P.O. Clock and Chimes.
11.1—Weather Report.
11.3—Musical Programme from the Studio.
11.17—Daily Telegraph News Service.
11.20—Sporting Talk.
11.30—Women's Session, conducted by Mrs. Jordan; Social Notes.
11.40—Mrs. Jordan replies to correspondents.
11.50—Talk by Dr. Morris.
11.15—Vegetable Market Report.
11.17—Fruit Market Report.
11.18—Bathing Market Report.
11.21—Fish Market Report.
11.25—London Daily Produce and Egg Market Report.
11.27—London Metal Quotations.
12.30—G.P.O. Clock and Chimes.
12.51—Boats in call by wireless.
12.58—Weather Report and Forecast.
12.30—Shipper Information.
12.55—Information re Interstate and Overseas Mails.
12.41—Sun News Service.
1—G.P.O. Clock and Chimes.
1.1—Concert and Recital broadcast from the Fine Art Gallery, Anthony Hordern, by Mr. Arnold R. Meier.
1.40—Sydney Stock Exchange Calls.
1.45—Sporting Information and race results from the Sun.

AFTERNOON SESSION.

2—G.P.O. Clock and Chimes.
2.1—Musical Programme from Studio.
2.15—News from the Sun.
2.30—G.P.O. Clock and Chimes.
2.31—Weather Report and Forecast.
2.33—Musical Programme from Studio.
2.45—Race Results.
2.50—Social Notes from "The Sun."

- 2.5—News from the Sun.
- 3.15—Studio Music.
- 3.30—G.P.O. Clock and Chimes.
- 3.55—Race results.
- 4.25—News from the Sun.
- 4.45—Musical programme from the Studio.
- 4.6—G.P.O. Clock and Chimes.
- 4.7—Racing Results.
- 4.8—News from "The Sun."
- 4.10—Serial Story.
- 4.15—G.P.O. Clock and Chimes.
- 4.30—Producers' Distributing Society's Fruit and Vegetable Report.
- 4.35—Race Results.
- 4.35—Musical Programme from Studio.
- 4.55—Shipping news when available.
- 4.55—Race Results.
- 4.55—Resume of night's programme.
- 5—G.P.O. Clock and Chimes.
- 5.1—Resume of Day's Racing.
- 5.5—Close down.

EARLY EVENING SESSION.

- 6.45—G.P.O. Clock and Chimes.
- 6.46—Uncle George and the Kiddies.
- 6.46—Pavilion Wagon Orchestra under the direction of Mr. Cec. Morrison.
- Special Country Session
- 7—G.P.O. Clock and Chimes.
- 7.1—Australian Mercantile Land and Finance Co's. Report.
- 7.5—Weather Report and Forecast, by courtesy of Mr. C. J. Marcos, Government Meteorologist.
- 7.9—Stock Exchange Report.
- 7.15—Producers' Distributing Society's Fruit and Vegetable Report.
- 7.19—Fruit and Vegetable Report (Sun).
- 7.25—Grain and Fodder Report (Sun).
- 7.26—Dairy Produce Report (Sun).
- 7.30—Country News from the Sun.
- 7.45—A talk on books wise and otherwise.

NIGHT SESSION.

- 8—G.P.O. Clock and Chimes. Broadcasters' Topical Chorus.
- 8.5—The Abad Duo (steel guitars).
- 8.10—Miss Grace Saville, contralto.
- 8.20—Mr. Lance Jeffrey, tenor.
- 8.25—Mr. S. Orlenden will talk on building a valve set.
- 8.45—Mr. Hugh Godwin, Old English ballads.
- 8.55—Resume of following day's programme; Weather Report and Forecast.
- 9—G.P.O. Clock and Chimes.
- 9.1—Mr. Howard Leighton, novelty pianist.
- 9.11—Mr. Frank Ryan, humorous entertainer.
- 9.15—Miss Gladys Hart, soprano.
- 9.25—The Abad Duo.
- 9.35—Interval.
- 9.45—Miss Grace Saville.
- 9.48—Mr. Hugh Godwin.
- 9.55—Mr. Frank Ryan.
- 10.5—Miss Gladys Hart.
- 10.15—Mr. Lance Jeffrey.
- 10.17—Al Hammett and the Ambassadors' Dance Band, broadcast from the ballroom of the Ambassadors. During the interval between dances, News Reports by courtesy of the Sun will be broadcast.
- 10.5—G.P.O. Clock and Chimes; National Anthem; Close down.

3 AR

MORNING SESSION.

- 11.30—British Official Wireless Press, received from Rugby Super Wireless Station, Warwick, by 3AR's Operator; Events of the Day; Express Train Information; "Age" News Bulletin, exclusive to 3AR.
- 12—Time Signal Chime from G.P.O.; Studio Barometer and Outdoor Thermometer Readings; First Weather Forecast; Sporting News; Events of the Day.
- 12.5—Musical selections from the Studio.
- 12.50—Market Reports.
- 12.60—Musical Selections.
- 12.55—Shipping Movements; Mail Notices.
- 1—Close Down.

AFTERNOON SESSION.

- 2.30—The Classic Trio.
- 2.45—Miss Lexie Burns, soprano.
- 2.53—Miss Amelia Cloney, violinist.
- 3—Miss Lexie Burns, soprano.
- 3.7—Mr. Stafford Byrne, cellist.
- 3.14—The Classic Trio.
- 3.50—Selections by the Studio Quartette.
- 4—Time Signal Chimes; 2nd Weather Forecast; Studio Quartet.
- 4.55—Evening Amusements.
- 6—Time Signal Chimes; Studio Barometer Readings; Close Down.

EARLY EVENING SESSION.

- 6.45—Children's Corner, by Uncle Ned.

EVENING SESSION.

- 7.50—British Official Wireless Press; Studio Barometer Readings.
- 8—Miss Ruby Bishop, L.A.B., solo pianist.
- 8.7—Mr. Milton Chick, baritone.
- 8.14—Mr. Dudley Richardson, flautist.
- 8.22—Miss Joan Thornely, soprano.
- 8.30—Mr. Dick Bayford; Talk on Ford car, dealing with Lubrication.
- 8.45—Mr. Hope Stevens, tenor.
- 8.52—Messrs. Jack Carter and Charles Backland; The Hawaiian Instrumentalists.
- 9—Mr. Milton Chick, baritone.
- 9.7—Miss Ruby Bishop, L.A.B., pianist.
- 9.20—Mr. V. E. Loewson will commence a series of talks. The subject of his first being "Advertising as a Business Force."
- 9.30—Mr. Hope Stevens, tenor.
- 9.37—Mr. Dudley Richardson, flautist.
- 9.44—Miss Joan Thornely, soprano.
- 9.54—The Hawaiian Instrumentalists.
- 10—Time Signal Chime from G.P.O.; Studio Barometer Readings. "Age" News Bulletin.
- 10.10—Leggett's Ballroom Orchestra.
- 11—Close down.

4QQ

EARLY MORNING SESSION.

- 6.50—Physical Culture Session.
- 7—Close Down.

MIDDAY SESSION.

- 12.55—Time In.
- 12.55—Time Signal.
- 1—Market Reports. Weather information. "The Daily Mail" and "The Daily Standard" news.
- 1.10—From Hotel Carlton; Lunch Music from the Lounge, Hotel Carlton, played by Hotel Carlton Symphony Orchestra.
- 2—Close down.

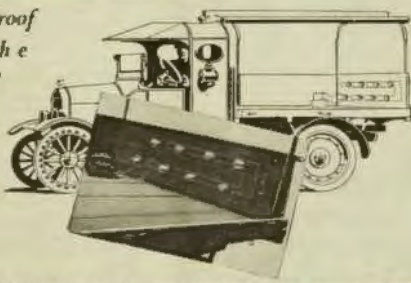
AFTERNOON SESSION.

- 2.30—From Hotel Carlton; Afternoon Tea Music from the Lounge, Hotel Carlton, played by Hotel Carlton Symphony Orchestra.
- 4.10—"The Telegraph" news.
- 4.15—Close down.

EARLY EVENING SESSION.

- 6—News Service supplied by the "Daily Standard"; Weather Information, supplied by the Commonwealth Weather Bureau; Announcements.
- 8.20—The Children's Session; Stories by "Little Miss Brisbane."
- 7.30—Market Reports; Lecture, "Farmers' Sleep in Queensland; Sheep Breeding Experiments," Mr. A. Carow.

Here's Proof
that the
'LOTUS'
survives
shock!



EIGHT "LOTUS" Valve Holders fitted with large power valves and fixed to tailboard of Ford Motor Lorry, driven over rough roads for 30 miles, survived the test.

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6 inch handle, two-way and three-way.

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7.50—From the Student Stock Reports: Announcements; Weather Information.

NIGHT SESSION.

- 7.45—Lecture, "The Origin of Words," by Mr. W. Deakery.
8—A Scottish night concert.
9—Metropolitan Weather Forecast; Concert continued.
10—From the Studio: "The Daily Mail" News; Weather News; Closes down.

6 W F

MIDDAY SESSION.

- 12.52—Tune-in.
12.55—First Local News Bulletin. Market Reports. Cables.

AFTERNOON SESSION.

- 1—Time signal from the Perth Observatory.
1.1—Weather Notes.
1.2—Studio Septette.
2—Close down.
2.30—Tune-in.
2.35—Musical programme, including vocal artistes.
4—Studio Trio.
4.30—Close down.

EVENING SESSION.

- 7—Tune-in.
7.5—A playette for the kiddies, by Uncle Duffy, with Aunties Kate and Evelyn and Uncle Henry, Leslie, Perry and Duffy.
8—Stock and Share Intelligence. Market Reports. Cables, news by courtesy of "The Western Australian Newspaper Coy."
8.5—Time signal from the Perth Observatory.
9.1—Weather Notes, supplied by the Meteorological Bureau of Western Australia.
9.2—Variety. The Studio String Trio.
10—Second News Bulletin, supplied by courtesy of "The Daily News" Newspaper Coy.
10.15—Close down.

7 Z L

MORNING SESSION.

- 11—G.P.O. Clock and Chimes; the "Mercury" News; Stock Market; Shipping; Commercial Intelligence; Weather Information; and Sporting Anticipations; Ships within wireless range; Sabotage selections.
12—G.P.O. Clock Chimes; Close Down.

AFTERNOON SESSION.

