

WIRELESS WEEKLY

Vol. 9, No. 2.

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

Friday, Nov. 5, 1926.



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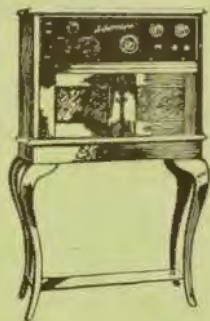
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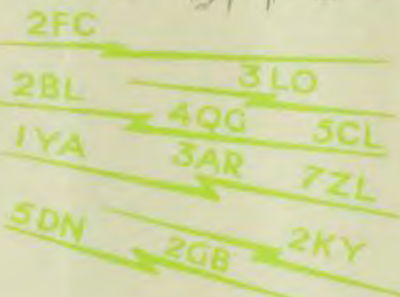
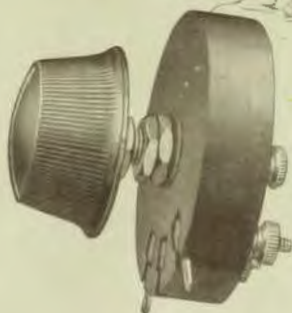
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WIRELESS WEEKLY

VOL. 9. No. 2.

NOVEMBER 5, 1926.

Summer Radio

IS radio a desirable type of summer entertainment? Is radio entertainment in summer a possibility?

Here are two questions which have set broadcasters and traders thinking. Not because they believe that radio is neither desirable nor possible in summer, but because these questions lie dormant in the minds of most listeners-in.

Summer time is looked upon as vacation and pleasure time. The hundreds of out-door attractions calling listeners away from their sets in summer are pointed out as rivals of the radio industry.

Yet surely the addition to the summer home or camp of an instrument that makes possible so large and varied a type of entertainment as radio does is a most desirable adjunct. In fact, for those possessing a summer cottage or camp, radio is almost a necessity because it supplies news as well as entertainment. The business man is daily in touch with business reports, stock market quotations, and news that might affect his business.

The listeners who remain in the city have just as great use for radio entertainment on their ver-

andahs as they had in their living rooms in the winter. The broadcasting stations are continuing to give the best type of programmes possible and are adjusting their programmes constantly to give that which most people desire.

The country listener-in will find that the added power behind 2FC on the low wavelength will help to overcome summer static. The increased efficiency of the modern set with the small wavelength range will also improve reception.

The answer to the second question, whether satisfactory reception is possible in summer is certainly "Yes." Even though summer reception from the point of view of distance may be poor, we feel that the question of distance has been over stressed. After all it is the quality of the entertainment, the purity of tone and volume that counts the most. The thrill of reaching out into the far distances for reception is one that quickly wears off, while the pleasure of really good performances nearer home soon becomes the important factor.

With this point in view, we believe we are playing safe in saying that summer radio entertainment is both desirable and possible.

Reproduced in our cover this week is a photograph of little Miss Koobabarrs, 31.0 bedtime storyteller, Jamana for her native animal totemity.

Between You and Me and the Microphone

STATION 4QG made a profit of £729 during the first twelve months of its existence, according to the report of the Queensland Auditor-General.

THE frequency of 290 kilocycles or 1034 metres has been set aside exclusively for the use of aviation radio beacons by the U.S. Government.

MR. W. J. ZECH, secretary of the Leichhardt and District Radio Society, lectured on the Harkness reflex receiver described in "Wireless Weekly" before the club recently.

Mr. J. L. BAIRD, inventor of a practical commercial method of television, has been approached by the French authorities for permission to attempt the transmission of pictures between London and Paris.

THE Swedish Government has appropriated £38,000 to build its seventeenth and most powerful broadcasting station. It is to be erected by Marconi's Wireless Telegraph Company, and will be of the same design and power as the famous Daventry station. The company controlling broadcasting in Sweden reports a profit of £11,000 for 1925, after meeting a deficit of a little over £900 incurred in 1924.

THESE FIGURES were given by an Australian radio engineer recently returned from the United States, to indicate the remarkable advance of broadcasting in that country. The first radio programme was broadcast in Pittsburg about 1920. To-day there are nearly 600 stations. In 1920 there were only seven manufacturers of radio equipment; there are probably 3000 to-day. There are 10,000,000 completely equipped receiving outfits in daily use in the U.S.

THE OTHER morning Mr. Sydney Exton, 3LO tenor, received a letter from Suva, Fiji, with a request that he should sing "Oft in the Stilly Night." "I don't suppose you remember me," wrote his correspondent, "but I have vivid recollections of a 'stunt' we did in an impromptu concert arranged just behind the firing line, and I remember you singing 'Roses of Picardy' as distinctly as if it had only happened yesterday. Then the next time I hear you is via the wireless, you singing in Melbourne, whilst I am listening in Fiji. Truly the world is a small place."

Conducted by
R. E. CORDER

MY WIFE'S learning to cook by radio. Last night we had static with onions.

SOME OF the new receiving sets do not require any earth at all. In the opinion of our neighbour's cat, our rose trees belong to this category also.

WIRELESS is useful for developing the imagination according to Mr. James Nangle in a recent issue. Judging from some of the stories of QSL collections we hear, it does very well.

FARMERS who make a practice of listening to the broadcasting stations, had brought home to them last week, the remarkable efficiency of radio. The first wheat of the season arrived at Alexandria goods sheds, Sydney, from Bogabri, and half an hour after it was sold, growers all over the State heard the broadcasting stations announce that the Baggabri truck of wheat weighed 654lbs. to the bushel, and that the opening price fixed for the new season at auction was 7/- a bushel. The price was repeated on the air the same evening, so that wheat men all over the State must have known the news many hours, in some cases, days before they could have learned it from other sources.

MR. HENRY FOO'S Chinese jazz band which has been playing at broadcasting station 2BL, Sydney, comprises six performers, who play a three-string violin, a two-string banjo, another two-string instrument, a trumpet (or something like it), a cymbal, and a drum. The operas rendered by the band are fairly modern (for China), being only 3700 years old. If Confucius had had a loud speaker!



THE Haitian Government Department of Public Works has purchased a one kilowatt broadcasting station for installation at Port-au-Prince.

TO GUARD against a sudden disorganisation of the service should a tropical storm carry away the 4QG aerial, the station has just completed manufacturing a duplicate aerial.

A HIGH power radio telegraph station will be erected at Manila by the Radio Corporation of America, according to plans recently approved officially. The station will link the Philippines directly with the United States, without recourse to outside communication systems.

TASMANIAN axemen passed the following resolution at a meeting at Ulverstone a few weeks ago:—"That the Axemen's Carnival Committee record their deep appreciation of the news broadcast by 3LO, enabling men working in the bush and at sawmills throughout the Commonwealth, where mails are received very infrequently to hear of the result of the World's Championship contests."

THE SPECIAL racing announcer of 2FC receives many flattering letters from radio enthusiasts who follow his descriptions of the principal race meetings as each race is in progress. The following is from F. Shields, Harris Park, and is typical:—"I have been listening to your racing service every afternoon. I think the description of the races is just wonderful, and I don't think there is room for any improvement. I have been leading hand in Mr. William Booth's stable, and it beats me how you can pick out every horse so well. There are as many as a dozen of my friends who listen-in on my loud speaker, and they think the same."

THIS MIGHT easily have happened at the wedding of the 2FC radio bride last week.

He was a minister—and a radio fan. He was performing a wedding ceremony. Something seemed to have gone wrong with the affair. The groom was fumbling in his pockets. He had lost the ring, as grooms always do. The guests grew restless and the minister realised that some explanation must be made. He stepped forward.

"Stand by while the connections are being made," he requested. "We will be back on the air in a few moments!"

The first of a series of three articles on the discovery and development of radio. All rights are reserved.

THE words wireless and radio are synonymous but equally inaccurate terms employed to indicate one of the many well-known methods of communication across a distance. In the British Empire, wireless is the more familiar term, while in America and Europe radio is employed almost exclusively.

Five years ago radio communication was a subject confined to the attentions of professional operators and a handful of amateur experimenters, but to-day it is a thing used by the mass in almost every home, and is almost as ubiquitous as boots and shoes, and therefore, the question: "Who invented wireless?" is one of great importance and keen interest to many millions. The average person, irrespective of nationality, desires and enjoys the existence of a great inventor, a pioneer, a military leader, and the numerous other shining lights of genius who adorn the pages of history and in this greatest subject of modern times a leading light is essential.

But when we ask the question: "Who invented wireless?" we demand an answer that no one can give, for the simple reason that wireless or radio was never invented. Wireless is not unique in this respect for the same answer must be given if we ask who invented locomotion or navigation or steam and other widespread utilities such as telephony, flying, artificial light. None of these were invented; they have either existed more or less crudely in nature, such as steam and electricity, or have existed for a long period in the imagination or desires of great numbers of people, such as telephony (speaking afar) or flying



Who Invented Wireless?

By E. T. FISK

Managing Director of Amalgamated Wireless (Australia) Limited

(an ideal method of transport).

For ages man has desired to cast his voice far beyond its unaided physical limits or to carry information across great distances instantaneously or with far greater speed than was possible by physical transport. If we could discover the man who first had such an idea in concrete form and believed it to be possible while being totally ignorant of any means for achieving the desired result, we might suggest that he be recognized as the inventor of all methods of telephony and telegraphy, including the megaphone, the beacon, the sémaphore, the foghorn, the speaking tube and all electrical methods including wire and radio telegraphy and telephony. But it is not our custom to accept a man as an inventor because he has conceived an idea, no matter how sound it might be, unless he has put the idea into practice in an original manner.

No one in Australia is better qualified to write on this subject than the man who brought wireless to this country.

Instances can be stated of one individual conceiving an original idea and devising the first means of putting it into practice, but such instances associated with wide-spread and fundamental ideas are few in number and almost impossible to substantiate because of the difficulty that would be experienced in proving that the man who devised the first means of putting an idea into practice was the only person in the world who thought of the idea.

We do, however, consider it important to discover, record and honour those who first produce a practical method for achieving an important result such as wireless or flying. It is right and even necessary to seek out the pioneers of the great world movements because without their

foresight, courage and labour these great advances would have been delayed and in some cases might have been missed altogether.

The pioneer who works, with little or no prior knowledge to guide him, and who usually meets massed opposition in the form of ridicule and unbelief, but who perseveres and succeeds in face of it all, is the man deserving the highest honour. It is his efforts that eventually turn the great massed mind from incredulity to acceptance and that stimulate and show the road for those who follow later and build higher on the secure foundations laid by the pioneer.

So it is with wireless, we cannot name the inventor of wireless because the idea or the possibility of electrical communication without connecting wires had existed even before we knew how to speak or telegraph along wires, but we may justly and profitably seek for the pioneer or

the greatest wireless inventor and in this search it will be both interesting and instructive to go to the beginnings of the science of electricity.

All modern applications of electricity have arisen from the early experiments made by Dr. Gilbert, a physician to Queen Elizabeth, but, of course, it would not be correct to speak of Dr. Gilbert as the inventor of electricity.

The story of the development of applied electricity is one of the great romances of modern times when traced through its many phases from Gilbert's simple experiments to the marvels of to-day electric railway and wireless broadcasting. The path of development is marked with the names of the pioneers in its various stages; the work of each arising out of knowledge contributed by predecessors, yet being of prime importance in itself and leading to further important steps.

The story of development might be likened to the description of a main road with various branches en route. The main road embracing those discoveries which apply to all subsequent applications and each branch road embracing some particular electrical application, such as electric traction, electric communication, and medicinal electricity. On this occasion it is only necessary to describe the main road from its origin to the branch leading to electrical communication and thence to a sub-branch leading to wireless or radio communication.

Before the days of Queen Elizabeth there was no main road, but Dr. Gilbert's curiosity was aroused by what might be termed ancient footprints. In other words, he became interested in the fact that some 4,000 years earlier the Chinese had been able to pick up pieces of straw with amber that had been rubbed. To continue our analogy, Gilbert examined these ancient footprints, and by repeating the Chinese experiments he made the first clear track which was subsequently to be developed into the great highway of the science of electricity, which to-day transports millions of people daily in and out of the great cities of the world,

which dispels darkness by the mere touch of a button, annihilates space with all the marvels of wireless, and makes solid matter transparent by means of the X-Ray.

Gilbert rubbed amber and picked up straw and he found that similar results could be produced by rubbing a stick of sealing wax or a glass rod. He showed that other materials than

When Ernest Thomas Fisk was born at Sanbury-on-Thames in 1886, wireless, as we know it now, was undreamed of. After two years with an engineering company, he entered the British Telegraph Service, joining the Marconi Company in 1905. In 1909 he undertook a special mission to Arctic icefields to demonstrate possibilities of wireless communication with the Newfoundland sealing fleet.

The following year he visited Australia on an Orient liner, again to demonstrate the value of wireless at sea. In 1911 he returned, and in 1913 was appointed General Manager of Amalgamated Wireless, with a seat on the board, rising to the managing directorship in 1916.

It was Mr. Fisk who first tested the possibility of direct wireless communication between England and Australia, and gave the first public demonstration of wireless telephony in Australia before the Royal Society of N.S.W. He negotiated the agreement between Amalgamated Wireless and Commonwealth Government in 1922, and put forward a complete scheme for broadcasting, which was accepted by a special committee.

straw could be attracted in this manner, and that glass rubbed with silk acted differently from wax or amber rubbed with wool. These remarkable discoveries were credited by Gilbert to some mysterious influence which could be brought into action by friction between two different substances and he called this influence or force electricity, derived from the Greek word elektron, meaning amber.

It would be incorrect and even misleading to call Dr. Gilbert the inventor of electricity, but he was its first pioneer, and he cut the first clear trail which has led, through a long

procession of experiments and discoveries, to the great electrical wonders of to-day.

It may be taken for granted that Gilbert's discoveries met with more ridicule and disbelief than with actual credit and encouragement, because all new discoveries pass through that phase, but his work attracted the attention of other enquiring minds, and led to further experiment and the discovery of most of the laws and functions of electrical energy in a stationary condition, generally known as electrostatics, as distinguished from the electrical current which flows through a wire or the electrical waves which move through space. By this means the first mile of good road on the electrical highway was built and consolidated by Gilbert and his contemporaries.

The second mile was discovered by an Italian surgeon who was exploring in that locality with an entirely different purpose, namely, physiology, and who accidentally stumbled upon something which eventually proved to be related to the short electrical highway laid by Gilbert and others. Galvani was studying the anatomy of a deceased frog and was astonished to see the muscles of a frog's leg contract as though they were part of a living animal instead of an isolated and dissected portion of a dead frog. Galvani, also having the enquiring type of mind, which unceasingly interrogates nature, sought for the cause of this remarkable vitality and discovered that the movement occurred whenever his metallic instrument came into contact with a tendon or muscle of the frog's leg. Having interrogated nature, and received her answer, he then questioned himself for an explanation of the new and startling phenomenon, and eventually ascribed the action to the new force discovered by Gilbert, and known as electricity, and he found that he could produce what appeared to be an electrical force by immersing two pieces of metal in an acid solution, thus reproducing the conditions of his metallic instrument in contact with the muscular tendons of the

(Continued on Page 41.)

The Only Really Genuine Radio Bug

Here he is, with a real spark set and an aerial so small we cannot measure his wavelength. His real name is 'Pyrophorus.'

BY MARTIN PORTER

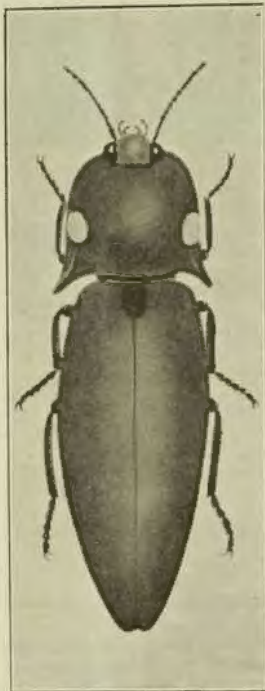
THE appellation is so justly descriptive, so apt, so appropriate, and all that, that one pictures the enthusiastic radio listener who tinkers with his circuit, howls, blows out valves and perhaps most unfortunately develops into a ham as the ideal radio bug.

This is a star upon entomology. It is more. It is an insect to the real radio bug who never blows a valve, who never howls, and who doesn't have to spend his cash for knockdown equipment. It is he who was the original transmitter, and by the same token, the receiver of the first radio signals. We refer respectfully and more or less reverently to the Pyrophorus, who is better known to those listeners-in in North Queensland as the firefly or lightning bug.

It was he (and his wife) who first crashed into the ether, who sent the first "C.Q." And it was his wife who recognised his call letters, and said, "Dit-dah-dit, dah-dit-dah!"

Not only that, if we are to believe scientific experts, the Pyrophorus was the first to realize that economy of radio transmission lay in the employment of ultrashort wave lengths. Also that these tremendously high frequencies were of better DX value and far removed from the zones of other natural and artificial electrical impulses.

That happened, though, of course, none to-day will likely remember, about 800,000,000 years ago. Or maybe it was only 750,000,800. That was several months after the birth of the first radio bug, at the exact time when he reached the age of maturity and began to speculate on the possible usage of a storage battery power supply, a few spirals of weblike coils, and a couple of perfectly equipped antennas. He soon found out (he must have, for he got results) that there was a decided relationship between the phosphorescent storage plant which nature



He is a small, light brown beetle clinging to the foliage during the day and flying about at night, emitting a bright flash of phosphorescent light from the tip of the abdomen as he moves his wings. Several species are found in the Blue Mountains and in the tropical scrubs of North Queensland.

planted under his wings and the two long feelers, which probably tingled when the little plant was put into operation.

Communication Begins.

At the same time he began to realize that those faint but unmis-

takable sounds that reached him through those same feelers were not the result of a hoadaohe, but had their source in a small storage power plant, entirely distinct from his own. And so the most natural thing in the world for him to do was to make an experiment. He emitted a few distinctive impulses. That was his "C.Q."

Aha! There came a reply. Thus was inaugurated the first radio.

His originality, of course, may have been questioned by the many relatives of the family, by that time scattered about the earth. There were the cousin glow-worms, the click beetles, who didn't know the radio code, but did very well with their own version of the Morse, and the various other species which resembled the Pyrophorus. But science gives the firefly the benefit of the doubt, and checking up on him, just to be sure, has found that he indeed possesses, uses and expertly operates a radio transmitter on a wave length that is well below one-fifteenth-thousand of a quarter, more or less, of a metre.

There is no doubt that lightning bug mates recognize the distinctive signalling of each other. Groups of them in laboratories have been marked and separated, and then liberated, and although in separate enclosures, with avenues of escape that prevent swarming, have never failed to reunite themselves.

The bugs have been placed more than 100 yards apart, in separate compartments, and have upon release unflinchingly found their mates without search.

While it has thus far been impossible to record the feeble electrical impulses emanating from the bugs, there remains not the slightest doubt that such impulses are actually transmitted. Even the most casual observation of the bugs will convince one of this.

In the darkness, the bugs invari-

ably choose a scout to pilot them, and when he is well in advance of a swarm, he will always flash his glowing rear end first. Within the fraction of a hundredth of a second the others will flash an acknowledgment of his message, either to proceed or change their flying course.

Two observers were placed in separate dark rooms to time the flashes of two specimens. Invariably they occurred less than a half second apart, and although each specimen was invisible to the other, the scientists were convinced that their transmission of impulses were carried back and forth on a tremendously low wave length through the ether, exactly in the manner of the waves with which radio enthusiasts are familiar.

Charles A. Miller, a radio amateur last winter interested the fans in a project to construct an electrical device which might record waves below any known length, with the idea of exploring the insect radio field. Many beetles and other insects are known to possess the same characteristics for mysterious and inexplicable communication over long distances to each other, and Miller and his fellow experimenters believed such a device for recording these impulses would open a new field of exploration in entomology.

Failure not Surprising.

Their failure to produce such a receiver, however, was not surprising, considering that the receiving antenna alone would have to be less than half an inch in length.

As a matter of fact, while the attainment was considered impossible from the beginning, the experimentation instinct set the fans to work, and many peculiar receivers were evolved, and to-day would prove an amusing, if not an instructive exhibit at a radio show. Some of the members of Miller's club went about their problem in a systematic way. They took measurements with delicate calipers of several specimens of pyrophori, and tried to calculate the overall wave length of the miniature transmitting gear. This placed them in a mathematical maze, and they finally resorted to guess work and ended in failure.

Islands Linked up by Radio

Almost every island of importance in the Pacific is now linked up by radio with the outside world.

LIFE on a coral island is not all that it is painted. Sun fever drives men mad occasionally in the tropics; but worse than this is the great silence. A word—any word from someone other than these few around you—means a new lease of life.

At Rabaul there are two steel masts, the main mast being 320 feet high, and power is derived from Rushton Hornsby crude oil engines, which, to cope with the traffic, are required to run continuously for about ten hours daily.

In addition to handling a heavy inter-island service, the Rabaul station receives and distributes all the traffic between Australia and the north and west Pacific islands, including those of the British Solomons and Japanese Mandate, which has its centre at Truk in the Caroline Islands. The main channel connecting the islands with Australia and with other parts of the world is provided between Rabaul, on the island of New Britain, and the radio station at Townsville, in Queensland. All traffic originating in the various island groups finds its way to Rabaul, and from there is transmitted to Townsville. After reaching Townsville, the messages are handed over to the telegraph office for delivery in Australia or for transmission to other parts of the world.

There are 17 commercial stations and four private radio stations in the islands, distributed as follows:—Mandated Territory of New Guinea 7, British Solomon Islands 3, British, Australian, and New Zealand Mandated Territory 2, Ocean and Gilbert Islands 2, Japanese Mandated Territory 7.

Besides the transmission and reception of Government and public radiograms, between New Guinea and other parts of the world, and with ships at sea, the island radio stations send out for the benefit of ships, navigation reports and warnings, weather forecasts and time signals.

TUNE IN KTAB

FEATURING *Californian music KTAB the 1000 watt broadcaster at Oakland, California, will transmit a special programme for Australian, New Zealand, and South Sea listeners on November 14.*

Aida Morgan O'Brien, musical director of KTAB, has arranged a long list of special items and artists. Among them will be E. Harold Dana, Mnie. Dorothy Tulbot, Olga Steffani, Mary Groom Richards and the Orpheus Ensemble.

Mr. R. A. Carrington, editor of the Oakland Post Enquirer, will give the opening address. A special announcement addressed to "Wireless Weekly" will be broadcast.

Any listener in tuning in KTAB is asked to communicate with the Editor. KTAB will transmit on 302.8 metres at 1 a.m. Pacific Standard time.

Radio is bringing hundreds—thousands of brisk cheerful words to island exiles to-day. There are a surprising number of radio stations in the islands. New Guinea alone has 21.

The main station in New Guinea is at Rabaul. Originally captured from the Germans by the Australian Naval and Military Expeditionary Forces in 1914, it is now the central radio station for all the north west Pacific islands. At this station, Amalgamated Wireless has substituted modern valve transmitters for both telegraphy and telephony, and receivers for the original German Telefunken apparatus, with the re-



The aerial of IYA and the headquarters of the N.Z.B.C. in Auckland.

Uncle Jack Prentice for New Zealand

The Radio Broadcasting Company of New Zealand has secured the services of Uncle Jack for their four new stations in the Dominion. Hundreds of listeners will miss him from the programmes of 2BL.

UNCLE Jack Prentice, one of the most popular announcers in Australia, has resigned from 2BL. He has been engaged as chief announcer to the chain of four stations operated by the Radio Broadcasting Company of New Zealand. In his new position he will be probably the highest paid announcer in the Southern Hemisphere.

Uncle Jack's resignation will come as a shock to the wireless public, who have regarded him as one of the permanent fixtures in the wireless world. By his energy and ability, he has made himself a power in the radio world, and his unflinching good spirits and courtesy have endeared him to thousands of boys and girls in the radio family. His personal contributions to the programmes as a lecturer on foreign affairs, as a raconteur of travelogues, or as a teller of great love stories, have emphasised his conspicuous ability.

Mr. Prentice will hold an executive position with the New Zealand Broadcasting Company, and will play an important part in the general organizations of IYA and the three sister stations. Following years of amateur transmissions, broadcasting in New

Zealand was not placed on a sound basis until August of this year. The rapid strides made since then indicate that it has a promising future.

IYA is the first of four new stations to be conducted under a system similar to that of the BBC in England. Duplicate stations are to be erected at Christchurch, Dunedin, and Wellington.

