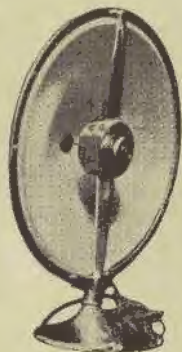


WIRELESS WEEKLY

Vol. 8. No. 19.

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

Friday, Sept. 3, 1926.



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FEATURES

Criminals Fear Radio

*The Work of the Police
Night Patrol*

"No Axe to Grind"

*Read the Theosophists answer
to 2 GB criticism*

BUCCANEERS OF THE ETHER

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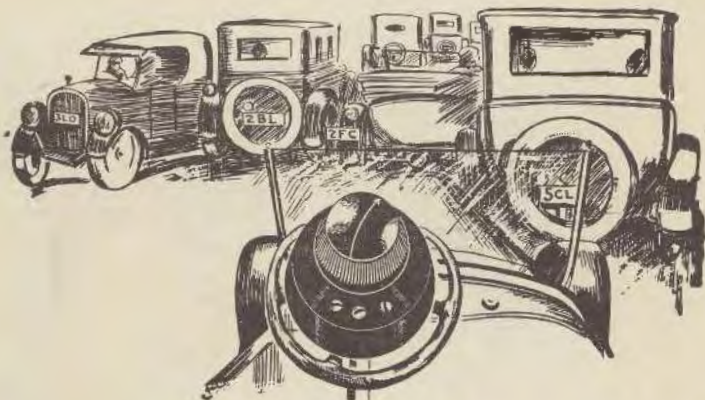
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No. of Turns	M.H. In-stance	Wave-lengths with .001 Condenser		Price Mounted	Price Unmounted	No. of Turns	M.H. In-stance	Wave-lengths with .001 Condenser		Price Mounted	Price Unmounted
		200	300					4,000-11,000	16,000-22,210		
20	20	50-260		5/-	2/-	300	5,000	1,050-4,200	10/-	4/3	
25	30	100-375		5/-	2/2	400	9,000	1,800-8,000	11/-	5/-	
35	50	150-525		5/-	2/2	500	15,000	2,000-7,500	12/6	7/-	
50	150	190-675		5/6	2/4	600	21,500	3,000-9,000	13/6	9/-	
75	330	240-925		5/-	2/6	750	35,500	4,000-11,000	14/6	10/8	
100	550	340-1,340		9/-	2/9	1,000	62,250	4,500-16,000	15/-	12/-	
150	1,300	500-1,950		8/3	3/-	1,250	100,000	6,310-18,240	18/-	14/-	
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WIRELESS WEEKLY

VOL. 8 No. 19.

SEPTEMBER 3, 1926.

A Latent Force

PROBABLY the most notable of the many changes in the form of "Wireless Weekly," during recent issues, has been the re-arrangement of the programmes. We believe, that by placing each evening's programme from each station together under the one heading, we have saved listeners-in much inconvenience.

There have been other changes in the paper, and new features have been added each week, until we now believe "Wireless Weekly" sets the standard for broadcasting magazines in Australia. But this is not a claim to be over boastful about, nor is it one over which to be unduly modest, for, quite frankly, this standard has hitherto been low when compared to that set in Britain and America. We may not hope to reach these heights, but there is no reason whatever why the hundred thousand listeners in Australia should not have the first-class magazine they need.

This need is apparent. Listeners-in as a body are the largest public in Australia not bound together by an association or similar organisation. This is often remarked upon and many movements have been set afoot to represent them, but probably because the listener-in does not belong to any one type, but is found in every class and creed they have not met with any great success. Yet, the listener-in

wants representation. He is a potent force in the world but he is also a latent force. He has no court of appeal.

That is except for his broadcasting magazine. Reaching him no matter where or in what position the broadcasting magazine presenting the weekly programmes is his only representative, his only means of attack or defence.

It is the aim of this journal to represent the listener-in. Our policy is primarily in the interest of the development of wireless, more particularly radio broadcasting. Our efforts are devoted to assisting, wherever possible, those who are interested in getting the best results from the broadcasting services and those who give the services.

In this respect, no trouble has been spared to obtain articles of topical subjects from capable authorities. In our next issue, Captain P. P. Eckersley, Chief Engineer of the British Broadcasting Company, in an article specially written at the request of the Editor, emphasises the necessity for inter-Empire broadcasting. It is by such articles that we hope to aid and create interest in the advancement of radio.

In keeping with our policy, we invite constructive criticism. New ideas and suggestions for the betterment of the magazine are welcomed from listeners-in.

Buccaneers of the Ether

Modern Pirates are Undermining our Broadcasting System

MUCH more important than most people realise, the financial support of broadcasting services is a subject of vital interest to listeners-in.

If the listeners do not pay their subscriptions and the broadcasting company's revenue declines, we cannot complain if the companies reduce the quality of their services. It is a matter, therefore, that affects all listeners; those who don't pay and those who do. None wish to see the services reduced and therefore, it behoves us to help the broadcasting companies to help ourselves—to help maintain the high standard of service that most of the stations are giving.

The existing method of paying for the service we receive, of course, is to buy a Listener's License at a post office. The cost is only 27/6 for a year, and there is a refreshing absence of formality—no forms to fill in, and usually no delay. And the postal people will sell these licenses at offices up to 6 p.m.; that is, after the sale of money orders and postal notes has ceased. This method is satisfactory and convenient enough for any reasonable person, but there are some people who want changes.

Fee is Low Enough.

Some want to be able to pay monthly, some quarterly, and some would pay half yearly. The fee is low enough in all conscience, but apparently there are people who would like to pay for the service as they pay for their gas or electric light. It sounds alright, but there are difficulties. The gas company or the electric light company have a ready means of letting us know most inconveniently if we fail or forget our instalments. They can cut off the service. The broadcasting company cannot do that without affecting all the remaining listeners who have not incurred the company's displeasure.

It is the knowledge that our gas service will be cut off that prevents some of us forgetting to pay up regularly. And it is not unlikely that the inability of the broadcasting company to similarly penalise us is one

of the reasons that would make ineffective an instalment plan of paying for broadcasting.

There is another probable objection. The Postmaster General's Department keeps two and sixpence out of every 27/6 fee, and presumably that deduction is made as a payment for the service of issuing and registering the license. If that be so, there would be a similar payment to the post office for every instalment. That would necessarily increase the cost of the license to listeners, because the Company's proportion of 25/- p.a. should not be altered if it has to continue paying out royalties to the Amalgamated Wireless Coy., and the copyright association.

Be sure to order our next issue at your newsagent's. New features will include an article on inter-Empire broadcasting, specially written for "Wireless Weekly" by Captain P. P. Eckersley, Chief Engineer of the British Broadcasting Company.

The post office people are not likely to reduce their proportion of 2/6, as they certainly would have to spend more in chasing up the people who forgot to pay the second or third instalment. Another serious objection would be in the possibility of people taking out licenses for the winter months only. That would have the effect of whittling down the company's revenue in summer, although the cost of providing the service would be the same as in winter.

Various suggestions have been made to induce or force listeners to take out licenses. It is well known that there are pirates in every suburb and town. These may be classified as first, the unprincipled ones who know they should have a license and persist in dodging the payment; secondly, those who know, but keep on putting the matter off and don't pay, and, lastly, those who don't know a license is necessary.

There is really no excuse for this last named class, but they do really exist, and they do not know or believe they are acting wrongly. How can we "bring them all in"? Someone has suggested that all license holders should be required to display their license or a convenient tablet or card in the receiving set. This would be an intimation to visitors that the owner of the set was a law-abiding person, and gradually it would become a matter for embarrassment or a sign of guilt if the tablet (obtained from the post office) were missing. That idea is practicable in a limited degree only; there are very many sets that are not shown to visitors, and the exemplary deterrent effect would not be produced. It would also be necessary to alter the shape or colour of the tablet every year, and the postal people might consider it not worth the limited results that would follow.

Fantastic Methods.

Another suggestion is to put a tablet on the gate or a flag on the aeriator mast. These methods are somewhat fantastic and would probably be objected to by the owners of the houses or aeriols. And the owner of a set with an indoor aerial would still be able to "get away with it" if he didn't have many friends to see the furniture.

A friend of mine recently suggested a method whereby the evil would be found at its source. He suggests that all wireless traders be required to keep a list of the sales of sets—the names and addresses of purchasers. This list would be passed on to the postal officials, who would know what to do if the register of licenses did not disclose a license for the address.

That looks a workable idea at first sight, but on reflection one sees difficulties. I have made some enquiries and found that the postal people had a regulation on somewhat the same lines in 1923 and 1924, but found it was not being observed satisfactorily. Some traders did not bother to keep

(Continued on Page 38.)

Criminals Fear and Hate Radio

SKILFUL thieves had entered a warehouse, and were removing rolls of silk to a truck in the rear. They had come prepared to deal quickly with the caretaker. But since he did not appear they remained undisturbed, delighted with their luck.

But they had not passed unnoticed. Carefully schooled by the police, the watchman had rung headquarters without raising the alarm, and now, one minute after placing the receiver back on the hook, a powerful car drew up to the kerb. A torch flashed and three men sprang out. The startled thieves were held at revolver point, caught red-handed with the goods.

This happened one night recently, and is only one instance of the efficiency of the police wireless patrol. Every week brings further proof that radio is an invaluable aid to the suppressors of crime.

Old Patrol System.

Under the old patrol system, three cars combed the city and suburbs, each reporting to a local police station once an hour, according to a pre-arranged schedule. This meant that 20 minutes elapsed between each call, and should an urgent piece of work be required Headquarters often had a 20 minutes' wait before instructions could be issued.

This system still operates, but for urgent work a powerful car fitted with wireless, having a roving commission over Sydney and suburbs, has been added. Should an urgent call for assistance reach Headquarters, the constable on duty, through an operator at Willoughby radio station, broadcasts a message for the wireless car. Under this arrangement, instead of a 20 minute wait before the police could arrive on the scene of the crime, the average time now between the reception of the message at Headquarters and the arrival of the police is three minutes. In some instances, when the patrol was cruising in the vicinity of the crime, the car has arrived a few seconds after the watchman has finished ringing the police.

It is not hard to see then how radio has increased the efficiency of the

"Burglars at ——— patrol wanted," is a typical radio message received by the Police Wireless Patrol. Because three minutes is the average time taken to arrive on the scene of the crime, the efficiency of the Patrol has been doubted.

night patrol and why criminals hate and fear the wireless car. They are completely baffled, for they know not when the patrol will arrive without warning. Under the old patrol system they had a reasonable chance to get away, and could generally deal with the watchman should he attempt to hold them until the police arrived. Now the watchman, safe in the knowledge that the police will be on the spot within a few minutes of his call, does not disturb the thieves, but rings the nearest police station. This only seems to make the wireless car more inexplicable to the criminal. Many suspects, captured and on the way to the nearest police station, have attempted to kick to pieces the small cabinet with the eight burning valves.

There are four crews for the wireless patrol, each taking in turn about for a fortnight at a time. Each car has a crew of four men dressed in plain clothes—a sergeant in charge, the operator, the driver, and a first class constable. All are picked men, noted for their initiative and observation powers. They are modestly proud of their work. They have one complaint, however—criminals are not as active as they were when the patrol first started. Then they had, perhaps, half a dozen calls each night. Except for Friday and Saturday night, the average number of calls now, except for the 20 minute reports of the other patrol cars relayed by radio, is two a night. Spend a night with the patrol, however, and the average man would not believe that the patrol's work has become unexciting.

Search for Stolen Cars.

At 10 p.m., the big car leaves Headquarters. Sergeant Langford already has instructions to call at No. 2 to investigate an assault case. Chalked

on the windscreen are the numbers and descriptions of four stolen cars. The assault case is investigated and left in the hands of the local constable. In and out a maze of narrow lanes and streets bordering silent factories, Driver Lodge guides the car with an uncanny knowledge of Sydney. A shirt factory is their objective. A passing wayfarer has reported at No. 4 that the door is open. The factory is easily found and recognised as one recently broken into. All but the operator leave the car, and stealthily approach the door. A two-minute examination of the premises satisfies them that the building has not been visited by burglars, and that the open door is due to the carelessness of a caretaker. A uniformed man arriving from a near-by station is left in charge.

Weak Locks Cause Trouble.

Through a network of streets the car moves silently, the keen-eyed watchers searching for suspicious signs. Torches are flashed in dark corners and on locks of doors. A knitting mill is passed.

"Sure to be a break there soon," says the Sergeant, flashing his torch. "Look at the locks—child's play." Darling Point, Woollahroomooloo, Pott's Point, Rushcutter's Bay, Bellevue Hill, Daceyville, Centennial Park, Darling Harbour, Pyrmont, Glebe, follow. Two police cars on their way to a raid are passed.

At several corners numbers of men are seen in groups.

"Good night!" says the Sergeant coldly, as the car passes them at a crawl. It is the signal to disperse which none dare question. As the car comes by a second time, having circled the block, only an odd figure slinking in the shadows is to be seen.

"Say, how long have you been asleep?" chaffs Driver Bill Lodge, of Operator Foley.

"No longer than you've been catching sight of those stolen cars," replies the operator, good humoredly, for there is perfect understanding between these men, the result of many daring experiences together.

"We've got it," says Sergeant Langford, laughing, as a big Hudson flashes past at 35 miles an hour. At the same time the message is put through to Headquarters: "Stolen Hudson reported racing past No. 3."

The car has already turned around, and is gathering speed rapidly. The stolen car senses pursuit, and jumps ahead. Bill Lodge sinks down before the wheel, for there is nothing he enjoys more than an exciting chase. All are silent as the cars fly ahead, 40, 45, 50, 60, 65 miles down Anzac Parade. They draw alongside at Centennial Park, and gradually crowd the Hudson into the footpath. The driver is arrested, and the car, with two constables aboard, is driven to the nearest police station and handed over.

This is a common incident in the work of the police patrol, for dozens of stolen cars are recovered in this way. The motor car chase is the most exciting part of the wireless patrol work, and when the men pull in at Headquarters for 3 a.m. lunch they are satisfied that they have done something for the night anyway, just like old times.

But the real work of the night is not over. At 4 a.m. at Daceyville the

call is received, "Burglars disturbed at girls' school, _____ Street." Without pausing, the car leaps forward in the direction of the call, and in two minutes is at the school gate. The alarm proves to be a late one, however, for the thieves have made a quick getaway, before actually in the school. Ten minutes later two police cars arrive with uniformed constables, who take over the investigation.

Towards morning a message is received from Headquarters: "No. 5 reports man seen making for the Gap." The car is cruising in the direction, and in a few minutes the car sights a man running in the middle of the road.

"Where are you going?" asks the Sergeant, casually, as the car draws alongside.

"Gap!"

"Jump in, and we will give you a lift," replies the Sergeant, for the man appears demoted.

He is. Suddenly, suspicion rising in his eyes as the Sergeant grasps his wrist, he flies round and with a safety razor blade tears a deep gash in his throat.

He is rushed to the Sydney Hos-

pital. At 6 a.m. four tired men step out of the car at Headquarters. A good night's work.

The patrol has had its exciting nights, when desperate criminals have not hesitated to fire upon them. They have also had their humorous chases, which they are never tired of repeating and laughing over.

On one occasion the police cornered two burglars in a wine loft. The police were unable to gain entrance and the criminals unable to get out. Resigned to their fate, the burglars set about drinking all the wine they could lay hands on, meanwhile poking fun at the thirsty patrol below. When the manager arrived and unlocked the entrance, the two men were found prostrate, and three dozen empties lay on the floor.

In the two years of its existence the Wireless Patrol has made many successful captures, bringing proof of its efficiency time and time again. However it is yet only in the experimental stage. Within a few weeks, extensive changes will be made. It is proposed to build into the car both a receiving and transmitting set, instead of the movable receiving set now used. It is suggested that telephone apparatus be installed, enabling Headquarters to maintain direct conversation with the operator. However, whether this will prove practical remains to be seen. At present the Morse, working on approximately 720 metres, serves the purpose well.

A special transmitting set may be installed at Police Headquarters, Phillip Street, although it is more probable that a landline will be used. To further cut down the time taken by the constable on duty at Headquarters in telephoning the operator at Willoughby and repeating the message, it is proposed to have the operator right at the switchboard at Phillip Street.



Picked men who man the police wireless night patrol. One of the four crews which cause criminals to fear and hate radio.

PHILCO—"Have you got one yet?"—BATERIES.



"We Have No Axe to Grind"

This is the Theosophists' reply to 2GB criticism. Below, the general manager of the Theosophical station states their broadcasting policy. Having read both sides of the controversy, listeners-in may form their own conclusions. Above are: Bishop Avondale, General Manager A. E. Bennett, and Studio Manager Arthur Burton.

BY A. E. BENNETT

In the first place let me say right now that the Theosophical Broadcasting Station Ltd., has no intention of using its resources for semi-religious or religious matter only. It is our ambition to have our programmes as varied as possible, so that we may reach every section of the listening-in public. At the same time, like the cinema and the gramophone, wireless is a potent force in the world, and can be used either for good or for evil. I claim that we have no right to use wireless unless we utilise it for the Nation's uplift and progress. A little wireless is a dangerous thing, much wireless is a still more dangerous thing, and the safety or danger is determined by the motives and purposes of those who control it.

On the whole, at present, most broadcasting stations send out good service, and the public, judging by popular votes on most appreciated items, still prefers good things to vulgar things. This standard must be maintained. The Theosophical

Broadcasting station will transmit nothing but the best in music, humour, and talk. It will allow nothing to be transmitted behind which there is not sincerity, good-will and good taste. The Theosophical Broadcasting station is primarily dedicated to Australia's service, to its advancement and uplift. We have no personal axes to grind and are not out to make money, though obviously, the station should make both ends meet. Our advertising will be well and thoroughly conducted, and we are pleased to say that the support we have already received from advertisers has been very encouraging. Nothing whatsoever will be advertised by us that we cannot genuinely recommend.