- 2—G.P.O. Clock Chimes; Musical Items from the Studio; Story from Illustrated Tasmanian Mail.
2.30—Hobart Stock Exchange Quotations.
2.35—Weather Information.
4—G.P.O. Clock Chimes; Close Down.

EVENING SESSION.

- 7—Children's Corner, "Big Brother" chats to his pals.
7.15—Story from Illustrated Tasmanian Mail

NIGHT SESSION.

- 8—G.P.O. Clock Chimes; the "Mercury" Special Tasmanian News Service; Railway Auction Produce Sales; Weather Information and Sporting Results.
8.5—Hobart Stock Exchange Quotations.
8.15—Abattoirs and Stock Market Reports from Robera and Co. Ltd., Murray St., Hobart.
8.15—Physical Culture talk by Mr. George Collis.
8.30—Concert from the Studio.
8.15—Tasmanian District Weather Reports.
8.55—The "Mercury" Special Interstate News Service; Weather Synopsis; Station Announcements; Ships within wireless range; National Anthem.

Thursday, Jan. 6
2 F C

EARLY MORNING SESSION.

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

MORNING SESSION.

- 9.15—The Chimes of 2FC.
9.20—Music from the Studio.
9.30—Marching Music for School Children.
9.40—Music from the Studio.
9.45—Talk by 2FC Having Commissioner.
10—"Big Ben" and Announcements.
10.5—Late "Sydney Morning Herald" News Service.
10.15—Music from the Studio.
10.45—A Morning Reading.
11—"Big Ben"; Australian Press Association and Reporter's Cables.
11.15—Music from the Studio.
11.30—Marching music for school children.
11.35—Close down.

MIDDAY SESSION.

- 12—The Chimes of Big Ben; and Announcements.
12.5—Stock Exchange—First Call.
12.10—Music from the Studio.
12.30—Marching Music for School Children.
12.40—Music from the Studio.
12.45—From Farmer's Oak Hall: The Oak Hall Trio.
1—"Big Ben" and weather intelligence.
1.5—"Evening News" midday news service. Producers' Distributing Report.
1.30—The Oak Hall Trio.
1.25—Stock Exchange—Second Call.
1.30—Marching Music for School Children.
1.45—Music from the Studio.
1.45—From Farmer's Oak Hall—The Oak Hall Trio.
2—"Big Ben"; Talk by 2FC. Racing Commissioner.
2—"Big Ben"; close down.

AFTERNOON SESSION.

- 2.30—The Chimes of 2FC and Antennements
2.35—Studio Music.
3.30—From Farmer's Tea Rooms: The Oak Hall Trio.
3.45—From Farmer's Tea Rooms: Miss Alice Fozzery, vocalist.
3.45—Instrumental Music from the Oak Hall Trio.
3.55—Music from the Studio.
4—From Farmer's Tea Rooms: Miss Julie Williams, vocalist.
4.5—The Oak Hall Trio.
4.50—From Farmer's Tea Rooms: Miss Alice Fozzery, vocalist.
4.55—The Oak Hall Trio.
4.55—Music from the Studio.
4.40—From Farmer's Tea Rooms: Miss Julie Williams, vocalist.
4.45—Stock Exchange—Third Call.
4.45—Close down.

EARLY EVENING SESSION.

- 6.45—The Chimes of 2FC.
6.55—"The Hello Man" talks to the Children.
6.55—A Serial Story for the older children.
6.45—Dinner Music.

NIGHT SESSION.

- 7—From the Studio: "Evening News" late news session.
7.15—Delicacy Market Report (Wool, Wheat, Stock, Fruit and Vegetable Markets).
7.50—A Talk by the Technical Editor of "Wireless Weekly."

7.45—Broadcast from the Cunard liner "Carinthia," which arrives in Sydney to-day on its world's tour. Specially selected programme, which will be broadcast from the deck of the steamer. The ship's orchestra specially engaged for the trip will render items until 9.30, interspersed with concert items supplied by 2FC.

- 9.30—From the Studio: "The Four Waifs" in Harmonium.
9.45—Miss Lois Evans, soprano.
9.45—"The Four Waifs."
9.55—Miss Muriel Humphries, contralto.
10.5—"The Four Waifs."
10.15—Miss Lois Evans, soprano.
10.22—"The Four Waifs."
10.30—Miss Muriel Humphries, contralto.
10.35—Broadcast from Wairoa Hotel: "Carinthia" orchestra in dance numbers.
11—"Big Ben" and Announcements.
11.5—"Carinthia" orchestra.
11.50—Wentworth Hotel: Dance music until midnight.
12—National Anthem; close down.

2 B L

EARLY MORNING SESSION.

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

MORNING SESSION.

- 10—G.P.O. Clock and Chimes.
10.1—Weather Report and Forecast.
10.45—Studio Music.
10.45—Telegraph News.
10.45—Studio Music.
10.45—Serial Story.
11—G.P.O. Clock and Chimes.
11.1—Ten Minutes' Talk supplied by the N.R.M.A.
11.11—News from the Daily Telegraph.
11.20—Rabbit Market Report.
11.22—Fish Market Report.
11.24—Vegetable Market Report.
11.25—Fruit Market Report.
11.27—London Dairy Produce and Egg Market Report.
11.30—Ships in call by wireless.
11.32—Information re Interstate and Overseas Mails.
11.33—Shipping information.
11.35—Sporting talk.
11.45—Warman's Session; Social Notes by Mrs. Jordan.
11.50—Mrs. Jordan replies to Correspondents.
12—G.P.O. Clock and Chimes; Talk by Mrs. Jordan.

- 12.25—News from the Sun.
12.50—G.P.O. Clock and Chimes.
12.51—Sydney Stock Exchange Calls.
12.55—News from the Sun.
12.45—Hillier's Instrumental Quartette, directed by Caryl Casting.
1.30—G.P.O. Clock and Chimes.
1.31—Weather Report and Forecast.
1.33—Sydney Stock Exchange Calls.
1.40—News from the Sun.
1.45—Studio Music.
2—G.P.O. Clock and Chimes; Close Down.

AFTERNOON SESSION.

- Racing information broadcast by courtesy of the Sun.
3—G.P.O. Clock and Chimes.
3.5—Weather Report and Forecast by courtesy of Great Meteorologist.
3.5—Social Notes from the Sun.
3.10—Sun Newspaper's News Service.
3.15—David Jones' Tea Room Trio; Pianist, Miss Caspers, violinist, Mr. Adcock, cellist, Mr. Cleaver.
3.30—G.P.O. Clock and Chimes.
3.31—Country Women's Session.

- 3.15—Music from the Studio.
 4—G.P.O. Clock and Chimes; David Jones'
 Tea Room Trio.
 4.10—Serial Story.
 4.10—G.P.O. Clock and Chimes.
 4.11—Studio Music.
 4.15—Producers' Distributing Society's Veget-
 able and Fruit Markets.
 4.50—Shipping information when available.
 4.52—Day's Racing Resume on Race Days.
 4.53—News from the Sun.
 4.58—Resume of Night's Programmes.
 5—G.P.O. Clock and Chimes.

EARLY EVENING SESSION.

- 5.15—G.P.O. Clock and Chimes.
 5.45—Uncle George and the Kiddies.
 6.40—Pavilion Dinner Orchestra, under the
 direction of Mr. Geo. Morrison.
 Special Country Session.
 7—G.P.O. Clock and Chimes.
 7.1—Australian Mercantile Land and Finance
 Co.'s Report.
 7.5—Weather Report and Forecast, by court-
 esy of Mr. C. J. Mares, Govt. Meteorolo-
 gist.
 7.9—Stock Exchange Reports.
 7.15—Producers' Distributing Society's Fruit
 and Vegetable Report.
 7.19—Fruit and Vegetable Report (Sun).
 7.22—Grain and Fodder Report (Sun).
 7.25—Dairy Produce Report (Sun).
 7.30—Country News from the Sun.

NIGHT SESSION.

- 8—G.P.O. Clock and Chimes; Broadwaters'
 Topical Chorus.
 8.15—Social and Fashion Notes broadcast
 from the Ballroom of the Ambassadors.
 8.25—The Ambassadors' Instrumental Salon
 Quartet.
 8.30—Miss Marjorie Skill soprano.
 8.37—Mr. Gilbert Dobson, bass.
 8.44—The Orpheum Amateur Orchestral
 Society.
 8.44—Resume of following day's programme;
 Weather Report and Forecast.
 9—G.P.O. Clock and Chimes.
 9.1—Mr. E. D. R. Sreenen, tenor.
 9.9—Sketch by May Nancarrow and partner.
 9.29—The Orpheum Amateur Orchestra Society.
 9.35—Interval.
 9.41—Miss Marjorie Skill.
 9.52—Mr. Gilbert Dobson.
 10—G.P.O. Clock and Chimes.
 10.1—Mr. E. D. R. Sreenen.
 10.4—Al. Hammelt and the Ambassadors'
 Dance Band, broadcast from the Ballroom
 of the Ambassadors. During the intervals
 between dances News Reports by courtesy
 of the "Sun" will be broadcast.
 12—G.P.O. Clock and Chimes; National
 Anthem.

3 AR

MORNING SESSION.

- 11.30—British Official Wireless Press, re-
 ceived from Rugby Super Wireless Station,
 England, by 3AR's Operator. Events of
 the Day; Express Train Information; "Age"
 News Bulletin exclusive to 3AR.
 12—Time Signal Chime; First Weather Re-
 port; Events of the day; Studio Barometer
 Readings.
 12.5—Musical selections from the studio.
 12.55—Stock Exchange News; Market Report.
 1.40—Musical Selections; Mail Notices.
 1.45—Shipping Movements; Mail Notices.
 1—Close Down.

AFTERNOON SESSION.

- Mornington Racing Club. Results after
 each race and at half hourly intervals.
 2.30—Studio Quartet.
 4—Time Signal Chimes; 2nd Weather Fore-
 cast; Studio Quartet.
 4.55—Time Signal Chimes; Studio Barometer
 Readings; Close Down.
 EARLY EVENING SESSION.
 6.43—Children's Corner—Uncle Steve.
 EVENING SESSION.
 7.45—British Official Wireless Press; Studio

Barometer and Outdoor Thermometer Read-
 ings; Special Pig and Calf Report, sup-
 plied by courtesy of Messrs. McPhail, An-
 derson and Co. Pty. Ltd.; Fat Sheep and
 Cattle Report, supplied by courtesy of
 Messrs. John McNameas & Co.