It is certain that Mr. Prentice will



Uncle Jack.

be a force for good in the radio world of New Zealand. Coming into broadcasting just over two years ago, he has seen the growth and development of 2BL from a position of relative insignificance to the position it now holds. He has contributed in a marked fashion to its efficiency.

Many of the innovations introduced were suggestions made by him; his ability in inaugurating the "talking-back" possibilities of radio by replying over the air to telephoned questions broadcast simultaneously, gave him an immediate position of importance on programmes, and a reputation in the wireless world. His various regular lecture-features, dealing with literature, music, philosophy and psychology, were all of a very high order, and it will be exceedingly difficult to replace him by one individual who can command the same attention over a long period.

Of course, it is possible that with experience gained in New Zealand, Mr. Prentice will ere long be prevailed upon to return to Australia. It may be that the present departure is the result of that wanderlust which has already carried him to most of the habitable parts of the world.

Successful Broadcasting Needs Co-operation

Few listeners-in realise the vast amount of organisation and co-operation which lies behind each broadcast programme

BBROADCASTING has been referred to as a co-operative affair. That description is a fair one because the successful development of broadcasting does certainly depend on the co-operative efforts of various interests. And no one group of interests can carry on without the assistance of the other.

The principal interests concerned are the broadcasting company, the wireless traders and the Post Office Department. Other interests concerned, though perhaps not so intimately, are the companies receiving contributions from listeners' subscriptions, for patents and copyright royalties. The listeners of course are very much interested, but not so vitally concerned in ensuring the success of the business. With the possible exception of the Postmaster-General the whole of the interested parties must necessarily treat the matter as a business proposition and the success of their enterprises depends on extending the use of broadcasting by the public. The more people become interested in broadcasting and make use of it, the more business must result.

Let us see how the various interests contribute to the provision of broadcasting service. The broadcasting company does the most important part. If the programme is not up to the mark and kept up to it week in and week out, the business of the other interests will suffer. People will not buy sets if there is not something worth listening to. The broadcasters part of the business is also much more exacting than that of the others. Slackness may be permissible in selling sets or selling licences; holidays may be taken by the traders and the postal officials, but the studio staff and the station staffs cannot relax their concentration and their work goes on like the brook.

The preparation of programmes—weeks in advance, with a watchful eye to the careful balancing of the other items so as to provide for all types of

listeners in a day's programme; the arranging of items from churches, halls and other outside places involving as it does frequently negotiations of a delicate character; the study of the items from the point of view of copyright payments—all these matters and many more constantly keep the studio management more



An uncommon animal known as a deerhound discovered by E. J. Vanderveide at the Sydney Zoo. The unusual earphone ears have been developed through having attempted to separate 2FC and 2GB on a single slider crystal set.

than busy. And there are other very important things for the broadcasting company's officials to attend to. They must ensure that the items are properly broadcast—that simple phrase means a great deal. Quality of transmission, amount of power used (and its effect on the general expenses item), reliability of amplifier control—of landlines—complete some of the things to be watched on the technical side. What of the careful examination of news matter—the censoring of items likely to cause offence to some groups or section of listeners? A newspaper may take liberties with politics or other controversial subjects, but the broadcasting company must not take sides.

In addition to these every day matters of concern, the company must plan well ahead, and must study the problem of providing satisfactory service to listeners throughout the State from many angles. It is to the fore-

ful and constant attention to all these matters by 3LO Melbourne that the great success of broadcasting in Victoria must be attributed.

What of the other interests? The post office has a comparatively easy task—to collect the subscription from listeners. Its far flung organisation—post offices in every town and village—permits of that being done economically. Subscriptions from listeners can be collected with greater economy and with much more convenience to listeners by the post office department than by any other organisation.

Some broadcasting companies have learned that the Postmaster-General does more than collect the listeners' fees. He decides whether or not the fees have been earned by the company—if the service given has been a satisfactory one. He may keep back some of the subscriptions and return them to listeners if he considers that a satisfactory service has not been received. That is at once an important and necessary power for the Postmaster-General to possess. He is the policeman so to speak or the custodian of the interests of the general public. His power to keep the broadcasting companies up to the mark and his power to censor and prohibit objectionable matter being broadcast are influences for the happy development of the business. It is a pity that his power should not be exercised in other directions as well—for instance control of the sale of inefficient equipment.

The part played by the patent and copyright people is very slight—it is not an active part at all. The broadcaster has to pay out of his earnings—the listeners' fees—twenty per cent. to the patent people, and ten per cent. to the copyright people. And although these people incur no additional expense when the number of listeners increase, the royalty payments do actually continue at the

(Continued on Page 37.)



Major Sandford Morgan talks on travel at 2FC.

Strays from the Studios

News from the broadcasting companies and notes about items to be broadcast.



Mr. E. M. Pascoe talks on boats at 3LO.

THE BROADCAST of the wedding festivities of Miss Clarice Barry, winner of the most beautiful October Bride competition was one of the most interesting events that has been on the air for many months. Miss Barry has won prizes in the competition to the value of £808/4/6, and the wedding took place at 7 o'clock on Thursday, October 28, at St. Andrew's Cathedral, Sydney, the ceremony being conducted by Dean Talbot.

A GREAT many radio listeners were apparently expected to abandon their sets, and to attend the wedding ceremony, for special police were engaged to prevent the curious crowd from storming the Cathedral. An unusually fine collection of artists sang while the register was being signed. These included Mr. Alfred O'Shea, Australia's leading tenor; Mr. A. E. Y. Benham, basso, and Madame Elsa Stralia, the world famed dramatic soprano, Mr. Walter Kingsley, the English baritone, and Mr. Andrea Navarre, who leaves Australia shortly for Italy.

DURING THIS week there will be a "re-shuffling" of announcers—Mr. Alfred Andrew will take Mr. A. S. Cochrane's place, and Mr. Cochrane will be heard from 3LO. Mr. Cochrane, the "Hello Man," has many radio friends in Melbourne, and is quite anxious to get into closer touch with them. Mr. Andrew has a reputation for clear and concise announcing.

FROM THE S.S. Goorangan trawler, operating along the coast of New South Wales, will be relayed and rebroadcast a description by a 2FC announcer, of "how fish in our coast are trawled," on November 6. Ar-

rangements have been made for the announcer to stay with the trawler over the week-end, and from time to time interesting descriptions will be given. A further description will be given on Sunday morning.

A SERIES of favorite light operas are to be broadcast by 2FC. On November 10 and 11, the whole of "Katinka," which is to be performed by the Roseville Operatic Society, will be placed on the air. On November 20, the first act of "The Chocolate Soldier," performed by the Mosman Musical Society, will be broadcast, and on November 23 the second act. On the following night, the Kuriagai Operatic Society will stage "The Orchid," and the first act will be broadcast.

ON NOVEMBER 25, the second act of "The Orchid" will be placed on the air. The first performance in Australia of the new opera, "Mademoiselle Taps," by Arthur Penn, the well known American composer, will be given by Madame Baker's Operatic Company at St. James' Hall on November 24, and part of this will be broadcast by 2FC. On Novem-

ber 27, Act I. of "High Jinks" from the Parramatta Operatic Society will be broadcast, and on December 1, Acts 2 and 3. "Very Good Eddie," played by the Railway and Tramway Institute, will be broadcast on December 24. Three times in December station 2FC will broadcast portions of the oratorio "The Messiah."

REMEMBER, listeners—the 11th hour of the 11th day of the 11th month, Armistice Day. During the morning a memorial service will be broadcast by 3LO from St. Paul's Cathedral, and the chimes that will be heard from 3LO at 11 o'clock will be the signal for the great three minutes' silence. On Wednesday, November 10, Mr. Howlett Ross will deliver an impressive lecture on the significance of Armistice Day—which will be intently listened to from all parts of the Commonwealth.

ON FRIDAY, Morris and Vane will present a musical entertainment from 2BL. These vaudeville artistes are famous throughout Australia.

THE AMBASSADORS' instrumental salon quartette will figure on the programme of 2BL on Saturday, November 6. These players, headed by Mr. Claude McGlynn, will present a half-hour of classical instrumental music.

STATION 2GB announces that Dr. J. J. van der Leeuw will deliver regular short talks on Mondays, Wednesdays and Fridays. He will commence by tackling the problem of corporal punishment in schools, advocating its entire abolition. Dr. van de Leeuw is a graduate of the University of Leyden, Holland.



M. Stanislaus De Turzynski, noted Polish violinist, who broadcast from 3LO recently

Radio Quest for Perfect Beauty — The 3LO Girl

Following upon the success of the September Bride competition 3LO are now in quest of "the 3LO Girl." The chief prize will be a six weeks' trip to New Zealand.

NO sooner are 3LO finished with the September bride and her multitudinous trousseau than they set to work on a quest that is as mythical as the Great Auk. This is no less than an attempt to find a perfect girl. And when they have got her, they won't know what to do with her. Personally, I don't think she exists, and I am not a cynic.

3LO's perfect girl must be beautiful; that goes without saying. Not content with a beautiful face they go further and insist on a lovely figure, as if that wasn't at this day and date merely a matter of a dress-maker. Grandma, auntie and the girls all wear the same sort of figure nowadays. The only thing a girl has to watch in the way of her shape is where her knees go in. The short skirt of to-day certainly does betray an architectural arch in the region of the knees. So the judges should have difficult work to do.

3LO go further in their extravagant hopes. Having found their beauty, they insist that her disposition will match her face, when all they can be reasonably hopeful of is that it will match her complexion, for they are made, not born. The next item on the list of perfections is intellect. I never knew a normal man yet who, when he had found a pretty face, with figure to match, and an angelic disposition, wanted an intellect. A girl with all four points would be likely to despise almost any man. Men fear intellect, though I'm bound to say they do not often have to worry about it, the modern girl doesn't bother about learning, so long as her lip-stick and cigarette case are handy.

Nor does this exhaust the list of 3LO's optimistic desires. The ideal 3LO girl must be a domestic treasure



A view of the new 3LO Studio

able to cook, sweep and sew, manage a house, and on the top of all this must then be able to drop her apron in the kitchen and saunter in to the piano to entertain her guests with Debussy, if she does not prefer to tear off a few yards of *vera libre* by way of making a joyous evening of it for visitors.

If they find this paragon among listeners-in to 3LO they will present her with so many rewards that the total is expected to run into £1000. The chief item of the prize will be a wonderful six weeks' tour through New Zealand, all expenses paid, and with as much personal attention from the personnel of New Zealand rail and ship pool-bahs as the Duke and Duchess of York will get next year. As the trip will be well over before the Duke's arrival, it may be predicted that the 3LO Perfect Girl will have skimmed the cream off New Zealand's hospitality before the royal guests get a swipe at it.

Everything a traveller could wish for will be given to the girl and her chaperon, who may be her husband if she is married. The only bar is that the girl must be over 16. I expect the competition will send every pretty girl into a domestic college to learn to cook and scrub. The entertaining part will be of wide varie-

ty. Most sensible girls know that they are most entertaining when they flirt nicely, but I suppose 3LO will require more credentials than a glad eye and a nimble tongue. Good luck to the girl when, and if, she is found. It is expected that there are at least 3000 who imagine they have the necessary qualifications for perfection.

Modern Broadcasting an Ordeal

On Saturday night I was broadcasting for the first time since the new studio, with its accommodation for visitors was in use. I had forgotten this fact, till the liftman shot me up a flight higher than I was accustomed to, and deposited me almost in a well-filled concert room where I blinked nervously at the serried ranks of men, women and children, who had come to see the performers.

Nervous! You bet I was nervous. You see, it's all right for singers and reciters who are used to audiences to find they have a real one. It is only when they get in front of the microphone that takes their voices out to a huge invisible crowd that they get scared. For me, I am totally unused to public appearances. The last time was when I recited "The Wreck of the Hesperus" at a school concert in 1882, and broke down. You may

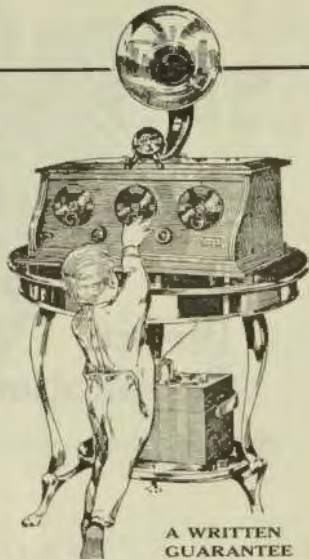
imagine my feelings when I was wafted to a big chair by the suave announcer who patted my hand and told me not to mind. I looked up, while a number was finishing and caught the eye of a wretched girl who was enjoying my discomfort. She nudged the girl next to her, and the nudges ran right along the front row. I trembled like an aspen, and prayed hard that the singer would get an encore. Then like a barber the announcer turned blandly to me with a "you're next!" and I began to strut my stuff in a voice that had many more waves in it than the issue allowed to ordinary vibrations. When I finished, I slunk out without a backward glance, and the people were ominously quiet. I'll bet they hated it as much as I did. Give me a lonely little "mike" in a private room, and I'm a little lion, but these real audiences—ugh!

Teaching Art by Wireless

I have before remarked that wireless, while not losing its entertaining force, is raising the taste of the mass of the people in an extraordinary way. In England the British Broadcasting Company has recently engaged the greatest English artist extant, Mr. Augustus John, to give a talk on popular art. He told listeners how great a change was coming over the world when the idea of real art had penetrated the homes of the people. The time was passing when we bought our pictures next door to the time-payment furniture shop, selecting them carefully to go with our wall paper and our linoleum.

In order to stimulate the finer sense of the people, the B.B.C. is doing something that will possibly be done here some time in the future. It has organized talks on great pictures by great artists, who point out just what ought to be admired in them. The appreciation of such things must be taught, though natural taste helps much. In order to enable listeners to understand and follow such talks, the B.B.C. have had reproductions made on post-cards of some of the famous pictures in the National Gallery, and has sent thousands of these out to subscribers. Their sale could easily be organised.

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D.3	D.3	0.0	12/6	D.3	D.3	0.0	12/6	DFA.2	D.3	0.25	12/6	
DFA.1	D.3	0.0	12/6	DFA.1	D.3	0.25	12/6	DFA.3	D.3	0.25	12/6	
DFA.2	D.3	0.0	12/6	DFA.2	D.3	0.25	12/6	DFA.4	D.3	0.25	12/6	
DFA.3	D.3	0.0	12/6	DFA.3	D.3	0.25	12/6					
PM.5	D.3	0.0	12/6	PM.5	D.3	0.25	12/6					

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News from the North

Notes from our 4QG correspondent. The studio orchestra of the northern station is seen above. The conductor, Mr. A. R. Featherstone, is seated in the centre of the group.

ART is many sided. Just as a gem has its many facets reflecting its scintillating beauties, so has art its differing forms of expression. The musical side of art alone has a diversified power in conveying its message, and its greatest effect is sometimes felt in the least obtrusive manner of its utterance. Take for example the musical monologue in which the spoken word has a musical accompaniment acting as a "highlight" to its dramatic picturisation. Station 4QG has given the listening public many fine examples of the dramatic art, and one of its most popular entertainers, Miss Eileen McLennan, will be heard on November 14, in that clear descriptive effort—"The Yukon Trail."

THE TASK of the director of a large broadcasting station may best be summed up in these words: "To seek for something new." During the past three years broadcasting stations the world over have gone to considerable trouble in order to provide listeners with novel features. The

usual studio concerts which are given nightly are oft-times very attractive but the radio public seems to appreciate mostly small "stunts" which are quite distinct. Station 4QG is shortly to introduce another feature into its programmes. Commencing from the latter portion of November, each Monday night, from 7.45 to 8 p.m., will be set apart as "A Children's Music Corner." For 15 minutes "The Music Man" will talk to juvenile listeners regarding music, will tell them stories connected with music, and will illustrate his talks with pianoforte excerpts.

THE EXAMINATION of the morning mail at a large broadcasting station provides much rich food for thought and incidentally makes one wonder whether, after all, there is such a thing as a definite expression of public opinion. It is most pleasing to note, however, that fully ninety-nine per cent. of the criticism offered by listeners is constructive and therefore helpful to the station.

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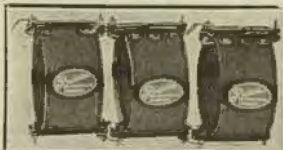
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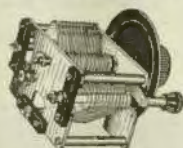
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This is a view of the front of the panel. Note that vernier dials are used.

The Marco Four Valve Receiver

Constructive data for a receiver which has achieved great popularity in America because of its selectivity and volume

THE two-valve Reinartz, described in this paper on October 15, created considerable interest. From the many letters received this two-valve did all and more than was claimed for it. There will be no doubt that this week's receiver will be equally popular as it is the Reinartz with a stage of radio frequency.

The distance getting proclivities of the straight detector Reinartz is well-known all the world over. Until recently all attempts to add radio frequency were never very successful. It remained to Mr. D. L. Pendleton, Consulting Engineer to Martin Copeland Co., the makers of Marco radio material, to devise a system whereby radio frequency could be successfully applied to the Reinartz. Several different systems were tried out and discarded until finally the circuit published here was produced.

Looking at this circuit the usual Reinartz will be recognised in coils L3 and L4, tuned with variable condensers C2 and C3. Preceding this is found the RF valve (V1) the coil L2 being the coupling coil transferring the RF energy to L3, and the V2, which is the detector tube. Now the greatest difficulty connected with RF

is stabilisation, hence the potentiometer in the tuned anode circuit, and neutralization in the Neutrodyne. Unless some means of controlling oscillation is provided, considerable difficulty is met with in radio frequency amplification, thereby rendering it almost useless. The method adopted by Pendleton is simple yet particularly effective.

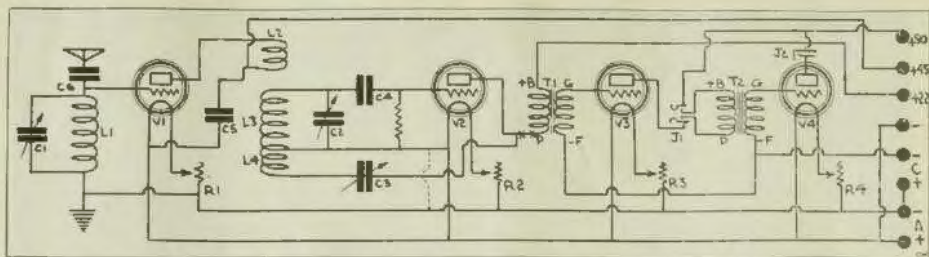
It is always desirable with radio frequency to transfer as much energy

as is possible without impairing selectivity, causing uncontrollable oscillation in the RF valve. The method adopted in this instance is the coupling between the RF plate coil (L2) and the detector grid coil (L3). However, without going into the theory of this matter, be assured that this receiver is wonderfully selective, and although there are 3 condensers to tune, it is quite simple to bring in the different stations.

Before going on with the constructional details, a comparison of the circuit with the back of panel view of the receiver will clear up any difficulties which you may have in your mind. Aerial condenser C0, is a constant aerial tuning condenser of .0001 mfd., and assists greatly in selectivity. The incoming energy is tuned to the correct wavelength by L1, C1, from which it is passed through the first valve to L2, which conveys its energy through L3 tuned by C2 and is detected by valve V2. Reaction is introduced per medium of C3 and L4, after which the volume is stepped up by transformers T1 and valve V3, thence to T2, and valve V2, these two last valves being audio frequency valves and will produce considerable strength on the loud speaker. Should it be desired to use only one valve

PARTS REQUIRED.

- 1 Dilecto Panel, 21 x 7 x 3/16
- 3 .0005 Variable Condensers
- 1 DC Jack
- 1 SC Jack
- 1 Battery Switch
- 4 Rheostats (30 ohms)
- 4 Valve Sockets
- 2 Audio Transformers
- 1 .0025 Grid Condenser
- 1 2 Meg. Leak and Clips
- 1 .0001 Fixed Condenser
- 1 .002 Fixed Condenser
- 2 3 1/2 inch lengths of 3 inch diameter Dilecto tubing or Cardboard tubing.
- 1 1 1/2 inch length of 3 inch diameter Dilecto Tubing.
- 1 Terminal Board
- 1 Baseboard, 20 x 9 x 2 Busbar, etc.



The circuit diagram. The dotted line shows the alternative grid return.

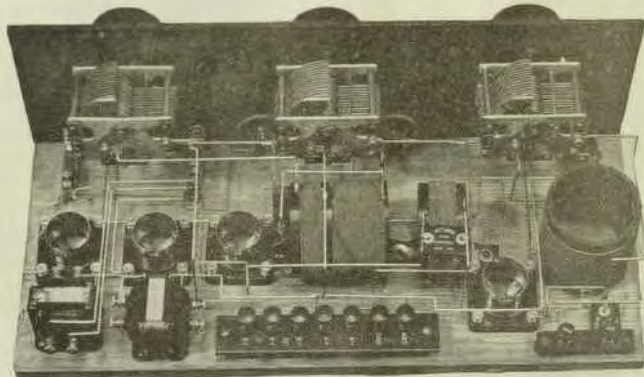
for loud speaker work, a double circuit jack, J1, is provided after the first audio valve. In this case rheostat, R4, should be turned down, thus leaving the last valve out of circuit entirely. Condenser C5, is the standard by-pass condenser having a capacity of .002. The three variable condensers each have a capacity of .0005 mfd., whereas C4 is the usual .00025 mfd. grid condenser. Looking at the back of panel diagram it will be seen that L1 is so arranged that it is at right angles to the other coils. The most important feature in this receiver is the position of the radio frequency plate coil L2. This is inductively coupled to L3, but its position is most critical. If it is brought too close the selectivity is not so great as when it is kept away. There is a certain position at which this coil gives the greatest signal strength on weak signals with noticeably sharper tuning, and as will be explained later, this position can only

be determined by experiment. In the receiver illustrated herewith the best position was found to be when the edge of L2 was $2\frac{3}{4}$ " away from L3, that is to say, the actual coil itself, not the former.

However, the construction of this receiver will now be proceeded with. The coils themselves should, firstly, be wound. For L1, 47 turns of No. 24 DCC wire is necessary. Proceed to wind this, first of all, drilling two small holes through which the end of the wire has to be threaded, in order that it will be held securely. Wind on the 47 turns of wire and finish off by securing in a similar manner. One of the $3\frac{1}{4}$ " lengths of Dilecta tubing is required for this purpose, but if this size tubing is not available, $3\frac{1}{2}$ " or $3\frac{3}{4}$ " tubing will be found perfectly satisfactory. Another of the same pieces of tubing has to be wound with coils L3 and L4. Grid coil L3 has 45 turns of wire, whereas L4 has 20 turns of

the same gauge wire. Both these coils are wound on the same former, the distance between L3 and L4 being one-quarter inch. The third coil, that is, the RF plate coil, comprises 25 turns of No. 24 gauge DCC wire, wound on the remaining portion, that is, the $1\frac{1}{2}$ " length of tubing. Take a little care and a few pains over winding these coils, as when correctly built, they look very nice and neat.

Leave these coils on one side while you attend to your panel layout and drilling. The diagram given herewith will show you the exact measurements suited to your different panel components. To understand this clearly, a consultation with the front view of the receiver reproduced here will be of great value. There can be seen the three condenser dials which it will be noted are of the vernier type, and also the 4 rheostat knobs underneath these condensers. The battery switch is placed at the extreme left of the panel, while the single circuit SC jack is on the extreme right. Midway between the two audio valve rheostats is found the DC jack. Lay your panel on a flat surface and mark out the various positions. Never use lead pencil for this purpose; rather measure each particular position with a rule and make a small scratch at the correct position and centre punch immediately. Pencil lines provide a path for radio frequency currents, and, as we wish to confine them to the circuit itself, and not the front of the panel, we stress the necessity of not using pencil lines. In drilling, don't forget the golden rule that with Dilecta a light pressure and a high speed quickly bores the panel.



Showing the layout of the components on the back of the panel. L2 is that coil with the fixed condenser on top.

When everything is drilled, mount your components on the panel and then prepare for the base board layout.