Regarding programmes, at the moment we propose to broadcast four days a week, Mondays, Wednesdays, Fridays, and Sundays. The times for the week days being from 7.30 p.m. to 10 p.m., and on Sundays from 10.30 a.m. to 12 noon, and 6.30 p.m. to 10 p.m. It is our hope, later on,

to broadcast seven days a week. There will be good music, classical and modern. There will be talks on Australia in all the aspects of her varied life, political, industrial, social, educational and religious. There will be talks on her problems and difficulties. All those who are endeavouring to contribute to the world's uplift, no matter in what way, whether it be in politics, in the arts and sciences, in industry or in education, will be invited to use the station for a courteous urging of their convictions.

There will be travel talks, art talks, drama talks, music talks, talks to young Australia and to very young Australia. At the same time, I want it to be understood that all these varied subjects will be dealt with in a simple manner, thus, coming within the understanding of everybody.

On Sundays, there will be Sunday concerts, and a feature will be made of the services of the Liberal Catholic

(Continued on Page 19.)



Studio News & Notes

AUSTRALIAN NIGHT AT 2FC.

September 7 will be devoted exclusively to Australian items at 2FC, following that station's practice of giving National nights. Bryson Taylor, Murray Gibbs and Lionel Lawson will contribute to an interesting programme, including features by the N.S.W. State Military Band, and a talk by Mr. Grattan Smith on Australian literature and humour. The first broadcast of the "Concerto for Piano and Organ" will be given. Ester Kahn, the composer, will be at the piano and Miss Lillian Frost at the organ.

HELLO MAN'S HOLIDAY.

While the Hello-Man enjoys his holidays (he refuses to divulge where) child listeners-in will be entertained by Mr. Rus. Garling, who will bring his pal Jerry to the station on Tuesday and Friday, and will answer the letters. Miss Annie Hughes, better



Grace Saville, dramatic contralto, often heard from 2BL.

known as Aunt Meg, will take charge of the children's sessions during the remainder of the week. She will be assisted by little Greta Bremner, who can play and sing and deliver stories appealing to the imagination of the little ones.

RADIO TRAVELOGUES.

A variation of the usual Travel Talks broadcast from 2FC, will be noticed shortly. Music incidental to the scenes and countries described will be transmitted to help form a mental picture in the listener's mind. It is hoped that this innovation will maintain interest in the talks until the finish.

The services of Major Sandford Morgan, D.C.M. (a much travelled man), and Mr. N. J. Van-de-Velde, who has toured practically every part of the globe have been secured, and these gentlemen, assisted by 2FC musicians, will give a travelogue every three weeks covering the major portion of the evening's programme. The first date has been set down for September 22.

POPULAR BARITONE.

Mr. Walter Kingsley, English baritone, is giving so much pleasure to 2FC listeners that a further series of engagements have been entered into with this artist, covering appearances until the end of October.

NEW 2FC ARTISTS.

Although there are 100 artists at present being employed through 2FC station, some fresh names are now added to the list, including Claude Bell, baritone; Russell Callow, tenor; Regina Bannon, soprano; and Peggy Dunbar, contralto.



Mr. J. C. Lockley, Redgum of 2FC, who entertains gardening enthusiasts each week with his informative talks.

RADIO BRIDGE.

This feature on 2FC's Wednesday night programmes is now working smoothly. The perfect hand, known only to the leader of the party—Mr. W. F. H. Master—has worked out satisfactorily, although recently the players, who of course, are not aware of the hands dealt, did not succeed in making their contract, but this lends interest to the game as listeners are glad to see that the players are only human and make the same mistakes themselves. These little differences bring forth a large number of enquiries on the 'phone to the studios which are answered on the air by Mr. Master. The sixth of the series has been given and there is yet no diminution of interest.

NEW 2FC RECORD.

2FC is now on the air 14 hours a day. This is longer than any other station in the world. Broadcasting begins at 7 a.m. with cricket scores, news service, and with a short rest of half an hour, transmissions are carried right through until midnight.

COMIC OPERA ANECDOTES.

Miss Vinia de Loitte appears to have an inexhaustible store from which to draw stories and anecdotes of the wonderful partnership of Gilbert and Sullivan. On Thursday night, September 9, some exclusive matter will be broadcast from 2FC studios.

WEEK-END PROGRAMME.

A comprehensive programme has been drawn up by 2FC for next week-end. In addition to the usual racing session during Saturday afternoon, the musical prologue to the picture "The Sea Beast," will be broadcast for the first time from the Crystal Palace. The 2FC Dance Band; a talk on "Boxing," by Captain Fred Aarons; a talk on "Motor Lubrication"; short comedy by Mr. Brunton Gibbes and Miss Ethel Lang; and Mr. Jack Lumsdaine's second "Musical Steeplechase" guessing series, are among the features.

The morning service for Sunday will be taken from the Lyceum, and the evening service from the Randwick Presbyterian Church. In the afternoon, Mr. Christian Helleman will broadcast an organ recital with vocal numbers, from the Congregational Church, Petersham. In the studio, a talk on "Musicians and Poets" will be given by Professor E. Sauer. In the early evening session,



Arthur Cornell, actor producer, heard from 3LO recently.

Madame Vieeroy-Goosens will provide a special vocal programme, and at the conclusion of the church service a band concert by the State Military Band will be transmitted from the Grand Opera House.

PAINTING RED INDIANS.

Station 2BL will feature the Sydney Orpheus Society from the studio on September 8. This excellent male chorus has won golden commendations for the splendid selection of items which they have broadcast. Miss Mary Edwards, an artist who has the distinction of being the youngest Australian who exhibited in a Continental Salon, will speak on the subject of painting Red Indians. Miss Edwards has been selected to paint the portraits of the Red Indians who have been featured in Sydney in connection with a moving picture dealing with Indian life. Miss Edwards received her art training in London and Paris and exhibited at the Paris Salon at the age of 19.

ORPHAN'S WAIL.

For Monday, September 6, 2BL's evening programme is one of marked interest, incorporating the Newtown Band, broadcasting from the Industrial Hall, Newtown, and the Orphan's Wail, which will be transmitted from the Warringah Hall, Neutral Bay. Al Hammett's famous dance band broadcasting from the ballroom of the Ambassadors, will also be heard, and social notes and descriptions of frocks will be featured. The high character of the programmes provided by the Orphan's Wail make this item of special interest and value to the listeners-in.

BY RETURN MAIL.

Among the first articles to be carried by air from Australia to England in Captain Cobham's plane on his return journey, will be a letter from the Directors of Farmer's to Mr. Reith, of the British Broadcasting Co. Captain Cobham will also take back with him an autographed enlargement of the photograph, reproduced in these columns, of those attending the dinner tendered to Captain Cobham by Farmer & Co. on his arrival here.



Ruby Michael, soprano, featured in 2BL

NEW 2BL ARTIST.

Broadcasters' Miniature Orchestra, under the direction of Mr. J. Knight Barnett, will provide a programme of selected orchestral numbers on September 7. This Miniature Orchestra is proving a great success, and many expressions of approval have been received regarding the excellence of its work. An interesting comer to the programme will be Miss Gladys Verona, the distinguished artist who was so great a success in London, and who is now back in Australia. Miss Verona will make her debut in the broadcasting world on this occasion, and her opening performances will be gladly awaited by the listeners-in.

BABY WELFARE EXPERT AT 2BL.

Hailed as one of the most distinguished medicine graduates in Australia, Dr. Sidney Morris, Director of Maternity and Baby Welfare in N.S.W., has been engaged to deliver midday addresses at 2BL each Wednesday. This series of talks have been arranged by Mrs. D. Jordan, who has charge of this session and is endeavouring to make it of increasing interest to women.

According to the "Radio Review," the power of WJZ is 50 k.w. The station operates on 455 metres, and was first known as 2XAR.

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Daily Telegraph Buildings, Sydney

BRISBANE AGENTS: WIRELESS HOUSE, ADELAIDE STREET, BRISBANE.

Well Known in the Radio Trade

MR. L. A. HOOKE.

As assistant manager of Amalgamated Wireless, Mr. L. A. Hooke has earned a reputation among radio men as one who fixes the name of his company in the minds of those with whom he comes in contact. However, to get him to talk about himself is a different matter. He would rather tell you about his hobby—motoring—and because a man often reveals his personality in the way he tackles his hobby, we let him talk.

He explained that, while he did a small amount of motoring before the war, it was not until he joined Sir Ernest Shackleton's Antarctic Expedition in a motor sledge party in 1914 that he became actively interested in the working of the internal combustion engine.

On the return of the Expedition to England in 1915, the war was of course in progress, and Mr. Hooke joined the R.N.R. Auxiliary Motor Boat Patrol operating in the English Channel. The Patrol had under its control, motor launches, rescue tugs and trawlers, doing service in the North Sea. Later he joined the Royal Naval Air Force as a pilot, and commanded Anti-submarine substations around the English coast.



Mr. C. C. Faulkner.

On the termination of hostilities, he returned to Australia and resumed his position with Amalgamated Wireless (A/sia) Ltd.

During the last two years he has interested himself in Reliability Trials, mostly in Victoria, where he is an associate member of the V.R.A.C.. His 14 h.p. Sports Dolage is only a year old.

Wireless is his profession—and motoring his hobby—and with both he has had remarkable success.



Mr. A. R. Allen.

MR. A. R. ALLEN.

A popular and prominent personality in the battery trade, is Mr. A. R. Allen, the efficient Manager of the Clyde Battery Service Station in Wentworth Avenue, Sydney.

Mr. Allen's earliest years were spent in Fremantle, Western Australia, where he was born in 1896, and after passing his school days in the Western state, he came to Sydney in 1910. He first showed his bent for electrical engineering by spending four years at the Sydney Technical College, making a special study of it.

In 1915, he abandoned his studies for a kit bag and khaki, and spent the following four years on active service until the end of the War. After the Armistice, and whilst wait-



Mr. L. A. Hooke.

ing for demobilisation, he availed himself of the splendid opportunity at hand, to make a study of battery construction in England and investigate the different processes and methods of manufacture used by some of the leading storage battery producers in Great Britain.

The value of his observations abroad as well as his assiduous studies earlier in life became manifest in his success as a manufacturer of accumulators upon his return to Australia in 1919.

He remained thus engaged until the beginning of his association with the Clyde Company Ltd., one of the largest engineering works in Australia, where he now controls a staff of skilled hands, in addition to handling the sales and distribution of the product itself.

MR. C. C. FAULKNER.

Although only recently recognised by the wireless trade as radio's best publicity man, Mr. C. C. Faulkner, director of the Radio Broadcast Bureau has been for years one of the best known journalists in the State. He was for two years President of the Australian Journalists' Association.

Trained on the Victorian press, Mr. Faulkner joined the Sydney Morning Herald about seventeen years ago, and later served on the Sydney "Daily Telegraph," and the "Evening News," to which paper he was appointed chief sub-editor by the late H. J. Taperell, then editor-in-chief.



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Amplifier, can be used with dry
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And at Melbourne, Perth, Wellington and Auckland, N.Z.



Capt. Alan Cobham broadcasting from 3LO Studio recently.

How 3LO Broadcast Cobham's Arrival

BBROADCASTING will be soon be reckoned among the occupations classed as "extra hazardous" if recent experiences are often repeated. It was a fine idea of 3LO's to broadcast a description of the arrival of Cobham at Essendon, but the occasion was shorn of much of its interest to listeners by reason of the fact that the 3LO aeroplane was not able to make its flight.

The first reason for this was the refusal of the authorities to allow any plane to leave the aerodrome after 2.30 p.m., which would have meant cruising up and down the sky for upwards of an hour before the arrival of the aviator. The second was that the special transmitting apparatus being prepared for 3LO

was not quite ready for use, at all events to give the best results. It was tried out under normal conditions the next Saturday, when the Aero Club held its first big sky parade, when Cobham was present, flying one of the new Moths.

Mr. Norman McCance, whose splendid descriptions of sporting events are so much enjoyed, had a comparatively secure stance on the roof of one of the hangars on Sunday, but even from that perch he was able to do comparatively little broadcasting, owing to all the official programme going west when the excited crowd took charge of the proceedings. The man on the ground fared badly. He was swept away by the rushing human tide, and his apparatus was trodden underfoot.

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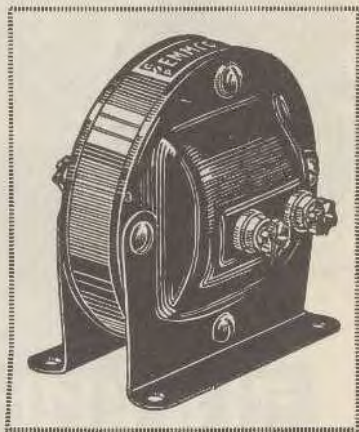
Prompt despatch from stock guaranteed

Perfection in Performance and Appearance

What does perfect amplification with an audio transformer mean? Simply, pure tone quality with maximum volume—two features which demonstrate the superiority of the New EMMCO Transformer.

It amplifies in their proper proportion, all the separate notes of a full orchestra—the full, rich bass notes, and the rippling scale. It reproduces speech with astonishing naturalness of tone.

It is acknowledged by thousands of radio users to be the standard of perfection for audio amplification.



Emmco Transformer :: Price, 21/-



Emmco Rheostat

Built with the superior new style metal frame, with a double inside grip, insuring continuous contact, and with genuine bakelite knobs, EMMCO Rheostats are unequalled in efficiency and good value.

Obtainable in 6, 10, 20 and 30 ohms, at 4/6

Potentiometers of the same style are obtainable in 240 or 400 ohms. Price 5/6

EMMCO JACKS

Open Circuit	2/6
Double Circuit	3/-
Jack Switch	4/6

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SYDNEY, N.S.W.

ALWAYS ASK YOUR DEALER FOR EMMCO

What's on the Air in Melbourne

HAPPY FAMILY AT 3LO.

The cheerful spirit of camaraderie pervading the studio of 3LO, where, in the streaming sunshine a large staff strives unceasingly, was typically illustrated during the luncheon hour a few days ago when Agnes Fortune, the popular pianiste, was the guest of honour at an impromptu birthday party. The feast was prepared by the orchestra, and appreciative gifts from listeners-in, members of the staff, as well as personal friends, were stacked high upon the festive board.

BILLY LOCKWOOD BROADCASTS.

A fresh addition to 3LO programmes is the petite and popular comedienne, Billy Lockwood, who, after a successful debut under the J. C. Williamson management, became a firmly established footlight favourite with Lee White's company, where her catchy numbers and skilful impersonations were among the headline attractions of a clever show.

3LO'S N.Z. PROGRAMME.

As 3LO has such a large number of New Zealand listeners-in, arrangements have now been made for a weekly transmission of a special programme for its overseas adherents. The first programme will be broadcast on a date to be arranged, and will last from 6.30 until close down at 11 p.m.



Gus Blacet, whose popularity as a comedian equals that of his father, Fred. He broadcast from 3LO recently.

EAT MORE FRUIT.

A feature of the great publicity campaign to commence towards the end of the month for the exploitation of Australian Dried Fruits, one of this country's most rapidly advancing industries, will be the speeches by leading members of the community to be broadcast from 3LO. Heading the list is Lady Somers, whose great interest in all Australian matters has already endeared her to her new people. The Prime Minister, also the Minister for Agriculture, will give their views on the dried fruits industry. Other interesting speakers are Miss Knight, the well known fruit preserving expert, and Miss Flora Pell, supervisor of domestic arts for the Education Department.

3CL ON L.S. CRYSTAL SET.

No field offers wider scope to the enthusiastic amateur than wireless. By means of an aerial 100 feet long, with an average height of 54 feet, and a specially wound low loss coil, a 3LO listener-in has a crystal set capable of working a small loud speaker. This speaker, has a special extension attached which enables it to be carried from room to room. Another triumph achieved with his low loss loose coupled set is that with the headphones he is able to pick up Adelaide when 3LO closes down at night.

CONNIE COURTNEY.

Lovers of the lighter side of vocal music will welcome Miss Connie Courtney, of the "Tell Me More" Company, who has been engaged to broadcast from the 3LO studio. She has a sheaf of dainty songs to select from, and some excellent items are included in the programme. The possessor of a light, flexible soprano voice, which should broadcast to great advantage, Miss Courtney, as yet, has only played chorus and small parts, but is studying hard, and in the not too far distant future, we shall find her filling an important soprano role very capably.



Dan Collins, popular tenor at 3LO.

BY SPECIAL REQUEST.

One of 3LO's most successful offerings was the Old Time Night programme recently broadcast. Every item was "by special request," and the Director of Programmes wishes to notify listeners-in that if they will forward any requests to the studio, these will be duly recorded and included among the next old time night numbers, as far as possible.

LINKED BY WIRELESS.

Among the many good deeds performed by Colonel Leane, in Norfolk Island, was to link it with the mainland by wireless. He installed a 6 valve super heterodyne set, and with this continuous reception is established with all the stations of Australia; 3LO coming in remarkably clearly. Few can realise the isolation of this little Island, 900 miles away in the Southern Pacific, or the tremendous difference the wireless concerts have made to its people.

BACK TO COLOMBO.

Miss S. V. Parker, that interesting personality whose travelogue series during the Wednesday afternoon sessions gave such enjoyable and instructive entertainment to 3LO listeners-in, has returned to Colombo to resume her duties as kindergarten mistress to the babes of that tropic town. Both her home and her school are situated in the fragrant cinnamon gardens—the inspiration of many a poet's song — which must waft an aromatic atmosphere of romance around even the prosaic monotony of infant instruction.