- 8—The Peewee Trio.
 8.14—Mr. Ernest Eaton, tenor.
 8.21—Mr. Frederick Beckwith, "The Science
 of Education."
 8.36—Miss Marion Daniels, mezzo.
 8.40—Miss Beatrice Phillips, violinist.
 8.50—Miss Bertha Bruttell, soprano.
 8.57—Mr. Ernest Kaune, tenor.
 9.4—Mr. Geo. Payne Phillips, President of
 and editor of "The National Magazine of
 Health," will give you a few "New Year
 Health Resolutions."
 9.15—Miss Bertha Bruttell, soprano.
 9.20—Miss John Fannell, cellist.
 9.33—Miss Marion Daniels, mezzo contralto.
 9.40—Miss Elsie Mitchell, soprano.
 9.47—The Peewee Trio.
 10.0—Time Signal Chime; Studio Barometer
 Readings; "Age" News Bulletin exclusive
 to 3AR; Tourist and Road Information sup-
 plied by courtesy of Pioneer Tourist
 Coaches, Pty. Ltd.
 10.15—Legerette's Dance Orchestra.
 11—Close down.

4 QG

MIDDAY SESSION.

- 12.55—Time In.
 12.58—Time Signal.
 1—Market Reports. Weather information,
 "The Daily Mail" and "The Daily Standard"
 news.
 1.20—From Hotel Carlton: Lunch Music from
 the Lounge, Hotel Carlton, played by Hotel
 Carlton Symphony Orchestra.
 1—Close down.

AFTERNOON SESSION.

- 3.30—A programme of Music from the Studio
 4.15—"The Telegraph" news.
 4.30—Close down.

EARLY EVENING SESSION.

- 6—"Daily Standard" News; Weather in-
 formation; Announcements.
 6.30—The Children's Session. Stories by
 "The Sandman."
 7—Market Reports. Lecture, "Agricultural
 Courses at some American Universities," by
 Mr. J. K. Murray.
 7.10—From the Studio; Stock Reports; An-
 nouncements.

NIGHT SESSION.

- 7.45—Lecture Sealsan, "A Talk on Books," by
 Mr. W. A. Braiden.
 8—Studio Concert.
 Metropolitan Weather Forecast.
 9—From the Band room music by the
 Greater Brisbane Municipal Concert Band.
 10—From the Studio; "The Daily Mail" news
 Weather News; Close down.

6 WF

MIDDAY SESSION.

- 12.30—Time-in.
 12.45—First Local News Bulletin. Market
 Reports, Cables.

AFTERNOON SESSION.

- 1—Time signal from the Perth Observatory,
 1.1—Weather notes, supplied by the Metro-
 logical Bureau of Western Australia.
 1.2—Studio Septette.
 2—Close down.
 3.30—Time-in.
 3.35—Musical programme, including piano-
 forte selections by Miss Evelyn Willis.
 A.R.C.M.
 4—Studio Trio.
 4.50—Close down.
 EVENING SESSION.
 7—Time-in.

- 7.5—Stories for Tiny Tots by Auntie Kate.
 7.26—Uncle Duffy will talk to the Kiddies.
 7.50—Stock and Share Intelligence; Market
 Reports; Cable news by courtesy of "The
 West Australian" Newspaper Coy.
 8—Time signal from the Perth Observatory.
 8.1—Weather Notes, supplied by the Metro-
 logical Bureau of Western Australia.
 8.2—Orchestral Night. S.W.F.'s Station Or-
 chestra, conducted by Mr. Ronald E. Moyle,
 A.T.C.L. Mr. Fraser Harvey, baritone.
 10—Second News Bulletin, supplied by court-
 esy of "The Daily Mail" Newspaper Coy.
 10.20—Close down.

7 ZL

MORNING SESSION.

- 11—G.P.O. Clock Chimes; "The Mercury"
 News; Stock Market; Shipping Commer-
 cial Intelligence; Weather Information;
 Ships within wireless range.
 11.50—Boat Express Information.
 12—G.P.O. Clock Chime; close down.
 AFTERNOON SESSION.
 1—G.P.O. Clock Chimes; Musical items from
 the Studio.
 3.30—Bulair Stock Exchange Quotations.
 3.45—Weather information.
 4—G.P.O. Clock Chimes, close down.
 EVENING SESSION.
 7—Children's Corner, "Big Brother" chats to
 his pals.
 7.14—The Adventures of George the Book-
 shelf Cat, by "Aunt Stella."

NIGHT SESSION.

- 4—G.P.O. Clock Chimes; "The Mercury"
 Special Tasmanian News Service; Railway
 Auction Produce Sales; Weather infor-
 mation.
 8.5—Holbert Stock Exchange Quotations.
 8.10—Wireless talk, Mr. Sidney Laws.
 8.30—Studio Concert.
 9.15—Tasmanian District Weather Report.
 9.50—"The Mercury" Special Interstate news
 Service; Weather Synopsis; Station An-
 nouncements; Ships within wireless range;
 Close down.

THE LENINGRAD broadcasting station underwent great changes recently, and is now carrying on experimental transmissions on 940 and 1400 metres. Its aerial power has been increased, and there is every prospect that the new station will be eventually one of the most efficient in the North of Europe.

During this week, Mr. William James, the eminent Australian pianist-composer, will be heard from 3LO. This will mark a step forward in the intention of the studio to provide the very highest class of musical fare, and also to make listeners better acquainted with their own talented fellow countrymen. It seems astounding that an Australian artist should be better known and more widely appreciated in England than his own country, and if the studio can remedy this somewhat glaring fault, one of its missions will be amply fulfilled.

Latest Developments in Valve Construction

THE AMPLION RADIO VALVE.

IT IS nowadays generally agreed that the future of broadcasting is intimately bound up in the achievement of "Better Radio Reproduction," and the introduction of any improvement leading to this desirable end is a step in the direction of progress.

The loud speaker manufacturer of repute is, in the first place, and perhaps above all things, interested in purity of tone and realism, and he devotes his energies to the production of an article which reaches a high standard in this respect. But a perfect loud speaker, since it is only a link in the chain, cannot alone ensure the desired result. Much depends upon the receiving set and more upon the valves.

It is not unnatural, therefore, that the House responsible for the production of the Amplion loud speaker should have been for some years experimenting in connection with the production of a valve having those qualities which make for excellence of reproduction.

The result of a prolonged period of investigation and research is to be found in the series of Amplion radio valves now offered to the public by Alfred Graham & Company, and briefly described below.

The series may be divided into two classes—one for use with a 2-volt battery and one for use with 6 volts. In each class there is a general purpose valve, a loud speaker valve, and a valve specially designed for use in resistance-capacity coupled amplifiers. There is in addition a special 6-volt heavy duty "Super-Power Valve" for dealing with exceptional volume. The nomenclature and system of marking adopted in connection with these valves is so simple as to be almost self-explanatory. For example, the six-volt loud speaker valve is marked: A.M.L. 6/25.

This stands for "Amplion Loud Speaker Valve for a 6-volt battery, taking a filament current of 25 centiamps." Similarly, A.M.G. 6/9 is an Amplion general purpose valve for a 6-volt battery taking a filament

current of 99 centiamps, and A.M.R. 2/9 is a valve suitable for resistance capacity coupling, for use with a 2-volt battery, and taking a filament current of 9 centiamps.

The "centiamp" is used as a unit for filament current in order to avoid the necessity for introducing a decimal point. A centiamp is, as its name indicates, one hundredth of an ampere; 25 centiamps is, therefore, 0.25 ampere; and so forth.

A new factor, the "volume factor," has been introduced to serve as a guide in the selection of valves for low frequency amplification and, incidentally, to provide information regarding the correct grid bias. For distortionless low frequency amplification it is essential that the valve shall be capable of dealing with its input without permitting a flow of grid current and without the occurrence of "bottom-bend" rectification.

With correct H.T. and grid bias adjustments any valve will amplify weak signals without distortion, but as the strength of the signal is increased it becomes essential that the valve shall be a type capable of dealing with the corresponding volume.

This all important consideration has not been fully appreciated, and prior to the introduction of the "volume factor" it was by no means easy for the radio user to differentiate with certainty between the valve

suitable for "weak signal" amplification and that suitable for "strong signal" amplification.

With Amplion valves the volume factor in every case is marked clearly on the carton containing the valve. It varies from just over +1.0 to +10.5 in the case of the 6-volt loud speaker valve A.M.L. 6/25, and is as much as +100 in the case of the Amplion super-power valve A.M.S. 6/100.

The volume factor is approximately proportional to the volume of input the valve will handle without distortion, at the specified H.T. voltage, and it also serves as a guide to the correct grid bias for maximum distortionless output at that H.T. voltage.

For weak signals a valve with a volume factor of +2 or +3 will give distortionless amplification, but for signals which have been amplified up to a good strength, or are inherently strong owing to the proximity of the transmitting station, a volume factor +8.0 to +10.0, with the corresponding grid bias and H.T. value, may be necessary if distortion is to be avoided.

Amplion's world over will welcome a valve designed specially for quality of reproduction and which, while specially suited to the Amplion, can be relied upon to give



The M.O. Studio Orchestra playing in the new studio.

entirely satisfactory results with any other high-grade loud speaker.

ANOTHER GREAT VALVE

It is well known that if a batch of valves were made up using identical filaments, grids, and anodes, without due regard being paid to the accurate spacing of the elements, that every valve would vary considerably in results. There would be hardly two alike. Any variation of distance between filament and grid or between grid and anode exercises considerable influence upon performance. All elements must be mounted co-axially to obtain the best results, and any method which guarantees this must result in an incomparably higher standard of efficiency.

Messrs. A. C. Cossor, Ltd., who, four years ago, astonished the radio world by evolving a method of valve construction which, for the first time, utilised the whole of the electron stream, have now evolved a method of mounting the elements of a valve, which is acknowledged to be the most far-reaching advance in valve design yet made. Known as Co-axial mounting, this new constructional system ensures longer life, lower running costs, and greater uniformity in results.