Before going any further, it is, perhaps, advisable to carefully study the back of panel view of this receiver. As mentioned before, too much importance cannot be attached to the position of the RF plate coil L2, with relation to the detector grid coil L3. To achieve the maximum efficiency from this receiver, lay out the audio end of this receiver. Follow closely our own lay out, and you can then be assured of maximum results. There is nothing whatever to stop you from mounting the aerial coil L1 and the grid and reaction coils L3 and L4, provided you leave sufficient room for experimenting for the correct position of RF plate coil L2. Certainly screw down your valve sockets and transformers and temporarily lay in a near position the RF plate coil L2.

Having done this, carry on with the wiring of this receiver. In the wiring it is always advisable to start off at the audio end of your receiver. Back of panel wiring diagram will give sufficient detail of the wiring to enable you to proceed. Square busbar is ideal for this purpose and make certain that each joint is tight, and when soldering is required, is

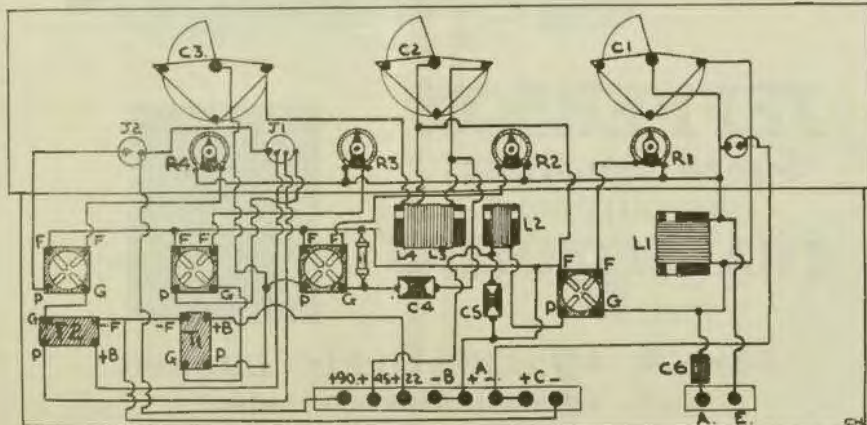


The panel layout

carefully soldered. At some later time there will appear in these pages an article devoted entirely to the subject of soldering, which, for some unknown reason or other, from the experience of the writer, seems to present some difficulty to the average set constructor. This should not be so. Soldering is quite a simple matter, and should present no difficulty whatever. However, for the time being, when you come to wiring the connections of L2, use some ordinary flexible wire, in order that you may be in a position to vary the situation of this coil on actual tests. Take the wiring in easy stages, checking off with a circuit diagram and the back of panel diagram as you proceed; perhaps the back of panel wiring diagram will be of some assistance to you in wiring as many of the wires as can be plainly seen in this photograph.

After everything is wired correctly you are now in a position to test your receiver on the air. Connect

up your A, B and C batteries, 44 volts being sufficient for the C battery. Insert your valves in their sockets, and hook on your aerial and earth. Insert your phones and jack, J1, and turn up your valve filaments. Leave condenser, C3, at a position when the movable plates are half way emeshed into the fixed plates, and tune with condenser C1 and C2, using the right hand for tuning the middle condenser, C2. This condenser is very critical of adjustments, and should be rotated in unison with condenser C1. Presently you will hear one of the local stations, and by the careful adjustment of C2 and a final adjustment to C3, you will hear them at an excellent volume. Bear in mind that this time you have the RF plate coil L2 approximately 2" away from L3. Without moving this coil in any way tune through all the local stations, listening to each in turn, and bringing each up to maximum volume, keeping in mind all the time that if too much of condenser C3 is used a certain amount of distortion may occur. Watch this carefully. Now seek the distant station. Go for Brisbane, for example, and note the strength of this station. Plug your phones into jack, J2, thereby including all four valves of the circuit. We must needs turn up rheostat, R4, tune Brisbane to its loudest



Wire your receiver from this diagram. Remember the position of L2

Putting
QUALITY
into
RADIO



JEFFERSON
Super - Sensitive
Amplifying
TRANSFORMERS



Fox & MacGillycuddy Limited
Daily Telegraph Buildings, Sydney

BRISBANE AGENTS: WIRELESS HOUSE, ADELAIDE STREET, BRISBANE.

pitch, and then move RF plate coil L2 just a fraction away from L3, take away your hand and notice if result is stronger or weaker. Spend half an hour moving this coil closer to, or further away, from L3, until the position is reached where the maximum volume from Queensland is obtainable. At this stage you can make a permanent fixture of coil, L2, which need never be disturbed again, and which will respond to all stations both interstate and local.

Perhaps, it may happen that a slight distortion is perceptible through all reception. If this is so, it points out the necessity for the insertion of the radio frequency choke coil in the plate circuit of the detector valve. This has to be inserted between the two points marked with a cross on the P. lead of transformer T1. To make certain of this, one end of your choke is to be connected to the P. of this transformer, and the other end at the point where the busbar is running from the condenser C3 to the plate lead of the valve. Of course that portion between the two crosses has to be broken, and to be left in such a position that the radio frequency choke coil completes a circuit itself. This coil may take the form of a 200 turn honeycomb coil, or if this is not available, use 4 ozs. of a No. 24 cotton covered wire, wound in any old fashion, on a cotton reel. In actual practice, however, this choke coil was dispensed with and a receiver illustrated herewith, and no detriment was found with this exclusion.

Again, it may happen that a slight difficulty may be experienced in controlling oscillation. If this is the case, it will be advisable to take the grid return lead, that is, the lead which comes from the join of L3 and L4, to the moving plates of condenser C2, and to the bottom of grid lead; take this lead from the A positive, where it is fixed in wiring diagram, to the A negative. A dotted line on the circuit diagram shows this alteration, which, if it is necessary, means that that portion which is joined to the filament of valve V2, is taken to the A minus battery wire lead, to which are connected all the rheostats. This alteration will be

plain to you, and may even be necessary in order to hold in the oscillations, which may be produced in this receiver. A word about valves will not be out of place. In actual practice, UX201A valves were used to advantage, and the RF plate coil has been designed for this particular valve. Should, of course, UX109 or UV109 valves be used, it may be necessary to wind coil L2 with 50 turns of No. 32 gauge of DCC wire. Still, this coil is not as critical as it may be, provided particular attention is paid to the coupling.

Before closing this article, it may be worth while mentioning that the most suitable aerial for this receiver was found to be one which did not exceed 50 feet long, that is, including the lead end. A short indoor aerial not exceeding 40 feet long, gave excellent results at Marrickville, the Melbourne station, 3LO, entertaining all present at excellent loud speaker's strength. But my remarks of previous weeks must still be borne in mind with regard to Interstate stations. Properly constructed, this receiver is capable of yielding interstate stations, provided you are at least 7 miles away from an A class broadcasting station, and perhaps even if you are closer than this, but so much depends on the person who is handling the receiver. It is absolutely essential to become familiar with any receiver before the maximum results can be obtained. It is only natural the more you use a receiver the better results you can obtain from it, and always keep in mind that old adage, that a circuited A keeps the signals away, as it is very true indeed of practically all receivers in every sphere. Persevere, and you will have results, and a receiver of this type just described will find many people who will be pleased to own it for quite a long time to come.

Eliza Tinsley Pty. Ltd. announce that any of their Carborundum Detectors which should be found faulty will be either rectified or replaced if it is returned to the radio dealer from whom it was purchased.

Free Trip to Java for "W. W." Reader

What about a holiday in Java this summer? An interesting trip through the Spice Islands, via Queensland and Northern Australia.

No, not expensive, that is if you are willing to devote a little of your spare time to "Wireless Weekly."

There is a free return passage to Java and Singapore on one of Messrs. Burns Philps' mail steamers and incidental expenses amounting to £50 for the reader securing the greatest number of pre-paid subscriptions to "Wireless Weekly."

It's not hard to sell a good proposition to any wide-awake listener-in. You are a reader yourself; and know why you are buying the paper. Do your neighbour a good turn, and introduce him to us.

In addition to a trip to Java as first prize, we offer a special prize to the youth between 16 and 18 securing the greatest number of subscriptions. By special arrangement with Amalgamated Wireless, we will present a full course through the Marconi School of Wireless to the winner in this section.

Here is a career which in the ordinary course of events would cost £50 to begin, free to any youth willing to devote his spare time and energy in an attempt to grasp this opportunity.

To the Director,
Wireless Newspapers Limited,
51 Castlereagh Street,
Sydney.

Sir,—

In consideration of your allowing me to enter the "Wireless Weekly" Subscription Competition of Wireless Newspapers Limited, and supply me with a book of subscription forms, I undertake to remit to you within 24 hours after receiving same any signed subscription orders received and the amount of money received by me as represented on the order. I also undertake to account to you for all subscription order forms which you supply to me.

Signed

Address



Broadcasting Programmes

for the Coming Week

Friday, Nov. 5

2 FC

EARLY MORNING SESSION.

- 7.—The Chimes of "Big Ben." Announcements.
7.6—Music from the Studio.
7.10—Weather information, commercial news, shipping intelligence, rainfall, temperatures, astronomical memoranda.
7.25—Investment Market, Mining Share Markets, Metal quotations.
7.35—Wool Sales, Broadstuffs Markets, Interstate Markets, Produce Markets.
7.45—"Sydney Morning Herald" News Service.
8.—Chimes of "Big Ben." Music from the Studio.
8.15—Close down.

MORNING SESSION.

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

MIDDAY SESSION.

- 12.—The Chimes of "Big Ben." Announcements.
12.4—Stock Exchange, First Call.
12.10—Music from the Studio.
12.30—Marching Music for the Children.
12.40—Music from Studio.
12.45—From Farmer's Tea Rooms: The Oak Hall Trio.
12.50—Rural Wireless News.
12.55—Music from the Studio.
1.—The Chimes of "Big Ben." Weather Intelligence.
1.3—"Evening News" midday services, Producer's Distributing Society's Report.
1.40—From Farmer's Tea Rooms: The Oak Hall Trio.
1.45—Stock Exchange—Second Call.
1.50—Marching Music for the School Children.
1.40—Music from the Studio.
1.50—From Farmer's Oak Hall: The Oak Hall Trio.
2.—Close down.

AFTERNOON SESSION.

- 2.30—The Chimes of 2FC and Announcements.
2.35—From the Studio: Miss Elsie Corry, contralto.

- 2.40—Music from the Studio.
2.55—Miss Elsie Corry, contralto.
3.—From St. James' Hall, Phillip Street, Sydney, an address by Lady Cecil, at the meeting arranged by the Women's Migration Council of N.S.W.
3.30—Marching Music for the School Children.
3.40—Miss Mary Cole, soprano.
3.45—From Farmer's Oak Hall: The Oak Hall Trio.
3.52—Music from the Studio.
4.—Miss Dorothy Benbow, contralto.
4.5—From the Studio: A Serial Story.
4.15—Music from the Studio.
4.20—Miss Mary Cole, soprano.
4.25—The Oak Hall Trio.
4.35—Music from the Studio.
4.40—Miss Dorothy Benbow, contralto.
4.45—Stock Exchange, Third Call.
4.45—Close down.

Farmer's Service, Sydney, call sign 2FC, wave length 442 metres.
Broadcasters Ltd., Sydney, call sign 2BL, wave length 353 metres.
Trades Hall Broadcasting Station, call sign, 2KY, wavelength, 260 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 3LO, wave length 371 metres.

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

Queensland Radio Service, Brisbane, call sign 4QG, wave length 385 metres.

Central Broadcasters Ltd., Adelaide, call sign 6CL, wave length 395 metres.

Radio Broadcasting Co. of N.Z., Auckland, call sign 1YA, wave length 420 metres.

Western Australian Farmer's, Perth, call sign 6WF, wave length 1230 metres.

Tasmanian Broadcasting Coy. Ltd., Hobart, call sign 7ZL, wave length, 635 metres.

EARLY EVENING SESSION.

- 5.45—The Chimes of 2FC.
5.50—The "Hello Man" Talks to the children.
6.45—From Farmer's Oak Hall: Vocal and Instrumental items.
7.—From the Studio: Last minute sporting information, by the 2FC Racing Commission.
7.15—"Evening News" late news service; weather information.
7.30—Bakery's Market Reports (wool, wheat, stock), fruit and vegetable markets.
7.40—Talk on "Safety First Bins" to motorists.

NIGHT SESSION.

- 7.55—Chimes of 2FC and Programme Announcements.
8.—From the Lyceum Picture Theatre (by courtesy of the Union Theatres) items by the Theatre orchestra, under the baton of Mr. Emanuel Aarons.

- 8.30—From the Studio: The Sydney Instrumental Trio, comprising Mr. Lionel Lawson, violinist; Mr. Gladstone Bell, cellist; Mr. Lindley Evans, pianist.
8.42—The Metropolitan Vocal Quartette, consisting of Miss Jean Grant, soprano; Miss Mary Bourke, contralto; Mr. A. L. Champion, tenor; and Mr. A. C. Ellis, baritone.
8.55—Mr. Gladstone Bell, solo items.
9.35—Miss Jean Grant, soprano.
9.42—Mr. Lindley Evans, piano.
9.52—Mr. A. G. Ellis, baritone.
9.50—Mr. Lionel Lawson, violin.
9.58—Metropolitan Quartette.
9.48—Items by the Sydney Instrumental Trio.
10.—Broadcast from the Lyceum Picture Theatre (by courtesy of the Union Theatres Ltd.), items by the theatre orchestra, under the baton of Mr. Emanuel Aarons. During the playing of the orchestra, a description of next week's principal film releases will be given by Mr. S. H. Bowden from the Film House projection room, and this will be superimposed upon the transmission from the Lyceum Theatre.
10.30—Broadcast from the Wentworth Hotel, items by the Wentworth Cafe Orchestra, conductor, Mr. Sydney Simpson.
12—Close down: National Anthem.

2 BL

EARLY MORNING SESSION.

- 7.15—Physical Training and Health Exercises.
7.30—Broadcasters Special News Service.
7.45—Physical Training and Health Exercises.
8—G.P.O. Clock and Chimes. Close down.

MORNING SESSION.

- 10.—G.P.O. Clock and Chimes; Musical programme from the studio.
10.10—Special News Service from the Daily Telegraph.
10.25—Musical programme from the studio.
10.40—Special News Service from the Daily Telegraph.
11.—G.P.O. Clock and Chimes; Market Reports and London Metal Quotations.
11.10—Musical programme from the studio.
11.25—Broadcasters' Information Service, including Mail, Shipping, Weather, Rain-fall.
11.40—Women's Session; Social Notes by Mrs. Jordan.
11.55—Mrs. Jordan Replies to Correspondence.
12.—G.P.O. Clock and Chimes; Feeding the Family, Mrs. Jordan.
12.25—A talk by Miss Helen Jean Hoegling.
12.30—Sydney Stock Exchange Calls.
12.45—Hiller's Instrumental Quartette under the direction of Caryl Castling.
1.30—Sydney Stock Exchange calls.
1.45—Latest sporting information from the "Sun".
2—G.P.O. Clock. Close down.

AFTERNOON SESSION.

- Racing Information broadcast by courtesy of The Sun.
3—G.P.O. Clock and Chimes; Weather Report and Forecast by courtesy of Mr. C. J. Macleod, Meteorologist; Social Notes from the Sun.
3.15—Civil Service Restaurant Trio, under the direction of Miss De Curcy Bruce.
3.30—A talk on English Literature and Poetry by Mr. J. M. Franklin.
3.45—Music from the Studio.
4.—G.P.O. Clock and Chimes; Civil Service Stores Trio.
4.15—Musical Programme from the Studio.

5.—G.P.O. Clock and Chimes. Producers' Distributing Society's Market and Fruit Report.
5.30.—Shipping information when available.
5.30.—Resume of night's programme.
5.45.—G.P.O. Clock and Chimes. Close down.

EARLY EVENING SESSION.

6.—G.P.O. Clock and Chimes. The pupils of Miss Monica Sealy will entertain the audience.
6.15.—G.P.O. Clock and Chimes.
6.40.—Pavilion Dinner Orchestra, under the direction of Mr. Cec. Morrison.
Special Country Session.

7.—G.P.O. Clock and Chimes; Australian Mercantile Land and Finance Co. Stock, Wool and Hides Report.
7.15.—Weather Report and Forecast, by courtesy of Mr. C. J. Marx, Government Meteorologist.

7.30.—Stock Exchange Reports.
7.35.—Fruit and Vegetable Society's fruit and vegetable report.
7.40.—Fruit and vegetable Report (Sun).
7.45.—Grain and fodder Report (Sun).
7.50.—Egg and Poultry Report (Sun).
7.55.—Country News from the Sun.
7.58.—Talk on The Electrical part of a Car, by Mr. Fred Brown.

NIGHT SESSION.

8.—G.P.O. Clock and Chimes. Broadcasters' Typical Chorus.

8.15.—Sid and Molly Owen, musical novelties.
8.25.—Miss Edna Lester, contralto.
8.30.—Morris and Vane, musical interlude.
8.40.—Mr. W. E. Lewis, baritone.
8.45.—Miss Dorris Ward, soprano.
8.54.—Resume of following day's programme and weather report.

9.—G.P.O. Clock and Chimes.
9.1.—Broadcasters' Trio.

9.15.—Miss Edna Lester, contralto.
9.20.—Sid and Molly Owen.
9.25.—Lecturer, Mr. Lewis.
9.30.—Ambassadors until midnight.
10.—G.P.O. Clock and Chimes; National Anthem.

3LO

MIDDAY SESSION.

12.—British Official Wireless News from Rugby; Reuters and the Australian Press Association cables.

12.15.—Stock Exchange Information; Meteorological Information. Weather Forecast for Victoria, Tasmania, South Australia and New South Wales.

1.—Studio Orchestra.
1.5.—Sylvia Van Asche, soprano.
1.14.—Franklin Statham, clarinet.
1.20.—Keith Desmond, eucphonist.
1.25.—Studio Orchestra.
1.40.—Sylvia Van Asche, soprano.
1.47.—Studio Orchestra.
2.—Close down.

AFTERNOON SESSION.

2.30.—First half of Tivoli Theatre programme transmitted from the Tivoli Theatre, by permission of J. C. Williamson Ltd.

3.—"An Evening of Messrs. Buckley and Nunn Ltd., Fashion Talk.
3.55.—Studio Orchestra.
4.45.—Rupert Hazel.

4.45.—Mrs. M. Callaway Mahood, "The Art of Charcoal Drawing."
4.50.—Studio Orchestra.

4.45.—"Herald" News Service; Stock Exchange Information.
5.—Close down.

EARLY EVENING SESSION.

6.45.—Children's hour. Answers to letters and birthday greetings.

6.—Rita Hillon, two songs for children.
6.5.—"The Bunyons" will tell the Little's Fairy Story.

6.17.—Rita Hillon.
6.24.—"Rilly Bunyons".

6.30.—"Arcus" and "Herald" News Service; Reuters and the Australian Press Association.

6.35.—Weather synopsis. Shipping movements.

6.37.—Stock Exchange Information.

7.2.—Fish Market Reports, by J. R. Berritt Ltd.

7.4.—River Reports.

7.6.—Market Reports, by the Victorian Producers' Cooperative Co. Ltd. Haymarket sheep sales. Poultry, Grain, Chaff, Straw, Jute, Dairy Produce, Potatoes, and Onions. Market prices of Oranges and Lemons, supplied by the Victorian Central Citrus Association Pty. Ltd.

NIGHT SESSION.

7.20.—Under the auspices of the Department of Agriculture, Mr. G. Sawyers, Cheese Export, Cheese Making.

7.40.—Miss Thelma Burrows, now playing the part of "Pat" in "Katie" will speak to you from her dressing room at His Majesty's Theatre, by permission of J. C. Williamson Ltd.

8.—Leo Gilson's Noncollan sextette.
8.10.—Mr. E. C. B. Taylor will talk to the boys on "School Life and School Sport."

8.30.—Rupert Hazel and Elsie Day, harmonization.

8.40.—Dr. Floyd, organ recital, transmitted from St. Paul's Cathedral.

9.10.—"Cardigan," Mr. H. A. Wolfe, sporting editor of the "Arcus"; "Victoria's Steeple and other races."

9.25.—Collingwood Citizen's Band.

9.35.—Gwen Barham, contralto.

9.45.—Leo Gilson's Noncollan Sextette.

9.55.—Glen Crane, baritone by permission of J. C. Williamson Ltd.

10.—British Official Wireless News from Rugby.

10.10.—Collingwood Citizen's Band.

10.20.—Gwen Barham, contralto.

10.27.—"Arcus" News Service; Meteorological Information; Announcements.

10.37.—Rupert Hazel and Elsie Day.

10.44.—Collingwood Citizen's Band.

10.45.—Glen Crane, baritone.

10.45.—Collingwood Citizen's Band.

11.—Our Great Thought: "Enthusiasm is the breath of man; it is the passing from the human to the divine."—Emerson.

11.1.—ELO Dance Orchestra.

11.40.—God Save the King.

4QG

EARLY EVENING SESSION.

8.25.—Tune-in.
8.30.—The Children's Session—Stories by "The Sandman."

9.—From the Council of the Agriculture Bureau: "The Farmer's Session," Market Reports; Lecturette, "Lessons from Rural Denmark" No. 1, Mr. J. F. V. Reid, Editor Queensland Agricultural Journal."

7.40.—Announcements.

NIGHT SESSION.

7.45.—Lecture Session: "The Growth of a Modern Science," Mr. R. A. Melrose, under the auspices of the Town Planning Association of Queensland.

8.—March, Federal Band; mess soprano, Mrs. R. C. Bentley; solo, the Federal Band, baritone solo, Mr. J. R. Clarke; idyll, the Federal Band; tenor solo, Mr. G. Williamson; cornet solo, accompanied by the Federal Band; contralto solo, Miss Blanche Burns; meso-sop, the Federal Band.

Rita Viles concert semi-finish; the Studio Orchestra; opening, the Studio Orchestra; baritone solo, Mr. J. R. Clarke; value ballet, the Studio Orchestra.

9.10.—Radio Voice Contest items. Weather information officially supplied by the Commonwealth Weather Bureau, Announcements.

9.30.—Selection, the Studio Orchestra; soprano solo, Mrs. R. C. Bentley; vocal duet, Messrs. J. A. Clarke and G. Williamson; contralto solo, Miss Blanche Burns; march, the Studio Orchestra.

5CL

AFTERNOON SESSION.

8.—G.P.O. Chimes.

8.1.—Reply from "Maple Leaf" Cafe—Orchestral numbers.

8.45.—Stock Duc-Art numbers.

8.—G.P.O. Chimes.

8.1.—Reply from "Arcadia" Cafe—Orchestral numbers.

8.—G. O. Chimes.

EVENING SESSION.

8.30.—G.P.O. Chimes.

8.31.—Bedtime Stories, by "Annie Perry."

7.30.—Market Reports.

7.40.—Sporting Talk, by "Old Timer."

8.—G.P.O. Chimes.

8.1.—Metzmakers' Orchestra in instrumental numbers, interspersed with vocal items.

8.—G.P.O. Chimes.

8.1.—Weather reports.

8.—Studio Concert, continued.

10.15.—"Advertiser" News Service.

10.30.—Studio Concert, continued.

10.45.—Station announcements.

Ships within wireless range.

11.—G.P.O. Chimes. National Anthem. Close down.

7ZL

EARLY EVENING SESSION.

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

EVENING SESSION.

8.—G.P.O. Clock Chimes. "The Mercury" special Tasmanian news service. Railway auction produce sales. Weather information.

8.10.—Hobart Stock Exchange quotations.

8.15.—Weekly Gardening chat, by Mr. George Nation.

8.20.—Sports Basket, supplied by Mr. T. W. Newton, of Hobart Sports Depot.

8.25.—Concert from the Studio; Miss Jean Hilliard, mezzo soprano; Miss Kathleen Pearce, contralto; Miss Katherine Gullinan, eucphonist; Miss Gwenela Bidegood, mezzo soprano; Mr. Thomas Spencer, tenor; Master Victor Phoenix, banjo solo.

8.50.—"The Mercury" special interstate news service. Weather synopsis. Station announcements. National Anthem.

Saturday, Nov. 6

2FC

EARLY MORNING SESSION.

7.—Chimes of "Big Ben" and Announcements.

7.5.—Music from the Studio.

7.10.—Official Weather Forecast; Rainfall; temperatures; Astronomical Memoranda; Shipping Intelligence; Mail Services.

7.25.—Investment Market, Mining Share Market, Metal Quotations.