KARAS HARMONIC

"THE AUDIO TRANSFORMER SUPREME"

Reproduction equal to resistance coupling, but volume greater.

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ALL STAGE RATIO

Massive construction. Elegant appearance. Absolutely distortionless.

KARAS ORTHOMETRIC CONDENSERS: The highest grade low loss, straight line frequency condenser we have seen.

Size: .00025 mf., 11 brass plates, Price	s. d.
Size: .00037 mf., 17 brass plates, Price	36 6
Size: .0005 mf., 23 brass plates, Price	38 0
	39 6

A HIGH GRADE HEADSET AT A MODERATE PRICE

The Cannonball
Double Headset

12/6

Highly Sensitive
Comfortable

Plain black engraved dials: 2 inch, 1/-; 3 inch, 1/5; 4 inch,	s. d.
Genuine bakelite engraved dials: 3 inch, 2/9; 4 inch,	2 4
Vernier dials, Emmco; Black metal, each	3 9
Emmco slow motion dials: Black or mahogany bakelite	6 9
"Certified" low loss condensers: Size, .0005	9 6
Vernier attachments for the above: Including dial	12 0
Variable condensers with brown ends: .001, 10/9; .0005	3 0
Midget low loss condensers: 5 plates	8 6
Radex valves: .06 type, standard or UX base	3 0
Radex valves: .25 type, standard base	7 6
Rheostats: Ajax standard, 30 ohms	7 6
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Carborundum fixed detectors: As used in the Reflex set	3 0
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See Mr. W. L. Hamilton (Insulator) at our Sydney Store every Friday Evening. He will advise you on your Radio problems.

Country Clients: We pay carriage on orders 10/- and over, except on batteries and loud speakers.

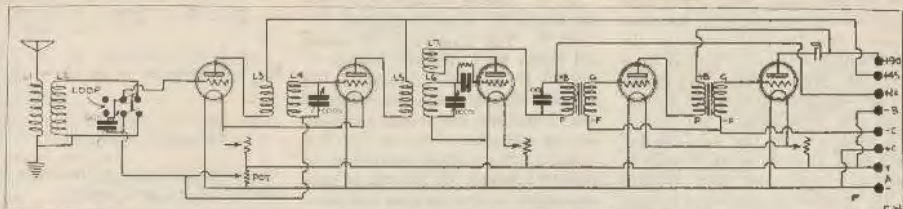
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Wireless Weekly Receiver No. 7

An all-wave tuned radio receiver employing a change over switch from outside aerial to loop is described below. The directional properties of the loop limit static and interference. The circuit is reproduced at the top of this page.

WEEK after week, for some months, we have published full constructional details for building various types of receivers. During that time a number of enquiries have reached us affording much information on the pitfalls encountered by home constructors.

It is apparent, after reading these letters, that the writers are divided into two classes. One class is uniformly very successful, whereas the other is equally unsuccessful. A large percentage of readers write, asking questions before they begin construction, indicating that they have insufficient confidence in themselves, and have had little or no previous experience building receivers. Shortly afterwards another letter is received, complaining that their success has been only partial. On the other hand, numerous letters are received from readers who have shared the success of the writer himself.

It is for the benefit of the former that a set somewhat less complicated, but with a wide range, is described this week, especially since it is capable of quality reproduction. We have in mind the "All Australian" Receiver, published in the issue of February 13th. Over 200 reports have been received from successful constructors in every State in Australia.

In the following article, our subject is an efficient receiver, based on questions received in our readers' letters. It complies with many requests for an efficiently tuned radio frequency receiver, which may be used in conjunction with a loop or outside aerial. The experienced home constructor will readily see that the receiver employs

two radio frequency amplifiers (tuned radio method), a regenerative detector and two stages of audio frequency amplification (transformer coupled). The plug-in coil method of tuning is used, affording maximum efficiency on all broadcast wavelengths.

Spiderweb coils are preferred for all the lower wavelengths. If the grid coils are wound identically with the same gauge wire, the position of the dials of the S2 and S3 condensers should correspond throughout the wavelength range, and thus simplify the tuning operations. It is not imperative that any particular size tun-

ing coil be used, as long as the wavelength to be received is successfully tuned. But it is an advantage if the coils and condensers used are so matched that as little capacity as is possible be used at all times with as great an amount of inductance and that the two together be sufficient to cover the desired wavelength.

While on the subject of tuning coils it is worth while to mention that for wavelengths from 200 to 600 metres, from the standpoint of efficiency and ease of construction, in the opinion of the writer no coil has yet been devised which is superior to the ordinary spiderweb coil type. For wavelengths above 500 metres, however, the ordinary honeycomb coil type is recommended. See coil table.

Selecting Components.

Progressing through the various instruments of the set, we will consider for a moment the subject of transformers. Every sound that the set produces comes directly through them, and is delivered as nearly as received in proportion to the performance ability of the particular transformer used. It is not enough to stop when we have constructed a set which produces at the detector undistorted tones, but we must arrange to amplify them without distortion for loud speaker use. In the past too many receivers have been built without proper attention being given to the audio circuits. Hundreds of words have been written on the subject of careful wiring of the radio frequency stages, but not enough emphasis has been placed on the importance of using care in selecting and wiring up the audio frequency transformers.

List of materials necessary to build this receiver:—

- 1 *Panel, 24in. x 8in. x 3/16 in.
- 1 Baseboard, 24in. x 8in. x 1/4 in.
- 2 2-Coil Holders.
- 1 3-Coil Holder.
- 2 .0005 Variable Condensers.
- 1 .001 Variable Condenser.
- 1 Potentiometer.
- 3 Rheostats to suit Valves.
- 1 Filament Switch.
- 1 S.C. Jack.
- 5 Valve Holders.
- 5 Valves.
- 2 Audio Transformers
- 1 .00025 Fixed Condenser.
- 1 .001 Fixed Condenser.
- 1 2-Megohm or Variable Grid Leak.
- Honeycomb Coils.
- Spiderweb Formers.
- 1lb. of No. 24 D.C.C. wire.

In the first place, when buying the transformers, care should be exercised to select only the best available. In order to do this one must look at more than the price ticket. A glance through the literature which accompanies the transformer will invariably explain how the amplification curve runs. It is not at all difficult to construct a transformer which will give at any particular frequency proper amplification, but it is quite another thing to construct a transformer that will give over a wide band of frequencies the same quality of amplification throughout. By choosing a transformer with a curve that is flat and long enough to include the low notes as well as the high ones, good loud speaker reproduction is assured.

In the selection of rheostats, condensers, switches, etc., it is only necessary to consider the mechanical qualities of these instruments. Unfortunately all valves are not identical, which makes it advisable to change round the various positions of valves until the best combination is found.

Constructional Details.

First drill and mount the panel and baseboard components, as shown by the drawings.

Ample room is provided if the size panel as recommended is used. Next wire up the following connections in their numerical order:—

No. 1. Aerial terminal to top connection of first coil holder, L1.

No. 2. Bottom connection of first coil holder L1 to earth terminal.

No. 3. Top connection of second coil holder L2 to D.P.D.T. switch.

No. 4. Bottom connection of D.P.D.T. Switch to the lower connection of the first and second coil holders, L1 and L2.

No. 5. Top centre connection of D.P.D.T. Switch to the fixed plate connection of first variable condenser.

No. 6. Centre connection of D.P.D.T. Switch to the moving plate connections of first variable condenser.

No. 7 is the connection from the moving arm contact of potentiometer to the No. 6 connection.

No. 8. Moving plate connection of second condenser linked to No. 6.

No. 9 is the common negative A busbar which feeds one of the terminals of each of the rheostats and the potentiometer.

Nos. 10, 11 and 12 feed the first, second and third rheostats respectively.

No. 13 links the fixed plate connection of third condenser with the upper connection of third grid coil L6.

No. 14. Moving plate connection of third condenser to the lower connection of third grid coil holder, L6.

No. 15. Lower connection L5 holder to lower connection L3 holder.

No. 16. Fixed plate connection of second condenser to upper connection of L4 coil holder.

No. 17. Moving plate connection



Front view of panel showing relative position of components.

of second condenser to the lower connection of L4 coil holder.

These completed wire up the following baseboard connections:—

No. 18 is the common positive A busbar. It extends the whole length of the baseboard components and links the left hand F terminal of the fifth valve holder with the right hand F terminal of first holder.

No. 19 links the right hand F terminal of second holder with the positive A busbar.

No. 20 links the right hand F terminal of the third valve holder with the positive A busbar.

No. 21 links the right hand F terminal of fourth valve holder with the positive A busbar.

No. 22 links the right hand F terminal of the fifth valve holder with the left hand F terminal of fourth valve holder.

No. 23 links together the two negative F terminals of the first and second transformers.

No. 24 links the G terminal of first transformer with the G terminal of fourth valve holder.

No. 25. P terminal of fourth valve holder to P terminal of second audio transformer.

No. 26. G of second transformer to G terminal of fifth valve holder.

The baseboard connections completed, wire the following panel to baseboard connections in the following order:—

No. 27. G terminal of first valve holder to fixed plate connection of first variable condenser.

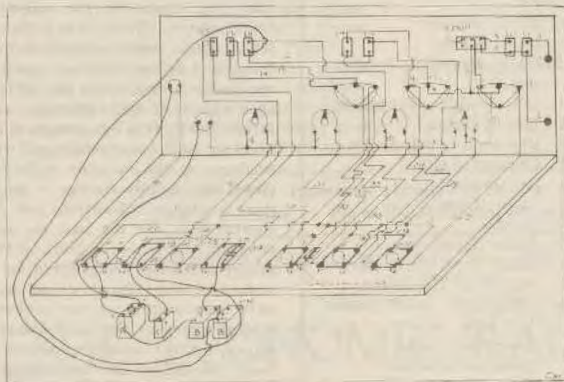
No. 28. Positive A busbar to right hand terminal of potentiometer.

No. 29. Left hand F terminal of first valve holder to left hand F terminal of second valve holder.

No. 30 is a connection from No. 29 to the right hand F terminal of first rheostat.

No. 31. Left hand F terminal of third valve holder to right hand F terminal of second rheostat.

No. 32 is a connection soldered from



Back of panel view showing point to point wiring.

No. 22 to the right hand terminal of third rheostat.

No. 33. P terminal of first valve holder to the upper connection of L2 coil holder.

No. 34. G terminal of second valve holder to the fixed plate connection of second condenser.

No. 35. P terminal of second valve holder to the upper connection of L5 coil holder.

No. 36. G of third valve holder to the grid condenser and leak.

No. 37. Grid condenser and leak connection to fixed plate connection of third variable condenser.

No. 38. P terminal of third valve holder to lower connection of L7 coil holder.

No. 39. P terminal of first transformer to the upper connection of L7.

No. 40. Moving arm contact of third condenser to positive A busbar.

No. 41. P of fifth valve holder to lower connection of S.C. jack.

These completed, carefully check over all connections and be particularly careful in wiring up the batteries.

A Word About the Coils.

Each coil must be wound and mounted the same way, or reversed reaction will result. Reversed reac-

tion is often very misleading to the home constructor, many a receiver has been dismantled when really the only fault has been caused through carelessly mounting the coils. In any regenerative receiver if all coils are mounted identically and reversed reaction is experienced, it is only necessary to reverse the external wiring to the tickler coil holder. If, on the other hand, the coils are mounted haphazardly, some combinations of coils will probably be correct, whilst others cause the above-mentioned reversed regeneration. A golden rule which the writer has is to wind or purchase unmounted coils. Then, in mounting them to the holders, the outside layer end is fixed to the pin connection, and the inside layer end to the hole connection, being careful of course to see that the direction of rotation of the wire is the same with each coil. If other readers will follow this example, no matter what combination of coils they use, reversed reaction is impossible.

The tuning of the receiver is comparatively easy, despite of the fact that there are three variable condensers. When once the best settings of all stations are found, they should be pasted on a card near the receiver, so that every member of the family can tune-in any one of the stations by referring to the table of adjustments.

FRENCH'S FOREST PHENOMENON.

Visitors to French's Forest last week during the broadcasting of a corroboree and camp fire concert by 2BL saw a striking illustration of the difference between the speed of radio sounds and sounds passing simply through the air. About 500 yards from the scene of the corroboree Broadcasters' engineer had a receiving set picking up the sound after it had been broadcast. This was useful, because it showed how the broadcast was being received by listeners. From the spot in question, however, a listener could hear the singing and chanting not only by radio but also by air, and the striking thing was that it was heard on the radio set a second or more before it was heard on the air. Thus, one could hear the native girls singing to the accompaniment of the harmonium and the radio set always kept a word or two ahead of the singer's actual voice.

AN INTIMATE HOUR.

Believing that Sunday evening, between 6 and 7, offers a special opportunity for developing an intimate hour, 2FC is arranging a series of recitals by leading artists. Future engagements for this feature include, September 5, recital arranged by Madame Vieroy Goosens; September 12, organ recital by Miss Lillian Frost; September 19, recital arranged by Madame Emily Marks, soprano; September 26, organ recital by Christian Helleman, A.R.C.M.

COIL TABLE.

Station	Using Outside Aerial.						
	L1	L2	L3	L4	L5	L6	L7
2GB	25	50	35	50	35	50	35
2BL	35	50	35	50	35	50	35
3LO	35	50	35	50	35	50	35
4QG	35	50	35	50	35	50	35
5CL	50	75	50	75	50	75	50
1YA (Auckland)	50	75	50	75	50	75	50
2FC	100	150	135	150	135	150	100

Note:—When using loop, the D.P.D.T. Switch must be placed in the loop position, coils L1 L2 are not then required. For all the lower wave stations 100 feet of loop wire is required, for 2FC 200 feet. (See "Wireless Weekly," April 23rd, for constructional details of loop.)

"We Have No Axe to Grind"

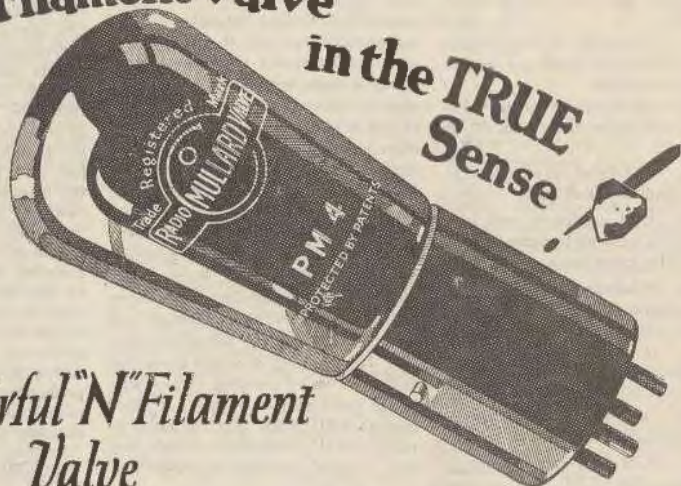
(Continued from Page 7.)

Church in Sydney. In a word, the Theosophical Broadcasting station is organised at considerable personal sacrifice on the part of individuals to serve Australia, and its promoters know that it will in due course become a valuable national asset. I would also like to advise listeners-in that we are only too anxious to please them, and any suggestion or criticisms regarding either our transmission or our programmes will be gladly accepted. We want to be in personal touch with listeners-in; therefore, we want their views.

Our call sign is 2GB, Sydney; our licensed power, 3,000 watts, and our wavelength, 326 metres.

A Dull Filament Valve

in the TRUE
Sense



The Wonderful "N" Filament Valve

FILAMENT VOLTAGE: 28 VOLTS.
FILAMENT CURRENT: ONE TENTH AMPERE.

USE the wonderful "N" filament valve and get SEVEN TIMES THE LIFE from your 4-volt accumulator charges.

Cut down the cost of upkeep and reduce recharging journeys to ONE-SEVENTH. This unique "N" filament is so economical of heating power that NO SIGN OF GLOW can be discerned.

Ask for the P.M.4 - - 13/6

A power valve for majestic loud speaker volume. The finest loud-speaker valve ever produced.

This valve can also be run from 3 dry cells

HF Amplification.				LF Amplification.				Power Valves.				Detectors.
Type	FIL. Volts	FIL. Current	Price	Type	FIL. Volts	FIL. Current	Price	Type	FIL. Volts	FIL. Current	Price	
HF	3.8	0.6	7/-	LF	3.8	0.6	7/-	DFA.1	5.0	0.25	13/6	When valve is followed by an Intervalve Transformer or telephones, use an LF Amplifier or Power Valve. When valve is followed by a resistance Capacity Intervalve system, use HF Amplifying Valve.
D.06	3.0	0.09	13/6	D.06	3.0	0.06	13/6	DFA.3	5.0	0.06	17/6	
D.3	1.8	0.3	15/6	D.3	1.8	0.3	15/6	PM.3	3.7	0.1	13/6	
DFA.1	5.0	0.25	13/6	DFA.1	5.0	0.25	13/6	DFA.5	5.0	0.25	13/6	
DM.3	3 to 4	0.1	13/6	DFA.3	5.0	0.06	17/6	DFA.4	5.0	0.25	13/6	
				PM.1	3.7	0.1	13/6					

All Mullard Valves are manufactured at Mullard Works, London, England.

OBTAINABLE FROM EVERY RADIO DEALER IN AUSTRALIA.

Mullard

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

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This kit is particularly suitable for the W.W. Receiver No. 4

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Hints, "Hook-ups" and practical articles on the "Super," Power Amplifiers, Radio Frequency and Audio Amplification. Sent for six-pence in coin or stamps.

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How to get Better Results from your Radio Batteries

A Few Hints.

The question these days that is occupying the minds of thousands of receiving set owners is the important problem of obtaining the best results and maintaining a low upkeep cost of their receiving sets. There are various good suggestions that can be made.