Owing to the peculiar advantages possessed by the shape of the Cossor grid and anode, it has been found possible to secure these two elements together at the top by means of a seonite insulator. The grid itself ends in two prongs which are inserted into the base of the seonite insulator. The anode rests on a wide flange provided, and is welded at its base to two stout nickel supports. Even extreme force cannot disturb the relative positions of these two elements—once fixed in their places, to a hundredth part of an inch, they are there for all time.

Through the centre of the seonite insulator passes a fine wire which holds the filament in its correct position, although the filament is NOT under tension. This shock-proof support provides exactly the degree of elasticity to enable it to absorb the sharp concussion caused by an accidental blow.

When one realises, too, that the

filament of this remarkable new Cossor Point One valve operates at a glow which is practically invisible, it will be obvious that at last wireless enthusiasts have available a valve which must give an incredibly long and uniform service.

JUDGE A VALVE BY ITS FILAMENT

It is a fact that a radio valve will operate with practically any type of grid or anode, but the man who knows will tell you that the whole question of economy, results and long life are dependent upon the filament.

Hence it is the filament that you pay for, and the accuracy of your choice in valves depends on your ability to select a valve with a filament that can satisfy the above three standards to the full.

The Mullard Co. have placed on the market a series of valves in which the filaments offer you practically three times more for your money than can be secured in ordinary valves.

These wonderful P.M. filaments require only one-tenth ampere, cannot be broken except by the very roughest handling, and have an emission that is up to 5½ times greater than ordinary filaments.

Radiokes acknowledged as the World's Best



£2/2/- at all Dealers

The Brownings-Drake is holding most of the world's records—Radiokes is the only genuine Brownings-Drake coil kit on the market.

Metropolitan Electric Co. Ltd.

27-29 King Street — Sydney



Travellers listening-in on the Canadian National Railways express. The All-Black Rugby players recently tuned-in a New York church service while journeying on this line recently.

HOW TO DANCE TO THE RADIO?

HOW can I increase the volume on my set without adding extra stages of audio frequency amplification?" A question the Technical Editor of every radio journal has thrust at him so often that sometimes he believes that the world has gone dancin' mad. For almost always the question is preceded by the statement that the writer wishes to dance to the radio.

The average receiver is equipped with two stages of transformer-coupled audio frequency amplification and to attempt to add more would result in distortion. Therefore, one must find some other method of increasing the volume while maintaining purity of reception.

Many of the world's leading manufacturers of valves and transformers have realised that there is a demand for greater volume combined with purity, and as a result, power audio frequency transformers and power valves have found their way on the market. This is one method which is open, and it can easily be adopted by substituting the power valves and the power transformer with a high plate voltage, thus ensuring greater volume while retaining the quality of reproduction.

Another method frequently adopted to-day is the use of resistance-coupled amplification in the audio stages. Special valves are often used in this portion of the circuit, and it is a generally accepted fact that resistance coupling ensures purity of reproduction.

Unfortunately, there is a drawback for the volume of three resistance-coupled valves generally equals the volume of two transformer coupled valves. To overcome this it is necessary to make use of the special valve for the purpose as well as the plate voltage in the region of approximately 150 volts.

If either of these methods is employed ample volume should result, so that in the average hall dancing is easy and natural to the loud speaker.



Radio Hill is the name of the prominence upon which the new transmitting station for 7ZL is being built outside Hobart.

AN INTERESTING letter has been received by broadcasting station 2BL, Sydney, from a Japanese radio enthusiast, Takeo Kimizuka. The writer gives a list of stations which he has heard in various parts of the world, including Sydney, Perth, Melbourne, Hobart, Brisbane, and Adelaide, five stations in China, five in India, three in Japan, one in the Philippine Islands, one in Siberia, and one at Singapore.

"DEAR SIRs (he says) there exists no such national boundary in space of radio wave activity as the fron-

tier of a country. Space must be joint ownership just as the sun. It was April last that I happened to enjoy beautiful foreign musics through a speaker. It took me, indeed, nearly 100 days until I might ascertain by letters that they had been broadcasting from 3LO (Melbourne), 4QG (Brisbane), 5CL (Adelaide), 2BL (Sydney), of Australia, KZRQ (Manila), of the Philippine, 2GR (Madras), of India, etc., all several thousand miles away from here. It was so long waiting for answers that it was beyond description.

"I KNOW the day is coming radio fans of all the world can hear radio voice of all the world with a simple apparatus. Lastly, it is added that I am only a humble Japanese young man, who is interested in radio and will have radio as the friend for life. Yours truly—

TAKEO KIMIZUKA."

Queries Answered

"Stibivick" (South Coast):—
Q: Would you kindly tell me who IFA is? S. Y. (Enfield): It appears that interaction is your trouble. Have you spaced components as shown in "Wireless Weekly"? Slip along and see Harringtons Ltd., George Street, Sydney.

J. B. (Punchbowl): Your main trouble is tuning, or perhaps your aerial is too long.

T. P. S. (Burwood): Interview one of the proprietors of "Wireless Weekly," and you will get the advice you desire.

H. B. B. (Sans Souci): The Browning-Drake is the receiver which you require.

W. H. M. (Lane Cove): Nothing short of a super-heterodyne would suit your purpose.

L. A. T. (Brisbane): The circuit you sent along built correctly as a receiver, should give you good intermediate results with very careful tuning, but would require another stage of audio. Considering that you are so close to 4QG, I am afraid the standard heterodyne only would suit your requirements to the degree.



The Canterbury District Band, now performing at 2GB studio.

ONE VALVE RECEIVER

(Continued from Page 19.)

the dial readings. The Brisbane station, 4QG, was heard at nice comfortable phone strength and quite apart from any other station. Adelaide, 5CL, was much weaker, still of an enjoyable strength. Static on Adelaide hindered a good judgment being made. The aerial used was a small cage type aerial on 2 inch curtain rings, 75 feet over all in length, the earth being the usual water pipe connection. Several different valves were tried and all to great satisfaction. Marriekville is approximately four miles air line from 2BL, and seventeen miles from 2FC. A slight re-tuning was necessary when the aerial was clipped from one tap to the other on L1, but the volume was not diminished in any degree. The coupling condenser X was allowed to remain as shown in the photographs, that is 22 inches of busbar was paralleled at the distance of an eighth of an inch. The vernier dials are absolutely indispensable for accurate tuning in this receiver, which is, like many of its confreres of the Reinartz family, one well worth while building.

BROADCASTING SPORT

(Continued from Page 11.)

ning by the various radio engineers and lines engineers. It must have been an anxious time for the engineers and announcers at Philadelphia; knowing as they did that over ten million people were listening, and one slip or absence of concentration on the work might have spoiled the performance.

It is interesting to note how the financial side of the matter was tackled. The promoter of the fight demanded 50,000 dollars for the broadcasting rights. The National Broadcasting Company (owners of WEAF, WJZ, and several other stations) decided to "sell the broadcasting time" to an advertiser. A typewriter company paid the 50,000 dollars for the rights to the boxing promoter, and the name of the typewriter company was announced by all the stations as being the promoter of the broadcasting stunt.



The Conservation of Energy

RADION Panels far excel any other insulating material in the conservation of both physical and electrical energy.

Radion can be easily sawed, drilled, machined and otherwise worked with minimum effort and without the slightest danger of chipping, cracking or breaking.

In the conservation of electrical energy, Radion is supreme, due to its established superiority over any other material in the four main

characteristics required, namely:

- 1—Low angle phase difference
- 2—Low dielectric constant
- 3—High resistivity
- 4—Low absorption of moisture

Do not jeopardize the value of your receiving set by using inferior materials. Save time and energy in the making and loss of power in the operation of your set by always insisting upon genuine Radion Panels and parts. Look for the name stamped on every piece.

SEND FOR FREE BOOKLET

"Building Your Own Set"

Our new booklet, "Building Your Own Set", giving wiring diagrams, front and rear views, lists of parts and directions for building the most popular circuits, will be sent free upon request to



International Radio Co., Ltd.

200 Castlereagh
Street — Sydney

91-92 Courtenay Pl.
Wellington, N. Z.

The Supreme Insulation

RADION

PANELS ~ DIALS ~ SOCKETS ~ KNOBS



Valves with the Wonderful P.M. Filament

THE wonderful P.M. Filament offers you three times more for your money. It is so tough that even after 1,000 hours' life it can be tied in knots and cannot be broken except by the very roughest handling—result, safety against accidents.

There is more than strength in the P.M. Filament. It has up to 3 times greater length and up to 5½ times greater emission than an ordinary filament. *This is where the P.M. Filament gives you real value.*

Another big point, the P.M. Filament requires only one-tenth ampere, giving 7 times the life to each of your accumulator charges. For great economy, great life and great results secure the valves with

the WONDERFUL P.M. FILAMENT

OBTAINABLE FROM EVERY RADIO DEALER IN AUSTRALIA

Mullard

THE MASTER VALVE

(ARKS.7.)

For 4-volt accumulator or 3 dry cells

THE P.M.3 (General Purpose)

0.1 amp. 13/6

THE P.M.4 (Power)

0.1 amp. 13/6

For 6-volt accumulator or 4 dry cells

THE P.M.5 (General Purpose)

0.1 amp. 13/6

THE P.M.6 (Power)

0.1 amp. 13/6

For 2-volt accumulator

THE P.M.1 H.F.

0.1 amp. 13/6

THE P.M.1 L.F.

0.1 amp. 13/6

THE P.M.2 (Power)

0.15 amp. 13/6

All Mullard Valves are made at the Mullard Works, Batham, London, England

A LOUD SPEAKER INNOVATION.

Yet another model of Amplion Loud Speakers, "The Cabinette," has just been introduced amongst the varied range already extended to meet the demand from listeners-in who do not approve of the "horn" type loud speaker, and at the same time are not prepared to invest in the rather more expensive Radiolux models already so evident in tastefully furnished homes.

The design of this latest product of the House of Graham is entirely new, being presented in a cabinet of dark fume oak, beautifully finished in Jacobean style by an entirely new process, and having ideal dimensions for placing upon any shelf, table and, especially, upon a mantelpiece. The greater part of the front is occupied by a fretted grille through which the sound emerges, and at one end a hinged door provides access to the electromagnetic unit and its adjusting screw. The unit is of a highly efficient pattern with a floating diaphragm, and the acoustic system incorporates novel and exclusive features, altogether different to those previously obtained. The tone is natural and pleasingly mellow, and is somewhat reminiscent with that usually associated with the well-known "Dragon" loud speakers, also manufactured by Alfred Graham & Company.