7.30.—Wool Sales, Breadstuffs Markets, Inter-state Markets, Produce Markets.

7.45.—"Sundry Morning Herald" News Service.

8.—The Chimes of "Big Ben"; A Chorus Talk by Mr. J. K. Powell.

8.15.—Close down.

MORNING SESSION.

9.15.—The Chimes of 2FC and Programme Announcements.

9.30.—Music from the Studio.

9.45.—A Talk by the 2FC Reading Committee.

10.—Chimes of "Big Ben" and Announcements.

10.7.—Extra "Epiphany Morning Herald" news service.

10.17.—Music from the Studio.

11.—The Chimes of "Big Ben" and Announcements.

11.15.—A talk on Gardening by "Red Gum"

MIDDAY SESSION.

During the afternoon, Raceheli Races will be described in the running by 2FC Racing Commissioner.

12.35—The Chimes of 2FC and Announcements.

1—The Chimes of "Big Ben" and Announcements; "Evening News" Middle News Service, Weather information, Music from Studio, during intervals of sporting events.

4.15—A complete resume of the afternoon's sporting events.

5.17—Close down.

EARLY EVENING SESSION.

3.45—The Chimes of 2FC and Announcements.

5.50—"Uncle Monty" will talk to the children.

6.30—A Story for the older children.

6.45—Broadcast from the Hotel Australia, Orchestral Items.

7.15—From the Studio: "Evening News" late news service and sporting information.

7.40—A Motor Talk by Mr. J. L. Austin, on "Relationship of correct lubrication to power farming."

NIGHT SESSION.

7.35—Chimes of 2FC, Announcements.

8—The Chimes of "Big Ben."

Broadcast from the Royal North Shore Hospital, North Sydney. Items by the 2FC Hospital Party, directed by Mr. James Donnelly, and consisting of the following artists: Mdlle. Marie Segur, soprano; Mr. Percival Spence, mouth organ (Championship of Australia); Mr. Russell Rix, baritone; Mr. James Donnelly, tenor; Mr. Wally Haynes, comedian; Miss Margaret Donnelly, pianiste.

8.40—From the Studio: A talk on "Swimming" by Captain Fred Adams.

8.50—From the Royal North Shore Hospital, further items by the 2FC Hospital Concert Party.

9.30—By courtesy of Messrs. Cam and Sosa, a transmission will be carried out from the trawler "Geostrak", which is operating off the coast of New South Wales, in the vicinity of Botany fishing ground. 2FC announcer is taking a three days' cruise, and will endeavour to give listeners some realistic ideas of how fish is trawled. The transmission will be carried out by means of a portable set which is installed on the boat, and picked up and relayed on the 2FC wavelength.

10—From the Studio: Mr. Charles Lawrence, entertainer.

10.10—2FC Dance Band, conducted by Mr. Eric Pearce.

10.30—Broadcast from the trawler "Geostrak," further descriptions.

10.50—From the Studio: Mr. Charles Lawrence in further items.

11—Chimes of "Big Ben."

2FC Dance Band in dance items until midnight.

12—National Anthem. Close down.

2 BL

EARLY MORNING SESSION.

7.15—Physical Training and Health Exercises.

7.30—Broadcasters Special News Service.

7.45—Physical Training and Health Exercises.

8—G.P.O. Clock and Chimes; Close down.

MORNING SESSION.

11—G.P.O. Clock and Chimes. Special news service from the "Daily Telegraph."

11.10—Musical programme from the Studio.

11.25—Special news from the "Daily Telegraph."

11.45—Musical programme from the Studio.

12—G.P.O. Clock and Chimes. Race results will be broadcast immediately after each race, by courtesy of "The Sun" Newspapers.

Social notes and a talk on "Stimic Cooking for Children" by Mrs. Jordan.

12.30—London Metal quotations.

12.35—Broadcasters' Information Service, including Mails, Shipping, Weather Rainfall.

AFTERNOON SESSION.

1—G.P.O. Clock and Chimes; News from Sun Cable Edition.

3.10—Musical Programme from the Studio.

3.20—Talk on Sporting and Athletic Fixtures for the day—Lacrosse, Hockey, Tennis, Rugby League all fixtures, Rugby Union all fixtures, Soccer, Australian Rules, Baseball, Racing, Trotting, Coursing, Harb, During the afternoon sporting information will be broadcast by courtesy of "The Sun" Newspapers.

5.15—G.P.O. Clock. Close down.

EARLY EVENING SESSION.

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

6.30—Pavilion Dinner Orchestra under the direction of Mr. Cec. Morrison.

7.15—Results of all sporting information, including Sailing, Swimming, Racing, Golf, Bowls, by courtesy of Sun Newspapers.

7.30—Country News from the Sun and results of all sporting and athletic fixtures.

7.45—Close down.

NIGHT SESSION.

8—Ambassadors Salon Quartette under the direction of Mr. Claude McElyan.

8.30—Concert from the Studio.

10.15—Cec. Morrison and his "Glossambars" broadcast from the ballroom of the Bondi Casino.

11.15—Al. Hammett and the Ambassadors Dance Band broadcast from the ballroom of the Ambassadors. During the intervals between dances, news reports by courtesy of the Sun will be broadcast.

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

3 LO

MORNING SESSION.

11—Sonora Recital.

11.7—Harold Rodgers, organ.

11.17—Colin Crane, baritone.

11.24—Sonora Recital.

11.31—Harold Rodgers, piano.

11.41—Colin Crane, baritone.

11.48—Sonora Recital.

12—Time Signal. British Official Wireless news from Rugby, Reuters' and the Australian Press Association cables. "Argie" and "Herald" news services. Shipping Intelligence.

12.45—Stock Exchange information.

12.50—Meteorological information. Weather forecast for Victoria, Tasmania, South Australia, and New South Wales. Ocean forecast. River reports.

1—Time signal.

1.3—Description of Batman Stakes, transmitted from the course.

1.5—Studio Orchestra.

1.15—Sylvia Van Asche, soprano

1.22—C. Richard Chung, flute

1.30—An original sketch, written by Eardley Turner, "The Trooper's Pocket."

1.40—Description of Flemington Stakes, transmitted from the course.

1.45—Studio Orchestra.

1.55—Sylvia Van Asche, soprano.

2—Close Down.

2.10—Description of the C.B. Fisher Plate, transmitted from the course.

AFTERNOON SESSION.

3—3.0 Dance Orchestra.

3.50—Description of the V.R.C. Handicap, transmitted from the course.

4—3.0 Dance Orchestra.

4.20—Description of the Victoria Steeple, transmitted from the course.

4.25—3.0 Dance Orchestra.

4.45—"Herald" News Service; Stock Exchange information.

5—Description of Final Handicap, transmitted from the course; close down.

EARLY EVENING SESSION.

5.45—Children's Hour: Answers to letters and birthday greetings.

6—Jina Hilton.

6.7—Mary Gurnea, poem

6.20—Jina Hilton.

6.25—A Story for Boys and Girls.

6.30—"Argus" and "Herald" News Services; Sporting Results, Reuters and Australian Press Association cables.

6.55—Weather synopsis, Shipping movements.

7.15—Stock Exchange information.

7.4—Fish Market Reports, by J. R. Borrett Ltd.

7.4—River reports.

7.6—Market Reports, by Victorian Producers' Co-operative Co. Ltd.; Grain, chaff, hay, straw, lute, dairy produce, potatoes and onions.

NIGHT SESSION.

7.20—Mr. R. Rawson, "The Study of Experiments and how shall I profit by it?"

7.40—Mr. E. Prescott, Australian Orchids

8—Studio Orchestra.

8.7—Elsie Day, soprano.

8.15—Concert by the Musical Society of Victoria, transmitted from the Assembly Hall, Collins Street.

10—British Official Wireless News; Announcements.

10.10—Studio Orchestra.

10.20—Rupert Hazel.

10.27—Studio Orchestra.

10.27—"Argus" News Service; Meteorological information; Sporting Results; Races, Football, Metropolitan Soccer League, Metropolitan Amateur Association Lacrosse; Announcements.

10.47—Rupert Hazel and Elsie Day.

11—Our Great Thought! "Knowledge is like money—the more a man gets, the more he craves."—H. W. Shaw.

11.5—3.0 Dance Orchestra.

11.40—God Save the King.

3 AR

MORNING SESSION.

11.30—The British Official Wireless Press, received by 3AR's operator from Rugby Wireless Station, England. Express train information. "Ace" news bulletin.

12—Time Signal. Chime from the G.P.O. First Weather Forecast. Studio Barometer Readings.

12.3—Musical Selections, relayed from Hoyt's De Luxe, Bourke Street. Mr. T. L. Campbell at the organ.

12.30—Stock Exchange News. Foreign Exchange of the world, supplied by the courtesy of Messrs. Thos. Cook & Son.

Market Reports.

12.40—Musical Selections.

12.45—Mail Notices. Shipping Movements.

1—Close down.

AFTERNOON SESSION.

V.R.C. Meeting at Flemington, 4th day.

1—Description of Batman Stakes.

1.40—Description of Flemington Stakes.

2.30—Hoyt's Premier Orchestra.

2.40—Description of C. B. Fisher Plate, 14m.

3.30—Description of V.R.C. Handicap.

4—Time Signal Chime. Studio Barometer Readings. Hoyt's Premier Orchestra.

4.30—Description of Victorian Steeplechase.

4.55—Evening Amusements.

5—Description of Final Handicap. Close down.

EARLY EVENING SESSION.

6.45—The Children's Corner: Uncle Steve.

EVENING SESSION.

8—Time Signal Chime from G.P.O. Studio Barometer Readings. British Official Wireless Press. Final Sporting and Racing Results. Local news.

8.15—The Rhythmic Dance Orchestra.

9.30—We and Traveller's Information, supplied by the Victorian Railways Department and Metropolitan Tramways Board.

- 9.45—Maison-De-Luxe Rhythmic Dance Orchestra.
10—Time Signal (Time from G.P.O. Studio Barometer and Outdoor Thermometer Readings).
10.45—The Maison-De-Luxe Rhythmic Dance Orchestra.
11—Time signal. Close down.

4QG

NO MIDDAY TRANSMISSION.

EARLY EVENING SESSION.

- 8.25—Temp-in.
8.30—The Children's Swedish Bedtime Stories by "Onnie Jim," assisted by "Mabel Kneahine."
7.15—Sporting news.
7.10—Close down.

NIGHT SESSION.

- 7.45—A Sporting Talk.
8—From the Gaiety Theatre, Towong— a quarter of an hour's music by the orchestra.
8.15—From the Studio: Bass solo, Mr. J. P. Cornwell; soprano solo, Miss Tiny Brown; contralto solo, Miss Dorothy Brown; from the Gaiety Theatre, Towong, fifteen minutes by the Orchestra: From the Studio: Bass solo, Mr. J. P. Cornwell; Hawaiian music, the Kahuia trio; soprano solo, Miss Tiny Brown; contralto solo, Miss Dorothy Brown; Hawaiian music, the Kahuia Trio.
9.10—Weather information.
9.15—Aix Novelty Band.
10—From the Studio: "The Daily Mail" news service. Close down.

5CL

AFTERNOON SESSION.

From the Studio—Interstate and local stories.

EVENING SESSION.

- 6.30—G.P.O. Chimes.
6.31—Bedtime stories.
7.30—Market reports.
7.40—Results of the chief sporting results throughout the Commonwealth.
8—G.P.O. Chimes.
8.1—Dance programme relayed from Palais Royal, interspersed with vocal items from the studio.
9—G.P.O. Chimes.
10.15—Sporting results.
10.30—Studio concert continued.
10.55—Station announcements.
11—G.P.O. chimes. National Anthem, and close down.

7ZL

EVENING SESSION.

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

NIGHT SESSION.

- 8—G.P.O. Clock Chimes. The "Mercury" special Tasmanian news service. Railway action produce sales; Weather information and sporting results.
8.5—Hobart Stock Exchange quotations.
8.10—"Come to Tasmania" movement, by Mr. George Watt.
8.30—Dance numbers from the Studio.
9.45—British Official Wireless News, copied direct from Rugby by our own operator. Weather synopses. Station Announcements.

Sunday, Nov. 7

2FC

MORNING SESSION.

10.55—Chimes of 2FC and Announcements.

- 11—The Chimes of Big Ben. Broadcast from St. Andrew's Cathedral, by courtesy of the Dean of Sydney, Dean Talbot, the morning service.
12.15—News from the Studio.
12.30—Close down.

AFTERNOON SESSION.

- 3—Broadcast from the Parramatta Congregational Church, General's Choral Masterpieces: "Morn et Vm," on the occasion of the Annual Choir Festival.
4.45—Broadcast from the Trawler, cruising off the Botany fishing ground, a description of the haul and incidents of the trip, by the 2FC announcer.
5—Close down.

EVENING SESSION.

- 6—The Chimes of "Big Ben," A Talk on General Hymns, by Mr. William Adams, illustrated by Mr. R. Kennedy with organ solo.
8.20—From the Studio: A Vocal and piano-forte recital by Miss Roseana Ronald and Mr. Herbert Brown (by permission of Messrs. J. C. Williamson Ltd.).
7—Broadcast from St. Stephen's Presbyterian Church, the evening service. Preacher: Rev. H. B. D. Brown.
8.20—Broadcast from the band stand, Manly, items by the Manly Municipal Band, conducted by Mr. J. Thomson.
9.05—From the Studio: A Vocal and piano-forte recital by Miss Marie Bremer (by permission of Messrs. J. C. Williamson Ltd.) and Mr. Ewart Chapman.
10—Close down.

2BL

MORNING SESSION.

11—Service broadcast from First Church of Christ, Scientist.

AFTERNOON SESSION.

3—Special Children's Service broadcast from Balmain Presbyterian Church.

EVENING SESSION.

- 7.20—Lecture: Royal broadcast from the King's Hall.
8.45—From the Studio: Broadcasters' Trio: Mr. Herbert Macpherson, baritone; Miss Dolis Blair, violinist.

3LO

MORNING SESSION.

- 10.55—Express Train Information.
11—Service from Collins Street Independent Church, Melbourne.
12.15—British Official Wireless News from Rugby; Announcements; Close down.

AFTERNOON SESSION.

3—Pleasant Sunday Afternoon Service: Central Mission, Wesley Church. Chairmen: Rev. J. H. Cain.
4.30—Close down.

EARLY EVENING SESSION.

- 8.45—Children's Hour; Chorus by Billy Bunny and his Brer Rabbits.
9—Answers to letters and birthday greetings.
9.15—Another Hymn by Billy Bunny and his Brer Rabbits.
9.25—Stories by Billy Bunny; Mimosa and Lovell's Life.
9.45—Close down.

NIGHT SESSION.

- 7—Service from Pleasant Street Methodist Sunday School, Ballarat.
8.40—Malvern Tramways Band.
8.40—Ceilia Ladies' Choir.
8.47—Stanislaus Taterzynski, violin.
8.57—Collin Crane, baritone.
9.5—Stanislaus Taterzynski, violin.
9.15—Collin Crane, baritone.
9.25—Malvern Tramways Band.
9.35—Ceilia Ladies' Choir.
9.40—Malvern Tramways Band.
9.50—"Argus" News Service; Meteorological Information; Announcements.

- 9.55—Our Great Thought for to-night is: "No man is born without faults, he is best who has the fewest."—Horace.
10—God Save the King.

3AR

MORNING SESSION.

10.35—"The bells from St. James' Old Cathedral
11—Morning Service, St. James' Old Cathedral, Archbishop Leach, preacher.

AFTERNOON SESSION.

- 3—Studio Concert: Miss Nina Wilkes, contralto.
3.7—Mrs. James Henderson, baritone.
3.14—Miss Iris Turner, soprano.
3.21—Miss Marjorie Daniels, mezzo.
3.25—Misses Iris Turner and Brenda Lovie, duets.
3.35—Mrs. Nina Wilkes, contralto.
3.41—Mrs. James Henderson, baritone.
3.47—Miss Iris Turner, soprano.
3.54—Miss Marjorie Daniels, mezzo.
4—Close down.

EVENING SESSION.

- 8—Children's Corner: Talks and Songs.
8.30—Hells from St. James' Old Cathedral.
8.39—Mr. Robert Gordon, baritone.
8.47—Master Lal Kirring, 'cello.
8.44—Miss A. M. Kuring, soprano.
8.51—Mr. Moy Ling, baritone.
8.55—Misses Alma Piller, Mavis Sparks, and Hazel Dalton, vocal trio.
9.5—Dr. M. J. Robertson, M.D., will talk on "Kangaroos, their uses and abuses."
9.22—Mr. Harold Gordon, baritone.
9.29—Master Lal Kirring, 'cello.
9.36—Miss A. M. Kuring and Mr. Arthur Williams, duets.
9.43—Mr. Moy Ling, baritone.
9.50—"Argus" news service, exclusive to 3AR.
9.55—Close down.

4QG

MORNING SESSION.

10.45—Temp-in.
11—The complete morning service will be relayed from All Saints' Church of England.

AFTERNOON SESSION.

3.15—The concert by the Escabelet Band will be relayed from the Botanic Gardens, Brisbane (conductor, Mr. G. Holmes).

NIGHT SESSION.

7.30—The complete evening service will be relayed from All Saints' Church of England. At the conclusion of the church service, the concert by the Greater Brisbane Municipal Concert Band (conductor, Mr. E. Jackson) will be relayed from Wickham Park.

5CL

MORNING SESSION.

11—Relay from Maughan Church—Divine Service.

EVENING SESSION.

- 6.30—G.P.O. Chimes.
6.31—Sunday stories for the children.
7—G.P.O. Chimes.
7.1—Relay from Pirie Street Methodist Church—Divine Service.
7.15 (approx.)—Relay from Railways Institute: Holders' Band.
8.45—Mr. P. H. Nicholls.
9—G.P.O. Chimes.
9.1—Weather reports.
9.3—Studio concert continued.
10—G.P.O. Chimes. National Anthem. Close down.

7ZL

EVENING SESSION.

7—Service from Memorial Congregational Church, Hobart. Preacher, Rev. Arthur

- C. Nelson. Sermon. "A Fatal Lure."
 5.45—Concert from the Studio: Miss Ruby Pience, pianist; Miss Frances Evans, contralto; Miss Maureen Jones, contralto; Mr. W. E. Fuller, dramatic recital; Mr. L. M. Barnett, cornet solo.
 9.45—"The Mercury" Special Interstate news service; Weather Synopsis; Station Announcements; National Anthem.

Monday, Nov. 8

2FC

EARLY MORNING SESSION.

- 7.—The Chimes of "Big Ben" and Announcements.
 7.5—Music from the Studio.
 7.16—Weather Information; Commercial News; Shipping Intelligence; Rainfall; Temperatures; Astronomical Memoranda.
 7.35—Investment Market. Mining Share Market. Metal Quotations.
 7.55—Wool Sales. Breadstuffs Markets. Interstate Markets. Produce Markets.
 7.45—"Sunday Morning Herald" News Service.
 8.—The Chimes of "Big Ben." Music from the Studio.
 8.15—Close down.

MORNING SESSION.

- 9.15—The Chimes of 2FC and Programme Announcements.
 9.25—Music from the Studio.
 9.30—Marching music for school children.
 10.—Chimes of "Big Ben." Music from the Studio.
 10.15—"Sunday Morning Herald" News Service.
 10.46—A Morning Reading.
 11.—The Chimes of "Big Ben." Australian Press Association and Letter's Cables.
 11.15—Music from the Studio.
 11.30—Marching Music for School Children.
 12.35—Close down.

MIDDAY SESSION.

- 12.—The Chimes of "Big Ben." Announcements.
 12.5—Stock Exchange, First Call.
 12.10—Music from the Studio.
 12.30—Marching Music from the Studio for School Children.
 12.40—Musical Items.
 12.45—From Farmer's Oak Hall: The Oak Hall Trio.
 12.50—Rusby Wireless News.
 12.55—Miss Gwendy Fimister, soprano.
 1.—Chimes of "Big Ben." Weather Intelligence.
 1.5—"Evening News" midday news service.
 1.20—The Oak Hall Trio.
 1.25—Stock Exchange. Second call.
 1.50—Marching Music for School Children.
 1.40—Miss Gladys Fimister, soprano.
 1.45—Music from the Studio.
 1.50—The Oak Hall Trio.
 1.55—Music from the Studio.
 2.—Chimes of "Big Ben." Close down.

AFTERNOON SESSION.

- 2.30—Chimes of 2FC and Announcements.
 2.35—A recital by the piano pupils of Mrs. Stuart Boyle.
 3.—Music from the Studio.
 3.30—Marching Music for the School Children.
 3.45—Miss Muriel Humphries, contralto.
 3.45—From Farmer's Tea Rooms: The Oak Hall Trio.
 3.50—Music from the Studio.
 4.—Chimes of "Big Ben." Miss Chris Hawkesford, soprano.
 4.5—A Serial Story, read by Miss Annie Hughes.
 4.20—Miss Muriel Humphries, contralto.
 4.25—From Farmer's Tea Rooms: The Oak Hall Trio.
 4.35—Music from the Studio.
 4.—The Sun.
 4.40—Miss Chris Hawkesford, soprano.

- 4.45—Stock Exchange: Third Call.

4.45—Close down.

EARLY EVENING SESSION.

- 5.45—The Chimes of 2FC.
 5.50—The Halls Music for the Children.
 6.30—A Serial Story for the Older Children.
 6.45—Bronze cast from the Hotel Australia, Sydney; Orchestral Items.
 7.15—From the Studio: "Evening News" Late News Service and Weather Information.
 7.30—Dalyell's Market Reports (wool, wheat, stocks, fruit and vegetable markets).
 7.45—A talk on "Ballata," by Dolny, late of Pavlova Co. Close down.

NIGHT SESSION.

- 8.—The Chimes of "Big Ben" and Announcements.
 Broadcast from the Haymarket Theatre, Sydney; Operatic Orchestra, under the baton of Mr. Stanley Porter.
 8.30—From the Studio: Miss Mabel Batchelor, soprano.
 8.40—Mr. R. A. Bartlett, baritone.
 8.45—A Talk by Madame Evelyn Greig, on "The American at Home." A lecture of particular interest to women, giving examples of the culinary art.
 9.2—Announcements.
 9.5—From the Haymarket Theatre further items. The Vocal Act.
 9.20—From the Studio: 3rd Transgraphologic given by Major Sandford Morgan, the title being "Somewhere East of Suez." During the talk, scenes typical of the descriptions will be given by Miss Mabel Batchelor and Mr. R. A. Bartlett, and effects necessary will be carried out under the direction of Mr. Laurence Ballert. Note—During the evening, the final description will be given from the trawler that has returned to Sydney with its third day's haul.
 10.40—2FC Dance Band will play dance music. Mr. Eric Pearce, conductor.
 11.—Chimes of "Big Ben." Further items by the 2FC Dance Band.
 11.30—Announcements.
 11.35—The 2FC Dance Band in dance numbers.
 12.—Chimes of "Big Ben." Close down.

2BL

EARLY MORNING SESSION.

- 7.15—Physical Training and Health exercises.
 7.30—Broadcasters' Special News Service.
 7.45—Physical Training and Health Exercises.
 8.—G.P.O. Clock and Chimes; Close down.

MORNING SESSION.

- 10—G.P.O. Clock and Chimes; Musical programme from the Studio.
 10.10—Special News Service from the "Daily Telegraph."
 10.25—Musical Programme from the Studio.
 10.40—Special News Service from the "Daily Telegraph."
 11—G.P.O. Clock and Chimes; Market Reports.
 11.10—Musical programme from the Studio.
 11.25—Broadcasters' Information Service, including Mails, Boats in call by wireless Shipping; Weather and Rainfall.
 11.40—Women's Session: Social Notes by Mrs. Jordan.
 11.55—Mrs. Jordan answering correspondents.
 12—G.P.O. Clock and Chimes; A Talk by Mrs. Jordan.
 12.25—A Talk by Miss Helen Jean Beegling.
 12.30—Sydney Stock Exchange Calls.
 12.45—Hillier's Instrumental Quartette, directed by Caryl Beegling.
 1.30—Sydney Stock Exchange Calls.
 1.45—Latest Sporting Information and News from the Sun.
 2.—G.P.O. Clock and Chimes; Close down.

AFTERNOON SESSION.

- Racing Information broadcast by courtesy of G.P.O. Clock and Chimes; Weather Report

and Forecast by courtesy of Mr. C. J. Mares, Govt. Meteorologist; Social Notes from the Sun.