Of course no one will get maximum satisfaction from a cheap set, made from cheap unreliable parts, but even having purchased the best of sets, the greatest upkeep saving can be made in the choosing of batteries.

Kind of Batteries Determine Expense.

The first cost of Storage or Rechargeable "B" Batteries is naturally greater than the cost of dry batteries. But dry batteries must be replaced frequently, and the larger the number of valves, the more frequently the set is in use, the more often the owner must throw out his worn out dry batteries and purchase more. In many cases, within the first year, the first cost of a "Philco" 83X Rechargeable "B" Battery will be less than the cost of replacing dry cells over a similar period.

Mistakes Made.

A mistake which the set owner is very liable to make, after deciding to use Rechargeable "B" Batteries, is in the choosing of the wrong kind of battery. The capacity or amount of energy which is contained in a battery is designated in ampere hours. It is, therefore, necessary to choose a battery such as the "Philco" 83X or 86H, which has the capacity to run for some months before requiring recharge.

Capacity of Battery.

The 83X has a capacity of 3000 milliampere hours, whilst the 86H is just double, being rated at 6000 milliampere hours.

Advantages Over Eliminators.

These batteries have a big advantage over eliminators, too, as they deliver strong, steady current to the Set at all times absolutely without trace of that hum and buzz so prevalent with Eliminators. It is also easy to tap off any voltage you require, whereas, with Eliminators you are restricted in this regard.



Broadcasting Programs

for the Coming Week



Friday, Sept. 3

2FC

Early Morning Session.

7.—Time Signals. The Chimes of 2FC. Announcements.

7.5.—Cricket Scores: 2nd day's play of the match Australia versus England eleven.

7.10.—Weather information. Commercial news. Shipping Intelligence. mail Service.

7.40.—"Sydney Morning Herald" news service.

8.—Time signals. Musical items. Cricket scores.

8.15.—Close down.

Morning Session.

9.15.—The Chimes of 2FC and Announcements.

9.20.—Music from the studio.

9.45.—A morning reading.

10.—Time signals. Music from the Studio.

10.5.—Late "Sydney Morning Herald" news service.

10.15.—Music from the Studio.

11.—Progress Cricket Talk.

11.10.—Australian Press Association and Reuter's Cable Services.

11.15.—A Cooking Talk and Recipes by Miss Ruth Funt.

11.30.—Close down.

Midday Session.

12.—Time signals. The chimes of 2FC and Announcements.

12.5.—Stock Exchange. First Call.

12.10.—Music from the Studio.

12.40.—Rugby Wireless News.

1.—Time signals. Weather intelligence.

1.5.—"Evening News" midday news service. Producer's Distributing Society's report.

1.20.—Music from the Studio.

1.50.—Stock Exchange. Second Call.

1.55.—Music from the Studio.

2.—Time signals; Close down.

Afternoon Session.

2.50.—The Chimes of 2FC and Announcements.

2.55.—Piano Recital by the pupils of F. E. Down.

3.50.—From Farmer's Tea Rooms: The Oak Hall Trio.

3.40.—Miss Dorothy Benbow, contralto: "Saisam" (Laur).

3.45.—From Farmer's Tea Rooms: The Oak Hall Trio.

3.45.—Music from the Studio.

4.—Miss Margjorie Cole, soprano: "Tosca's Prayer" (Puccini).

4.5.—From Farmer's Tea Rooms: The Oak Hall Trio.

4.15.—Music from the Studio.

4.40.—Miss Margjorie Cole, soprano: "Didn't you know" (Lehmann).

4.45.—Stock Exchange. Third Call.

4.45.—Music from the studio.

Early Evening Session.

6.—Time signals. The chimes of 2FC and announcements.

6.5.—The "Hello Man" talks to the children.

6.40.—A talk to the elder boys: "Three Real Bricks."

6.50.—Broadcast from Farmer's Tea Rooms: Vocal and instrumental items.

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

7.30.—Dalgely's Market Reports (wool, wheat, stock), Fruit and Vegetable Markets.

7.40.—A talk on next week's film releases. Close down.

Night Session.

7.55.—The Chimes of 2FC and Announcements.

8.—Broadcast from the Prince Edward Theatre Beautiful: the musical prologue to the film "The Vanishing Races" Orchestra conducted by Will Prior and Leslie V. Harvey at the orchestral Grand Organ.

8.45.—From the Studio: Mr. Raymond Ellis, operatic baritone.

8.55.—Mr. Cyril Monk will give the 2nd of his travel talks, illustrated with violin solos typical of the various countries described.

Farmer's service, Sydney, call sign 2FC, wave length 1160 metres.

Broadcasters Ltd., Sydney, call sign 2BL, wave length 853 metres.

Broadcasting Co. of Australia, Melbourne, call sign 3LO, wave length 371 metres.

Associated Radio Co., Melbourne, call sign 3AR, wave length 484 metres.

Queensland Radio Service, Brisbane, call sign 4QG, wave length 386 metres.

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

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

Westralian Farmer's, Perth, call sign 6WP, wave length 1280 metres.

Nice, Monte Carlo, Genoa, Rome.

4.10.—Broadcast from the Criterion Theatre: 2nd act of the comedy-drama "The Mask and the Face" (by permission of Messrs. J. C. Williamson Ltd.).

15.—From the studio: Mr. Raymond Ellis, operatic baritone.

10.8.—Miss Peggy Dunbar, contralto.

10.10.—Ewart Chaple, piano solo: "Polonaise C Sharp Minor" (Chopin).

10.24.—Miss Goodie Reeve in her "Behind the Scenes" talk.

10.40.—Miss Peggy Dunbar, contralto.

10.45.—Broadcast from the Wentworth Hotel, Sydney—Wentworth Cafe Dance Orchestra, under the baton of Mr. Sydney Simpson.

12.—National Anthem. Close down.

2BL

Early Morning Session.

7.15.—Physical Training and Health Exercises.

7.30.—Talk on Health and Hygiene.

7.35.—Physical Training and Health Exercises.

7.45.—Broadcasters' Special News Service.

7.52.—Special News from Rugby.

7.55.—Musical Programme from the Studio.

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

Morning Session.

10.—G.P.O. Clock and Chimes. Special News Service from the "Daily Telegraph."

10.10.—Music from the Studio.

10.25.—Special news from the "Daily Telegraph."

10.45.—Music from the Studio.

11.—G.P.O. Clock and Chimes. Special Cricket Session.

11.5.—Musical Programme from the Studio.

11.20.—London Metal Quotations.

11.25.—Broadcasters' Information Service, including Mails, Shipping, Weather, Rainfall, Special News for the following day.

11.40.—Musical Programme from the Studio.

11.50.—News from "Sun" Cable Edition.

12.—G.P.O. Clock and Chimes. Talks to women by Mrs. Jordan.

12.30.—Broadcasters' Turf Expert will discuss the training operations and horses' form from Handwick.

12.45.—Hilley's Instrumental Quartette, under the direction of Carl Castling.

1.15.—Music from the Studio.

1.45.—Sydney Stock Exchange Call.

2.—G.P.O. Clock and Chimes. Close down.

Afternoon Session.

During the afternoon, results of races broadcast immediately after each race.

8.—G.P.O. Clock and Chimes. Weather Report and Social Notes from "The Sun."

8.15.—Civil Service Restaurant Trio under the direction of Miss De Cury Brewer.

8.30.—A talk on English Literature and Poetry by Mr. J. M. Prentice.

8.45.—Music from the Studio.

4.—G.P.O. Clock and Chimes. Music from the studio; Civil Service Restaurant Trio, under the direction of Miss De Cury Brewer.

4.15.—Musical Programme from the studio.

4.50.—Serial Story, entitled "The Mad Song" (Mabel Magellan).

4.45.—Music from the Studio.

5.—G.P.O. Clock and Chimes; Producers Distributing Society's Market Report.

5.10.—Shipping Information when available.

5.15.—G.P.O. Clock and Chimes. Close down.

Early Evening Session.

6.—G.P.O. Clock and Chimes. Uncle George and the Kiddies. The pupils of Miss Monica Scully will entertain the kiddies.

8.45.—Broadcasters' Dinner Orchestra, Special Country Session.

7.15.—Australian Mercantile Land & Finance Co.'s Stock and Wool Report.

7.20.—Weather Reports.

7.24.—Talk on Land Subjects.

7.30.—Stock Exchange Reports.

7.35.—Producers' Distributing Society's fruit and vegetable reports.

7.41.—Fruit and vegetable reports (Sun).

7.45.—Grain and Fodder Reports (Sun).

7.48.—Country news from "The Sun."

7.50.—Close down.

Evening Session.

8.—G.P.O. Clock and Chimes. Broadcasters' Minstrel Troupe.

8.—G.P.O. Clock and Chimes; The Senior Sporting Editor of "The Sun" will talk on "The Prospects of To-morrow's Race."

9.20.—Interval.

9.25.—"Concerning Your Valve Set."

9.45.—Resume of following day's programme.

9.45.—Weather Report and Forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist.

9.50.—Mr. Richard McClelland, basso.

10.5.—Miss Phyllis Atkinson, soprano.

10.12.—Mr. Richard McClelland.

- 10.20—Lecture by Mr. J. M. Prentice.
 10.35—Cec. Morrison and the Glomuchers, from the ballroom of the Beaulieu Casino. During the intervals between dances, News Reports, by courtesy of the Sun will be broadcast.
 11—From the Studio: Jazz Band.
 12—G.P.O. Clock and Cimes; National Anthem.

3 L O

Midday Session.

- 12 noon—Time Signal; Latest cricket scores, by courtesy of Reuters Ltd. An England XI, played at Folkestone; Reuters and the Australian Press Association Cables; "Argus" and "Herald" News Services.
 12.45—Stock Exchange Information.
 12.50—Meteorological Information: Weather Forecasts for Victoria, Tasmania, South Australia and New South Wales; Ocean Forecast.
 1—Time Signal.
 1.1—Studio Orchestra.
 1.10—Billie Lockwood, humorist.
 1.15—Victorian Dried Fruits Board; Mr. E. Meeking, Senior Fruit Inspector, Agricultural Department, will speak.
 1.22—Studio Orchestra.
 1.32—Billie Lockwood, humorist.
 1.40—Studio Orchestra.
 2—Close down.

Afternoon Session.

- 3—Latest cricket scores, by courtesy of Reuters Ltd.; Auctions versus an English XI, played at Folkestone.
 3.1—Studio Orchestra.
 3.10—Connie Courtney, soprano.
 3.17—Miss Frances Fraser, "See Naples and Die."
 3.33—Tasma Tierman, "ello solo.
 3.37—Arthur Cornell, elocutionist.
 3.44—Studio Orchestra.
 4.5—Victorian Dried Fruits Board; Miss A. Knight, Fruit Bottling Expert, Agriculture Department.
 4.10—Comic Courtines, soprano.
 4.17—"Au Fait," of Messrs. Buckley & Nunn Ltd., will give a fashion talk.
 4.37—Frank Stotham, Clarinet solo.
 4.45—Latest Cricket scores, by courtesy of Reuters Ltd.; "Herald" News Service; Stock Exchange Information.
 5—Close down.

Evening Session.

- 6.45—Children's Hour, Answers to letters and Hithythy Greetings.
 6.50—Miss Billie Jones will sing to the children, and Billy Bunny will tell the stories of "The Lost Princess" and "Black Beauty."
 8.40—Latest Cricket scores, by courtesy of Reuters Ltd.; Auctions versus an English XI, played at Folkestone; "Argus" and "Herald" News Services; Reuters and the Australian Press Association Cables.
 6.53—Weather synopsis. Shipping movements.
 6.57—Stock Exchange information.
 7.2—Fish Market Reports by J. R. Borrett Ltd.
 7.4—Market Reports.
 7.5—Market Reports by the Victorian Producers' Cooperative Co. Ltd. Haymarket sales. Poultry, grain, chaff, hay, straw, wool, dairy produce, potatoes and onions. Market prices of oranges and lemons, supplied by the Victorian Central Citrus Association Pty. Ltd.

Night Session.

- Speakers: Mr. F. de Castella, Miss Margery Hicklin, Victorian Dried Fruits Board, "Magister," Leslie Brunning, Mr. W. H. Sweeting, Organ Recital by Dr. Floyd, Ely Treweek, soprano, Eardley Turner, Betty Roe, Geraldine Turner, Collingwood Citizens' Band, Mr. F. C. Johnston, conductor.
 7.30—Under the auspices of the Department of Agriculture, Mr. F. de Castella, Viticulturist, "Vine Diseases, Their Treatment".
 7.40—Miss Margery Hicklin, now playing in

- "Tell Me More," at His Majesty's Theatre, will speak from her dressing-room, by permission of J. C. Williamson Ltd.
 8—Collingwood Citizens' Band.
 8.7—Victorian Dried Fruits Board, Mr. J. M. Halford, Chairman of the V.D.F. Board.
 8.12—School Life and School Sport, by "Magister."
 8.32—Organ Recital, transmitted from St. Paul's Cathedral, by Dr. Floyd.
 9.2—Collingwood Citizens' Band.
 9.5—Ely Treweek, soprano.
 9.11—Leslie Brunning, gardening talk, "Oranges and Lemons."
 9.20—Trombone solo by A. Thorn.
 9.37—Mr. W. H. Sweeting, a talk on the Victorian Amateur Boxing and Wrestling championship.
 9.52—Ely Treweek, soprano.
 9.59—Original sketch, written by Eardley Turner, entitled "Doctored".
 10.14—Collingwood Citizens' Band.
 10.24—"Argus" News Service. Announcements. Latest cricket scores, by courtesy of Reuters Ltd. British Official Wireless news from Rugby. Weather forecast.
 10.30—Ely Treweek, soprano.
 10.35—"Argus" News Service.
 11—God Save the King.

4 Q Q

Midday Session.

- 12.55—Time-in.
 12.58—Time Signal.
 1—Market Reports. Weather Information, "The Daily Mail" news, the "Daily Standard" news.
 1.20—Close down.
 Afternoon Session.
 3.25—Tune in.
 3.30—A Programme of Music.
 3.35—"The Telegraph" news.
 4.30—Close down.
 Early Evening Session.
 6.25—Time-in.
 6.30—"The Children's Session. Stories by "The Sandman".
 7—"The Farmers' Session; Market Reports; Lecturers: "Tariffs as they affect the Primary Producers," Mr. C. Sheehy (Council of Agriculture).
 7.20—"The Telegraph" news. Stock Exchange.
 7.30—Close down.

Night Session.

- 7.45—A Welsh Night. To-night's programme has been arranged by the St. David's Society of Blackstone, supported by the Savoy Orchestra.
 8—Week-end road information for motorists, officially supplied by the Royal Automobile Club of Queensland. Welsh Night, continued.
 9.20—Weather Information, officially supplied by the Commonwealth Weather Bureau. Welsh Night, continued.
 10—"The Daily Mail" news service. Close down.

3 A R

Morning Session.

- 11.30—The British Official Wireless Press, received by 3AR's operator from Rugby Wireless Station, England. Express train information. "Age" news bulletin.
 12—Time Signal Chime from the G.P.O., Studio Barometer Readings; 1st Weather Forecast; Events of the Day.
 12.5—Musical Selections, relayed from Hoyt's De Luxe, Bourke Street.
 12.50—Stock Exchange news. Market reports.
 12.40—Musical Selections.

PHILCO—"Experience teaches"—BATTERIES.

- 12.53—Mail Notices. Shipping Movements.
 1—Close down.

Afternoon Session.

- 2.30—Hoyt's Premier Orchestra, under the direction of Miss Ella Brien. Birthday Week Programme.
 3—Cleinairum Orchestra, under the leadership of Mr. Ed. Butler.
 4—Time Signal Chime from G.P.O.
 4.5—Hoyt's Premier Orchestra. Birthday Month Programme.
 4.30—Gardening Talk to Children. Luther Burbank's Wonderful Creations (1st Series).
 4.56—"The Evening Amusement Guide."
 5—Time Signal Chime from G.P.O.; Studio Barometer Readings; 2nd Weather Forecast. Close down.

Early Evening Session.

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

Evening Session.

- 8—Time Signal from the G.P.O.; British Official Wireless Press; Studio Barometer Readings. Rating Anticipations by "Field Glasses".
 8.5—Mr. Eric Aitken (pianoforte novelties).
 8.10—Miss Marjorie Ford, mezzo.
 8.17—Mr. Will Hooking, baritone.
 8.25—Messrs. Ken and Owen Jones.
 8.35—Mr. W. W. Fotherwell, talk: How to Become Quick at Figures.
 8.50—Miss Dorothy Martin, contralto.
 8.57—Mr. Jack Harris, humorist.
 9.4—Mr. Eric Aitken, piano player Imitations.
 9.15—Miss Marjorie Ford, mezzo.
 9.19—Mr. Will Hooking, baritone.
 9.25—Messrs. Ken and Owen Jones, Hawaiian Instrumentals, selected items.
 9.36—Mr. Phillip H. Tracy (Windsale), will talk on "Jackering on the Thompson River".
 9.45—Miss Dorothy Martin, contralto.
 9.53—Mr. Jack Harris, humorist.
 10—Time Signal Chime from G.P.O.; Studio Barometer Readings; Age News Service, exclusive to 3AR.
 10.10—Leggett's Ballroom Orchestra, under the leadership of Mr. Harry Nangle.
 11—Close down.

5 C L

Morning Session.

- 11.30—G.P.O. Chimes.
 11.31—Featuring a Stock Duo Art Number.
 11.40—"Advertiser" News Service.
 11.55—Vocalion number.
 12—G.P.O. Chimes.
 12.1—"Advertiser" News Service and Cricket scores.
 12.15—Featuring a Stock Duo Art Number.
 12.50—5CL Studio Orchestra will be heard in a series of classical numbers.
 1.55 (approx.)—Ward & Co.'s Stock Exchange Intelligence; Weather Reports and Station Announcements.
 2—G.P.O. Chimes.