In view of the growing tendency to depart from obtrusive loud speakers, this "Cabinette" model should meet with a big demand.

NUMBERS of country and suburban schools have of late formed the habit of marching in and out of school to the music of inspiring marches broadcast from Station 2FC, Sydney. It was at the request of a country school that 2FC introduced these marches, which are broadcast at 9.30, 11.30, 12.30, 1.30 and 3.30 daily. The playing of the march usually occupies from eight to ten minutes, and it is believed that some teachers march the children round the playground a few times before turning into school. The favourite marches are "Crusaders," "Big Ben," "Invercargill," and "Gippsland."

Use Your Head

Cut Prices, Slander, Hearsay, Habit, may cause you to buy other Valves BUT—

for the sake of your sanity and best results

Buy De Forest Valves

and have no regrets.

For Sale Everywhere



D.V.5
Filament 5 volts
25 amp.
12/-

D.V.3
Filament 3 volts
30 amp.
13/6

De Forest Valves

TYPE D.V.5—Takes 5 volts at lamp, on filament .. 12/- each
Plate Voltages, Detector, 18-32½ volts.

Plate Voltages, Amplifier, 60-150 volts.

TYPE D.V.3—Takes 3 volts at .06 of an amp. on filament.
—13/6 each

Plate Voltage, 16-22½ volts, Detector.

Plate Voltage, 60-120 volts, used as an Amplifier.

Both Types fit Standard American Socket.

International Radio Co.

Limited

200 Castlereagh Street, Sydney.

91-93 Courtenay Place, Wellington, N.Z.

(Factory Representatives)

Extract from Melb Argus
December 4th

WIRELESS SETS.
SIMILARITY IN MAKE.

Interim Injunction Granted.
Three portable wireless sets were exhibited in the Practice Court yesterday, when Mr Justice Mann was asked to grant an interim injunction in a Supreme Court suit taken out by the Louis Egan Wire- less Pty Ltd., Melbourne It was allowed on behalf of the

Mr Justice Mann said
The design of defendants' manufac- tured closely resembled the design and general appearance of plaintiffs' machine.
An interlocutory injunction would accordingly be granted.

Success of the "Porta" attracts imitations!

INTERIM INJUNCTION GRANTED!

AN IDEAL XMAS GIFT.

THE IMMEDIATE POPULARITY which the "PORTA" enjoyed after its introduction soon enticed others to copy the original design of this marvellous portable Radio set, and in order to prevent the public legal proceedings were at once instituted to prevent misrepresentation. The interim injunction which has been granted indicates that the Court at once upon the production to manufacture or take off any machine the same as the "PORTA"
WARNING—Anyone seeking to make or sell Portable Radio sets of the same design and exclusive features as the "PORTA" will at once be served legal action and proceedings taken without delay. Any information from the public of imitations will be appreciated.

ENTERTAINS EVERYWHERE.

The compact, sensational "PORTA" SET is simulates itself simply upon the lid and automatically the set will operate in perfection. It is absolutely self-contained, complete with all accessories, including the Spherax Speaker. No aerial, no earth. Terms arranged. Write for literature or call and hear the wonderful "PORTA."

TAKE IT WITH YOU ON YOUR HOLIDAYS.
MUSIC IN A MOMENT—JUST OPEN THE LID.

N.S.W. Representative:

MR. H. J. HAPGOOD,
Manufacturers' Products Sales Co.,
Challis House SYDNEY.



"The PINNACLE" "PORTA" SELF CONTAINED RADIO SET

£ **39-10**



At all
Radio
Stores

Sound Scenery

(Continued from Page 7.)

the muffled roar and each second the control engineer built up the volume until the heavy train veritably thundered past the little country railway station. An added effect, familiar to those who live near passing trains, was the rattling of window glass. Six people were required to produce the train effect, one to whistle, one to chug, one to operate the roller skates, one to make the windows rattle, and another to sound the bell and the sixth, the control room operator, to control the sound volume.

The best recipe for a fast train then is: two short pieces of wood covered with sandpaper, a flour sieve, a pair of roller skates, a metal panel, a whistle, a bell, and two pieces of heavy cord.

CATALOGUE RECEIVED

Manufacturers' Products Pty. Ltd., Challis House, Martin Place, Sydney, have sent us a copy of their new catalogue featuring the various types of receivers handled by that concern. This little booklet is well printed and one page is devoted to each of the attractive models which have already found an extensive market in Australia. The Crosley model featured is very well-known in this country. Model 51 is a two-valve receiver and Model 52 a three-valve, while Model 51 is a special portable type installed in a leatherette carrying case which also accommodates batteries, headphones and accessories.

Another receiver featured in the catalogue is a Henderson five-valve set, which is a Neutrodyne incorporating high grade low loss parts and encased in a handsome cabinet with Bakelite panel. In this set rheostats are eliminated and automatic control substituted. A feature of this set is the simplicity of tuning.

The "Rotofor" receiver which is also illustrated comprises five valves, yet has the remarkable feature of having only one control. It is operated with an on and off switch and is enclosed in a genuine mahogany cabinet.



"KING QUALITY" NEUTRODYNE SET

£60

A high quality 5-Valve Broadcast Receiver equipped with built-in Loud Speaker and correctly designed tonal chamber, capable of producing perfect reception in any reasonable volume desired—very sharp tuning. Wavelength range 200 to 550 metres. Sold complete with valves, batteries and all accessories ready for immediate installation.
Price £60

Deferred payments—£6 deposit, balance 23/- per week to be completed within 12 months.

"D. J. STANDARD-4"

£25

Powerful and highly selective, a splendid Christmas Gift—all Interstate stations (excluding Perth) on Loud Speaker. Absolutely complete, no extras to buy, for £25

Deferred payments, deposit £2/10/-, bal. 9/6 week

DAVID JONES'

New Price -- **45/-** Each

*Breeds Blue Foxes
and Listens to 2BL*



Brandes

The Table-Talker

makes a friend of the electrical impulse

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

Ask your Dealer for Brandes.

Now **45/-** Each

FACTORY REPRESENTATIVES:

International Radio Company Ltd.

200 CASTLEREAGH, STREET, SYDNEY, N.S.W.

Also at 91-93 COURTENAY PLACE, WELLINGTON, N.Z.

"PREUSCHOFF Brothers, breeders of choice blue foxes, Petersburg, Alaska," is printed at the head of a letter received by 2BL, Sydney, by last American mail. Whether the art of breeding blue foxes necessitates the owner of the foxes remaining out of bed all night is not stated, but the writer, Frank J. Preuschoff, starts off, "It is now 2.30 o'clock in the morning, and I am sitting up and listening in to your programme, which is coming in loud and clear. At present writing the Scottish comedian is singing." Mr. Preuschoff signs his letter, and adds a postscript, "Dance music is starting, I'm going to bed; good morning."

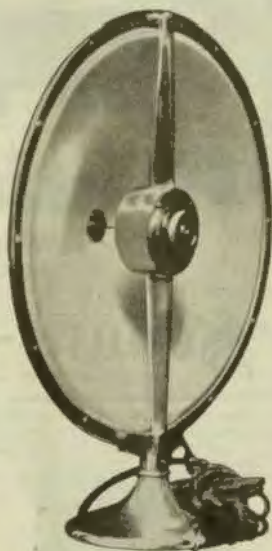
The Scottish comedian referred to was Tom Angus, which fact has been conveyed to the breeder of blue foxes by letter from the Sydney broadcasting station. Broadcasters received no fewer than 47 letters from various parts of America by the last mail, all stating that the writers had heard the station's programmes. Some of the letters are very interesting. One, Elton H. Sherwood, sends an American newspaper cutting about himself. In this it is mentioned that Mr. Sherwood also listens to the Japanese station JOAK, but he does not like it much, as JOAK does not give enough music. Last time he was listening, a man talked in Japanese for two solid hours. "The music over there is terrible," he says, of JOAK, but he calls 2BL "your wonderful station," and next to 2BL he considers 3LO (Melbourne) the best radiocaster in Australia.

Most of the writers from America explain that they have quite ordinary sets—the kind that would cost from £30 to £100 in Australia, and they all ask for an acknowledgment giving items they heard so that their claims can be verified. The listeners' addresses range all along the Pacific Coast, and as far inland in Canada as Manitoba and Hudson's Bay.

"SFERAVOX"



For
Faithful and
Distortionless
Reproduction



£5-5-0

THE INCOMPARABLE CONE SPEAKER

In most existing instruments of a similar nature the design is such that distortion cannot be avoided and in this respect we would refer particularly to the differences arising in the forces acting either by attraction or by repulsion in the magnetic circuit and the magnitude of the current required to obtain sufficient volume, such differences resulting in very unfavourable conditions for the valves and the low frequency transformers of the receiver. Furthermore, diaphragm of an excessive size induce sound reverberations and this coupled with the causes quoted above, are all contributory to distortion and disagreeable tone reproduction.

The "SFERAVOX" Loud Speaker is an example of how these difficulties have been overcome.

Australian Representatives:

And at Melbourne, Perth, Brisbane
Auckland & Wellington, N.Z.

BROWN & DUREAU, Ltd.

Broughton House
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Across the World
THE

Sonora-Radio

CLEAR AS A BELL

has proved through years of meticulous care and scientific experiment, that for volume, range, fine tone and selectivity it is the pre-eminent medium between broadcaster and receiver.



Those who love music have an inherent love for beauty in all kindred arts, and in the Sonora Radio they find the qualities so eagerly desired. The radios excel in tone quality—each liquid note flowing forth with crystal-clear beauty and mellow resonance.

Extreme selectivity contributes to the wonderful tone quality. Between stations—silence, still as the night—tune the dials to the group wanted and a resonant voice musically wells forth unmarred by the undertone of another station.

In the photograph, too, they are assured as to quality, for built within them is the famous Sonora tone chamber.

This cabinet will please the artist's esthetic senses, for it is a craftsman's masterpiece.

Sonora-Radio

PRESENTS ITSELF AS
THE MASTERPIECE OF
SCIENTIFIC PERFECTION

A Combination of Phonograph and Radio, it is
THE HIGHEST CLASS INSTRUMENT IN THE WORLD
Call or Write for Catalogue.