- 3.15—David Jones' Tea Room Trio.
 3.45—Musical programme from the studio.
 4.—G.P.O. Clock and Chimes; David Jones' Tea Room Trio.
 4.15—Serial Story.
 4.20—Musical programme from the studio.
 4.45—Producers' Distributing Society's Vegetable and Market Fruit Report; Shipping Information when available.
 4.50—News from the Sun.
 4.55—Reviews of to-night's programme.
 5.—G.P.O. Clock; Close down.

EARLY EVENING SESSION.

- 5.45—G.P.O. Clock; Uncle George and the Kiddies.
 6.30—Pavilion Dinner Orchestra under the direction of Mr. Cec. Morrison. Special Country Service.
 7.—G.P.O. Clock and Chimes; Australian Mercantile Lairs and Finance Co.'s Stock Wool and Hide Report.
 7.5—Weather Report and Forecast by courtesy of Mr. C. J. Mares, Govt. Meteorologist.
 7.10—Stock Exchange Reports.
 7.15—Producers' Distributing Society's Fruit and Vegetable Report.
 7.20—Fruit and Vegetable Reports (Sun).
 7.24—Grain and Fodder Reports (Sun).
 7.27—Egg and Poultry Reports (Sun).
 7.30—Country News from the Sun.
 7.35—A description of the route taken by the Commonwealth Line of Steamers, by Mr. J. Holmes.

NIGHT SESSION.

- 1.—Newtown Band, broadcast from Industrial Hall, Newtown; Programme from the 2FC Dance Band, including Miss May Nanarrows, chionistral; Miss Edna Walker, soprano. Mr. Edward Barry; Miss Heather Kinnaid, contralto.

3LO

MIDDAY SESSION.

- 12 noon—Time Signal; British Official Wireless News from Rugby; Reuters and the Australian Press Association Cables; "Arctic" and "Herald" News Services.
 12.45—Stock Exchange Information; Shipping Intelligence.
 12.50—Meteorological Information; Weather Forecasts for Victoria, Tasmania, South Australia, and New South Wales; Ocean Forecast; River Reports.
 1.—Time Signal.
 1.1—Studio Orchestra.
 1.14—Colin Crane, baritone.
 1.17—Harry Woodman, concertina.
 1.20—Tasma Tierman, 'cello.
 1.27—Colin Crane, baritone.
 1.34—Harry Woodman, concertina.
 1.40—Walter Smith, cornet solo.
 1.47—Studio Orchestra.
 2.—Williamstown Races, description of Cup Race will be given.
 2.5—Close down.
 2.40—Result of Two Year Old Handicap, Williamstown Races.

AFTERNOON SESSION.

- 3.—Studio Orchestra.
 3.15—Description of the Williamstown Cup.
 3.20—Mrs. Dorothy Silk will give a talk on "Homecrafts."
 3.35—Vera Spaul, soprante.
 3.42—Franklin Sionham, clarinet.
 3.45—Eardley Turner and Miss Geraldine Turner's original sketch, written by Eardley Turner.
 4.2—Studio Orchestra.
 4.10—Miss Flora Pell, Supervisor of Domestic Economy; Department: Domestic Economy.
 4.25—Tasma Tierman, 'cello.
 4.30—Vera Spaul, soprante.
 4.37—Studio Orchestra.
 4.—Herald News Service; Stock Exchange Information.
 5.—Close down.
 Result of Steeple will be given at 4.5 p.m.;

Result of Atton Handicap at 4.45 a.m.;
Result of Ocean Welter, 6.10 p.m.

EVENING SESSION.

- 5.45—Children's Hour: Answers to letters and Birthday Greetings.
6—Mollie Ick will sing.
6.7—Little Miss Kookaburra, tiny tot's story.
6.25—Mollie Ick will sing again.
6.30—Little Miss Kookaburra will tell the next instalment of the Trials of the Twins.
6.40—"Argus" and "Herald" News Service; Reuters and the Australian Press Association Cables.
6.55—Weather Synopsis; Shipping Movements; Overseas Shipping.
7—Stock Exchange Information.
7.1—Fish Market Reports by J. R. Barrett Ltd.
7.5—River Reports; Aerial Mail Information by the Australian Aerial Services Ltd.
7.8—Market Reports by the Victorian Producers Co-operative Co. Ltd.; Haymarket Sheep Sales; Poultry, grain, chaff, hay, straw, tallow, dairy produce, potatoes and onions; Market prices of oranges and lemons, by the Victorian Central Citrus Association Pty. Ltd.

NIGHT SESSION.

- 7.30—Under the auspices of the Develop Australia League, Mr. J. R. A. O'Keefe, B.A., LL.M.: Australia and Australasia.
7.45—Under the auspices of the Department of Agriculture, Mr. P. Ryan, Inspector of Agriculture; Summer Bullocks.
8—Organ Recital by Dr. Floyd, transmitted from St. Paul's Cathedral.
8.30—Studio Orchestra.
8.40—Colin Crane, baritone.
8.47—"Put out your lights and listen."
8.50—A concert in the Village Schoolroom at Collingwood. Presided over by the Rev. Mr. Chubb.
9.15—British Official Wireless News from Rugby. Announcements.
9.15—Studio Orchestra.
10.24—Under the auspices of the Associated Amateur Sports Committee, Mr. J. Newman, ex-Australian one-mile Champion and Australian Olympic Representative, 1924. Impressions of the Olympic Games.
10.35—"Argus" News Service. Weather Forecast. Announcements.
10.45—Colin Crane, baritone.
10.48—Studio Orchestra.
11—Our Great Thought for To-night is:—"The knowledge which we have acquired ought not to resemble a great ship without anchor and without an inventory; we ought to know what we possess, and be able to make it serve to us in need."—Leibnitz.
11.5—BLO Dance Orchestra.
11.45—God Save the King.

3AR

MORNING SESSION.

- 11.30—British Official Wireless Press, received from Rugby. News from Victoria Station, England, by 3AR's operator. Express Train information. Events of the day. "Age" news bulletin, exclusive to 3AR.
12—Time Signal Chime. Studio Barometer Readings. 1st Weather Forecast. Sporting Fixtures.
12.5—Musical selections, relayed from Hoyt's De-Luxe, Bourke Street. Mr. T. L. Campbell at the Warburton.
13.15—Stock Exchange news. Market reports.
13.40—Musical selections.
13.55—Shipping Movements. Mail Notices.
14—Close down.

AFTERNOON SESSION:

- Williamstown Racing Club Meeting; 2nd Day Results after each race and at half-hourly intervals.
2.30—Hoyt's Premier Orchestra, under direction of Cecil W. Fraser.
3—The Melbourne Piano Trio.
3.15—Miss Duleira Carson, soprano.
3.23—Mr. Ronald Bradbury, 'cello.
3.30—Miss Duleira Carson, soprano.
3.37—Mr. Bert Pettifer, violinist.

- 3.44—The Melbourne Piano Trio.
4—Time Signal Chime. 2nd Weather Forecast. Hoyt's Orchestra.
4.55—Evening Amusement Guide.
5—Time Signal Chime from G.P.O. Studio Barometer and Thermometer Readings. Close down.

EARLY EVENING SESSION.

- 5.45—Children's corner, by Uncle Rad

EVENING SESSION.

- 7.30—British Official Wireless Press. Studio Barometer Readings.
8—Time Signal Chime from G.P.O. The Harmonics Trio. Instrumentals.
8.10—Miss Sylvia MacPherson, mezzo.
8.17—Mr. Syd Henry, in moments grace and gay.
8.25—Mr. John Box, bass.
8.32—Mr. S. P. England, "Tennis" talk.
8.47—Miss Victoria Dunbar, soprano.
8.54—Mr. Les Lyson, novelty; Trampoline whist, with pianoforte accompaniment, as played by himself.
9.1—Mr. Syd Henry, in moments grace and gay.
9.15—Miss Sylvia MacPherson, mezzo.
9.15—Mr. J. Sullivan, talk: Travels in Australia and New Zealand.
9.30—The Harmonics Jazz Band.
9.40—Mr. John Box, bass.
9.47—Miss Victoria Dunbar, soprano.
9.54—Mr. Les Lyson, instrumental novelty.
10—Time Signal Chime from G.P.O. "Age" news service, exclusive to 3AR.
10.15—Studio barometer reading.
10.16—Hoyt's Premier Orchestra.
10.40—Close down.

4QG

EARLY EVENING SESSION.

- 6.25—Tone in.
6.30—Children's Session: Stories by "The Sandman."
7—Food: The Council of Agriculture Studies: The Farmer's Session: Market Reports supplied by the Council of Agriculture; Lectures: Programs for the Christmas Home Market, Mr. E. J. Shelton, Instructor in Pig Raising.
7.30—From the Studio of 4QG: News Service, supplied by "The Daily Standard"; Stock Exchange information, supplied by the Committee of the Brisbane Stock Exchange. Metal quotations. Overseas shipping information.
7.45—Announcements.

NIGHT SESSION.

- 7.45—Lecture: Sealions: The Children's Music Corner, conducted by "The Music Man."
8—The Federal Band, Radio Voice Contest Semi-Finals: The Provability Orchestra.
8.20—Weather Information, officially supplied by the Commonwealth Weather Bureau. Announcements.
8.30—Studio Concert, continued.
10.15—"The Daily Mail" News Service. Close down.

5CL

AFTERNOON SESSION.

- 3—G.P.O. Chimes.
3.1—Relay from "Maple Leaf" Cafe—Orchestral numbers.
3.45—From the Studio: Sterk Duo-Art and Vocalion numbers.
4—G.P.O. Chimes.
4.1—Relay from "Arcadia" Cafe—Orchestral numbers.
5—G.P.O. Chimes.

EVENING SESSION.

- 6.30—G.P.O. Chimes.
6.31—Bedtime stories.
7.30—Market reports.
7.40—Mr. Frederickson, automotive engineer, Yascum Oil Company.
8—G.P.O. Chimes.

- 8.1—Programme of Instrumental numbers interspersed with vocal numbers.
8.20—"Twinkler's" Boys' Club.
8.40—Studio Concert, continued.
9—G.P.O. Chimes.
9.1—Weather reports.
9.3—Studio Concert, continued.
10.15—"Advertiser" news service and show within wireless range.
10.30—Studio Concert, continued.
10.55—Station announcements.
11—"G.P.O. Chime. National Anthem. Close down.

7ZL

EVENING SESSION.

- 7—Children's Corner. "Big Brother" chats to his Pal.
8—G.P.O. Clock Chimes. The "Mercury" special Tasmanian news service. Railway station produce sales. Weather information.
8.5—Robert Stock Exchange quotations.
8.10—Talk by Mr. R. W. Crabtree, B.Sc., subject: "The Election."
8.30—Concert from the Studio: Miss Dorcen Glover, mezzo contralto; Miss Jean Smiles, soprano; Miss Amy Hutterworth, pianist; Miss Joan Dohis, soloist; Mr. R. Lyson, baritone; Mr. G. T. Lane, tenor; Mr. Roy Butcher, cornet solo.
9.15—Tasmanian District Weather Reports.
9.30—The "Mercury" special interstate news service. Weather synopsis. Station announcements. National Anthem.

NIGHT SESSION.

- 9—G.P.O. Clock Chimes. The "Mercury" special Tasmanian news service. Railway station produce sales. Weather information.

Tuesday, Nov. 9

2FC

EARLY MORNING SESSION.

- 7—The Chimes of Big Bell and Announcements.
7.1—Music from the Studio.
7.10—Weather information; Commercial News; Shipping Intelligence; Rainfall; Temperatures; Astronomical Memoranda.
7.25—Investment Market; Mining Shares Market; Metal Quotations.
7.35—Wool Sales; Breadstuffs Market; Interstate Markets; Produce Markets.
7.45—"Sydney Morning Herald" News Service.
8—The Chimes of Big Bell; Music from the Studio.
8.15—Close down.
8.15—The Chimes of 2FC and Programme Announcements.
8.20—Music from the Studio.
8.30—Marching Music for School Children.
8.45—Last-minute Racing Information by the 2FC Racing Commissioner.
10—The Chimes of Big Bell.
10.5—Late "Sydney Morning Herald" News Service.
10.55—Music from the Studio.
10.45—A Morning Reading.
11—The Chimes of Big Bell; Music from the Studio. Australian Press Association and Reuters's Cable News Service.
11.15—A Talk on Home Cooking and Recipes by Miss Ruth Purst.
11.30—Marching Music for School Children.
11.45—Close down.
MIDDAY SESSION.
12—The Chimes of Big Bell; and Announcements.
12.15—Stock Exchange, First Call.
12.10—Music from the Studio.
12.30—Marching Music for the School Children.
12.45—Music from the Studio.
12.45—From Farmer's Oak Hall: The Oak Hall Trio.
12.50—Rugby Wireless News.
12.55—Miss Ruby Swadlow, soprano.

- 1.—Chimes of "Big Ben"; Weather Intelligence.
 1.3—"Evening News" midday news service.
 1.30—Oak Hall Trio.
 1.28—Stock Exchange; Second call.
 1.30—Marching Music for School Children.
 1.40—Miss Ruby Swadlow, soprano.
 1.40—Music from the Studio.
 1.50—The Oak Hall Trio.
 2.—The Chimes of Big Ben; Close Down.

AFTERNOON SESSION.

- 2.30—Chimes of 2PC and Announcements.
 2.35—A Recital of "Behning" Player Piano rolls.
 3.15—A Serial Story read by Annie Hughes.
 3.20—Marching Music for the School Children.
 3.40—Miss Thelma Lansdowne, mezzo.
 3.45—Music from the Studio.
 4.—Miss Jeanne Slapoffski, soprano.
 4.5—The Oak Hall Trio.
 4.30—Music from the Studio.
 4.35—Miss Thelma Lansdowne, mezzo.
 4.45—From Farmer's Tea Rooms, the Oak Hall Trio.
 4.50—Music from the Studio.
 4.40—Miss Jeanne Slapoffski, soprano.
 4.45—Afternoon Call, Stock Exchange.
 4.40—Close down.

EARLY EVENING SESSION.

- 5.45—The Chimes of 2PC and Announcements.
 5.50—"Hello Men" talks to the Children.
 6.50—A talk to the Older Children.
 6.45—Broadcast from the Hotel Australia—Orchestra Items.
 7.15—From the Studio; "Evening News" Service.
 7.30—Dulzey's Market Reports (Wool, Wheat, Stock, Fruit, and Vegetable Markets).
 7.40—A Talk on "Jaco," the Garden of the East. Close down.

NIGHT SESSION.

- 8.—The Chimes of Big Ben and Announcements.
 8.2—Broadcast from the Darlington Town Hall, items by the Metropolitan Band, conducted by Mr. John Palmer.
 8.12—From the Studio; Mr. Walter Kingsley, baritone.
 8.18—Mr. Lionel Lawson, violinist.
 8.35—From the Metropolitan Band, further items by the Metropolitan Band.
 8.38—From the Studio; Mr. Walter Kingsley, baritone.
 8.40—Miss Lucille Allen, Queensland soprano.
 8.50—From the Darlington Town Hall, the Metropolitan Band.
 9.—From the Studio; Mr. Lionel Lawson, violin solo.
 9.8—Mr. Walter Hunt and Miss Eve Warhurst in a one act play.
 9.24—The Metropolitan Band, selections.
 9.35—From the Studio; Miss Lucille Allen, soprano.
 9.40—Mr. Walter Kingsley, baritone.
 9.50—Mr. Walter Hunt and Miss Eve Warhurst in a one act play.
 10.—Miss Lucille Allen, soprano.
 10.50—Broadcast from the Lyric Wintergarden Theatre, items by the operatic orchestra, under the baton of Mr. Alfred Moulton, by permission of the management.
 10.55—Broadcast from the Wentworth Hotel, Sydney; Wentworth Cafe Dance Orchestra, under the baton of Mr. Sydney Simpson.
 12.—National Anthem; Close Down.

2 B L

EARLY MORNING SESSION.

- 7.15—Physical Training and Health exercises.
 7.30—Broadcasters' Special News Service.
 7.45—Physical Training and Health Exercises.
 8.—G.P.O. Clock and Chimes; Close down.

MORNING SESSION.

- 10.—G.P.O. Clock and Chimes; Musical programme from the Studio.
 10.10—Special News Service from the "Daily Telegraph."

- 10.25—Musical programme from the Studio.
 10.40—Special News Service from the "Daily Telegraph."
 11.—G.P.O. Clock and Chimes; Market Reports and London Metal Quotations.
 11.10—Musical programme from the Studio.
 11.25—Broadcasters' Information Service, including Mail, Boats in sail by wireless Shipper, Weather and Rainfall.
 11.40—Women's Session; Social Notes by Mrs. Jordan.
 11.55—Mrs. Jordan answering correspondents.
 12.—G.P.O. Clock and Chimes; A Talk by Mrs. Jordan.
 12.25—A Talk by Miss Helen Joan Becking on "Swimming."
 12.30—Sydney Stock Exchange Call.
 12.45—Heller's Instrumental Quartet, direction Caryl Castling.
 1.30—Sydney Stock Exchange Call.
 1.45—Latest Sporting Information and News from the Sun.
 2.—G.P.O. Clock and Chimes; Close down.

AFTERNOON SESSION.

- Racing Information, broadcast by courtesy of the Sun.
 4.—G.P.O. Clock and Chimes; Weather Report and Forecast by courtesy of Mr. C. J. Mares, Govt. Meteorologist; Social Notes from the Sun.
 4.15—Civil Service Stanzas' Trio, direction Miss de Cuiry Bremer.
 3.30—Musical programme from the Studio.
 4.—G.P.O. Clock and Chimes; Civil Service Stanzas' Trio.
 4.15—Serial Story.
 4.40—Musical Programme from the Studio, Producers' Distributing Society's Vegetable and Market Fruit Report, Shipping information when available.
 4.55—News from the "Sun."
 4.55—Resume of night's programme.
 5.—G.P.O. Clock and Chimes. Close Down.

EARLY EVENING SESSION.

- 5.45—G.P.O. Clock and Chimes, Uncle George and the Kiddies.
 6.40—Pavilion Dinner Orchestra, under the direction of Mr. Cec. Morrison.
 Special Country Session.
 7.—G.P.O. Clock and Chimes; Australian Merchants' Land and Finance Co.'s Report.
 7.5—Weather Report and Forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist.
 7.9—Stock Exchange Reports.
 7.15—Producers' Distributing Society's Fruit and Vegetable Report.
 7.20—Fruit and Vegetable Reports (Sun).
 7.25—Egg and Poultry Report (Sun).
 7.30—Country News from the Sun.
 7.35—"Some aspects of Hamlet," by Rupert Markham.
 7.45—A talk on the "Hydro Electric Developments in Australia."

NIGHT SESSION.

- 8.—Classical Concert from the Studio, including Mr. Stanley R. Catlett tenor, Mr. Gerald Watson violinist, Miss Gladys Verona soprano, Miss Amy Oatling contralto, Mr. Peter Sutherland basso, Broadcasters' Miniature Orchestra.
 11.—Paragon Orchestra, under the direction of Mr. S. Bennett.

3 L O

MIDDAY SESSION.

- 12 noon—Time Signal; British Official Wireless News from Rugby; Reuters and the Australian Press Association Cables; "Argus" and "Herald" News Services.
 12.45—Stock Exchange Information; Shipping Intelligence.
 12.50—Meteorological Information; Weather Forecasts for Victoria, Tasmania, South Australia, and New South Wales; Ocean Forecast; River Reports.
 1.—Time Signal.
 1.1—Studio Orchestra, Reg. Bradley, musical director.
 1.10—Eulalie Hong, soprano.
 1.17—Reginald Bradley, violin.
 1.22—Bruce Green, Famous Pantomime Dame,

- will entertain you with some stories.
 1.32—Studio Orchestra.
 1.40—Eulalie Hong, soprano.
 1.47—Studio Orchestra.
 2.—Close down.

AFTERNOON SESSION.

- 3.—Will Page and his Popular Players.
 3.10—"Au Pair" of Messrs. Buckley and Nunn Ltd., "Fashion Talk."
 3.25—Will Page's Popular Players.
 3.35—Royalty Hazel and Elsie Day.
 3.42—Will Page's Popular Players.
 3.52—Marion Moreland, "Infant Welfare."
 4.2—Will Page's Popular Players.
 4.12—Royalty Hazel and Elsie are with us again.
 4.20—Will Page's Popular Players.
 4.45—"Herald" News Service; Stock Exchange Information.
 5.—Close down.

EVENING SESSION.

- 6.45—Children's Hour; Answers to letters and Birthday Greetings.
 6.—Mollie Lok, will tell about "Touchin' Finches" "No Finches Admitted."
 6.7—"Mary Gumfak," Poems; "My Teddy Bear," Story for the littlest ones; "Bye, bye bud."
 6.17—Mollie Lok, "Bad Sir Brian Botany," "Stinky Town."
 6.24—"Mary Gumfak," story for the bigger ones, "Tina and the Lion."
 6.40—"Argus" and "Herald" News Services; Reuters and the Australian Press Association Cables.
 6.53—Stock Exchange Information.
 7.—Fish Market Reports, by J. R. Barrett, Ltd.
 7.6—River reports, Aerial Mail Information by the Australian Aerial Services Ltd.
 7.8.—Market Reports by the Victorian Producers Co-operative Co. Ltd.; Haymarket Sheep Sales; Poultry, grain, chaff, hay, straw, lard, dairy produce, prunes and onions; Market prices of oranges and lemons, by the Victorian Central Citrus Association Pty. Ltd.

NIGHT SESSION.

- 7.24—Madame Seward, "A Story by Jean Bardin."
 7.40—Under the auspices of the University Extension Board, Associate-Professor Lode-wyck, Lecturer in German at the Melbourne University, "Famous Languages in Australia."
 8.—Lecture on "Warner" by Mr. Fritz Hart, illustrated by vocal items.
 9.—Dr. Loftus Hills, "Popular Science."
 9.15—Mr. W. Mendeney, Vice President of the Metropolitan Football Association, and member of Independent Tribunal under the auspices of the A.A.S.C. of Victoria, "Amateur Football."
 9.30—Bert Howell and his Concert Orchestra, transmitted from the Tivoli Theatre, St. Kilda.
 10.40—"Argus" news services, Announcements, British Official Wireless News from Rugby, Meteorological Information.
 11.—Our Great Thought for Today is: "Nothing great was ever achieved without enthusiasm."—Emerson.
 11.1—SLO Dance Orchestra.
 11.40—God Save the King.

3 A R

MORNING SESSION.

- 11.30—British Official Wireless Press, received from Rugby Super Wireless Station, England, by S.A.'s operator, Express Train information, Events of the day, "Age" news bulletin, exclusive to 3AR.
 12.—Time Signal Chime from G.P.O. Studio Barometer Readings, 1st Weather Forecast, Sporting Fixtures.
 12.5.—Musical Selections from Hoyt's De-Luxe, Bourke Street, Mr. T. L. Campbell at the Warlters.
 12.30—Stock Exchange News, Market Reports.

12.40—Musical Selections.
12.50—Shipping Movements. Mail Notices.
1—Close down.

AFTERNOON SESSION.

2.50—Hoyt's Premier Orchestra, under direction Cecil W. Fraser.
3—The Cyclists Instrumental Trio.
3.10—Miss Mary O'Meara, soprano.
3.15—Mr. Walter Quirk, pianoforte novelties.
3.24—Miss Theresa Crowe, violinist.
3.30—Miss Mary O'Meara, soprano.
3.37—Cyclists Instrumental Trio.
3.46—Mr. Walter Quirk, baritone.
3.52—Miss Mary Nickless, violinist.
4—Time Signal Chimes. 2nd Weather Forecast.
4.05—Evening Amusement Guide.
5—Time Signal Chime. Studio Barometer Readings. Close down.

EARLY EVENING SESSION.

6.45—Children's Corner, by Uncle Steve.

EVENING SESSION.