Afternoon Session.

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

Evening Session.

- 8.20—G.P.O. Chimes.
 8.31—Bedtime Stories.
 7.50—Market Reports.
 7.40—Sporting talk by "Old Timer."
 8—G.P.O. Chimes.
 8.1—Special programme of instrumental and vocal numbers by the "Merry Maids of F. F. Cavaret's Havana Syncopators, Miss Grace Cusson, T. Harman, Moysty Skinner, Forbes and Hawke, and Miss Linda Wall.
 9.1—Weather Reports.
 9.3—Studio Concert, continued.

- 10.16—"Advertiser" News Service and ships within wireless range.
 10.30—Concert Continued.
 12—G.P.O. Chimes.
 12.1—Studio Concert, continued.
 1—G.P.O. Chimes; National Anthem; Close down.

7 ZL

Morning Session.

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

Afternoon Session.

- 8—Musical items from the Studio, weather information.
 8.30—Hobart Stock Exchange quotations.
 4—Time Signals.

Early Evening Session.

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

Evening Session.

- 4—"The Mercury" special Tasmanian news service. Railway auction produce sales. Weather forecasts.
 2.5—Hobart stock Exchange quotations.
 8.10—Weekly gardening chat, by Mr. George Nation.
 8.20—"Sports Budget," supplied by Mr. T. W. Newton, of Hobart Sports Depot.
 8.30—Miss Norah Shirley, contralto; Miss Gwendia Bidecock, mezzo soprano; Miss Katherine Cullinane, alto; Miss Kate Ruby Preece, accompanist; Mr. Herbert Larro, baritone; Mr. W. J. Cicola, Jr., trumpeter; Mr. Fred Harsud, baritone.
 9.50—"The Mercury" special interstate news service. Weather synopsis. Station announcements. National Anthem.



Saturday, Sept. 4

2 FC

Early Morning Session.

- 7—Time Signals. The Chimes of 2FC and Announcements.
 7.5—Cricket Scores: 3rd day's play of the match, Australia versus the English XI.
 7.10—Weather Information, Commercial News, Shipping Intelligence and Market Reports.
 7.25—Investment Market, Mining Share Market, Metal Quotations.
 7.35—Wool Sales, Broadstuffs Markets, Interests Markets, Produce Markets.
 7.45—"Sydney Morning Herald" News Service.
 8—Time Signals; Music from the studio.
 8.15—Close down.

Morning Session.

- 9.15—The Chimes of 2FC and Programme Announcements.
 9.20—Music from the Studio.
 9.45—A Talk by the 2FC Racing Commissioner.
 10—Time Signals; Cricket scores.
 10.5—Late "Sydney Morning Herald" news service.
 10.15—Music from the Studio.
 11—Australian Press Association and Reuter's Cable Service.
 11.15—A Talk on Gardening by "Red Gum."
 11.30—Close down.

Midday Session.

- 12.55—The Chimes of 2FC and Announcements.
 1—Time Signals; "Evening News" Midday News Service and Weather Information; Race Results will be given at intervals.

Afternoon Session.

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

Early Evening Session.

- 6—The Chimes of 2FC and Announcements.
 6.5—Aunt Meg and Sylvia will entertain the Children.
 6.45—Broadcast from the Hotel Australia: Orchestral Items.
 7.5—Late "Evening News" News Service and Weather Information.
 7.30—Late Sporting Results.
 7.40—A Talk on Motor Car Lubrication.

Night Session.

- 7.55—The Chimes of 2FC and Announcements.
 8—Broadcast from the Crystal Palace, by courtesy of the Directors of Union Theatres Ltd., the musical prologue to the new film "The Sea Beast," with incidental music played by the Crystal Palace Orchestra—conductor: Mr. H. Stone.
 8.45—From the Studio: Mr. William Dallison, (singer): (a) "Serenade" (Schubert); (b) "In Love" (Loehr).
 8.55—Mr. Gladstone Bell, cello solos.
 9.3—Musical monologue: "Grave and Gay"; Miss Ethel Lang and Mr. Brimton Gibb.
 9.15—Sporting Talk: "Boxing," by Captain Fred Anzosa.
 9.20—Mr. Lionel Lawson, violin solos.
 9.38—Mr. Jack Lamsdaine will give his second series of the Musical Stoopchase.
 9.45—Australian Honour: (a) "Dad's Dith" (Dyson); (b) "The Disagreeable Musician" (Denial).
 9.54—Mr. William Dallison, tenor: (a) "Pleading" (Harris); (b) "The Sapphires" (Caroe); (c) "On the Beach at Otaia" (Harrison).
 10.4—Mr. Gladstone Bell, cello solos.
 10.12—Mr. Jack Lamsdaine: (a) "Sweet Child" (Whitman); (b) "Alwaya" (Berlioz).
 10.25—Mr. Lionel Lawson, violin solos.
 10.35—2FC Dance Band.
 10.40—Comedy Sketch: "Desperate Remedies" (Winkworth).
 10.45—2FC Dance Band.
 11—Late Sporting Information.
 11.5—2FC Dance Band.
 11.30—Broadcast from the Wentworth Hotel, Sydney: Wentworth Cafe Dance Orchestra, under the baton of Mr. Sydney Simpson.
 12—National Anthem; Close down.

2 BL

Early Morning Session.

- 7.15—Physical Training and Health Exercises.
 7.30—Talk on Health and Hygiene.
 7.45—Physical Training and Health Exercises.
 7.45—Broadcasters Special News Service.
 7.52—Special News from Rugby.
 7.55—Musical Programme from the Studio.
 8—G.P.O. Clock and Chimes. Close down.

Morning Session.

- 10—G.P.O. Clock and Chimes. Special news service from the "Daily Telegraph."
 10.15—Broadcasters' Surf Expert will discuss the training operations and horses' form from Randwick.
 10.25—Special news from the "Daily Telegraph."
 10.45—Music from the Studio.
 11—G.P.O. Clock and Chimes. Special Cricket Session.
 11.5—Musical Programme from the Studio.
 11.15—London Metal Quotations.
 11.20—Broadcasters Information Service, in

cluding mails, shipping, weather, rainfall, social fixtures for the following day.

- 11.45—News from Sun Cable Edition.
 11.55—Talks to Women by Mrs. Jordan; Race Results broadcast immediately after each Race.
 12.25—Talk on Sporting and Athletic Fixtures for the day.
 1—G.P.O. Clock and Chimes. Close down.

Afternoon Session.

- 2—G.P.O. Clock and Chimes. Special Sporting Information broadcast by courtesy of "The Sun Newspapers."
 5.15—G.P.O. Clock and Chimes. Close down.

Early Evening Session.

- 6—G.P.O. Clock and Chimes. Uncle George and the Kiddies.
 6.45—Pavilion Dinner Orchestras.
 7.15—Results of football, lacrosse, and sporting information.
 7.30—Country news from "The Sun"
 7.45—G.P.O. Clock and Chimes. Close down.

Evening Session.

- 8—G.P.O. Clock and Chimes; Emmore Theatre Symphony Orchestra, under the direction of Mr. F. Watkins.
 8.15—Mr. Roland Foster will talk on "Music."
 8.45—Miss Anna Burke, soprano.
 8.55—Brings will sing cries of old Sydney.
 9.12—Mr. Chas. O'Mara will sing Irish songs, and tell funny stories.
 9.20—Duet: Miss Millie Hughes and Mr. Raymond Beattie.
 9.25—Interval.
 9.30—Resume of following day's programme.
 9.35—Announcements.
 9.38—Mr. Bobby Watson, comedian.
 9.45—Miss Millie Hughes, soprano.
 9.58—Mr. Chas. O'Mara.
 10—Duet: Miss Millie Hughes and Mr. Raymond Beattie.
 10.5—Miss Anna Burke.
 10.12—Mr. Raymond Beattie, basso cantante.
 10.25—Miss Bennett and the Ambassador Dance Orchestra, broadcast from the ball-room of the Ambassadors. During interval between dances "Sun" News will be broadcast.
 12—G.P.O. Clock and Chimes; National Anthem.

3 LO

Morning Session.

- 11—Sonora Recital.
 11.10—Harold Rodgers, organ selections.
 11.20—Connie Courtney, soprano.
 11.30—Sonora Recital.
 11.40—Harold Rogers, organ.
 11.50—Connie Courtney, soprano.
 12—Time signal. Latest cricket news, by courtesy of Reuters Ltd. Reuters and the Australian Press Association cables. "Argus" and "Herald" News services. Shipping intelligence.
 12.25—Stock Exchange Information.
 12.30—Meteorological information. Weather forecast for Victoria, Tasmania, South Australia, and New South Wales. Ocean forecast. River reports.

- 1—Time signal.
 1.1—Studio Orchestra.
 1.16—Vera Spaul, soubrette.
 1.17—Beatie Gaumon, violin.
 1.24—Studio Orchestra.
 1.34—Vera Spaul, soubrette.
 1.44—Studio Orchestra.
 2—The result of the Kiowa Hurdle, V.A.T.C. Caulfield, will be given at 1.30 p.m.
 2.5—Result of Downs Trial, V.A.T.C. Caulfield.
 2.40—Mr. Tod Collins will speak from the Melbourne Football Ground, Melbourne v. Footscray.

Afternoon Session.

- 3—Latest cricket news, by courtesy of Reuters Ltd.
 3.1—Studio Orchestra.
 3.5—Result of Menie Stakes, Caulfield.
 3.10—Mr. Tod Collins, football. Quarter-time interval. Story of first quarter's play. The scores.
 3.15—Studio Orchestra.

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 of Comparison"—
 BATTERIES.

- 3.40—Result of Sandringham Steeplechase, Caulfield.
- 3.41—Mr. Tod Collins—Football. Half-time interval. Story of second quarter's play. The scores.
- 3.45—Studio Orchestra.
- 3.50—Mr. Tod Collins—Football. Third quarter starts. News of any special incidents in the interval. The bounce.
- 3.55—Studio Orchestra.
- 4.15—Result of Heather Handicap—Caulfield.
- 4.20—Mr. Tod Collins—Football. Three-quarter time. Interval. Story of third quarter's play. The scores.
- 4.25—Studio Orchestra.
- 4.45—Sporting results. Latest cricket news, by courtesy of Reuters Ltd. "Herald" news service.
- 4.50—Result of Warristow Welter, Caulfield. Mr. Tod Collins—Football. Final bell. Story of last quarter's play. Best players. Final scores.
- 5—Close down.

Evening Session.

- 5.45—Sporting Results.
- 5—Children's Hour. After Billy Jones has sung to the children, "Mary Gunleak" will recite, "Painting a Boat," "Blue Curstine," "Siny for the little ones," "How the Robber's Breast became Red," Musical numbers by "Betty Boronia." For the boys and girls, "The Magic Mirror."
- 6.40—Latest Australian Cricket Eleven scores, by courtesy of Reuters Ltd.; "Argus" and "Herald" news services. Sporting results. Reuters and Australian Press Association cables.
- 6.55—Weather synopsis, Shipping movements.
- 6.57—Stock Exchange information.
- 7—Fish Market Reports by J. R. Borreit Ltd.
- 7.4—River Reports.
- 7.5—Market Reports by Victorian Producers' Cooperative Co. Ltd.; Grain, chaff, hay, straw, jute, dairy produce, potatoes and onions.

Night Session.

- Speakers: Mr. R. Rawson, Mr. G. S. Brown, Mr. J. S. Ross. Opening of Victorian Railways Institute. Musical and Elocutionary Competitions. A Special Programme.
- 7.50—Mr. R. Rawson.
- 7.40—Mr. C. S. Brown, Registrar of Copyrights, "Some Freaks of Memory."
- 8—Opening of the Victorian Railways Institute, musical and elocutionary competitions by Mr. J. S. Ross, President of the Victorian Railways Institute.
- 8.45—Special Programme.
- 10.50—Sporting Results—Races, Football, Metropolitan Soccer League, Metropolitan Amateur Association Lacrosse. "Argus" news service. Announcement.
- 11—God Save the King.

4 Q Q

No Midday Transmission.

Afternoon Session.

- 3.25—Tone in.
- 3.30—A Matinee for Little Listeners.
- 4.30—Close down.
- Early Evening Session.
- 6.25—Tone in.
- 6.30—The Children's Session, Bedtime Stories by "Uncle Ben" and "Uncle Jim," assisted by "Mabel Sunshine."
- 7.15—Sporting News.
- 7.30—Close down.

Night Session.

- 7.45—A sporting talk, by Rugby League Officials.
- 8—From the Gaiety Theatre, Toowong: Quarter of an hour's music by the orchestra.
- 8.15—From the Stadler Contralto solo, Miss Irene Elphinstone; Hawaiian instrumentalists, The Kalua Trio; soprano solo, Mrs. Robt. Bell; violin solo, Miss Peggy Adams.

- 8.30—From the Gaiety Theatre, Toowong: A Quarter of an hour's music by the orchestra.
- 8.45—From the Studio: Contralto solo, Miss Irene Elphinstone; Hawaiian instrumentalists; soprano solo, Mrs. Robt. Bell; violin solo, Miss Peggy Adams; Hawaiian instrumentalists, The Kalua Trio.
- 9.30—From Leonora's Ballroom, by courtesy of the proprietors of Lennon's Hotel, a programme of music will be relayed from Lennon's Ballroom.
- 10—From the Studio: "The Sunday Mail" News Service; Close down.

5 C L

Morning Session.

- 10.30—G.P.O. Chimes.
- 10.31—Studio Orchestra.
- 11.45—"Advertiser" News Service.

Afternoon Session.

- 1—Relay from Morphettville Racecourse—Running description of the racing programme by Mr. Arnold Treloar.
- 2—From the Studio: Interstate sporting results and "A" grade football results as available.
- Evening Session.
- 6.30—G.P.O. Chimes.
- 6.31—Bedtime Stories.
- 6.35—Market Reports.
- 7.40—Resume of the chief sporting results throughout the Commonwealth.
- 8—G.P.O. Chimes.
- 8.1—Programme of vocal and instrumental numbers by Protestant Federation Orchestras.
- 10.15—Sporting results.
- 10.20—Concert, continued.
- 10.35—Station Announcements.
- 11—G.P.O. Chimes. National Anthem.

7 Z L

Morning Session.

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

Early Evening Session.

- 7—Children's Corner. "Big Brother" chats to his Pal.
- Evening Session.
- 6—"The Mercury" Special Tasmanian News Service. Railway auction, produce sales. Weather information, and sporting results.
- 6.5—Hobart Stock Exchange quotations.
- 8.10—Talk "Come to Tasmania Movement," by Mr. N. A. Lewis, LL.B. "A popular talk on the Geology of Tasmania."
- 8.20—Palais de Danco Band, City Hall.
- 8.50—"The Mercury" Special Interstate News Service. Weather synopsis. Station announcements. Close down.

Morning Session.

- 10.55—The Chimes of 2FC and Announcements.
- 11—Broadcast from the Lyceum Hall, Pitt Street: Morning Service arranged by the Central Methodist Mission. Preacher: Rev. F. H. Raward.
- 12.20—From the Studio; News Service.
- 12.30—Close down.

Afternoon Session.

- 2.55—The Chimes of 2FC and Announcements.
- 3—Organ Recital including vocal items from the Petersham Congregational Church, arranged by Mr. Christian Hellmann.
- 4.30—An illustrated talk by Professor C. Sauer, on "Musicians and Poets." Illustrations: "Toccata" (Bach-Busoni); "Prelude Op. 28, No. 7 and 8" (Chopin)—piano solos; violin solos: "Tramers" (Schumann); "Prelud for Meistersingers" (Wagner-Wilhelm). Accompanist: Mr. Palmer Kent.
- 5—Close down.

Night Session.

- 6.10—The Chimes of 2FC and Announcements.
- 6.5—William Adam will talk on "Hymns and their story" dealing with evening hymns.
- 6.15—Vocal programme arranged by Madame Viceroy-Gosens.
- 7—Broadcast from the Randwick Presbyterian Church: The service conducted by the Rev. W. J. Grant.
- 8.30—Broadcast from the Grand Opera House: Band Concert by the N.S.W. State Military Band.
- 10—National Anthem; Close down.

2 B L

Morning Session.

- 10.55—Special Cricket Session.
- 11—Service, broadcast from Palmer Street Presbyterian Church.

Afternoon Session.

- 3.30—Bible Class, conducted by Mr. W. (Cairo) Bruce.
- 4—Organ Recital, broadcast from Palmer Street Presbyterian Church.
- 6—G.P.O. Clock and Chimes.
- Close down.

Evening Session.

- 7.20—Lecturo Recital, broadcast from the King's Hall.
- 8.50—Manly Municipal Military Band, broadcast from Piallo Theatre, Manly.
- 9.30—Interval.
- 9.35—Resume of following day's programme.
- 9.38—Weather report and forecast, by courtesy of Mr. C. J. Marce, Government Meteorologist.
- 9.40—Studio Concert.

3 L O

Morning Session.

- 10.30—Express Train Information.
- 10.35—Latest Cricket Scores, by courtesy of Reuters Ltd., Australia v. Civil Service C.A., played at Chiswick.
- 11—Service from Wesley Church, Lonsdale Street, Melbourne, conducted by the Rev. J. H. Cain.
- 12.15—Latest cricket scores, by courtesy of Reuters Ltd., Australia v. Civil Service C.A., played at Chiswick. British Official Wireless news from Rugby.
- Close down.

Afternoon Session.