E. F. WILKS & CO. LTD., 321 PITT ST., SYDNEY

As 47 persons in the United States and Canada have gone to the trouble to write by the same mail to 2BL, stating that they listen to that station, it seems probable that 200 or more actually heard the Australian station. In any case 2BL has started replying to their American friends starting at 10 p.m., Sydney time, every Wednesday.

BEETLE CAUSES 2GB TO GET OFF THE AIR.

MOSMAN is full of radio bugs. In fact, one of these creatures, when fooling around 2GB's transmitting station recently got himself into one of the huge air condensers, caused the station to cease broadcasting for several minutes and paid for the prank with his life. His charred body is kept by the operating staff as a proof of the yarn.

While the transmitting station of 2GB is fully shielded electrically there seems to be some defect in the shielding against flying pests which arrive in swarms at this time of the year. One night last week several of the engineers saw a large beetle buzzing around the brilliantly lighted transmitting tubes. The presence of the insect did not cause them any concern about the operation of the station at the time, but they hurriedly inspected the screen doors to find where it had entered. During the process of this inspection there was a blinding flash from one of the transmitting frames and the station "went off the air." Immediately the screen inspectors turned their inquiry from the windows and doors to the apparatus. Everything seemed to be in proper order, but finally on one of the huge copper air condensers was found the tell-tale scar of a short circuit. It was not until they looked upon the floor beneath the condenser and found the charred remains of the beetle that they learned of its sad demise and the cause of the trouble. Evidently the insect had flown into the condenser, and its body had caused the blinding flash which automatically opened the circuit breakers and ceased the broadcasting. The official entry was made in the records, the body filed away, and the incident closed.

See it—Hear it—and be convinced of the superlative qualities of this remarkably low-priced Receiver



The "Eclipse Super-Six"

Here is the most exclusive, the most powerful and selective of all Sets, a Super Six-valve, within reach of the man of moderate means.

at the unequalled price of £18/18/-
without accessories

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quality accessories . £37/10/-

THE COMPLETE SET INCLUDES — Latest Magnavox Cone Speaker
Clyde Guaranteed Accumulator 6 201A Valves (Radiotron)
3 Large Capacity Winchester B Batteries Aerial Equipment.
Complete with cheaper quality accessories - - - £30

Cash or Terms

To those who are desirous of possessing a Set embodying only the most advanced attainments in Radio, the "ECLIPSE" can be bought with the absolute assurance that it will give the finest possible results in Broadcast receiving.

3 Salient Points of the "Eclipse"

1. The latest method of amplification used ensures the most wonderful tonal quality, as well as a maximum of volume.
2. Simplified tuning—Two dials only used.
3. Exclusive and distinctive cabinet design.

Hear the "ECLIPSE" demonstrated in our special Audition Room or in your own home.

2 SPECIAL XMAS OFFERS

MANHATTAN HEADPHONES.

The 'phones that ensure you perfect reproduction in speech, song or music. Regular Price 25/-

Special Price 15/-

THE "MANHATTAN JUNIOR ADJUSTABLE"

Height, 22 in., 10 in. Bell.

Usually priced at 75/-, a Special Big Purchase enables us to offer this efficient speaker at the astounding price of 32/6

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Avoid Radio Replacements

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which will give lasting service

Radio Accessories that are built to last. No longer any of those annoying break-downs necessitating replacement of worn-out or defective parts at frequent intervals. All wireless accessories purchased at Farmer's are of guaranteed reliability, and will give the same satisfactory results for years to come.



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Rheostats, single
hole mounting. As-
sembled. Price 3/9



"Sensory" Standard Base Sock-
ets, of genuine bakelite.

Price 3/-

"Columbia" 1.5 dry Cells, for
use with dull emitter tubes.
Price 2/9



"Emmeo" Vernier
Dials, unsurpassed for
critical tuning.

Price 9/6

"Radiokes" Kit

"Radiokes" Radio Frequency kit
as used in the Browning Drake
Circuit. Complete with blue
print. Price 42/-



FARMER'S, SYDNEY

BOX 497 AA, G.P.O.

RADIO SUPPLIES, GROUND FLOOR

Coming Features in the Broadcast Programmes

(Continued from Page 8.)

MR. ERIC JOHN, Brisbane's gifted pianist, will be heard often from 4QG this year. Extensive arrangements have been made, resulting in twelve special pianoforte recitals by Mr. John being broadcast. In addition twelve special concerts which have also been arranged by Mr. John will be given.

ARRANGEMENTS are now being made by 4QG and the Workers' Education Association which should result in a number of broadcasts appealing to lovers of classical music being made. Mr. George Sampson, F.R.C.O. (City Organist) will be the tutor for the coming music classes to be held by the Workers' Education Association and it is quite probable that these classes will be held at 4QG and will be transmitted by radio.

THE CHRISTMAS EVE programme from 2FC was one of the most novel radio entertainments yet attempted, and through the courtesy of the Columbia Gramophone Co., the whole of the transmission was put over from the spacious studios that are used by this Company for making their new records. Record making is closely allied to broadcasting, as is evidenced by the fact that many prominent 2FC artists are now successfully recording for the Columbia Company, and the arrangement of the recording studios are admirably adapted for broadcasting purposes.

THE PLEASURE that has been given by 2FC Hospital Concert Party to the various hospitals has been so great that further entertainments will be arranged in the New Year. A visit will be made to the Lady Davidson Hospital for soldiers at Turramurra on Saturday, January 8. On Sunday evening, January 16, the Prince of Wales Hospital, Randwick, will be given a special programme. Other hospitals to be visited are the Royal South Sydney Hospital, the Blind Institution, a second visit to Royal North Shore, and also to Waterfall Sanitarium.

NOW!

THE EMMCO SUPER-HET. KIT

AT LAST!

A long-felt want comes true. You can own a Super-Set and you can build it yourself. After months of experimenting, testing, and retesting, EMMCO—pioneer of radio and creator of fine radio parts—now announces

A New Super-Heterodyne Kit

for home constructors. No hit-or-miss combination in this kit. In every separate unit, and as a whole, it is PERFECT. It represents more value for price than ever before.

Full size blue prints, wiring diagrams, and full details for building go with it. Follow the directions and YOU CAN'T GO WRONG. Start in and BUILD ONE NOW. Completed, it is a Set you will be proud to own.

Consists of: Aerial Coupling Coil, Plugs, three Intermediate Transformers, Filter and Oscillator. All matched and balanced.

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AT ALL DEALERS

THE EMMCO SLOGAN COMPETITION HAS BEEN EXTENDED TO
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SYDNEY, N.S.W.



Receiving Sets We Have Tested

A description of the Roto-for, manufactured by H. J. Hapgood, as tested by "Wireless Weekly." Under this heading we will discuss the merits of a different commercially built receiver each week.

IL L USTRATED on this page is the Roto-for, a five-valve receiver with one control only. We tested it out this week, and are very pleased to pass on the readers of our paper a description of this excellent receiver and just what it can do.

To begin with, as may be seen from the illustrations, this receiver is very compact. The overall dimensions of the Roto-for Table Model is 18 inches long by 8½ inches high by 14 inches deep, the whole set being contained in a drawer. Altogether there are four different models available, but in all four models the set is the same. The drawer is certainly a very neat idea, and can be incorporated in the average phonograph cabinet if desired. The actual dimensions of the drawer is 14½ ins. long by 8½ ins. high by 11 ins. deep. It therefore follows that the inclusion in the average



The set in its magnificent cabinet.

phonograph cabinet is a simple matter indeed. By a very simple arrangement the phonograph horn can be used as a reproducer. The finish of all the woodwork is antique mahogany and is very prepossessing in appearance.

Looking at the inside of the drawer all that can be seen are the three rotoformers, which are connected to the single dial with a bevel gear. Five valve sockets are arranged in the front of these rotoformers, immediately to the left of which is found an aerial adjustment which tunes the instrument for a short or long aerial. This adjuster, once set, never need be touched again.

Immediately in the front of the re-

ceiver is a dial handle, actually a knob, which is finished in wood to match the cabinet. This handle controls the adjustment of the rotoformers, and to tune-in the various stations all that is necessary is to turn this knob, and one station after the other will come romping in. Inset in a frame are the numerals on the dial which are sufficiently big to be seen comfortably without eye strain. The dial turns to a complete circle of 360 degrees.

Underneath this knob there is a small lever which serves both as a switch and a volume control, and it lives up to its name.

Certainly this is radio simplified. Instead of terminals for the battery connections for this receiver, a multi-coloured cord is provided, each lead being marked the position it should occupy in the batteries. No mistake can therefore be made in battery connections—another feature of simplicity.

Having batteries, valves and everything handy, we connected up the Roto-for. Pronounced sensitivity could be felt as soon as the knob was touched. 2FC was the first station tuned-in, and in spite of its high power a slight turn of the dial is sufficient to make one doubt its very existence. While the volume was extremely good, at the same time the quality of tone was most pronounced. No distortion whatever was noticed from any of the stations tuned-in, and the volume control regulated the

(Continued on Page 55.)



View of inside of drawer showing Rotoformers.

BUILD AN

Airzone Neutrodyne

All the world over, the Neutrodyne is acknowledged as the best all-round broadcast receiver.

Super selective, powerful, mellow, it has capabilities possessed by no other type of receiver.

THE AIRZONE NEUTRODYNE KIT, built from the highest quality parts, is now available for all those who desire to have a modern receiver, which will deliver Loud Speaker results on interstate Stations, and at the same time is absolutely free from any trace of interference from local Stations.

**No
Soldering
Necessary**

The Kit is supplied in a handsome carton and is complete to the last screw. The parts include the well-known Emmco Vernier Dials, which ensure wonderfully fine tuning, and the latest type of Ball-bearing Bakelite Frame Straight Line Frequency Condensers.

The panel is drilled and engraved and every wire used is bent to shape and numbered so that it is an extremely simple matter to construct the Receiver. Supplied with each Kit is a book of instructions which explains exactly how to make every connection and explains clearly also further to test, neutralise and operate the Set when it is assembled. A screw driver is the only tool necessary to complete this high-grade receiver.

Price £18-0-0

Manufactured by

C. Plowman
363a Oxford St.,
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Obtainable at
All Dealers

Descriptive circular on request from Sole Selling Agents

**Manufacturers
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CHALLIS HOUSE, MARTIN
PLACE . . . SYDNEY

All Readers' Queries Answered Here

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

E.C. (Ashfield)—Q. 1: I have made up the Neutrodine of October 22, 1924, and have got good results from 3L0 and 44G, but it will not tune-in 2FC with all the condensers all in. I am using 11 plate condensers.