7.45—British Official Wireless Press. Studio Barometer Readings. Fat Sheep and Cat. Report, furnished by courtesy of Messrs. John McNameara & Co. Pty., Ltd.
8—Time Signal Chime. Mr. Julian James, baritone.
8.7—Master Eric Smith, violinist.
8.14—Mr. James Molloy, tenor.
8.21—Mr. Trevor Wilton, Theological talk.
8.36—Miss Yette Landau, entertainer.
8.40—Miss Betty Fitzmaurice, pianist.
8.57—Mr. Julian James, baritone.
9.4—Mr. D. J. Moor (manager), by courtesy Messrs. Lincoln, McIlhenny's Ford headquarters.
9.10—Mr. John Smith, baritone.
9.26—Mr. Frank Pearson, entertainer.
9.33—Master Eric Smith, violinist.
9.40—Mr. James Molloy, tenor.
9.47—Miss Yette Landau and Mr. Frank Pearson, scene from "King John."
10—Time Signal Chime from G.P.O. Studio Barometer Readings. "Age" news service, exclusive to 3AR.
10.10—Legett's Ballroom Orchestra.
11—Close down.

4QG

EARLY EVENING SESSION.

8.25—Tune in.
8.30—The Children's Session. Stories by "Uncle Ben" and "Uncle Jim."
9—From the Council of Agriculture, Studio: The Farmers' Session. Market Reports. Lectures: Poultry Breeding Experiments, Professor Goddard, University of Queensland.
9.50—From the Studio of 4QG: "The Daily Standard" news. Stock Exchange Information.
10—Announcements.

NIGHT SESSION.

7.45—Lecture Session: A Gardening Talk by "Teoma", Dalhousie.
8—The first portion of to-night's programme will be provided by the Wilton State School Choir and Orchestra (under the direction of Mr. W. Collins).
Radio Voice Contest. Semi-Finals.
9.30—Weather information obtained supplied by the Commonwealth Weather Bureau. Announcements.
9.50—From the Centennial Hall: Half an Hour's Dance Music.
10—From the Studio: "The Daily Mail" news service. Close down.

5CL

AFTERNOON SESSION.

2—G.P.O. Chimes.
2.1—Relay from the "Maple Leaf" Cafe—Orchestral numbers.
2.45—From the Studio: Stack Duo-Art and Vocal numbers.
4—G.P.O. Chimes.

4.1—Relay from the "Arcadia" Cafe—Orchestral numbers.
5—G.P.O. Chimes.

EVENING SESSION.

6.30—G.P.O. Chimes.
6.31—Bedtime stories.
6.35—Market reports.
7.40—Milling talk, by Mr. Jackett.
8—G.P.O. Chimes.
8.1—Cadenza Quartette, interspersed with vocal items from Studio.
9—G.P.O. Chimes.
9.50—Studio concert continued.
10.15—"Advertiser" news service.
10.30—Studio concert continued.
10.50—Station announcements.
11.5—G.P.O. Chimes. National Anthem.

7ZL

EVENING SESSION.

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

NIGHT SESSION.

8—G.P.O. Clock Chimes; the "Mercury" Special Tasmanian News Service; Railway Auction Produce Sales; Weather Information.
8.5—Hobart Stock Exchange Quotations.
9.10—Literary Notices and Literary Lists by Mr. W. E. Fuller.
9.30—Musical items from the Studio—special request numbers.
9.45—Tasmanian District Weather Reports.
9.50—The "Mercury" Special Interstate News Service; Weather Synopses; Station Announcements; National Anthem.

Wednesday, Nov. 10

2FC

EARLY MORNING SESSION.

7—The Chimes of Big Ben; and Announcements.
7.5—Music from the Studio.
7.10—Weather information, astronomical observations.
7.25—Investment Market: Mining Share Market. Metal Quotations.
7.35—Wool Sales; Breadstuffs Market; Interstate Markets; Produce Markets.
7.45—"Sydney Morning Herald" News Service.
8—Chimes of Big Ben. Music from the Studio.
8.15—Close down.

MORNING SESSION.

9.15—The Chimes of 2FC and Programme Announcements.
9.20—Music from the Studio.
9.35—Marching music for the School Children.
9.40—Music from the Studio.
9.45—The Chimes of Big Ben and Announcements.
10.5—Late "Sydney Morning Herald" News Service.
10.10—Music from the Studio.
10.45—A Morning Reading.
11—The Chimes of Big Ben; the Australian Press Association and Reuter's Cables.
11.16—A Talk on Home Cooking and Recipes by Miss Ruth Purat.
11.30—Marching Music for the School Children.
11.55—Close down.

MIDDAY SESSION.

12—The Chimes of Big Ben; and Announcements.
12.5—Stock Exchange. First Call.
13.10—Music from the Studio.
13.20—Marching Music for the School Children.
13.40—Music from the Studio.
14.25—From Farmer's Oak Hall: Oak Hall Trio.

12.50—Kunby Wireless News.
12.55—Music from the Studio.
1—The Chimes of Big Ben; Weather Intelligence.

1.3—"Evening News" Midday Service; Producers' Distributing Society's Report.
1.35—Oak Hall Trio.
1.50—Stock Exchange—Second Call.
1.50—Marching Music for the School Children.
1.55—Miss Kathleen Cranknell, contralto.
1.58—From Farmer's Oak Hall: The Oak Hall Trio.
2—Chimes of "Big Ben." Close down.

AFTERNOON SESSION.

2.30—Chimes of 2FC and Announcements.
2.35—A Recital by the educational pupils from the studio, of Mr. Harry Thomas, interspersed with music from the studio.
3.30—Marching Music for School Children.
3.40—Miss Annie Seliger, mezzo.
3.55—Music from the Studio.
4—Miss Fernis Ritter, soprano.
4.1—The Oak Hall Trio.
4.10—Music from the Studio.
4.20—Miss Annie Seliger, mezzo.
4.35—From Farmer's Oak Hall: The Oak Hall Trio.
4.45—Music from the Studio.
4.50—Miss Fernis Ritter, soprano.
4.55—Afternoon Call. Stock Exchange.
4.58—Close down.

EARLY EVENING SESSION.

6.45—Chimes of 2FC.
6.50—"The Hello Man" talks to the Children.
6.55—A Talk to the older Children.
6.45—Broadcast from the Hotel, Australia—orchestral items, direct, Miss A. J. Egan.
7.10—From the Studio, "Evening News" Service; and Weather Information.
7.30—Dalgety's Market Reports (Wool, Wheat, Stock, Fruit and Vegetable Markets).
7.45—From the Studio: A Talk, by the Hon. W. M. Hughes, P.C., M.P., on behalf of the Appeal on Puppy Day.

NIGHT SESSION.

7.50—Programme Announcements.
7.55—The Chimes of Big Ben; Broadcast from the Broadcasting Picture, Lindfield (by permission of Messrs. J. C. Williamson Ltd.) the first act of the comic opera "Katinka," produced by the Roseville Musical Society, the principal part will be taken by Miss Heather Harding, 1st Scene, Villa of Boris Stroyeff, at Yalla, on the Black Sea; 2. Overture; 2. Opening Chorus; 3. Song; Montmartre Girls; Ivan (John Ryan); 4. Duet: One who will Understand, Katinka (Heather Harding) and Ivan; 5. Duet: Katinka, Boris (Oliver Lewis) and Ivan; 6. Song; 14. Duet: Duet (Victor J. Kelly); 7. Song: Bachelery Cou, Katinka; 8. Russian Dances, Ballet; 9. Finale.
8—The Hon. W. M. Hughes, P.C., M.P., will broadcast the appeal on behalf of Puppy Day.
9.40—From the Conservatorium Hall, the Symphony No. 4 in F minor (Tchaikovsky).

10.10—From the Studio, Mr. A. E. Y. Benham, tenor.
10.15—Mr. Jack Lumsden, entertainer.
10.25—The 2FC Dance Band in dance items; conductor, Mr. Eric Pearce.
10.45—Mr. A. E. Y. Benham, tenor.
10.46—The 2FC Dance Band.
11—The Chimes of Big Ben and Announcements.
11.5—2FC Dance Band.
12—National Anthem. Close down.

2BL

EARLY MORNING SESSION.

7.35—Physical Training and Health Exercises.
7.30—Bronzebeaters Special News Service.
7.40—Physical Training and Health Exercises.
8—G.P.O. Clock and Chimes; Close down.

MORNING SESSION.

10—G.P.O. Clock and Chimes; Musical programme from the Studio.

- 16.15—Special News Service from the "Daily Telegraph."
 19.25—Musical programme from the Studio.
 16.40—Special News Service from the "Daily Telegraph."
 11—G.P.O. Clock and Chimes; Market Reports.
 11.10—Musical programme from the Studio.
 11.25—Broadcasters' Information Service, including Mails, Boats in call by wireless Shipping; Weather and Rainfall.
 11.40—Women's Session; Social Notes by Mrs. Jordan.
 11.55—Mrs. Jordan answering correspondents.
 12—G.P.O. Clock and Chimes; A Talk by Dr. Morris on Infant Welfare.
 12.25—A Talk by Miss Helen Jean Bealing.
 12.45—Musical Programme from the Studio.
 3—Midday Musical Recital from Christ Church, St. Laurence.

AFTERNOON SESSION.

- Racing Information broadcast by courtesy of the Sun.
 3—G.P.O. Clock and Chimes; Weather Report and Forecast by courtesy of Mr. C. J. Mares, Govt. Meteorologist; Social Notes from the Sun.
 3.15—Musical Programme from the Studio.
 4—G.P.O. Clock and Chimes; Musical Programme from the Studio.
 4.15—Musical programme from the studio.
 4.45—Producers' Distributing Society's Market and Fruit Report; Shipping Information when available.
 4.55—News from the Sun.
 4.55—Resume of to-night's programme.
 5—G.P.O. Clock and Chimes; Close down.

EARLY EVENING SESSION.

- 6—G.P.O. Clock and Chimes; Uncle George and the Kiddies.
 6.40—Pavilion Dinner Orchestra under the direction of Mr. Cos. Morrison.
 Special-County Session
 7—G.P.O. Clock and Chimes; Australian Mercantile Loan and Finance Co's. Stock, Wool and Hide Report.
 7.5—Weather Report and Forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist.
 7.9—Stock Exchange Reports.
 7.15—Producers' Distributing Society's Fruit and Vegetable Report.
 7.20—Fruit and Vegetable Reports (Sun).
 7.24—Grain and Fodder Reports (Sun).
 7.27—Egg and Poultry Report (Sun).
 7.35—Country News from the Sun.
 7.5—A Talk on Soldier Poppy Day Appeal, by Colonel A. W. Hyman.
 7.45—Talk on Books, Wise and Otherwise.

NIGHT SESSION.

- 8—Programme from the Studio featuring Mr. Clem Williams, baritone; Miss Hilda Walker, soprano; Miss Nell Crane and Mr. A. J. Lawrence; brass quartette Mr. Stanley Critchton will talk on Building a Valve Set.
 10.15—Al. Hammett and the Ambassadors Dance Band, broadcast from the ballroom of the Ambassadors. During the intervals between dances, News Reports by courtesy of the Sun will be broadcast.
 12—G.P.O. Clock and Chimes; National Anthem.

3 LO

MID-DAY SESSION.

- 12—Time Signal; Reuters and the Australian Press Association Cables; "Arcus" and "Herald" News Services; Shipping Intelligence.
 12.45—Stock Exchange information.
 12.50—Meteorological information. Weather forecast for Victoria, Tasmania, South Australia and New South Wales. Ocean forecast. River reports.
 1—Time signal.
 1.1—Vera Spaul, soubrette.
 1.2—Le Casack's Quartette.
 1.53—Vera Spaul.
 2—Close down.
 2.30—Result of Maiden Plate, Sunbury.

AFTERNOON SESSION.

- 3—Result of Bolinda Welter Plate.
 3.1—Studio Orchestra.
 3.10—Miss Frances Fraser.
 3.25—Studio Orchestra.
 3.30—Result of Sunbury Cup.
 3.32—Eardley Turner, original sketch.
 4—Result of Bolinda Welter Purse.
 4.1—Sister Peck will speak on "Mothercraft."
 4.30—Studio Orchestra.
 4.40—Third Act of "Katie," transmitted from His Majesty's Theatre, by permission of J. C. Williamson Ltd.
 5—"Herald" News Services; Stock Exchange information.
 5.15—Close Down; result of Corinthian Handicap and Juniper's Flat Race will be given at 5 p.m.

EVENING SESSION.

- 5.45—Children's Hour: Answers to letters and Birthday Greetings.
 6—Dr. Floyd will bring along some of the Characters from St. Paul's Cathedral, and they will sing some purely rhymed, songs, duets, and choruses.
 6.45—"Arcus" and "Herald" News Services; Reuters and the Australian Press Association Cables; Shipping Movements; Overseas Shipping; Weather Synopsis.
 7—Stock Exchange Information.
 7.4—Fish Market Reports, by J. R. Barrett Ltd.
 7.6—River Reports.
 7.8—Market Reports by the Victorian Producers' Co-operative Co. Ltd.; Baymarket Show; Sales; Poultry; Grain; Char. Hay, straw, Jute, dairy produce, potatoes and onions; Market prices of oranges and lemons; by the Victorian Central Citrus Association Pty. Ltd.

NIGHT SESSION.

- 7.20—Under the auspices of the Department of Agriculture, Mr. R. Cross, Export Superintendent, "Market Comments."
 7.40—Mr. H. C. Stoscombe, "A Chat on Photography."
 8—A Sketch "Do you Remember?" dealing with Agricultural Day; introductory remarks by Mr. J. Huxlett Ross.
 10.45—"Arcus" news service. British Official wireless news from Rugby. Announcements. Meteorological Information.
 11—Our Great Thought for To-night is: "Let the bulges sound the truce of God to the whole world forever."—Charles Sumner.
 11.1—M.O's. Dance Orchestra.
 11.40—God Save the King.

3 AR

MORNING SESSION.

- 11.30—British Official Wireless Press, received from Rugby Super Wireless Station, England, by 3AR's Operators. Events of the Day; Express Train Information; "Axe" News Bulletin.
 12—Time Signal Chime from G.P.O.; Studio Barometer and Outdoor Thermometer Readings; First Weather Forecast; Sporting News.
 12.45—Musical Selections relayed from Hoy's De-Luxe, Bourke Street, Mr. T. L. Campbell at the Wurlitzer.
 12.30—Stock Exchange News; Market Reports.
 12.40—Musical Selections.
 12.55—Shipping Movements; Mail Notices.
 1—Close Down.

AFTERNOON SESSION.

- Sunbury Racing Club Meeting. Results immediately after each race, and at half-hourly intervals.
 2.35—Hoy's Premier Orchestra, under direction of Cecil W. Fraser.
 3—The Classic Trio.
 3.16—Miss Louise Sterling, mezzo.
 3.25—Miss Amelia Clancy, violinist.
 3.36—Miss Louise Sterling, mezzo.
 3.37—Mr. Bryan Stafford, cellist.
 3.44—The Classic Trio.

- 4—Time Signal Chimes; 2nd Weather Forecast; Hoy's Orchestra.
 4.55—Evening Amusements.
 5—Time Signal Chimes; Studio Barometer Readings; Close Down.

EARLY EVENING SESSION.

- 6.45—Children's Corner, by Uncle Rad.
 EVENING SESSION.
 7.40—Mr. E. Glanville-Hicks will speak on "The Significance of Poppy Day."
 7.50—British Official Wireless Press; Studio Barometer and Outdoor Thermometer Readings.
 8—Time Signal Chime. Instrumental Trio.
 8.7—Miss Minnie Marks, soprano.
 8.14—Mr. Jack Curlett, dramatic monologue.
 8.20—Mr. Eric Aitken, the human piano.
 8.27—Miss Hilda Brewer, soprano.
 8.34—Mr. Will Hoeking, baritone.
 8.41—Miss Adeline Whitbourn, cellist.
 8.48—Miss Ivy Prior, soprano.
 8.55—Duo Act Play.
 9.7—Miss Minnie Marks, soprano.
 9.14—Instrumental Trio.
 9.21—Mr. Will Hoeking, baritone.
 9.28—Mr. Eric Aitken, the human piano player.
 9.35—Miss Hilda Brewer, soprano.
 9.42—Miss Lillian Joseph, elocutionist.
 9.47—Miss Kathleen Darcy, violinist.
 9.55—Miss Ivy Prior, soprano.
 10—Time Signal Chime. Studio Barometer Readings. "Axe" news bulletin.
 10.10—Hoy's Premier Orchestra.
 10.40—Close down.

4 QG

EARLY EVENING SESSION.

- 6.25—Tune In.
 6.30—"The Children's Session: Stories by "Little Miss Brisbane"
 7—From the Council of Agriculture Studio; The Farmers Session. Market reports. Organisation of the Maize Industry on Commonwealth Basis, Mr. J. Harcourt, Chairman, Mixed Farming Industries Advisory Board.
 7.30—From the Studio of 4QG: "The Daily Standard" news. Stock Exchange information.
 7.40—Announcements.

NIGHT SESSION.

- 7.45—Lecture Session: Beautifying Public Buildings, Mr. E. J. Chilton.
 8—Studio Concert.
 9.20—Weather Information officially supplied by the Commonwealth Weather Bureau; Announcements.
 9.30—From the Crystal Palace, Dance Music.
 10—"The Daily Mail" news. Close down.

5 CL

AFTERNOON SESSION.

- 3—G.P.O. Chimes.
 3.1—Relay from "Maple Leaf" Cafe—Orchestral Numbers.
 3.45—From the Studio—Stock-Duo Art numbers.
 4—G.P.O. Chimes.
 4.1—Relay from Arcadia Cafe—Orchestral and vocal numbers.
 5—G.P.O. Chimes.

EVENING SESSION.

- 6.30—G.P.O. Chimes.
 6.31—Balltime Stories.
 6.30—Market Reports.
 7.40—Boy Scouts' Corner.
 8—Programme of Instrumental and Vocal numbers.
 8.30—Science Lecture by Messrs. F. H. Faulding & Co.
 8.40—Studio Concert, continued.
 9—G.P.O. Chimes.
 9.1—Weather Reports.
 9.8—Concert Continued.
 9.15—"Advertiser" News Service.
 10.30—Studio concert continued.
 10.55—Station Announcements.
 11—G.P.O. Chimes; National Anthem.

7ZL

EVENING SESSION.

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

NIGHT SESSION.

- 8.—B.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.
9.10.—Abstracts and Stock Market Reports from Roberts and Co. Ltd., Murray St., Hobart.
9.15.—Physical Culture talk by Mr. George Collis.
9.30.—Concert from the Studio.
9.45.—Tasmanian District Weather Reports.
10.—The "Mercury" Special Interstate News Service; Weather Synopses; Station Announcements. National Anthem.

Thursday, Nov. 11

2FC

EARLY MORNING SESSION.

- 7.—The Chimes of Big Ben and Announcements.
7.3.—Music from the Studio.
7.10.—Weather Information; Commercial News; Shipping Intelligence; Rainfall; Temperatures; Astronomical Memoranda.
7.25.—Investment Market: Mining Share Market; Metal Quotations.
7.35.—Wool Sales; Breadstuffs Market; Interstate Markets; Produce Markets.
7.45.—"Sydney Morning Herald" News Service.
8.—Chimes of "Big Ben." Music from the Studio.
8.45.—Close down.

MORNING SESSION.

- 9.15.—The Chimes of EFC and Programmes Announcements.
9.26.—Music from the Studio.
9.30.—Marching Music for the School Children.
9.45.—Last minute sporting information, by the EFC Racing Commissioner.
10.—The Chimes of "Big Ben" and announcements.
10.7.—Late "Sydney Morning Herald" News Service.
10.11.—Music from the Studio.
10.16.—A Morning Reading.
11.—Australian Press Association and Readers' cables.
11.10.—Music from the Studio.
11.30.—Marching Music for the School Children.
11.35.—Close down.

MIDDAY SESSION.

- 12.—The Chimes of Big Ben, and Announcements.
12.5.—Stock Exchange, First Call.
12.16.—Music from the Studio.
12.30.—Marching Music for the School Children
12.45.—Music from the Studio.
12.48.—From Farmer's Oak Hall: The Oak Hall Trio.
12.56.—Korby Wireless News.
12.58.—Miss Enid D'Arcy, soprano, Waltz Song from "Roméo and Juliet" (Gounod).
1.—The Chimes of Big Ben; Weather Intelligence.
1.3.—"Evening News" Mid-day News Service.
1.20.—From Farmer's Oak Hall—The Oak Hall Trio.
1.23.—Stock Exchange—Second Call.
1.30.—Marching Music for the School children
1.40.—Miss Enid D'Arcy, soprano, "Villanelle" (Eni Argus).
1.45.—Music from the Studio.
1.50.—The Oak Hall Trio.
2.—The Chimes of "Big Ben." "Last we forget"—As this is Armistice Day, the Com-

A GOOD BATTERY IS ESSENTIAL

The battery is recognised as a vital part of the set. On it depends the volume on it brings the pleasure or otherwise of your reception. To choose an Ever-Ready Radio Battery is to ensure good reception, for into each and every one has been built that long life and power which has made them so popular with the radio public.

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The "Standard" Dry Cell Radio Battery
Price 3/6.

The Ever-Ready Radio "Standard" Dry Cell as illustrated is fitted with two screw terminals and since its introduction has met with great success, users recognising its immense superiority over any imported cell. Size 2 1/2 x 4 1/2. Weight, 210g. Also for Bells, Telephones, Signalling and Electro-medical apparatus. Ar.



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"Wanda" Plug Radio Battery.

This illustrates the new Radio High-tension "H" Battery, which can be obtained 21v., 42 or 63 volts—fitted with a Wanda Plug and 2 Screw Terminals.

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Small size, type WP, 31.5 volt 9/6
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If obtainable locally, write for address of nearest source of supply to



New Ever-Ready No. 126, ar A, B, or C Battery.
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One of a group of Radio Batteries. Useful in Wireless, Lighting, and Amplification. Size, 4 1/2 x 4 x 1 1/2. Most useful for Bells, Telephones, Burglar Alarms, Medical Cols, etc. With three Brass Terminals. Voltages 1.5, 2 or 4.5 volts. Useful for all wireless purposes, as well as general utility.

The Ever-Ready Co. (Gt. Britain) Ltd.

105 Pitt Street

11

SYDNEY

ministry Service from Martin Place will be broadcast.

AFTERNOON SESSION.

- 2.30—The Chimes of 2 P.C. and Announcements.
- 2.35—A Recital by the pupils of Mr. Hector Fleming.
- 3.0—Some New H.M.V. Records.
- 3.20—Marching Music for the school children.
- 3.40—The Heida Trio in vocal items: "After I say I'm Sorry" (Donaldson).
- 3.45—From Farmer's Tea Rooms, the Oak Hall Trio.
- 3.55—Music from the Studio.
- 4—The Beeds Trio: "Walking around in Circles" (Phillips and Young).
- 4.5—A Serial Story read by Miss Annie Hughes.
- 4.15—Music from the Studio.
- 4.20—The Beeds Trio: "Don't Wake me let me Dream" (Gilbert and Sauer).
- 4.25—The Oak Hall Trio: From Farmer's Tea Rooms.
- 4.25—Music from the Studio.
- 4.40—The Beeds Trio: "Wipers" (Barowski).
- 4.45—Stock Exchange. Third Call.
- 4.45—Close down.

EARLY EVENING SESSION.

- 5.15—The Chimes of 2 P.C. and announcements.
- 5.30—The "Hello Man" talks to the Children.
- 5.45—Serial Story for Older Children.
- 6.10—Broadcast from the Hotel Australis. Orchestral items under the direction of Miss A. J. Egan.
- 7.15—From the Studio: "Evening News" late news Service and Weather Information.
- 7.30—Endless Market Reports: Wool, Wheat, Stock, Fruit, and Vegetable Markets.
- 7.40—A Talk on Esperanto, the final of the series: "Word Building in Esperanto." Close down.

NIGHT SESSION.