- 2.55—Latest Cricket Scores, by courtesy of Reuters Ltd., Australia v. Civil Service C.A., played at Chiswick.
- 3—Pleasant Sunday Afternoon Service from Wesley Church, Lonsdale Street. Chairman, Rev. J. H. Cain.
- 4.30—Latest Cricket Scores, by courtesy of Reuters Ltd., Australia v. Civil Service C.A., played at Chiswick.
- Evening Session.
- 5.45—Children's Hour. Answers to letters and

Sunday, Sept. 5

2 F C

Early Morning Session.

- 9—Time Signals; The Chimes of 2FC and Announcements.
- 9.5—Cricket Scores to the drawing of stumps at the match, Australia versus Civil Service. These scores will be repeated at 10 and 11 a.m.

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Birthday Greetings. "Billy Bunny" and his "Brier Rabbits" will sing to the children. Stories will be "Mimma" and "Loveliest Life." Close down.

Night Session.

- 6.55—Latest Cricket Scores, by courtesy of Reuters Ltd., Australia v. Civil Service C.A., played at Chiswick.
- 7—Service from St. Paul's Cathedral, Melbourne.
- 8.45—Malvern Tramways Band.
- 8.45—Ely Treweek, soprano.
- 8.52—Kinz Bros., xylophone duet.
- 8.59—Malvern Tramways Band.
- 9.15—Ely Treweek, soprano.
- 9.22—Malvern Tramways Band.
- 9.33—Ely Treweek, soprano.
- 9.48—"Argus" news Service, Announcements, Latest cricket scores, by courtesy of Reuters Ltd., Australia v. Civil Service C.A., played at Chiswick.
- 9.56—Malvern Tramways Band.
- 10—God Save the King.

4 Q G

Morning Session.

The complete morning service from the Ann Street Presbyterian Church will be relayed.
10.55—Tune-in.
11—Church Service; Close down.

Afternoon Session.

The Band Concert provided in the Brisbane Botanical Gardens by the Metropolitan Band will be relayed.
8.10—Tune-in.
8.15—Band Concert.
4.30—Close down.

Night Session.

The complete evening service from the Ann Street Presbyterian Church will be relayed.
7.25—Tune-in.
7.30—Church Service.
8.30—Conclusion.
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; Close down.

5 C L

Morning Session.

11—Relay from Maughan Church—Divine Service.

Evening Session.

8.30—G.P.O. Chimes.
8.31—Sunday Stories for the children.
7—Relay from Rose Park Congregational Church, Divine Service.
8.15 approx.—From the Studio: Venetian Trio in a programme of concerted numbers, harp, flute, and violin solos, interspersed with vocal items.
8.45—Mr. P. H. Nicholls will talk on "Increase and multiply."
9—G.P.O. Chimes, continued.
9.1—Studio Concert, continued.
10—G.P.O. Chimes, National Anthem, Close down.

7 Z L

Evening Session.

7—Service from Melville Street Methodist Church, Hobart. Preacher, Rev. Robert Williams.
8.45—Concert from the Studio: Miss Amy Butterworth, pianist; Mr. Roll Lyons, baritone; Mr. Joseph Blight, sax soloist; Mr. Roy Sutcliffe, cornet; Mr. Audley Jones, bass, baritone; Mr. Ch. G. Tennant, baritone.
9.45—"The Mercury" Special Interstate News Service. Weather Synopsis. Station announcements. National Anthem.

Monday, Sept. 6

2 F C

Early Morning Session.

- 7—The Chimes of 2FC and Announcements. Time signals.
- 7.10—Music from the Studio.
- 7.15—Weather information, Commercial News, Shipping Intelligence, Rainfall, Temperatures, Astronomical Memoranda.
- 7.25—Investment Market, Mining Share Market, Metal Quotations.
- 7.35—Wool sales, breakbluffs markets, produce markets.
- 7.45—"Sydney Morning Herald" news service.
- 8—Time Signals. Music from the Studio.
- 8.15—Close down.

Morning Session.

- 9.15—The Chimes of 2FC and Programme Announcements.
- 9.20—Music from the Studio.
- 10—Time Signals. Music from the Studio.
- 10.5—Late "Sydney Morning Herald" news service.
- 10.15—Music from the Studio.
- 10.45—A Morning Reading.
- 11—Time Signals, Progress Cricket talk, Cashless.
- 11.5—Talk by the 2FC Racing Commissioner.
- 11.55—Music from the Studio.
- 11.30—Close down.

Midday Session.

- 12—Time Signals. The Chimes of 2FC and Announcements.
- 12.5—Stock Exchange, first call.
- 12.10—Music from the Studio.
- 12.50—Rusby Wireless News.
- 1—Time Signals. Weather Intelligence.
- 1.3—"Evening News" Midday News Service, Producer's Distributing Society's Report.
- 1.20—Music from the Studio.
- 1.30—Stock Exchange—second call.
- 1.35—Music from the Studio.
- 2—Time Signals; Close down.

Afternoon Session.

- 2.30—The Chimes of 2FC and Announcements.
- 2.35—A Recital on the Behning Player Piano.
- 3.30—From Farmer's Tea Rooms: The Oak Hall Trio will play (leader, Mr. Horace Kent).
- 3.45—From Farmer's Tea Rooms: Oak Hall Trio.
- 3.55—Music from the Studio.
- 3.40—Miss Kathleen Fletcher, mezzo.
- 4—Mr. Frank Donelan, tenor.
- 4.5—From Farmer's Tea Rooms: The Oak Hall Trio.
- 4.15—Music from the Studio.
- 4.30—Miss Kathleen Fletcher, mezzo.
- 4.25—From Farmer's Tea Rooms: The Oak Hall Trio.
- 4.35—Music from the Studio.
- 4.40—Mr. Frank Donelan, tenor.
- 4.45—Stock Exchange, Third Call.
- 4.45—Music from the Studio.
- 5—Close down.

Early Evening Session.

- 6—Time Signals. The Chimes of 2FC.
- 6.5—"Aunt Mary" and "Sylvia" talk to the children.
- 6.45—Broadcast from the Hotel Australia, Sydney, Orchestral Items.
- 7.15—From the Studio: "Evening News" late news service, weather information.
- 7.35—Daley's Market Reports (wool, wheat, stock), fruit and vegetable markets.
- 7.40—Close down.

Night Session.

7.55—The Chimes of 2FC and Announcements.
8—Broadcast from the Haymarket Theatre, Sydney: Operatic Orchestra, under the baton of Mr. Sidney Simpson.
8.25—A variety programme from the Warrigall Hall, Neutral Bay.
9.5—Broadcast from the Haymarket Theatre, Sydney: vocal act.
9.25—From the Studio: Mr. Nevin Tomson will continue his amusing instructions on "How to draw a Poster by Radio."
9.35—Further items from Neutral Bay.

- 10—Broadcast from the Haymarket Theatre, Sydney, Orchestral items.
- 10.30—Items from Warrinagh Hall, Neutral Bay.
- 11—Broadcast from the Wentworth Hotel, Sydney, Wentworth Cafe Dance Orchestra, under the baton of Mr. Sydney Simpson.
- 12—National Anthem; Close down.

2BL

Early Morning Session.

- 7.15—Physical Training and Health Exercises.
- 7.30—Talk on Health and Hygiene.
- 7.35—Physical Training and Health Exercises.
- 7.45—Broadcasters' Special News Service.
- 7.52—Special News from Rugby.
- 7.56—Musical programme from the studio.
- 8—G.P.O. Clock and Chimes. Close down.

Morning Session.

- 10—G.P.O. Clock and Chimes. Special News Service from the "Daily Telegraph."
- 10.10—Music from the Studio.
- 10.25—Special news from the "Daily Telegraph."
- 10.45—Music from the Studio.
- 11—G.P.O. Clock and Chimes. Special Orchestral Session.
- 11.30—Musical Programmes from the Studio.
- 11.20—Markets.
- 11.25—Broadcasters' Information Service, including Mail, Shipping, Weather, Rainfall, Social Fixtures for the following day.
- 11.40—Musical Programme from the Studio.
- 11.50—News from "Sun" Cable Edition.
- 12—G.P.O. Clock and Chimes. Talks to Women, by Mrs. Jordan.
- 12.30—Broadcasters' Turf Expert will discuss the training operations and horses form from Randwick.
- 12.45—Hilber's Instrumental Quartette, under the direction of Caryl Castling.
- 1.15—From the Studio: Palmgrove Orchestra, under the direction of Mr. Stan Forthingham.
- 1.30—Sydney Stock Exchange calls.
- 1.45—Latest sporting information from the "Sun."

- 2—G.P.O. Clock and Chimes. Close down.

Afternoon Session.

- During the afternoon results of races will be broadcast immediately after each race.
- 3—G.P.O. Clock and Chimes. Weather report and Social Notes from the "Sun."
- 3.10—Resume of night's programme.
- 3.15—David Jones' Tea Room Trio.
- 3.30—"A Course in Philosophic Thought," by Mr. J. M. Prentice.
- 3.45—Musical Programme from the Studio.
- 4—G.P.O. Clock and Chimes. David Jones' Tea Room Trio.
- 4.15—Music from the Studio.
- 4.30—Serial Story, entitled "The Mad Song" (Mabel Wagner).
- 4.45—Music from the Studio.
- 5—G.P.O. Clock and Chimes; Producers' Distributing Society's Market Report.
- 5.10—Shipping information when available.
- 5.15—G.P.O. Clock and Chimes. Close down.

Early Evening Session.

- 6—G.P.O. Clock and Chimes. Uncle George and the Kiddies.
- 6.45—Evilvin: Dinner Orchestra, under the direction of Gen. Morrison. Special Country Session.
- 7.15—Australian Mercantile Land & Finance Co.'s Stock and Wool Report.
- 7.20—Weather Reports.
- 7.24—What's On, a guide to the visitors and citizens of Sydney.
- 7.30—Stock Exchange Reports.
- 7.37—Producers' Distributing Society's fruit and vegetable report.
- 7.42—Fruit and vegetable Reports (Sun).
- 7.46—Grain and Fodder Reports (Sun).
- 7.48—Country News from The Sun.
- 7.55—Close down.

Evening Session.

- 8—G.P.O. Clock and Chimes; Newtown Band, broadcast from Industrial Hall, Newtown.
- 8.13—Orphans' Wall, broadcast from Warrinagh Hall, Neutral Bay.
- 9—Al. Hammet and The Ambassadors' Dance

Band, broadcast from the ballroom of the Ambassadors. During the intervals between dances, description of frocks and social notes will be broadcast by Mrs. Fotts.

- 9.30—Interval.
- 9.35—Orphans' Wall, broadcast from Warrinagh Hall, Neutral Bay.
- 10.43—Al. Hammet and The Ambassadors' Dance Band, broadcast from the ballroom of the Ambassadors. During intervals between dances, News Reports by courtesy of the Sun Newspapers will be broadcast.
- 12—G.P.O. Clock and Chimes; National Anthem.

3LO

Midday Session.

- 12—Time Signal. Latest cricket news, by courtesy of Reuters Ltd. British Official Wireless news from Rugby. Reuters and the Australian Press Association cables. "Argus" and "Herald" news services.
- 12.45—Shipping Intelligence. Stock Exchange information.
- 12.50—Meteorological information. Weather forecasts for Victoria, Tasmania, South Australia and New South Wales. Ocean forecast. River reports.
- 1—Time signal.
- 1.1—Studio Orchestra.
- 1.10—Arthur Douglas, Scotch comedian.
- 1.17—Frank Slousham, clarinet.
- 1.20—Clement May, juggler.
- 1.30—Arthur Douglas, Scotch comedian.
- 1.12—Tasma Tiernan, cello solo.
- 1.50—Studio Orchestra.
- 2—Close down.

Afternoon Session.

- 2—Latest cricket scores, by courtesy of Reuters Ltd.
- 2.1—Studio Orchestra.
- 3.10—Mrs. Sisk will talk on homecraft.
- 3.25—Reginald Beasley, violin.
- 3.33—Harry Wotton, baritone.

A -

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- 5.40—C. Richard Churg, flute.
 5.50—Lilian Crisp, soprano.
 5.57—Miss Flora Pell, Supervisor of Domestic Arts, Education Department, Domestic Economy.
 4.12—Harry Wotton, baritone.
 4.15—Bertrald Bradley, viola solo.
 4.26—Lilian Crisp, soprano.
 4.35—Studio Orchestra.
 4.48—"Herald" news service. Latest cricket news, by courtesy of Reuters Ltd.
 5—Close down.

Evening Session.

- 6.45—Children's Hour. Answers to letters and birthday greetings.
 6.10—Miss Bilce Lockwood will speak to the children. And "Little Miss Kookaburra" will say (by special request) "The House that Jack Built," and the fifth instalment of "The Girl who Played the Game."
 6.40—Latest cricket news, by courtesy of Reuters Ltd. "Argus" and "Herald" news services, Reuters and the Australian Press Association cables.
 6.58—Weather synopsis. Shipping movements.
 7—Stock Exchange information.
 7.2—Fish Market Reports, by J. R. Borrett Ltd.
 7.6—River reports. Aerial mail information by Australian Aerial Services.
 7.5—Market reports by the Victorian Producers Co-operative Co. Ltd.: Haymarket sheep sales, poultry, grain, chaff, hay, straw, jute, dairy produce, potatoes, and onions. Market prices of oranges and lemons, by the Victorian Central Citrus Association Pty. Ltd.

Night Session.

- 7.20—Under the auspices of the New Settlers' League, Mr. H. Rankin, "Wattles for Beauty and Shelter."
 7.40—Under the auspices of the Department of Agriculture, Mr. H. A. Mullett, Agricultural Superintendent, "Improvement of Soil Texture—Uses of Gypsum."
 8—"A Bursar of Agriculture," Melody."
 8—Transmission from Dookie Agricultural College. Singing by students, under the direction of Mr. A. B. Lane.
 8.45—Victorian Railways Institute Band.
 8.55—Billie Lockwood, soubrette.
 9.2—Under the auspices of the Launceston 50,000 League, a talk will be given on Launceston, Tasmania.
 9.17—Victorian Railways Institute Military Band.
 9.27—Billie Lockwood, soubrette, selected.
 9.35—Latest cricket news, by courtesy of Reuters Ltd. British Official Wireless news from Rugby. Announcements.
 9.45—Victorian Railways Institute Military Band.
 9.55—Eileen Starr, soprano.
 10.2—"The Melbourne Irish Pipes."
 10.12—Margaret Marshall, elocutionist.
 10.18—Victorian Railways Institute Military Band.
 10.29—Margaret Marshall, elocutionist.
 10.36—"Argus" news service. Announcements. Weather forecast.
 10.46—Eileen Starr, soprano.
 10.53—Melbourne Irish Pipes.
 11—God Save the King.

4 QG

Midday Session.

- 12.55—Tune-in.
 12.59—Time Signal.
 1—Market Reports supplied by the Council of Agriculture; Stock Exchange information, supplied by the Committee of the Brisbane Stock Exchange; Weather Information supplied by the Commonwealth Weather Bureau; News Service supplied by "The Daily Mail." News service supplied by "The Daily Standard."
 1.20—From the Hotel Carlton, lunch hour music by the Carlton Orchestra.
 2—Close down.

Afternoon Session.

- 5.30—A programme of Music from the Studio.
 4.15—News Service supplied by "The Telegraph."
 4.50—Close down.

Early Evening Session.

- 6.25—Tune-in.
 6.30—"The Children's Session"—Stories by "The Sandman."
 7—"The Farmers' Session." Market Reports supplied by the Council of Agriculture. Lecture: "Biological Research in Relation to Acriculture," by Professor Goddard, University of Queensland.
 7.20—News Service supplied by "The Standard." Stock Exchange Information supplied by the Committee of the Brisbane Stock Exchange.
 7.30—Close down.

Night Session.

- 7.45—Lecture Session: "A Talk by the Officials of the Queensland Preference League."
 8—Organ Recital, provided by City Organist

Afternoon Session.

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

Evening Session.

- 6.30—G.P.O. Chimes.
 6.31—Bedtime Stories.
 7.30—Market Reports.
 7.40—Mr. W. W. Fredrickson, automotive engineer, of Vacuum Oil Co., will give his weekly motor talk.
 7.58—Care of the Teeth, by Mr. A. E. Dungey.
 8—G.P.O. Chimes.
 8.1—A programme of band music by S.A. Railways Band interspersed with vocal items.
 8.29—Twinkler's Boys' Club.
 8.40—Concert, continued.
 9—G.P.O. Chimes.
 9.1—Weather Reports.
 9.15—Concert, continued.
 10.15—"Advertiser" news service and ships within wireless range.
 10.30—Studio Concert, continued.
 10.55—Station Announcements.
 11—G.P.O. Chimes; Close down.

7 ZL

Morning Session.

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

Afternoon Session.

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

Early Evening Session.

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

Evening Session.

- 8—"The Mercury" special Tasmanian news service. Railway auction produce news. Weather information.
 8.45—Hobart Stock Exchange quotations.
 8.10—Talk by Mr. W. H. Schneider, Lecturer in Mechanical Engineering, "Some relations of the Engineer to Society."
 8.50—Miss Dorothy Newton, contralto; Miss Doreen Glover, mezzo contralto; Miss Elsie Lumpkin, soprano; Miss Beryl Scettrine, soprano; Mrs. E. W. Bailey, L.A.B., contralto; Miss Amy Buttersworth, pianist; Mr. George Muir, tenor; Mr. Rolf Lyons, baritone.
 9.50—"The Mercury" special Interstate news service. Weather synopsis. Station announcements. National Anthem.



Free Trip to Java and Singapore

IN next week's issue of "Wireless Weekly" we offer a Free First-class Return Passage to Java and Singapore, and £50 incidental expenses as first prize in an unique competition for all readers.

Don't miss our next number!

(Mr. George Sampson, F.R.C.O.), relayed from Exhibition Concert Hall.
 2.15—From the Studio—Weather information officially supplied by the Commonwealth Weather Bureau. Announcements.
 9.25—The Clarwin Orchestra.
 10—From the Studio. "The Daily Mail" News Service. Close down.