A. 1: The condensers you use are too small to reach the wavelength of 2FC with Airam condensers.

J.R.C. (Limerick)—Q. 1: I have a three-valve wireless receiver, but cannot get very good volume. The valves are dry cell valves, and am using three 1.5 dry cells for an "A" battery. I would like to know (1) is a "C" battery advisable?

A. 1: Certainly, a "C" battery is most advisable.

Q. 2: Would Phillips 1100 valves used with an accumulator be any advantage?

A. 1: Yes, provided the "C" battery is used in conjunction with it.

W.F.F. (Marriekville)—Q. 1: I am desirous of altering my set to either a Neutrodine or a Haver or a Browning Drake receiver. Please advise me which is the best.

A. 1: It is very hard for me to draw comparisons of radio receivers. As mentioned in the articles describing the construction of these three sets, Intermediate reception was available at Marriekville within a few steps of your own home. Bear in mind, when building the Neutrodine, that three condensers of the same make are preferable to three mixed condensers, and also realize that the Neutrodine has five valves against the other receivers' four valves. This gives it a certain advantage. The material you mention is quite suitable for any one of the sets, excepting the variable condenser, which seems more like a 30005 than a 3006. Many thanks for your good advice, but as a pleasure to advise you that screened coils will soon be featured in "Wireless Weekly."

G.R. (Leibhardt)—Q. 1: Kindly let me know if it would be possible to pick up 2FC on a crystal set at a radius of 80 miles?

A. 1: Now you're asking me something which is impossible to answer. Generally the range of a crystal receiver is approximately 25 miles, but every day or so reports come to me of crystal receivers covering greater distances. Frankly, no one can tell you this correctly, and for mine I wash my hands of the whole affair.

F.H. (Fleish, Main)—Q. 1: I am thinking about making the Neutrodine in "Wireless Weekly," 22-10-24. Could I use three 9005 instead of the three 90025 in the diagram?

A. 1: Yes, quite alright.

W.R.R. (Newcastle)—Q. 1: I am thinking of trying my hand at a seven valve Super-Heterodyne. Is this set very critical to construct? Could you supply me with a diagram or advise me where I could get one? Is an eight valve super set better than a seven, and if so, how? I would prefer dull accumulator valves as I have a good four volt accumulator, and would prefer not to change it for a six volt if it could be avoided.

A. 1: No, the Super-Het is not very critical to construct, provided available working diagrams are available. Now, I have no hesitation in recommending you to obtain one of the new Kenaco Super-Hets, which will meet with your requirements exactly. Full emitter valves are perfectly suitable, but at the same time this LV 511A has been matched to the impedance of the 511A valves. Thanks for your good wishes.

W.R. (Roseville)—Q. 1: Would you please tell me if it is possible to make a Three-

Valve Audiotone circuit using variometers selective?

A. 1: Not sufficiently selective for your locality.

L.R. (Kilneshorpe)—Q. 1: I wish to build a Neutrodine and so I have a quantity of Hottelwood coils which will be of no use to me, as they will be suitable for winding the neutrodine? I am enclosing a sample.

A. 1: The sample you enclose is quite suitable for your purpose.

M.H. (Dunston)—Q. 1: I have a three-valve regenerative receiver which is giving excellent results with loud speaker on a class stations at night-time. I would like to add a plate of radio frequency, so that I can hear 2FL and 2FC in the daytime, but I do not wish to alter the present receiver unless it is absolutely necessary.

A. 1: See "Wireless Weekly," June 18, 1924.

Q. 2: I am using 1040 valves which will set work with three 1½ volt Columbia cells, but good results with four cells, viz. 4 volts, and have never had any born out. Could you please explain why this is so, as you say "never on my account use 1100 valves with 3 volt 'A' batteries?"

A. 1: My reason for advising against a 3 volt "A" battery for 1100 valves is because the summer heat makes these valves to work on 4 volts. It is quite a frequent occurrence for me to open letters from readers who have met with dire results, through using excessive "A" batteries on the filaments of valves. Perhaps your dry cells are only delivering 1.1 volt per cell. This is quite often the case.

Q. 3: I am enclosing block of panel view of present set, and I am told that this is the best set in this set?

A. 1: Yes, the circuit you enclose is the P. 1.

Q. 4: My dry cells averages 85 hours in three weeks per set of four cells. Is this a good result?

A. 1: Reasonably good. Why not use Amplex Carbons? They will last for twelve months or so, and can be recharged with a handful of Saksmanias.

R.T.V. (Stratfield)—Q. 1: My single valve reflex set has worked perfectly during the last couple of months, but has now developed a high pitched noise (frequency howl) which makes it impossible to get a station. Can you tell me the cause?

A. 1: Either a defective detector or worn out "B" batteries.

G.B.C. (Concord)—Q. 1: It is my intention to add another stage of audio to the two valve Benaritz described in the "Wireless Weekly," of 16-10-24. With the two valves at present, I am receiving 10G and 3L0 with soft loud speaker strength.

A. 1: This will be described in the next issue of "Wireless Weekly." Glad to hear of your success.

Nestak (Bexley)—Q. 1: I wish to congratulate you on and also thank you for the fine work you are doing per the medium of "Wireless Weekly." I look forward to your articles, and am enclosing a new diagram. I am going to build an accumulator "B" battery as described in "Wireless Weekly," 11-11-24, and I want to know if a separate unit of 6 volts can be constructed at the same time this be used as "A" battery? If so, would plates need to be larger, and what would the ampere be?

A. 1: No, a separate unit of 6 volts would not be suitable as an "A" battery, as there is not sufficient capacity in the cells to supply a sufficient current. Only milliamperage

is required for the plate supply, hence the reason why it is suitable.

Q. 2: Could you tell me if the Marconi 4 valve would be suitable for one placed on near 2FL as I am, or would you advise Beyer, or Browning Drake? I want Intermediate reception.

A. 2: You see how difficult it is for me to express preference for one set over the other. All the sets you mention are suitable for listening in Intermediate stations. But I think you already have a Neutrodine. Am I right?

Q. 3: Is the Liscandola loud speaker unit procurable in Sydney?

A. 2: Yes, Murdoch's, in Park Street.

F.P.R.W. (North Sydney)—Q. 1: I have constructed the chemical rectifier of "Wireless Weekly," 19-11-24, and now find one of the aluminium has been eaten through at the level of the electrolyte. Please tell me how to prevent crystals forming on the aluminium plate.

A. 1: It appears to me that the electrolyte you are using is too strong. Break it down by adding a little more water. There is nothing to prevent you from cleaning the aluminium thoroughly before using it in the electrolyte. Are you sure you are using pure aluminium and not aluminium alloy?

W.Z. (Miller's Point)—Q. 1: I have built the Browning Drake receiver but cannot get Intermediate stations on it. Will you please tell me what is wrong?

A. 1: The particulars you sent along are too meagre for me to form an opinion. Is your aerial too long? Are your batteries quite in order? Are all your soldered joints good? Are the valves in good order? You see there are a thousand and one questions I could ask you before forming an opinion. Why not take your set along to the local dealer, and get him to check it over and pass his comments?

Q. 2: I have built the "B" battery and also charger recently described in "Wireless Weekly." The current is D.C. Is the charger really necessary?

A. 2: No, the charger is not necessary. Connect the lamp in series with the main, leaving the rectifier circuit out altogether.

M.F. (Bathurst)—Q. 1: Would you please forward me a circuit diagram of a spark transmitter, and particulars of building same, also give particulars as to range (approx.), wavelength, and current consumed by the transmitter.

A. 1: I am afraid that if I did forward you this circuit it would be of an impracticable value to you, as the powers that be will not allow a spark transmitter to be used. Why not build the simple Little Hartley Receiver?

V.E.N. (Broadwater)—Q. 1: I have built up the Two Valve entitled the "Loudest and easiest Two Valves I have Ever," and find the title untrue. I am about 500 miles from Sydney, and I can hear the loud speaker comfortably forty feet away, still I would like it to be louder. Would I alter the amount of the detector and radio frequency up to get more volume. Both my batteries are fully charged, and the valves seem alright, still I cannot get something.

A. 1: It is not advisable to add another stage of audio.

TWICE THE SATISFACTION

—AND—

Half the Cost

You connect up RAY-O-VAC Batteries and tune in.

The difference is amazing.

No preliminary howls, buzz, or shrill whistling. The signals come in true, clear, and strong without the slightest bother. The reason is this:

Low Internal Resistance

Ray-O-Vacs have only a fraction of the resistance of other "B" Batteries.

Added to this, they have remarkably long life.

And the cost is so low.



No. 2303.



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Nine Outstanding Features of the Ray-O-Vac

The Exclusive construction of Ray-O-Vac "B" batteries combines a number of characteristics which easily distinguish them as leaders in the "B" battery field. Nine features are outstanding:—

- 1.—Zinc can of rolled sheet steel.
- 2.—Water and acid proof egg grate partition.
- 3.—Connecting wires securely soldered.
- 4.—Insulating compound between cells.
- 5.—Waterproof water container.
- 6.—Screw Post Terminals make positive connections with wire, spelt or spoke conductor.
- 7.—Blinder in upper seal.
- 8.—Heavy non-bulging top seal.
- 9.—Screw post terminal soldered securely to individual cells.

No. 9303—The Master Ray-O-Vac 45 volt; double the amperage of ordinary 45	£1 10 0
No. 2301—45 volt flat, with 7 tappings	1 6 0
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No. 2151—22½ volt flat, with 6 tappings	0 15 0
No. 2153—22½ volt upright, 2 terminals only. Specially recommended for detector valve	0 15 0
No. 5151—BP 22½ volt medium	0 12 6
No. 4151—22½ volt for portable sets	0 10 6
No. 201R—4½ "C" battery. Voltage adjustment of 1½, 3, and 4½ volt; can be used as A, B, or C battery.	0 4 6
No. 531R—1½ volt Grid Bias "C" Battery	0 3 6
No. 1211—1½ volt "A" battery—the best 1½ volt single cell on the market to-day	0 3 3
No. 6 — 1½ volt cell for radio or telephone use	0 3 3
No. 1231—3 cell 4½ volt A battery in one case	0 12 6

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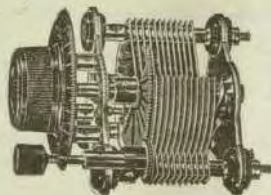
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Being non dielectric and strictly
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Plain 18/6
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TRUE BLUE Power Plus Tubes



18/6

STRONGLY RECOMMENDED
for the high frequency stages of
the Browning Drake. The only
6 volt valve to fit 199 sockets.