- 8—Chimes of "Big Ben." From the Studio Mr. Ernest Archer, tenor.
- 8.4—Miss Nora Hill, Irish soprano.
- 8.8—"Let Me Forget": A Talk on Armistice Day by Major Stamford Morgan.
- 8.22—Mr. Ernest Archer, tenor.
- 8.30—Broadcast from the Palace's Concert Hall, a programme arranged by the Sydney Medical Society, conducted by Mr. Arnold Mote.
- 9—A Wireless Talk by the Technical Editor of "Wireless Weekly."
- 9.10—Miss Nora Hill, Irish soprano.
- 9.18—Broadcast from the Deakinwood Picture Theatre, Chatswood, Act 2 and 3 of "Katinka" (by permission of Messrs J. C. Williamson Ltd.) produced by the Rossville Musical Society.
- Act 2: Opening Chorus; Song, "Allah's Hobbies"; Nahaua (Trixie Gregory); Song, "Your Photo"; Helen Hopper (Dorothy Bennett); Duet, "The Weekly Wedding"; Helen and Hopper (Victor Kelly); Dance of the Slaves; The Ballet; Duet, "On the end, so Farewell!"; Katinka (Heather Harding) and Ivan (J. Ryan); Finale. Act 3: Opening Chorus; Dance; The Ballet; Song, "My Paradise"; Ivan (John Ryan); Song, "I can tell by the way that you Dance"; Helen (Dorothy Bennett); Duet, "I want all the world to know"; Ivan and Katinka; Duet, "Shidkineath"; Hopper and Knopf (Geo. Clark); Speciality Dance; Alice Gilbert and Renati Garnery; Song, "I want to marry a Man's Quotient"; Helen; Finale.
- 10.12—From the Studio: Miss Nora Hill, Irish soprano.
- 10.20—Announcements. Note—Between the 1st and 2nd acts of "Katinka," Miss Nora Hill, Irish soprano, will be heard from the Studio.
- 11—Broadcast from the Wentworth Hotel, Sydney: Items by the Wentworth Cafe Orchestra, under the direction of Mr. Sydney Simpson.
- 12—The Chimes of Big Ben; Close down.

2 BL

EARLY MORNING SESSION.

- 7.15—Physical Training and Health exercises.
- 7.30—Broadcasters Special News Service.

- 7.45—Physical Training and Health Exercises.
- 8—G.P.O. Clock and Chimes; Close down.

MORNING SESSION.

- 9—G.P.O. Clock and Chimes; Musical programme from the Studio.
- 10.10—Special News Service from the "Daily Telegraph."
- 10.25—Musical programme from the Studio.
- 10.40—Special News Service from the "Daily Telegraph."
- 10.50—Ten Minutes' Talk supplied by the N.R.M.A.
- 11—G.P.O. Clock and Chimes; Market Reports.
- 11.10—Musical programme from the Studio.
- 11.25—Broadcasters' Information Service, including Mail, Boats in call by wireless, Shipping Weather and Rainfall.
- 11.40—Women's Session: Social Notes by Mrs. Jordan.
- 11.55—Mrs. Jordan answering correspondents.
- 12—G.P.O. Clock and Chimes; A Talk by Mrs. Jordan.
- 12.25—A Talk by Miss Helen Jean Berglund.
- 12.30—Sydney Stock Exchange Calls.
- 12.45—Hillier's Instrumental Quartet, direction Vivaldi Castling.
- 1.30—Sydney Stock Exchange Calls.
- 1.45—Latest Sporting Information and news from the Sun.

AFTERNOON SESSION.

- 2—G.P.O. Clock and Chimes; Close Down.
- 2.30—G.P.O. Clock and Chimes; Weather Report and Forecast, by courtesy of Mr. C. J. Mares, Govt. Meteorologist; Social Notes from the Sun.
- 3.15—David Jones' Tea Room Trio; Pianist, Miss Caspers, violinist, Mr. Archeson, cellist, Mr. Cleaver.
- 3.30—Country Women's Session.
- 3.45—Music from the Studio.
- 4—G.P.O. Clock and Chimes; David Jones' Tea Room Trio.
- 4.15—Serial Story.
- 4.30—Musical programme from the studio.
- 4.45—Producers' Distributing Society's Vegetable and Market Fruit Report Shipping Information, when available.
- 4.50—News from the Sun.
- 4.55—Resume of night's programme.
- 5—G.P.O. Clock and Chimes; Close down.

EARLY EVENING SESSION.

- 6—G.P.O. Clock and Chimes; Uncle Jack and the Kiddies.
- 6.40—Fashion Dinner Orchestra, under the direction of Mr. Coe Morrison, Special Country Session.
- 7—G.P.O. Clock and Chimes; Australian Mercantile Land and Finance Co's. Stock, Wool and Hide Report.
- 7.5—Weather Report and Forecast, by courtesy of Mr. C. J. Mares, Govt. Meteorologist.
- 7.9—Stock Exchange Reports.
- 7.15—Producers' Distributing Society's Fruit and Vegetable Report.
- 7.20—Fruit and Vegetable Report (Sun).
- 7.24—Grain and Fodder Reports (Sun).
- 7.27—Egg and Poultry Report (Sun).
- 7.30—Country News from the Sun.
- 7.45—Lecture.

NIGHT SESSION.

- 8—Variety Concert from the Studio.

3 LO

MID-DAY SESSION.

- 10.30—Memorial Service, Armistice Day.
- 12 noon—Time Signal; British Official Wireless News from Rugby; Reuters and the Australian Press Association Cables; "Argus" and "Herald" News Services.
- 12.45—Stock Exchange Information.
- 12.50—Meteorological Information; Weather Forecast for Victoria, Tasmania, South Australia, and New South Wales; Ocean Forecast; River Reports.
- 1—Time Signal.
- 1.1—Studio Orchestra.
- 1.10—Tanna Terrace, cello.
- 1.15—Bruce Green, humorist.
- 1.27—Studio Orchestra.

- 1.37—Walter Smith, cornet.
- 1.44—Bruce Green.
- 1.50—Studio Orchestra.
- 2—Close down.

AFTERNOON SESSION.

- 3—Studio Orchestra.
- 3.10—Mr. C. R. Long: A Talk on Shakespeare's Plays.
- 3.30—Vera Spaul, soprano.
- 3.35—Franklin Stanham, clarinet.
- 3.42—Bruce Green, pantomime dance.
- 3.52—Studio Orchestra.
- 4—Mary Ginnick: "The Value of a Broad Outlook."
- 4.20—Vera Spaul, soprano.
- 4.27—Agnes Portune, piano.
- 4.36—"Herald" News service's Stock Exchange Information.
- 4.45—Evensong from St. Paul's Cathedral.
- 5.30—Close down.

EVENING SESSION.

- 5.45—Children's Hour: Answers to letters and birthday greetings.
- 6—Mollie Lok will tell you about "Frothy Fun" and "The Fairies."
- 6.17—"Mary Ginnick" will recite.
- 6.27—Mollie Lok will talk again.
- 6.24—"Mary Ginnick" story for the boys and girls; "St. George and the Dragon."
- 6.40—"Argus" and "Herald" News Services; Reuters and the Australian Press Association Cables.
- 6.55—Weather Synopsis; Aerial Mail Information by the Australian Aerial Mail Services Ltd.
- 7—Stock Exchange information; Overseas Shipping News.
- 7.45—Fish Market Reports by J. B. Borrett Ltd.
- 7.6—River Reports.
- 7.8—Market Reports by the Victorian Producers' Co-operative Co. Ltd.; Haymarket Sheep Sales; Poultry, grain, chaff, hay, straw, juic, dairy produce, potatoes and onions.

NIGHT SESSION.

- 7.20—Mr. John March, Vice-president Electrical Federation, "The Electrical Home."
- 7.43—"Under the auspices of the Health Association, Mr. Jordan, "Oral Hygiene."
- 8—ELO Dance Orchestra.
- 8.10—Mr. A. W. Jackson, a chat on "Golf."
- 8.30—ELO Dance Orchestra.
- 8.40—Colin Crane, baritone.
- 8.44—ELO Dance Orchestra.
- 8.54—Rupert Hazel.
- 8.58—ELO Dance Orchestra.
- 9.8—Elicy Day, soprano.
- 9.11—ELO Dance Orchestra.
- 9.21—Bruce Green.
- 9.25—ELO Dance Orchestra.
- 9.35—Colin Crane, baritone.
- 9.40—ELO Dance Orchestra.
- 9.50—"Argus" News Service; British Official Wireless News from Rugby; Meteorological information; announcements.
- 10.5—ELO Dance Orchestra.
- 10.15—Rupert Hazel.
- 10.20—ELO Dance Orchestra.
- 10.30—Elicy Day, soprano.
- 10.34—ELO Dance Orchestra.
- 10.44—Bruce Green.
- 10.48—ELO Dance Orchestra.
- 11—Our Great Thought for To-night is—"Buried was the bloody hatchet; buried was the dreadful war-club; buried were all warlike weapons, and the war-cry was forgotten. Then was peace among the nations."—Longfellow.
- 11.1—ELO Dance Orchestra.
- 11.11—Rupert Hazel and Elicy Day.
- 11.16—ELO Dance Orchestra.
- 11.25—Bruce Green.
- 11.30—ELO Dance Orchestra.
- 11.40—God Save the King.

WANTED—All kinds secondhand Wireless Sets, Parts, Speakers, etc. Best prices given. JACK RAKPEN, 16 George Street West. MA 1193.

SEE THE LOVE OF THE TROPICS

Capt. Frank Hurley's
HOUND OF THE DEEP

FLAMING STORY

Produced by
CAPT. FRANK HURLEY
and adapted from his own novel
"Pearl of the South Seas."

NOVEL COMPETITION.

Through the courtesy of Union Theatres Ltd., 20 double tickets for the Lyceum and Haymarket Theatres will be distributed among those successful in giving, in not more than 25 words, the best and most conclusive reasons why "Burgess" are the best dry batteries in the world. "Reasons" can be lodged with any dealer who sells "Burgess," or posted direct to New System Telephones Pty. Ltd., 280 Castlereagh Street, Sydney, up to 10 a.m., Monday, 8th November. The Editor of "Wireless Weekly" has kindly consented to assist in judging the entries.

Why are Burgess the Best?

These first 3 entries have been received, and may be taken as examples

New System Telephones Pty. Ltd.,
280 Castlereagh Street.

"We include only the world's best accessories with 'Radiair' Sets. Power—Harmony—Endurance. That's why we chose Burgess Radio Batteries as standard equipment."

Australian Wireless Coy. Ltd.,
140 Castlereagh Street.

New System Telephones Pty. Ltd.,
280 Castlereagh Street.

"Use proves superiority. My Burgess have lasted 10 months and still going strong."

"Listener-In,"
Victoria Road,
Bellevue Hill.

New System Telephones Pty. Ltd.,
280 Castlereagh Street.

"By performance under severest conditions, while producing the 'Hound of the Deep,' Burgess Radio Batteries proved their claim as the Dry Batteries Supreme."

Frank Hurley.





ONCE AGAIN CAPTAIN FRANK HURLEY HAS COME FORWARD WITH ANOTHER AMAZING PRODUCTION.

This time he carries his audience in an adventurous fervour to the bottom of the Pacific Ocean, in a drama of the pearling deep, so powerful and as mighty as the waves under which it was filmed.

HE USED BURGESS RADIO BATTERIES.

Capt. Frank
HURLEY'S

"HOUND of the
DEEP"

HAYMARKET THEATRE

and the

LYCEUM THEATRE

(The Show that sets the Standard).
With Operatic Orchestra of 20. Commencing

SATURDAY, NOV. 6.



See Special opportunity on page 33 offered by Burgess Battery Coy. to see this amazing picture.



"Pearling Luggers, Torres Strait"



Captain Frank Hurley, who has just returned from Torres Straits and Thursday Island, where he filmed "The Hound of the Deep." His travel talks have created a sensation at 2FC.

"I Used Burgess"

"During the filming of the picture, "The Hound of the Deep," which is being released by Union Theatres Ltd. this week, it was essential we keep in touch with civilisation. Knowing the absolute dependability of Burgess Batteries, I chose them as the heart of my radio equipment."



Burgess Radio Batteries

"The Dry Battery Supreme"



Those who must receive absolute, unswerving service over longer periods always use Burgess "A," "B," and "C" Radio Batteries.

*"Burgess" accompanies
Capt. Frank Hurley and
party into the wilds*

Burgess Radio Batteries are found where there's need for the most efficient batteries made—in emergencies where failure brings disaster—with explorers in far-off lands—with those who wander across the world or spend their lives in the lonely outposts on the frontiers of civilisation.

To them the correct selection of dependable Radio equipment is vital. For to be deprived of the use of their Radio Set is a dire catastrophe, and results in complete isolation from the outside world.

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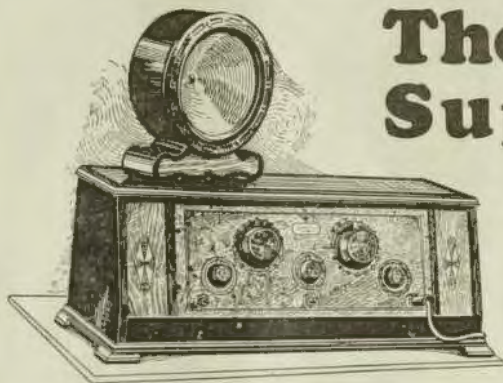
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*America's Latest 6-Valve Receiver—and undoubtedly
the finest proposition in the Radio world to-day*



The "Eclipse Super - Six"

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

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

or complete with first
quality accessories . £37/10/-

THE COMPLETE SET INCLUDES — Latest Magnavox Cone Speaker

Clyde Guaranteed Accumulator

3 Large Capacity Winchester B Batteries

6 201A Valves (Radiotron)

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 Audition Room or in your own home, and be convinced of the superlative qualities of this remarkably low-priced Receiver.

Value in Valves

O.K. 201A Valves 6/9 each

(Postage Extra).

Every one tested in our Jewel Valve Tester.

A SUPREME OFFER IN LOUD SPEAKERS

The "MANHATTAN Junior Adjustable"

Height 22 in., 19 in. Bell

Usually priced at 75/-; a Special Big Purchase enables us to offer this efficient speaker at the astounding price of 32/6. (Post free anywhere in Australia).

Mick Simmons Ltd

"The World's Greatest Sports Store"

Headquarters: 720G HAYMARKET, SYDNEY

And at BRISBANE

Successful Broadcasting Needs Co-operation

(Continued from Page 10.)

same rate of payment whether there are ten thousand or ninety thousand listeners paying their licence fees. The cost of broadcasting is an increasing factor—artists fees increase, clerical and management expenses increase, and as the service must be continually improved, the cost of providing service goes up with the number of listeners. Not so with the patent or copyright owning organizations. Their expenses never very high are fairly constant.

After the broadcasting company the wireless traders can exercise the greatest influence on the expansion of the business, both to their own advantage and to the advantage of the broadcaster. The necessity for co-operation exists between the broadcasting company and the traders more than between any other interests. The traders are in closer touch with the public—they can induce people to become listeners as much as the broadcasters can. And they can help the listener to continue to listen—and pay his subscription—as much as the broadcaster can. There are many ways in which this co-operation can be exercised—they have opportunities not possessed by the other interests—for the common good. Some firms are now doing their part splendidly others apparently are not. The subject of traders' co-operation is a big one and cannot be dealt with adequately in the scope of the present notes. Let us consider it later in detail.

A REGULAR battle is waged in some of the wheat producing states of America between the farmers and the elevator companies. The farmer, with his radio set, learns of the rise or fall of the market, and hurriedly sells or withholds his wheat from the elevator people according to his own interests.

SAID one policeman to another policeman: "I was in to see the chief just now; I pinched his nephew for speeding and the old man was so mad he nearly blew out a valve.

The other cop nodded. "Yeah—I know. He carries too much "B" on his plate all the time," he said. "He goes into oscillation too blank easy."



FARMER'S Standard 2-Valve Receiver

in Cabinet of Tasmanian Blackwood

Complete with Aerial Equipment and All Accessories

Farmer's Standard Two-Valve Receiver has definitely established its superiority, for reception of Broadcast Programmes, over all Two-valve sets now being manufactured in Australia. Reception is clear and distinct, and its selectivity is remarkable—there is absolutely no interference from other stations.

The cabinet in which it is fitted is of Tasmanian Blackwood, and is a very fine piece of workmanship.

Included among the accessories supplied is a complete set of Aerial Equipment, comprising 100 feet of Aerial Wire, 4 Insulators, Lead-in Wire, and Lightning Arrester

Other Accessories include the following:—

- 2 UX109 "Radiotron" Valves.
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- 1 60 Volt "Eveready" B Battery.
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AT 500 PERIODS - - 410,000 OHMS.

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- (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.



C.T.P. .85



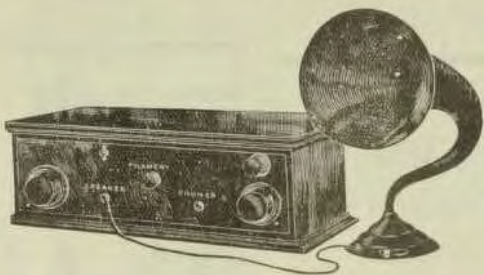
MR. S. E. TATHAM.

One of the earliest radio experimenters in Australia, Mr. S. E. Tatham secured one of the first hundred first class Commercial Operator Certificates issued in Australia, and served for many years in the mercantile marine, subsequently transferring to a shore position with Amalgamated Wireless (A'sia) Ltd. Several years ago he relinquished that position and entered into business on his own behalf in Sydney, and later in conjunction with Mr. E. G. Ten Eyck, who is also known to the Australian radio trade.

Mr. Tatham established the firm of Tatham and Ten Eyck, of which he is the Australasian representative.

The firm are factory representatives throughout Australia and New Zealand for a number of world famous radio factories, including the Allen Bradley Co., of Milwaukee, The Atwater Kent Mfg. Co. of Philadelphia; Baldwin Radio Products, Salt Lake City; Electrodyne Condenser Co., New York; Farrand Cone Speaker Mfg. Co., Long Is., City N.Y.; Funnell Condenser Mfg. Corp., Newark, N.J.; and the Mydar-Accuratune Dial-Radio Co., of Newark, N.J., U.S.A. They do an extensive business throughout Australia and New Zealand.

Mr. Tatham is sailing this month by the R.M.S. "Aorangi," on a business trip to Canada and the United States of America. His address while away will be:—C/o Messrs. Ten Eyck & Tatham Inc., No. 6 Church Street, New York City.



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SYDNEY, N.S.W.

frog's leg and the acid solution surrounding them. Thus Galvani turned the first sod of the next mile on the electrical highway, which subsequently proved to be the pathway of electricity in motion or the electrical current. Most people are familiar with the old terms Galvanic electricity and Galvanic battery, which have almost dropped out of use except in the treatment rooms of electro medical practitioners, where the terms Galvanic current and Faradic current are frequently though not correctly employed.

Once more we should note that Galvani did not invent the electrical current, but he was the first man to discover its existence and the Galvanic battery was truly an invention and the first electrical battery. The first mile of electrical current was completed by Galvani and his contemporaries, and particularly by a Frenchman named Volta, who built a very powerful Galvanic battery, commonly referred to as "Voltaic Pile," and who thus demonstrated that, other things being equal, the power of a galvanic battery was directly proportional to the number of galvanic cells or batteries connected in a series. This led to the establishing of a unit for measuring the potential power or energy of a galvanic battery, and that unit was named in honour of Volta. We are all more or less familiar with electrical voltage or volts, we frequently speak of the electrical energy supplied for lighting our homes as being of 240 volts.

Moving along our now well made highway, we pass from the milestones of electrical current to the first great step in discovering that wonderful interaction and interdependence of electricity and magnetism. All our electric traction, electric light and electric communication are dependent upon electrically produced magnetism and magnetically induced electricity, while waves which carry our wireless messages and entertainments are made up of a rapidly and continuously alternating condition of electricity and magnetism. Without the discovery of electricity we should have none of these modern wonders and we should have

WHO INVENTED WIRELESS?

Continued from page 6

In this, the first article, Mr. Fisk has traced the origin and development of electrical science from Gilbert to Faraday. The main artery terminates here and the important branches of applied electricity appear. Selecting the branch that leads to radio, he deals with the first wireless transmission in our next issue.

been equally devoid of them but for this next stage, which might be termed the mile of electro-magnetism.

This next stage of discovery was inaugurated by a famous Englishman, Michael Faraday. The property of magnetism like that of rubbed amber had been known to the ancient Chinese, who understood that pieces of iron taken from certain localities always pointed in a north and south direction when suspended, so that they could move freely, and it was employed by them as an aid to navigation, thus being the forerunner of the modern mariners' compass. For a long time this material was known as the Lodestone, but the property was subsequently called magnetism because it was found to exist in pieces of iron found at Magnesia in Asia Minor. Before the discovery of electromagnetism it was known that a non-magnetic piece of iron could be magnetised by contact with a magnet, but in this there was no indication of any connection between electricity and magnetism. The magnetic needle had been produced by stroking a steel needle with a piece of magnetic iron and this was used in connection with the magnetic compass.

Faraday tried an experiment of placing a non-magnetised steel needle in the middle of a coil of wire. An electric current was passed through the wire from a Voltaic battery, and, although there was no physical contact between the wire and the needle, he found that the needle became magnetised. In repeating the experiment he found that, when the direc-

tion of current through the coil was unchanged, the same end of the needle always became the north seeking end or north pole, but if the current was sent round the coil in the opposite direction the polarity of the needle was reversed. By polarity of the needle, we mean that a magnetised needle when hung by a thread from its centre will always turn north and south, and the end which points north is called the North Pole, while the opposite end, pointing south, is called the South Pole.

From this remarkable discovery, the scientific world learned that an electrical current flowing through a coiled wire, and, therefore, in whirls, could induce magnetism in a steel needle through the medium of the space separating the wire from the needle. The fact of no physical contact between the current carrying wire and the needle that was being magnetised caused astonishment, because it revealed for the first time the power of electricity to cause action at a distance and showed that such action resulted in the production of a magnetising force and thus disclosed that intimate relationship between electricity and magnetism from which all our modern electrical conveniences have arisen.

Some time elapsed before Faraday's discovery was crowned by another remarkable and equally important revelation made by a Danish scientist named Oersted. Faraday had not thought of reversing his important experiment or he would have anticipated Oersted, who showed that magnetism could generate electricity in a wire at a distance and not in physical contact. Instead of magnetising a knitting needle by placing it within the field of influence of a coil of wire carrying a current, he plunged a previously magnetised needle into the middle of a coil of wire. There was no physical contact between the needle and the coil and no battery was used, yet he found that a current flowed into the wire whenever the magnet was moved into or out of the coil and the direction of the current depended upon whether the north end or the south end of the needle was entering or leaving the coil. It was, of course, known that

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No. 2020 ... 6/6



Far better than the old fashioned, cumbersome, porcelain base, is the neat, compact, and highly efficient Muter single pole double throw switch. It is absolutely rigid. It insures positive contact. And its bakelite base provides perfect insulation.

With the Muter Shock-proof phone plug in circuit you have perfect contact, yet instant release. The automatic instant change features permits easy insertion of the phone tips into the shell where they are securely held under a brass lip, giving full contact the entire length of the phone tip. A slight outward pull on the cord causes instant release.



No. 2010 ... 4/6

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magnetism could influence iron at a distance, but it was quite new and unexpected to find that a moving magnet could create an electric current.

Thus we owe all our subsequent developments of applied electricity to the fundamental experiments and discoveries of four men: Gilbert, and Faraday, in England, Galvani, in Italy, and Oersted, in Denmark. Without those discoveries, there would be no electrical science to-day, and the world would be a very different place if we had no electric railways, electric light, telephones, telegraphs, cables, or wireless. Even the modern motor car and the aeroplane would be helpless if deprived of the electromagnetic apparatus that ignites the petrol mixture and thus drives the machine.

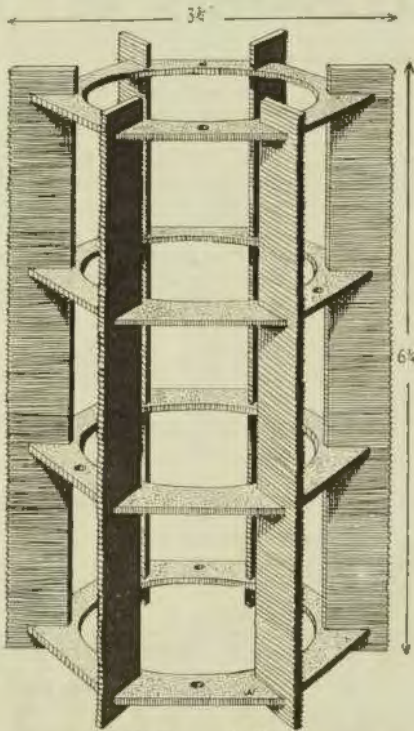
With equal truth and emphasis it may also be stated that those discoveries alone were insufficient; they were merely laboratory experiments having no practical application at the time and incapable of producing any useful result, but they paved the way for the work of an army of subsequent inventors, designers and constructors working in their various spheres.