5 CL

Morning Session.

- 11.30—G.P.O. Chimes.
 11.31—Featuring a Stock Duo Art Number.
 11.45—"Advertiser" News Service.
 11.55—Vocalion number.
 12—G.P.O. Chimes.
 12.1—"Advertiser" News Service and Cricket score.
 12.16—Featuring a Stock Duo Art Number.
 12.30—5CL Studio Orchestra will be heard in a series of classical numbers.
 1.45 (approx.)—Ward & Co.'s Stock Exchange Intelligence; Weather Reports and Station Announcements.
 2—G.P.O. Chimes.

Tuesday, Sept. 7

2 FC

Early Morning Session.

- 7—The Chimes of 2FC and Announcements—Time Signals.
 7.5—Cricket Score of the second day's play, Australia versus the Civil Service.
 7.10—Weather information, commercial news, shipping intelligence, rainfall, temperatures, astronomical memoranda.
 7.25—Investment market, mining share market, and metal quotations.
 7.35—Wool sales, breadstuffs markets, produce

markets,
7.45—"Sydney Morning Herald" News Service.
8.—Time Signals; Cricket Scores; Music from the Studio.
8.15—Close down.

Morning Session.

9.15—The Chimes of 2FC and Announcements; Cricket Scores.
9.25—Music from the studio.
9.45—Last minute racing information by the 2FC Racing Commissioner.
10.—Time Signals; Music from the Studio.
10.15—Late "Sydney Morning Herald" News Service.
10.15—Music from the Studio.
11.—Time signals. Progress cricket talk on 10-days' match in England. Australian Press Association and Reuters Cable services.
11.15—A talk on Home Cooking and Recipes, by Miss Ruth Furst.
11.30—Close down.

Midday Session.

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

Afternoon Session.

2.30—The Chimes of 2FC and Announcements.
2.35—A Vocal Recital.
3.30—From Farmer's Tea Rooms: The Oak Hall Trio will play (leader, Mr. Horace Koats).
3.40—Miss Alice Pomroy, soprano.
3.45—From Farmer's Tea Rooms: The Oak Hall Trio.
3.55—Music from the Studio.
4.—Mr. Robert Wellard, baritone.
4.5.—From Farmer's Tea Rooms: The Oak Hall Trio.
4.15—Music from the Studio.
4.20—Miss Alice Pomroy, soprano.
4.25.—The Oak Hall Trio.
4.35—Music from the Studio.
4.40.—Mr. Robert Wellard, baritone.
4.45—Stock Exchange, Third Call.
4.45—Music from the Studio.
6.—The Chimes of 2FC and Announcements.
6.—Time Signals; Close down.

Early Evening Session.

Time signals.
6.5—"Jerry" will talk to the children.
6.45—Broadcast from the Hotel Australia, orchestral items.
7.15—From the Studio: "Evening News" late news service, weather information.
7.30—Dulcety's Market Reports (wool, wheat, stock), fruit and vegetable markets.
7.40—A talk by a member of the N.S.W. Wireless Institute.

Night Session.

7.55—The Chimes of 2FC and Announcements.
8.—Items by the N.S.W. State Military Band, playing from the Royal Naval House, Margaret Street, City.
8.15—From the Studio, Mr. Bryson Taylor, tenor.
8.25.—Mr. Lionel Lawson, violin solos.
8.32.—Mr. Murray Gibbs, baritone.
8.40—Misses Esther Kahn and Lilian Frost in unaccompanied numbers for piano and organ, written by Esther Kahn.
8.50—Items by the N.S.W. State Military Band.
9.10—A talk by the Rev. F. H. Raward on "Australia."
9.15.—Mr. Bryson Taylor, tenor.
9.24—Items by the N.S.W. State Military Band.
9.50—From the Studio, Mr. Murray Gibbs, baritone.
10.—Mr. Grattan-Smith on Australian books.

A Dependable Battery

It's good to know that you have a dependable battery for your wireless set. One that is full of life and will give real and constant service.
You will have no battery troubles if you instal an Ever-Ready Radio Battery.
There are many different types, every one of which is reliable and efficient.



THE "STANDARD" DRY CELL RADIO BATTERY.

Price 2/-
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 recognizing its immense superiority over any imported cell. Size, 2 1/2 x 6 1/2. Weight, 2 lbs. Also for bells, telephones, signalling and electro-medical apparatus, &c.



THE NEW EVER-READY No. 126, OR A, B, OR C BATTERY.

Price 2/9
One of a group of radio batteries. Useful in wireless lighting and amplification. Size, 3 1/2 x 4 x 1 3/8. Most useful for bells, telephones, burglar alarms, medical coils, etc. With three brass terminals. Voltages, 1.5-3-or 4.5 volt. Useful for all wireless purposes as well as general utility.



"WANDA" PLUS RADIO BATTERIES.

This illustrates the new radio high-tension "B" battery, which can be obtained 3 1/4, 42 or 63 volts—fitted with a Wanda Plug, and 2 screw terminals.

PRICE:	
Small size, type WP, 30 volt	9/5
Small size, type WV, 40 volt	12/6
Small size, type WF, 60 volt	15/-
Large size, type XP, 30 volt	16/-
Large size, type XW, 40 volt	21/-

If unobtainable locally, write for address of nearest source of supply to

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

163 Pitt Street 11 SYDNEY

- 10.10—Miss Esther Kahn, piano solos.
 10.20—Mr. Murray Gibbs, baritone.
 10.25—Misses Esther Kahn and Lilian Frost, violin and piano solos.
 10.33—Broadcast from the Wentworth Hotel, Sydney; Wentworth Cafe Dance Orchestra, under baton of Mr. Sydney Simson.
 12—National Anthem. Close down.

2BL

Early Morning Session.

- 7.15—Physical Training and Health Exercises.
 7.30—Talk on Health and Hygiene.
 7.35—Physical Training and Health Exercises.
 7.45—Broadcasters' Special News Service.
 7.52—Special News from Rugby.
 7.55—Musical Programme from the Studio.
 8—G.P.O. Clock and Chimes; Close down.

Morning Session.

- 10—G.P.O. Clock and Chimes. Special news service from the "Daily Telegraph."
 10.10—Broadcasters' Turf Report will discuss the training operations and horses' form from Randwick.
 10.25—Special news from "Daily Telegraph."
 10.45—Musical programme from the Studio.
 11—G.P.O. Clock and Chimes. Special cricket session.
 11.5—Musical programme from the Studio.
 11.15—Markets.
 11.20—London Metal Quotations.
 11.25—Broadcasters' Special Information Service, including mail, shipping, weather, rainfall, social features for the following day.
 11.40—Musical programme from the Studio.
 11.50—News from "Sun" cable edition.
 12—G.P.O. Clock and Chimes. Talk to women by Mrs. Jordan: To Make and Choose Lingerie.
 12.30—Shopping Guide.
 12.35—Sydney Stock Exchange calls.
 12.45—Littles' Instrumental Quartette, direction "Carl Castling."
 1—Mid-day Organ Recital, by Miss Alice Bryant, broadcast from Manly Presbyterian Church.
 1.10—Sydney Stock Exchange calls.
 1.45—Special sporting information from "The Sun."
 2—G.P.O. Clock and Chimes. Close down.

Afternoon Session.

- During the Afternoon results of races will be broadcast immediately after each race by courtesy of The Sun Newspapers.
 2—G.P.O. Clock and Chimes; Weather Report and Social Notes from "The Sun."
 3.15—Civil Service Restaurant Trio.
 3.20—"Talk on Modern Psychology" by Mr. J. M. Prentice.
 3.45—Musical Programme from the Studio.
 4—G.P.O. Clock and Chimes; Civil Service Restaurant Trio.
 4.15—Musical Programme from the Studio.
 4.30—Serial story, entitled "The Mad Song."
 4.45—Musical programme from the studio.
 4—G.P.O. Clock and Chimes; Shipping Intelligence.
 5.15—G.P.O. Clock and Chimes; Close down, formation when available.

Early Evening Session.

- 6—G.P.O. Clock and Chimes; Uncle Jack and the Kiddies.
 6.45—Broadcasters' Dinner Orchestra. Special Country Session.
 7.15—Australian Mercantile Land & Finance Co.'s Stock and Wool Report.
 7.20—Weather Reports.
 7.24—Talk on Land Subjects.
 7.31—Stock Exchange Reports.
 7.37—Producers' Distributing Society's Fruit and Vegetable Report.
 7.40—Mr. A. H. Perrett, Vice President of N.S.W. Division of Wireless Institute of Australia will speak.
 7.55—Close down.

Evening Session.

- 8—G.P.O. Clock and Chimes; Broadcasters' Trio.
 8.15—Professor Randal Woodhouse, tenor.
 8.22—Miss Dulcie Blair, violin.
 8.30—Miss Gladys Verona, soprano, the fam-

ous Australian, who has recently returned from abroad.

- 8.45—Mr. Reg. Harrison, comedian.
 8.52—Broadcasters' Trio.
 9—G.P.O. Clock and Chimes.
 White Report and Forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist.
 9.2—Resume of following day's programme.
 9.5—Announcements.
 9.20—Mr. Alfred Cunningham, baritone.
 9.17—Miss Gladys Verona.
 9.32—Interval.
 9.35—Lecture from the Studio.
 9.55—Mr. Alfred Cunningham.
 10.2—The elite old time dances, broadcast from Marrickville Hall. During the interval between dances, news reports, by courtesy of "The Sun" will be broadcast.
 10.15—G.P.O. Clock and Chimes; National Anthem.

3LO

Midday Session.

- 12—Time Signal. Latest cricket, Australia v. Civil Service C.A., played at Chiswick. British Official Wireless news from Rugby. Reuters and the Australian Press Association cables. "Argus" and "Herald" news services. Shipping Intelligence.
 12.45—Stock Exchange information.
 12.50—Meteorological information. Weather forecasts for Victoria, Tasmania, South Australia and New South Wales. Ocean forecast. River reports.
 1—Time Signal.
 1.1—Studio Orchestra.
 1.11—Reginald Bradley, violin.
 1.17—Alban Brudenell, tenor.
 1.24—Tasma Tieron, Agnes Fortune, and Frank Stobham, "Trio in B Flat."
 1.35—Reginald Bradley, violin and piano.
 1.41—Alban Brudenell, tenor.
 1.50—Studio Orchestra.
 2—Close down.

Afternoon Session.

- 3—Latest Cricket Scores, by Courtesy of Reuters Ltd., Australia v. Civil Service C.A., played at Chiswick.
 3.1—Will Page and his Popular Players.
 3.10—Arthur Douglas, Scotch comedian.
 3.17—Will Page and his Popular Players.
 3.27—"Au Fait" of Messrs. Buckley and Nunn Ltd. will give a Fashion Talk.
 3.32—Will Page and his popular players.
 3.32—Rosa Darcy and Inez Vinard, entertainers.
 3.39—Will Page and his Popular Players.
 3.6—Arthur Douglas, Scotch comedian.
 4.14—Mairon Morland, Infant Welfare.
 4.24—Will Page and his Popular Players.
 4.30—Rosa Darcy and Inez Vinard.
 4.37—Will Page and his Popular Players.
 4.45—Latest Test Cricket Scores, by courtesy of Reuters Ltd. "Herald" news service.
 4.55—Stock Exchange information.
 5—Close down.

Evening Session.

- 5.45—Children's Hour. Answers to letters and Birthday Greetings.
 6—Billie Lockwood will sing "Poor Papa," and "Bunching Things."
 6.16—"Mary Gilmest" Poems: "Windy Nights," "Little Ones Sleeping," story for the little ones, "The Dream Fairies," Boys and girls, "The Story of Oberon."
 6.40—Latest Cricket Scores, by courtesy of Reuters Ltd., Australia v. Civil Service C.A., played at Chiswick. Reuters and the Australian Press Association cables.
 6.53—Weather synopsis. Aerial mail information by the Australian Aerial Services Ltd.
 6.59—Stock Exchange information.
 7.2—Fish Market Reports by J. R. Borrett Ltd.
 7.4—River Reports.
 7.5—Market Reports by the Victorian Producers' Co-operative Co. Ltd.: Haremarket sales, poultry, grain, chaff, hay, straw, jute, dairy produce, potatoes, and onions.

Night Session.

- 7.20—Councillor H. J. Bean will speak under the auspices of the Royal Automobile Club of Victoria.
 7.40—Under the auspices of the University Extension Board, Mr. F. Chapman, of the National Museum, "Buchan Marble."
 8—Tally Ho Farm Boys' Band.
 8.10—Cecilia Ladies' Choir, consisting of 60 voices.
 8.20—Clement May, famous Dikensian, selected.
 8.58—Tally Ho Farm Boys' Band.
 9—Cecilia Ladies' Choir.
 9.10—Dr. Loftus Hills, "Popular Science."
 9.23—Tally Ho Farm Boys' Band.
 9.35—Cecilia Ladies' Choir.
 9.45—Latest Cricket Scores, by courtesy of Reuters Ltd. Announcements. British Official Wireless news from Rugby.
 9.55—Studio Orchestra.
 10.5—Mary Mack, contralto.
 10.12—Louise Moorhouse, Oliver Bainbridge, and Terence Crisp, in a one act play, "The Man in the Stalls."
 10.42—Mary Mack, contralto.
 10.49—Studio Orchestra.
 10.57—"Argus" news service. Announcements. Weather forecast.
 11—God Save the King.

4QG

Midday Session.

- 12.55—Time-In Signal.
 12.58—Time Signal.
 1—Market Reports, Stock Exchange, Weather. "The Daily Mail" News, the "Daily Standard" News.
 1.23—Lunch Hour Music by the Carlton Orchestra.
 2—Close down.

Afternoon Session.

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

Early Evening Session.

- 6.25—Time-In.
 6.28—The Children's Session. Stories by "Uncle Ben" and "Uncle Jim."
 7—"The Farmers' Session; Market Reports; Lecture: 'The Honey Bee at Home,' Mr. A. T. Baker (Secretary, Queensland Beekeepers' Association).
 7.28—"The Standard" News. Stock Exchange.
 7.30—Close down.

Night Session.

- 7.45—Lecture Session: "Photography," by Mr. F. L. South (manager, Kodak Ltd.).
 8—Driabane Apollo Club in Instrumental Home.
 8.26—Weather information, officially supplied by the Commonwealth Weather Bureau. Announcements.
 8.36—From the Centennial Hall, by courtesy of the lessee, half an hour's dance music will be relayed from the Centennial Hall.
 10—From the Studio, "The Daily Mail" news service. Close down.

5CL

Morning Session.

- 11.30—G.P.O. Chimes.
 11.31—Featuring a Stock Duo Art Number.
 11.40—"Advertiser" News Service.
 11.55—Vocalion number.
 12—G.P.O. Chimes.
 12.1—"Advertiser" News Service and Cricket scores.
 12.16—5CL Studio Orchestra will be heard in a series of classical numbers.
 1.55 (approx.)—Ward & Co.'s Stock Exchange Intelligence; Weather Reports and Station Announcements.
 2—G.P.O. Chimes.

Afternoon Session.

- 3—G.P.O. Chimes.
 3.1—Relay from "Maple Leaf" Cafe—Orchestral numbers.
 3.45—From Studio—Serial Story.

- 4—G.P.O. Chimes.
 5.1—Broadcast from "Arcadia" Cafe—Orchestra numbers.
 5.5—Stock Exchange Reports, General Information, and Station Announcements.
 6—G.P.O. Chimes.

Evening Session.

- 6.30—G.P.O. Chimes.
 6.41—Bedtime Stories.
 7.30—Market Reports.
 7.40—Milling talk by Mr. Jaclott.
 8—G.P.O. Chimes.
 8.1—Ladenz's Quartette in a programme of instrumental numbers, interspersed with vocal items, relayed from Fire Street Lecture Hall.
 9—G.P.O. Chimes.
 9.1—Weather Reports.
 9.3—Studio Concert, continued.
 10.15—"Advertiser" news service, and ships within wireless range.
 10.30—Studio Concert, continued.
 10.55—Station Announcements.
 11—G.P.O. Chimes. National Anthem.

7 Z L

Morning Session.

- 11—G.P.O. Clock Chimes; "The Mercury" News; Stock Market; Shipping; Commercial Intelligence; Weather Information; Records from the Studio.
 12 noon—G.P.O. Chimes. Close down.

Afternoon Session.

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

Early Evening Session.

- 7—Children's Corner. "Big Brother" chair to his pulk.
 7.15—The adventures of George the Bookshelf Cat. "Roundness has a silver wedding" by Aunt Stella.

Evening Session.

- 8—G.P.O. Clock Chimes; "The Mercury" special Tasmanian news service; Railway mission produce sales; Weather Information.
 8.5—Hobart Stock Exchange quotations.
 8.10—Literary Lapses and Library Lists, by Mr. W. E. Fuller.
 8.30—Musical items from the Studio—special request numbers.
 9—Photography talk, by Mr. Ch. H. Sims, Manager of Kodak, Hobart. "The Cardinal points of Photography."
 9.20—Musical items continued.
 9.50—"The Mercury" special interstate news service. Weather synopsis. Station announcements. National Anthem.



Wednesday, Sept. 8

2 F C

Early Morning Session.

- 7—Time Signals, The Chimes of 2FC and Announcements.
 7.5—Cricket Scores of the third day's play, Australia versus Civil Service.
 7.10—Commercial news, rainfall, temperatures, Astronomical memoranda.
 7.25—Investment Market, Mining Share Market, Metal Quotations.
 7.55—Wool sales, breadstuffs markets, produce markets.
 7.45—"Sydney Morning Herald" news service.
 8—Time Signals; Cricket Scores; Music from the Studio. A "Chorus" talk by Mr. J. K. Powell.
 8.15—Close down.