**CROSLY 1, 3 AND 5 VALVE
SETS**

CROSLY MUSICONES—
New Shipment just landed.

Branston Super Het Kit

Seven valves Reflexed giving
power of 10.

Full Kits (minus valves and
batteries) £24/10/-
Transformers £10/10/-

W. Maling & Co.
30 Market Street — SYDNEY

THE "CORINTHIA" chartered for a world pleasure trip is due to arrive in Sydney on January 6. By courtesy of the Cunard Line, 2FC will broadcast a part of their programme that evening from the deck of the steamer. A special orchestra has been engaged for the trip, and from 7.45 p.m. till 9.30 p.m. this orchestra will play from the steamer. Items by well known Sydney artists will be interspersed, and a description of the boat will be given.

FRESH ARRANGEMENTS have been completed by 2FC to broadcast orchestras and artists of the Union Theatre circuit, including Lyceum, Lyric, Crystal Palace, and Haymarket Theatres. The musical directors will work in close co-operation with 2FC, so that the most interesting portion of their programmes will be broadcast for the benefit of listeners.

LICENSES for experimental stations in India are in great demand, but few are granted, writes a correspondent. During the present year about 500 experimental licenses have been issued, chiefly to European officials. In British India 2,700 broadcast reception licenses were granted during the six months ending in August. There are 165 licensed transmitters.

MR. ERIC C. DUNSTAN, of the headquarters staff of the British Broadcasting Company, has been appointed general manager of the Indian Broadcasting Company, which has lately been formed. The appointment made as the result of an application by the directors of the Indian Broadcasting Company to Mr. Reith, managing director of the British Broadcasting Company, to recommend a member of his staff who was familiar with all branches of broadcasting work and who would be competent to fill the new position.

THE LEVIATHAN is now completely fitted with telephonic transmission apparatus, and Transatlantic passengers can carry on conversations with friends on shore. The range is estimated at 5,000 miles, and the charge for the full range is £5 for three minutes. For every thousand miles short of this distance the charge is reduced by £1.

GEORGE FIELD RADIO AND ELECTRICAL SUPPLIER.

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285 Hunter St. NEWCASTLE.
(Between Scotts and Wines).

Grand Low-loss sq. Law Condensers, .0005, 9/6; Dials, 1/3; Plated Switches, 1/6; Torch Bulbs, 17/6 per 100; Torch Batteries, 9/- per dozen; Water Heaters, 14/6 with cord, etc.; Praeco Glass Accumulator "B" Batteries, 2s/- each; "Cruix," the famous French Audio Frequency Transformer, 5:1 ratio, 9/6; best quality Coil Plugs, 8d.; Hytron Valves, 201A and 20 types, improved non-microphonic, with beaded glass filament supports, 6/0 each; Ajax Phone Plugs, 1/8; Black Celluloid Strip, 2s. ft.; Budget Arresters, 1/6; Beels, 1in. and 1½in., 6 and 8d.; Grid and Phone Condensers, 1/-; best Bakelite in stock sizes, 1sd. sq. inch, special sizes cut to order, 3d. sq. inch.

Country Dealers Supplied.
Write for Descriptions.
Same Day service at Best City Prices.
All Standard Radio lines at best "weekly" prices.
RING NEWCASTLE 1135
for prompt delivery.

THE LARGEST AND OLDEST
RADIO HOUSE OF THE NORTH

SLINGSBY & COLES Limited

Under Central Station,
463 PITT STREET.

If you are not satisfied with the results from your present set, let us re-wire it to our Superlatinal Five—the results will astound you.

Spagetti, all colours 6d. yard
Jefferson 41 Transformers 17/6
Radlukes Toroid Coils, each 15/-
The Only Wave Trap (Mixer) 15/-



NO Corroding Crates NO Leaking Cells NO Untidiness

Three old Bug-Bears of the Radio Battery User—Definitely banished
by the New "SR" Clyde Type Batteries



Type 6SR7.

This big improvement in radio power supply incorporates all the established characteristics of the well-known super-power CLYDE

But in addition, it offers the emphatic advantages of

- (1) Non corrosive terminals.
- (2) Permanent connecting straps.
- (3) Four or Six volt units in one container only.

The experienced radio man knows what this means. The elimination of leaking cells; No corroding wood or iron crates; and in addition, compact form that definitely solves the problem of keeping unsightly batteries out of sight. In short, the end of all old battery troubles.



Type 4SR7.

Clyde 2-Volt Radio Cells



2V.S8.

Built for heavy duty, enclosed in strongly moulded ebonite jars. Coupled together or used separately,



2V.S7

they are equally satisfactory in performance. Supplied with handy connecting links.

Whether for car or radio, Clyde is battery value unequalled. Ruggedly dependable at all times — long lived — and surprisingly low in cost.

OBTAINABLE FROM RADIO DEALERS RIGHT
THROUGHOUT AUSTRALIA

Manufactured by

The Clyde Engineering Co. Ltd.

GRANVILLE, N.S.W.



2V.S5.

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GECOPHONE

Accessories for the Best Results

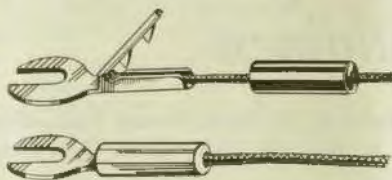


LOUD SPEAKERS
16

"The Musical Instrument of Wireless" is the Gecophone Loud Speaker.

Designed to give perfect, even, and distortionless reproduction over the whole range of voice and instrument notes.

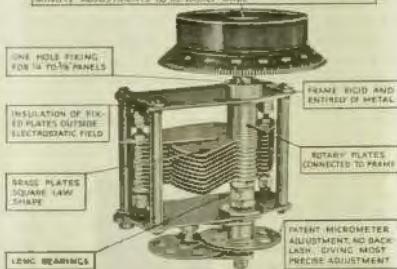
The non-resonating horn of moulded ebonite has been adapted on account of its excellent acoustic properties. Height, 26 inches, Flare 15 inches.



GRIP TERMINALS, 1/2 PAIR.

The top illustration shows the Gecophone Grip Terminal open for taking stripped end of lead, while the bottom illustration shows it closed for use. Well insulated, of thoroughly sound design, and made to take all sizes of wire used in wireless.

LIKED DIAMETER KNDS MOVING IN SAME DIRECTION AS DIAL THIS TOGETHER WITH THE MICROMETER MOVEMENT YIELDS THE MOST MINUTE ADJUSTMENTS TO BE EASILY MADE



ONE HOLE FIXING FOR 14 TO 16 PANELS

INSULATION OF FIXED PLATES OUTSIDE ELECTROSTATIC FIELD

BRASS PLATES SQUARE FLAW SHAPE

LENS BEARINGS

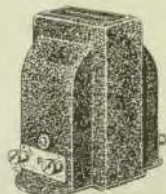
FRAME BIRD AND ENTIRETY OF METAL

ROTARY PLATES CONNECTED TO FRAME

PATENT MICROMETER ALIGNMENT AND BACKLASH, GIVING MOST PRECISE ADJUSTMENT

SLOW MOTION CONDENSER

.00025 .. 35/- .0003 .. 37/- .005 .. 39/-
The Gecophone Low Loss Slow Motion Variable Condenser is an advancement in condenser design. The minimum capacity is approximately 1/50th of the maximum capacity, giving the condenser a wide range and a very low minimum. The minimum capacity of a .005 mfd Gecophone low loss motion variable condenser is .00001 mfd, this being lower than any other condenser of like size. Obtainable in capacities from .0002 to .0005 mfd.



TRANSFORMERS.

RATIO 2-1 ... 32/6

RATIO 4-1 ... 35/6

Gecophone Low Frequency Transformers are the result of scientific investigation, and their design avoids all inherent causes of distortion. Exhaustive tests show that maximum and even amplification is obtained over the whole range of audible frequencies. The 2-1 ratio type is specially suitable for use after a general purpose detector valve. The 4-1 ratio type will give the maximum amplification without distortion when used after a low impedance valve.

British General Electric Co. Limited

Magnet House

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for which I enclose for (add exchange to country cheques).

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Receiving Sets We Have Tested

(Continued from Page 4R.)

sound from extremely loud to very soft.

In seeking Station 2BL we came across 4QG, Brisbane, and we may be justly pardoned for the error we made in thinking that we had 2BL, as the volume was so good and clear. 2BL was presently tuned-in, and one or two items of the programme were enjoyed immensely. 3LO, Melbourne, 5CL, Adelaide, as well as Brisbane beforementioned will all be tuned in on the one dial very nicely. It certainly seems strange but it proves that the radio receiver of the future will be one of minimum controls, yet at the same time be most efficient. Altogether the Rotofor is a most satisfactory receiver, and we are very pleased indeed with our experience of it. Our model was forwarded us by Mr. H. J. Hapgood, of Manufacturers' Products Pty. Ltd., Challis House, Sydney.

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Just take it where you wish, set it down, adjust the loop aerial, turn a dial or two and

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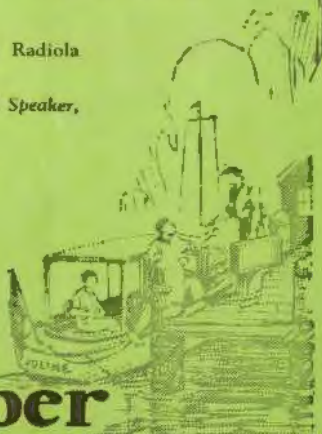
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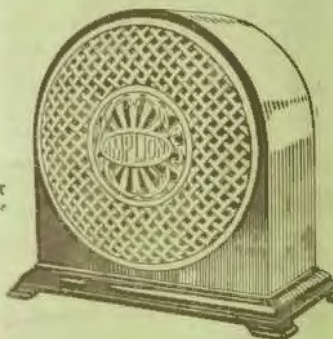
Portable Radiola Super



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