Our electrical highway now branches off in several directions, and we will follow the branch that leads to the wireless developments with which we are growing familiar and which is now being surveyed and worked upon for extension beyond its present-day limits.

To trace the origin and development of any of the modern applications of electrical engineering and science, the road just described must be passed over, and, therefore, the work of those men whose names appear along the road is fundamental. First, we saw the discovery of stationary or static electricity by Gilbert (not to be confused with the colloquial term "static" familiar to wireless listeners), next the discovery of electricity in motion or the "electrical current," and the invention of the electrical battery by Galvani and Volta, and, finally, the relationship between electricity and magnetism by Faraday and Oersted.

To be continued next week.

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JUST as we paved the way for the easy purchase of complete Radio Receivers, so we have now made it easy for home set builders to construct any type of Receiver without having to meet the first cost of the parts.

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Speakers.
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Wavelength 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.

H. J. W. (Dunwich, Q. 1)—

Q: I have made up the Extraordinary one valve receiver of the 22nd October, 1926, and consider it very good. I would like a circuit showing a stage of audio to this receiver, as I desire to build a portable set.

A: 1: We are glad of your good results, but regret to advise you that an audio valve on this receiver requires two sets of "B" batteries, which makes it impracticable for portability purposes. Use the Rehnartz two-valver in "Wireless Weekly" of October 15, this year.

A. M. D. (Mayfield)—

Q: 1: I intend building the Harkness Reflex but wish to use slotted bobbin formers for the coils. These formers are only 1 1/2 in. in diameter. Please will you—

Q: 1: How many turns of wire will be required to equal the specification of the 3 inch diameter former?

A: 1: We would rather you use the 8 inch former, as the 1 1/2 inch slotted type is not at all nearly so good from the point of view of good results.

E. P. (Hilliards) asks would the one valve receiver shown in "Wireless Weekly" of 22nd October, 1926, be improved by having a low-loss straight line frequency condenser, and would it have a wider range?

A: 1: A.S.I. condenser has the advantage over the average condenser inasmuch as it allows a greater spacing between the dial setting of different stations, whereas the standard condenser invariably has all different stations grouped in the one small portion of the dial. This is the only advantage gained with the R.F. condenser.

Q: 2: I have a two-valve set and I can only get Interstate reception provided I have my hand open full out facing the set about 3 to 6 inches from the dials. Can you suggest the cause and remedy?

A: 2: You are evidently experiencing body capacity, and to overcome this make certain that the fixed plates of your variable condensers are in the grid circuit of the valve. Never connect your moving plates to the grid, always connect these to earth potential side of your receiver. If this alteration does not assist you, then place a metal shield flat on the back of your set, in each section on which the variable condensers are mounted. Do not allow your condenser spindle or fixing screws to touch this aluminium or brass shield; cut narrow slits to allow these parts to fit through. Connect this shielding to your earth terminal of your receiver.

H. (Incorporately, Q. 1)—

Q: 1: I want to build a two-valve set, using two stages of radio frequency. Would the enclosed circuit be suitable? If so, please give me the winding of the H.F. transformer.

A: 1: The circuit you enclose is similar in all respects to the Neurodyne, but the stabilizing arrangement is not nearly so effective as the method employed in the Neurodyne. Consequently, we strongly advise you to try the Neurodyne which is, perhaps, the finest of all five-valve receivers for general use.

E. K. (Birkham) writes, telling us that he is getting excellent reception on the W.W. two-valve Reflex receiver. Still he gets a certain hard in listening to the wireless. Q: How can I get rid of this howl?

A: 1: As you mentioned that your reception is quite clear on the ear phones, it

seems to us that your speaker is the point too close to your B batteries. Keep your speaker away from your batteries, and earth the cords of your audio transformer.

Q: 2: Is the Harkness Reflex recently described in "Wireless Weekly" better than the "W.W." Reflex?

A: 2: It is not possible for us to draw comparisons between these two receivers, as each type is only a matter of opinion on which different people vary. Suffice it to say that the Harkness Reflex is a most satisfactory receiver, and yield splendid results on tests.

Q: 3: Which transformer out of these would you recommend? Ferron, Pival, or Crescent?

A: 3: Either transformer is suitable. Many thanks for your suggestion, but you must admit we have been doing this.

Restifer (Lewisham)—

I desire to charge my six-valve accumulator at 3 amperes charging rate. Please state particulars of a chemical rectifier suitable for this purpose?

A: 1: A chemical rectifier is not suitable for passing such a high surge-rate to charge your accumulator. Firstly, you must know watts would be required to pass three amps, and this would entail such a vast number of rectifier jars that you can save for yourself, but because it would be a 750 watt lamp on the power circuit would cost a little over 1d. per hour to maintain, so that were you to charge your battery for 24 hours, the actual current would be approximately 2/8. You would be well advised to purchase a proper rectifier.

C. N. L. (Drimmoyne) is experiencing some trouble with the ordinary "B" battery built on the Leclanche system. He enquires: Q: 1: Would bichromate of nickel be better than sal-ammoniac? If so, how long would it last? 1 1/2 inch thick cells, 12 in. solution?

A: 1: We are afraid that the bichromate would not last you any fourth of time, perhaps at the most, ten to fourteen days. You have not mentioned whether you have actually tested your B battery on the set. Interview provision manager, McIlraith's Drimmoyne, mentioning this paper.

Constant Reader (Wollomoo) wants to know (Q: 1) the advantages of the two-valve "W.W." Reflex.

A: 1: See reply to "E.K." (Birkham). Q: 2: Will two good variable condensers in the Harkness Reflex instead of two 6000s condensers?

A: 2: Yes, quite.

J. F. W. (Ashfield) I am desirous of a two-valve "Imitator's" spider coil crystal set described in "Wireless Weekly" two or three years ago. How many turns of wire must I put on such coil for Broadcaster and Farmer's, respectively, and will it be necessary to put a condenser on this set, and if so, will it cut out interference?

A: 1: We regret to advise that the good old spider coil set, in view of the change in wavelength, is now not suitable for present-day use. In next week's "Wireless Weekly" we describe an extremely selective crystal receiver, which you are advised to try.

C. M. (Spiny) writes—

I have to inform you that I have tried out the Rehnartz Resolver described in "W.W." of the 15/10/26, and found it very satisfactory. Will you please advise me how to add a stage of radio frequency to this receiver.

A: 1: You are catered for in this week's "Wireless Weekly." We would like your comment on the new resolver.

B. N. G.B. (Alexandria) states in his letter—

That he is not getting the volume from the "W.W." two-valve reflex that he anticipated. He would like to know if a power valve on the last stage is giving the desired volume?

A: 1: This is almost impossible to answer, as there is not a something inherently wrong with the receiver. If this is not the case, take your valves back to your radio dealer and ask him to test for oxidation. Ordinarily your valves should be quite all right, the writer having used them with great success.

K. G. (Coogee)—

Q: 1: Please tell me if the three-valve regenerative valve receiver are dying out?

A: 1: No, not by any means. Of course they are being improved to meet the altered conditions of wavelength. See last week's "Wireless Weekly."

Q: 2: Where can I obtain a stick of Chatterton's compound for filling holes in Dilectro puzzle?

A: 2: Australian General Electric Co. Ltd., Wentworth Avenue, Sydney. Why not purchase a block of abbeemaker's hot ball. This is equally satisfactory for the purpose.

F. L. (North Sydney)—

In his letter mentions that he is very pleased with the crystal receiver displayed in "Wireless Weekly" of 8/10/26. He wants a diagram showing how to add a stage of audio to his receiver.

A: 1: This will shortly appear in "Wireless Weekly," but if you would rather not wait, consult one of our advertisers, who will be happy to assist you.

J. D. (Portland) wishes to know some information on testing his components. He asks—

Q: 1: When testing fixed condensers the usual headphones and battery should a click be heard when the circuit is completed?

A: 1: Yes, if your condenser is charged. To test fixed condensers charge up each side by connecting the positive lead of a battery to one side of the condenser, and the negative lead to the other side of the condenser. A slight tip is all that is required. Having charged it, discharge it through your phones, by placing one tip on one side of the condenser, and touching the remaining tip on the other side. A click should then be heard on the earphone. When doing this charging or discharging, do not handle the tips of your phone cord with your fingers, rather hold the insulated flexible portion of your cord.

Q: 2: Regarding variable condensers, should there be any position of the moving of fixed plates when a click should not be heard in the phones when testing?

A: 2: Provided that no coils are connected across the condenser a click should not be heard at any position when testing the phones and batteries. If a click is heard it proves that the moving plates are coming in contact with your fixed plates, a situation to be avoided at all costs. Use a table knife to separate the touching plates.

Q: 3: What voltage should B battery be allowed to drop to before recharging?

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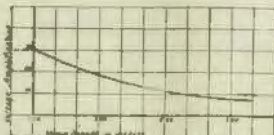
Type T1, Antenna Coupler
Type T2, R.F. Transformer

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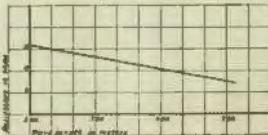
In the past the desire of the radio public to listen to distant stations has been responsible for the manufacture and use of many types of radio frequency transformers, which embody such features as lower losses by the elimination of dielectric material, or greater efficiency through the use of lacquer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

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

1. Elimination of unwanted signals because coils are not subject to outside inductances. 2. Feed-back between stages eliminated because this type of coil possesses no external magnetic field. 3. More compact and efficient set construction made possible because of the above features.



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A. 3: Generally the 2nd of the normally rated voltage. This again depends on the make of battery as better plus seamless zinc batteries can be allowed to drop still lower. Still, your reception is your best guide in this matter.

Q. 4: My Brownie-Drake receiver will not go below 200 from 316 meters when my condensers are all out. I would like to get lower. Can you help me?

A. 4: Use smaller capacity condensers, such as .0005 mfd.

J. R. (Ashfield) is worried.

He writes as follows: "The aerial lead-in wire disconnected from the eight-valve sets and not connected to earth. A buzzing sound is heard, and on touching the lead-in I get an electric shock. As soon as the buzz ceased nothing could be felt on touching the lead-in. The buzzing started again after an interval of one hour, and a current could again be felt through the insulation. Can you explain this?"

A. 1: We would like to be on the situation when this happened. Are you sure the aerial is not coming in contact with high tension electric mains? We have known this to happen before, and to be tended with similar results. Again, during the interval, did you connect your aerial to your set again? Write us again, giving further particulars.

W. C. (Redfern) asks:—

Will you kindly let me know if I can turn the two-valve Harkness reflex into a three-valve?

A. 1: We cannot see your object, as the Harkness reflex will produce sufficient volume to make a deaf man hear. You will be well advised to leave it as it is.

W. D. McK (Lawson):—

Q. 1: I would like to know how to replace spider web coils on my set with a fixed coil wound on Dilecto tube?

A. 1: See last week's "Wireless Weekly," the article entitled "The old Reliable." As you only want the one valve flash off the first transformer primary, that is, the outside contacts of the double circuit jack, thus leaving the audio out of the circuit.

Q. 2: What do you consider the best valves for the Harkness reflex?

A. 2: This is really a matter of opinion, but we will mention this, that Radiotron 201A, Cosor 1, Mollard D08, True Blues and Radio Technique all gave most satisfactory results. We would advise you to make your choice from these valves enumerated above.

A. R. L. (Woolahra):—

I wish to build a Neutrodyne on the panel sized 5 1/2 inch x 15 inch, the baseboard being 28 x 15 inch. It is absolutely necessary to stick to the diagram appearing in "Wireless Weekly," of 22/10/26?

A. 1: Not absolutely necessary, but your panel, although it is not too long, is certainly too high. Why not cut your panel in two, lengthways, and alter your cabinet by inserting fillets of wood, or something similar, to fill up the vacant space. It is well to keep as near to the layout shown in this case as is possible, spreading out the components to give a little more room. Of course, if you desire to retain your panel the only disadvantage will be in appearance, not in efficiency, of the receiver.

Q. 2: Is it necessary that each valve should have a separate thermostat?

A. 2: Not strictly necessary. In fact, more advantage has been noticed in every way with the Neutrodyne.

Mohr (Strathfield) dealing with Harkness reflex asks Q. 1: I have two .0005 variable condensers. Would they be suitable for this receiver?

A. 1: Yes, but it may be necessary to remove ten turns from the secondaries of each transformer.

P. G. C. (Enfield):—

Q. 1: Please send me a three-valve circuit P1 type?

A. 1: We would strongly advise you to build the receiver printed in last week's "Wireless Weekly," and entitled "The Old Bullish."

K. G. C. (Lindfield):—

Enclosed is a copy of the standard three-coil three-valve receiver, and asks is it quite all right.

A. 1: Yes, but if you desire intermediate reception, the Brownings-Drake is to be recommended.

Q. 2: Would there be any advantage in using a copper ball to my aerial?

A. 2: That is really a matter for individual experiment. Try it for yourself. Copper balls cost only a few shillings at the local plumber's.

J. S. (Greenville) finds that a single valve receiver in "Wireless Weekly," October 22nd, is not selective. 2FC always being heard.

A. 1: This we cannot understand, as an actual test at Marrickville particulars receiver photographer, actually received all local stations, as well as 2L3 and 4QZ, there being absolutely no background of any other station when any given station is being received. Also we have piles of good reports from many readers who have built this receiver, which makes us wonder if you have not made a mistake somewhere. Did you follow out the instructions in detail?

Carborundum (Bond) is somewhat dissatisfied with the "Wireless Weekly" two-valve reflex receiver. He mentions that he has burnt out four crystals at 11/- each, and as soon as he replaced with another crystal, the result is all right for a few days, then fades away. He suggests that possibly the B battery must be getting at the crystal.

A. Certainly, the B battery is getting at the crystal, as will be seen by examining the circuit, the crystal being in the plate circuit. This should not be detrimental to the carborundum detector, which is guaranteed against defects by the agents, Messrs. Elias Timmer Pty. Ltd. of 48 Kent Street, Sydney. We have been assured by the agents that their carborundum detectors are guaranteed fully, and will be replaced if defective. We would be glad to learn just how much B battery you were using on this receiver. The many good reports which you have on hand concerning this receiver gives us cause to think that you have most likely a faulty fixed condenser. Test all your fixed condensers. See reply to "J. D." (Portland).

W. J. K. (Sydney) would like a circuit and a list of necessary components for a two-valve short wave receiver for American amateur stations.

A. 1: This will appear in "Wireless Weekly" within the next few weeks.

G. M. (Burdleigh Road, Q.) I am somewhat doubtful of making up the 1G3 sock. Will you please show me more explicitly?

A. 1: See "Beginners' Problems" page, "Wireless Weekly," 1/16/26.

J. H. (Mandj, Q.) writes, stating I have a wave trap which cuts out all 4QZ, enabling me to hear 3BL and 2LO successfully, but will not eliminate the local station, in order that I should hear 2FC. Can you explain why this should be so?

A. 1: Write us again, showing us the circuit of your wave trap, then we will be in a position to advise you correctly.

H. F. (Kombia Heights): Please tell me where I can obtain the R.I. Hewlett-Ancle Unit and the R.I. Retroactive Tuner, also the best four to six valves?

A. 1: We do not know who are the agents for the material you desire.

D. B. (West Koorah):—
Try disconnecting your earth altogether, using your short aerial only.

C. 1: (Duff)

It is presumed that you have four coils in your receiver, a primary, a secondary, a tickler, and an anode coil. In this case to receive 2FC use primary 50 turns, secondary 75 turns, tickler 50 turns, and anode coil 75 turns.

(Continued on Page 53.)

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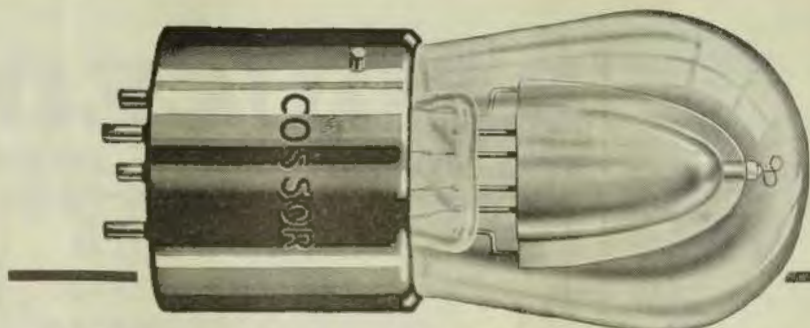
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At last the shockproof Valve

THERE is little need to ask "Which is the most vulnerable part of any valve?" Even a man who had never owned a Wireless Set would be able to guess the answer! Ever since Edison ransacked the world for filament material for his first electric lamp, the glowing thread within its crystal globe has been an object of special regard.

The wireless valve is first cousin to the electric lamp—but year by year the relationship is getting more remote. Whereas in the latter, efficiency is measured by the amount of light it gives, the whole resources of Science have been enlisted to obtain in the valve the maximum of efficiency with the minimum of light.

And now that a new Cossor Valve has been evolved with a special filament which operates at a glow almost indiscernible we appear to be within a reasonable distance of a valve which will never wear out.

But filament glow has been only one of the problems which Cossor has faced—and conquered. Another—almost equally as important—has been the perfection of a system of filament suspension which would successfully withstand the thousand and one shocks which every valve must encounter in use.

The Cossor Point One, now being placed on the market, is the

first valve in which the new system of Co-axial Mounting has been utilised. For the first time there is available a method which enables the

three elements—the filament, the Grid and the Anode—to be securely united together at the top as well as at the bottom.

How this is effected can be readily understood from the illustration above. At the top of the Anode will be seen a selenite insulator which—projecting downward—is firmly secured to the top of the Grid.

Through the centre of this selenite tube is threaded a fine wire which acts as the third support to the filament.

Thus it has been found possible to evolve a system of construction which will resist without harm the hardest of shocks. Even if the elements in this Cossor Point One should be displaced through an accidental blow they must always be in the same relative positions.

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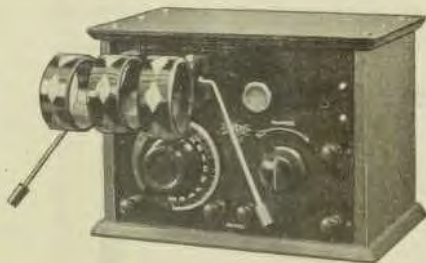
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Accessories required to fully equip this set are as follows—			
3 Valves, Radiotron, Philips, Geos or De Forest	2	8	6
4 Mounted Coils	0	16	6
1.5 Columbia Dry Cells	0	8	3
1 Pair Headphones	0	17	6
1 20-volt High Tension Battery	0	14	0
100 ft. Aerial Wire	0	2	6
15 ft. Lead-in Wire and 4 Insulators	0	1	7



ONE VALVE SET.

	£	s.	d.
With Polished Maple Cabinet and all panel equipment, wiring diagram, wire, solder, box, etc., but without coils	2	10	0
Accessories required to fully equip this set are as follows—			
1 Valve, Radiotron, Philips, Geos or De Forest	0	13	6
2 Mounted Coils	0	16	6
1.5 Columbia Dry Cells	0	8	3
1 Pair Headphones	0	17	6
1 20-volt High Tension Battery	0	9	0
100 ft. Aerial Wire	0	2	6
15 ft. Lead-in Wire and 4 Insulators	0	1	7

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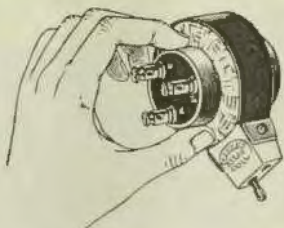
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Aperiodic Coupler



Cuts out local stations, when you can tune in others.
Separates stations which are close together in wavelengths.

No alteration to wiring of your set.

Suitable for all wavelengths.

Not necessary to get any special coils.

A USER'S RECOMMENDATION.

"Alloa,"
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Dear Sirs,—

I promised to let you know the result of my trial with the Aperiodic Coupler. Well, I must say that it has fulfilled every promise on the side of the Box a lot better than I really expected. I can tune out any station I wish, or tune any one in, with the Coupler my 4-valve set is very selective. You can confidently recommend it to anyone.

Yours truly,

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516 KENT STREET, SYDNEY, N.S.W.

Columbia Radio Batteries

Made by the manufacturers of the Famous Columbia Dry Cell

Wavelength Queries

(Continued from Page 47.)

A. L. (Wey Wey):—

Q. 1: Will you please inform me if the Harkness reflex receiver will pick up Interstate stations, also what are the ratios of the two A.F. transformers?

A. 1: Interstate reception depends very greatly on the person handling the receiver. As has been explained in these columns before, the receiver actually constructed brought in both Brisbane and Melbourne when tested out at Murrumbidgee. The transformer ratios may be 5 to 1 for the first stage, and 3½ to 1 for the second stage.

J. W. C. (Randwick):—

Q. 1: Please tell me what steps I should take to fix my accumulator which has sulphated?

A. 1: Take it to your battery service station, and have it cleaned thoroughly by experienced men. This is the best advice we can offer you.

Q. 2: Please tell me what type of valve used on the one-valve "Wireless Weekly," Vol. 8, No. 26.

A. 2: Osmer 1.

Q. 3: I want to build a five-valve Neutrodyne. Would you recommend that one which appeared in "Wireless Weekly," of 22nd October, 1926?

A. 3: Certainly, why not?

Q. 4: (Stratfield) information regarding the Harkness Reflex. He is anxious to know if this receiver will bring in Interstate stations?

A. 4: This depends on so many different contributing factors that it is really impossible to advise you. However, on actual tests the Harkness brought in both Melbourne and Brisbane at 100 feet speaker altitude, Brisbane being absolutely free from any background of 2BL, Melbourne having a slight background which was discernible only between times.

Q. 5: Will this receiver tune between 200 and 400 metres?

A. 5: Yes, between 200 and 500 metres.

W. A. B. (Newcastle):—

Q. 1: I have a four-valve tuned anode receiver and would like to know if I can use a frame aerial with it?

A. 1: See "Wireless Weekly," 23rd April, 1926.

W. D. McK. (Lawson):—

You say your aerial is 150 feet long overall and that you are getting good results as it is from your one-valve set; if this is the case leave it alone. Your second query is answered by mentioning that it makes no difference what way your battery is connected. We should advise you to stick to your spider web.

A. W. G. (Dulwich Hill):—

We would advise you to get in touch with the maker of your set.

J. L. M. (Padington):—

Many thanks for your excellent report on the extraordinary one-valve receiver in "Wireless Weekly," 27/10/26. We regret we are not in a position to advise you just what station you heard at a quarter to one on Sunday morning.

M. C. M. (Merby):—

It is not advisable to add an audio stage to the extraordinary one-valve receiver without providing a separate B battery altogether for the audio stage alone. Your proposal of an alteration of the coils is quite O.K. Dispose with the metal shell sockets which you have in this receiver.

E. A. D. (Camperdown):—

Many thanks for your circuit. At a later stage we will try it out.

T. M. (Greenfield):—

Interview Harringtons Ltd., George Street, Sydney.

G. W. (Palmwoods Q.):—

See "Wireless Weekly," of July 3rd, 1925.

O. P. (Lakemba):—

Test your fixed condenser right throughout the circuit.

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OXFORD & CROWN STREETS

For Quality and Service

RADIO DEPARTMENT

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SAME PRICES FOR CASH OR TERMS

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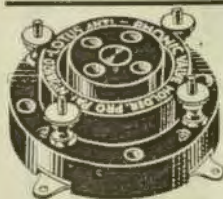
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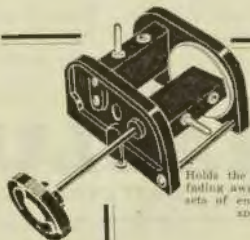
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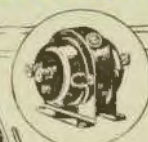
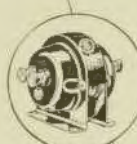
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Mr. Douglas Smith's Receipt



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Douglas Smith

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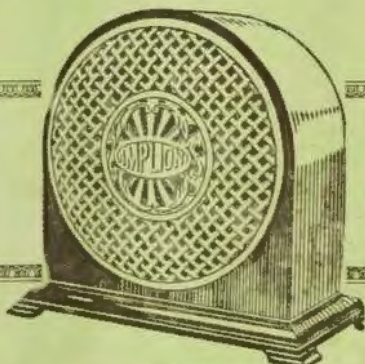
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