DRY CELL BATTERIES IN RADIO

As is well known, a Broadcasting Station sends out enormous electrical energy, at a speed great enough to encircle the earth over seven times in one second. We collect this energy with our receiving aeriads and through our receiving sets, but it is only by added energy by means of batteries that it is possible to operate, not only telephones, but loud speakers and other devices.

For the best results, the dry cell batteries must have certain characteristics, for example a large energy capacity, so that they can be used intensively or produce a large sound, availability to hold their energy and not allow it to leak out, even when they are in use, a constancy of delivery of energy so that it can be easily and smoothly controlled by the receiving set, and smoothness of discharge into the set to prevent interference with the control.

As these Dry Cell Batteries are such an important part of long distance radio receiving equipment, Burgess Dry Cell Batteries are pre-

eminently satisfactory for these purposes.

They have certain characteristics which should be mentioned. A dry cell consists of a zinc container filled with active chemicals, in the centre of which is a brass-capped carbon rod. The zinc can is the negative (—) pole or electrode, and the centre carbon is the positive (+) pole or electrode. The voltage of a dry cell is about 1.5 volts when it is not in circuit (open circuit voltage), and it is lower when it is in circuit (closed circuit voltage), depending on the cell resistance and the resistance of the circuit to which it is connected.

Burgess "B" Batteries are an assembly of small, specially designed dry cells soldered together in series to produce the high voltage necessary for the vacuum tube. These batteries have been "the standard of quality in the radio field" since 1917, and the accompanying illustration shows some of the unique construction of these batteries:—



"A" is the Burgess one piece seamless zinc can, which adds to the life of the cell, prevents leakage, eliminates voltage differences.

"B" is the moisture-proof wrapper around each cell. Secures individual insulation.

"C" is a sealing material between cells. Provides additional insulation, prevents movement.

"D" is the waterproof partition between cells. Means of confining internal moisture due to cell discharge within the compartment.

"E" is the heavy Burgess waterproof non-metallic insulating material, the first line of defence against moisture getting into the battery.

"F" is the heavy triple seal over the top which adds to strength of battery.

"G" is the webbing between seals.

The features which cannot be shown in the picture are as good as those enumerated above. They include a special mix or combination of chemicals, the results of much research work, a critical selection of raw materials, the best of manufacturing methods, and a most rigid technical control.

All Burgess "E" Batteries embody the same features of construction. There is no difference in the quality of the energy furnished. The largest sizes of batteries give the greatest energy or hours of service. The higher voltage batteries are simply equivalent of what a radio listener would get by connecting a number of "B" Batteries in series.*

Morning Session.

- 9.15—The Chimes of 2FC and Programme Announcements.
 9.20—Cricket scores. Music from the Studio.
 9.45—Last minute racing information by the 2FC Racing Commissioner.
 10—Time signals. Cricket scores. Music from the Studio.
 10.5—Late "Sydney Morning Herald" news service.
 10.15—Music from the Studio.
 10.45—The Morning Reading.
 11—Time signals. Progress Cricket Talk on to-day's cricket match in England. Cubles.
 11.15—Cooking Talk and Recipes by Miss Ruth Fursi.
 11.30—Close down.

Midday Session.

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

Afternoon Session.

- 2.30—The Chimes of 2FC and Announcements.
 2.35—A recital by the pupils of Mr. Brunton Gibb.
 2.50—From Farmer's Tea Rooms: The Oak Hall Trio (Leader, Mr. Horace Keats).
 3.0—Miss Eileen Semple, contralto.
 3.45—From Farmer's Tea Rooms: The Oak Hall Trio.
 4—Music from the Studio.
 4.1—Miss M. Craven, soprano.
 4.5—The Oak Hall Trio.
 4.15—Music from the Studio.
 4.20—Miss Eileen Semple, contralto.
 4.25—The Oak Hall Trio.
 4.45—Music from the Studio.
 4.50—Miss May Craven, soprano.
 4.55—Stock Exchange, Third Call.
 Music from the Studio.
 5—Close down.

Early Evening Session.

- 6—Time Signals. The Chimes of 2FC. Announcements.
 6.5—"Aunt Mary" and "Sylvia" entertain the children.
 6.45—Broadcast from The Hotel Australia, Sydney: Orchestral Items.
 7.15—From the Studio: "Evening News" late News Service; Weather Information.
 7.40—Daily's Market Reports (wheat, wheat stock), fruit and vegetable markets.
 7.40—Mr. J. K. Powell will talk on "Music, the Harmoniser."

Night Session.

- 7.55—The Chimes of 2FC and Announcements.
 8—String Quartette.
 8.30—From the Studio: Metropolitan Quartette.
 8.50—The eighth of the Radio Auction Bridge series in which four players led by Mr. W. F. H. Master, will play through a selected hand of Bridge. The complete play will be broadcast. Mr. Master, who alone has the key to the perfect playing of the hand will answer on the phone and broadcast simultaneously inquiries by listeners concerning the play. The perfect hand as played by expert players in U.S.A. will be available to Bridge enthusiasts each week after the games are played every Wednesday.
 9.20—From the Studio: Miss Jean Grant, soprano.
 9.25—Mr. A. E. Champion, tenor.
 9.30—Broadcast from the King's Hall, piano solo by Ethel Hynes, and lute solo by Wilfrid Thomas.
 10—Miss Mary Bourke, contralto, from Studio.
 10.5—Mr. A. G. Ellis, baritone.
 10.15—2FC Dance Band.

- 10.30—Miss Jean Grant, soprano.
 10.35—Mr. A. L. Champion, tenor.
 10.40—2FC Dance Band.
 11.30—Broadcast from the Wentworth Hotel, Sydney: Wentworth Cafe Dance Orchestra, under the baton of Mr. Sydney Simpson.
 12—National Anthem; Close down.

2BL

Early Morning Session.

- 7.15—Usual Early Morning Session.
 Morning Session.
 10—Usual programme.
 Afternoon Session.
 During the afternoon Race Results will be broadcast immediately after the race.
 3—G.P.O. Clock and Chimes; Weather Report and Social Notes from "The Sun."
 3.10—Resume of night's programme.
 3.15—Special Operatic Session with explanatory talk by Mr. J. M. Prentice.
 3.45—Music from the Studio.
 4—G.P.O. Clock and Chimes; Music from the Studio.
 4.30—Serial story, entitled "The Mad Song."
 4.45—Music from the Studio.
 5—G.P.O. Clock and Chimes; Producers' Distributing Society's Market Report.
 5.10—Shipping Information.
 5.15—G.P.O. Clock and Close down.

Early Evening Session.

- 6—G.P.O. Clock and Chimes; Uncle George and the Kiddies.
 6.45—Pavilion Dinner Orchestra, under the direction of Cec. Morrison.

Special Country Session.

- 7.15—Australian Mercantile Land & Finance Co.'s Stock and Wool Report.
 7.20—Weather reports.
 7.24—Special Country session: Talk on Land Subjects.
 7.30—Stock Exchange Reports.
 7.37—Producers' Distributing Society's Fruit and Vegetable Report.
 7.41—Fruit and Vegetable Reports (Sun).
 7.45—Grain and Fodder Reports.
 7.48—Country News from the Sun.
 7.55—Close down.

Evening Session.

- 8—G.P.O. Clock and Chimes; City of Sydney Band broadcast from Barlow Chambers.
 8.30—Sydney Orpheus Society, under the direction of Mr. Penman.
 8.20—Lecture from the Studio.
 8.55—Resume of following day's programme.
 9.55—Weather report and forecast, by courtesy of Mr. C. J. Mares, Government Meteorological.
 9—G.P.O. Clock and Chimes.
 9.1—Announcements.
 9.5—City of Sydney Band.
 9.25—Interval.
 9.30—Sydney Orpheus Society.
 9.45—Mr. J. M. Prentice will talk on Foreign Affairs.
 10.5—Cec. Morrison and The Gloomchasers, broadcast from the ballroom of the Bondi Casino. During the intervals between dances, news reports by courtesy of "The Sun" Newspapers will be broadcast.
 11.5—From the Studio: Jazz Band.
 12—G.P.O. Clock and Chimes; National Anthem.

3LO

Midday Session.

- 12—Time Signal. Latest cricket news, by courtesy of Reuters Ltd. Reuters and Australian Press Association cables. "Argus" and "Herald" news services. Shipping intelligence.
 12.45—Stock Exchange information.
 12.55—Meteorological information. Weather forecasts for Victoria, Tasmania, South Australia, and New South Wales. Ocean forecast. River reports.
 1—Time Signal.

- 1.1—Billie Lockwood, soubrette.
 1.7—Le Gasnier's Quartette.
 1.53—Billie Lockwood, selected.
 2—Close down.
 2.40—Result of the Three Year Old Handicap, Werribee Races.

Afternoon Session.

- 3—Official opening and inspection of the new "Argus" offices, transmission from the new building, Elizabeth Street, Melbourne. Result of Werribee Plate.
 3.30—Studio Orchestra.
 3.40—Mrs. Marguerite Callaway Mahood.
 4—Arthur Douglas, selected.
 4.7—Studio Orchestra, selected.
 4.17—Sister Peck, Mothercraft.
 4.27—Arthur Douglas, Scotch comedian.
 4.34—Studio Orchestra.
 4.45—"Herald" news service. Latest cricket scores, by courtesy of Reuters Ltd. Stock Exchange information. Result of Weller Handicap will be given at 4.10 p.m. Result of Werribee Handicap will be given at 4.45.
 5—Close down. Result of Werribee Purse.

Evening Session.

- 6.45—Children's hour, "Bobby Bluegun" will answer letters and give birthday greetings.
 6—A musical programme arranged by Mr. Fritz Hart.
 6.40—Latest Cricket scores, by courtesy of Reuters Ltd. "Argus" and "Herald" news services. Reuters and the Australian Press Association cables service.
 6.53—Weather Synopsis; Shipping Movements; Overseas Shipping News.
 7—Stock Exchange Information.
 7.4—Fish Market Reports by J. R. 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, lute, dairy produce, potatoes and onions.

Night Session.

- 7.20—Under the auspices of the Department of Agriculture, Mr. A. J. Gill, Senior Herd Tester, "Pig Feeding," will give a Physical Culture Talk.
 8—National Nights, Part 2. Illustrations by Students of the University Conservatorium.
 9—Studio Orchestra.
 9.10—Captain Petera, "Books, Wise and Otherwise."
 9.25—Studio Orchestra, "Early Selection."
 9.35—"Tell Me More," second act. Musical Comedy. Transmitted from His Majesty's Theatre, by permission of J. C. Williamson Ltd.
 11.5—"Argus" news service. Announcements. Latest cricket news, by courtesy of Reuters Ltd. British Official Wireless news from Rugby. Weather forecast. God Save the King.
 11—God Save the King.

4QG

Midday Session.

- 12.55—Tune-in Signal.
 1.55—Time Signal.
 1—Market Reports; Stock Exchange; Weather; "The Daily Mail" News; the "Daily Standard" News.
 1.20—From Hotel Carlton, lunch hour music, by Carlton Orchestra.
 2—Close down.

Afternoon Session.

- 3.25—Tune-in.
 3.30—A musical programme.
 4.15—"The Telegraph" News.
 4.30—Close down.
 Early Evening Session.
 6.25—Tune-in.
 6.30—"The Children's Session; Stories by Little Miss Brisbane.
 7—"The Farmers' Session. Market Reports. Litterette: "Milk Supplies for Queensland and Victoria;" by L. L. R. McGregor (Director, Q.P.A.).

7.20—"The Standard" News, Stock Exchange.
7.30—Close down.

Night Session.

- 7.45—Lecture Session: Travelogue No. 5, "Scotland," by Mr. C. V. Woodland.
- 8—Popular Concert.
- 9—Radio Voice Contest Items.
- 9.15—Savoy Orchestra.
- 9.30—Weather Information officially supplied by the Commonwealth Weather Bureau.
- 9.40—Savoy Orchestra. Mr. Gerald Cashman, tenor, Miss E. Tardent, pianoforte, Miss Irene Gibson, soprano, The Pacific Trio, Hawaiian Instrumentalists. The Savoy Orchestra.
- 10—From the Studio. "The Daily Mail" News Service. Close down.

5 CL

Morning Session.

- 11.30—G.P.O. Chimes.
- 11.37—Featuring a Stock Duo Art Number.
- 11.40—"Advertiser" News Service.
- 11.55—Vocalion number.
- 12—G.P.O. Chimes.
- 12.1—"Advertiser" News Service and Cricket scores.
- 12.16—Featuring a Stock Duo Art Number.
- 12.30—5CL Studio Orchestra will be heard in a series of classical numbers.
- 1.45 (approx.)—Ward & Co.'s Stock Exchange Intelligence: Weather Reports and Station Announcements.
- 2—G.P.O. Chimes.

Afternoon Session.

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

Evening Session.

- 6.36—G.P.O. Chimes.
- 6.37—Bedtime Stories.
- 7.30—Market Reports.
- 7.40—Boy Scouts' concert.
- 8—G.P.O. chimes.
- 8.1—Relay from Liberal Club Buildings, North Terrace—Vera Roger's Dance Band in a programme of dance numbers.
- 8.30—Mr. Lester Brown, head show exploiter from William Fox Studios, Hollywood, California.
- 8.45—Science Lecture by Messrs. F. H. Paulding and Co.
- 9—G.P.O. Chimes.
- 9.1—Weather Reports.
- 9.3—Vera Roger's Dance Band, interspersed with vocal items.
- 10.15—"Advertiser" news service, and ships within wireless range.
- 10.30—Vera Roger's Orchestra, continued.
- 10.55—Station Announcements.
- 11—G.P.O. Chimes. National Anthem.

7 ZL

Morning Session.

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

Afternoon Session.

- 3—Musical Items from the Studio. Story from "Illustrated Tasmanian Mail."
- 3.30—Hobart Stock Exchange quotations.
- 4—Time Signal.

Early Evening Session.

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

Evening Session.

- 8—G.P.O. Clock Chimes: "The Mercury" special Tasmania news service; Railway auction produce sales; Weather information and sporting results.
- 8.5—Hobart Stock Exchange quotations.

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PITT, MARKET & GEORGE STREETS

8.15—Physical Culture Talk by Mr. George Collins.
8.30—Palaia De Dance Band, City Hall, Hobart.
8.50—"The Mercury" special interstate news service. Weather synopsis. Station announcements. Close down.

Thursday, Sept. 9

2 F C

Early Morning Session.

7.—The Chimes of 2FC and Announcements. Time Signals.
7.5.—Cricket scores, 1st day's play, Australia v. Thornton's 11.
7.10.—Weather Information, Commercial News, Shipping Intelligence, and Markets. Rainfall, Temperatures, Astronomical Memoranda.
7.35.—Investment market, mining share market, produce markets.
7.45.—Wool sales, breadstuffs markets, produce markets.
7.45—"Sydney Morning Herald" news service.
8.—Time Signals; Music from the studio. Cricket scores.
8.15.—Close down.

Morning Session.

9.15.—The Chimes of 2FC and Programme Announcements.
9.20.—Music from the Studio.
9.45.—Lut music relating information, by the 2FC Racing Commissioner.
10.—Time Signals. Music from the Studio. Cricket scores.
10.5.—Late "Sydney Morning Herald" news service.
10.15.—Music from the Studio.
10.45.—A Morning Reading.
11.—Time signals. Progress cricket talk. Cubes.
11.15.—Musical Items from the Studio.
11.30.—Close down.

Midday Session.

12.—Time Signals. The Chimes of 2FC and Announcements.
12.5.—Stock Exchange, first call.
12.10.—Music from the Studio.
12.10.—Rugby Wireless News.
1.—Time Signals. Weather Intelligence.
1.3.—"Breeding News" Midday News Service, Producer's Distributing Society's Report.
1.20.—Music from the Studio.
1.30.—Stock Exchange. Second call.
1.35.—Music from the Studio.
2.—Time Signals. Close down.

Afternoon Session.

2.30.—The Chimes of 2FC and Announcements.
2.35.—A recital of some new H.M.V. Records.
3.30.—From Farmer's Tea Rooms: The Oak Hall Trio will play (leader, Mr. Horace Kona).
3.40.—Miss Joan Shorter, soprano.
3.45.—From Farmer's Tea Rooms: The Oak Hall Trio.
3.55.—Music from the Studio.
4.—Miss Annie Sedger, mezzo.
4.5.—The Oak Hall Trio.
4.15.—Music from the Studio.
4.30.—Miss Jess Shorter, soprano.
4.25.—The Oak Hall Trio.
4.30.—Music from the Studio.
4.40.—Miss Annie Sedger, mezzo.
4.45.—Stock Exchange. Third Call.
4.45.—Music from the Studio.
5.—Close down.

Early Evening Session.

6.—Time Signals. The Chimes of 2FC and Announcements.
6.5.—"Aunt Mary" and "Sylvia" talk to the children.
6.45.—Broadcast from the Hotel Australia, Orchestral items.
7.—From the Studio: "Evening News" late news service, weather information.
7.50.—Dalgely's Market Reports (wool, wheat, stock), fruit and vegetable markets.

7.40.—Mr. Walter Hunt will talk on "The Art of Speech."

Night Session.

7.55.—The Chimes of 2FC and Announcements.
8.—Broadcast from the Lyric Wintergarden Theatre, Sydney, Orchestra under the baton of Mr. Alfred Houston.
8.30.—Mr. Walter Kingsley, from the Studio.
8.35.—Broadcast from Pallina's Concert Hall, Items by the Sydney Madrigal Society's Choir, Mr. Frederick Newton, conductor.
9.—From the Studio. Some anecdotes on Gilbert and Sullivan, given by Miss Vivia de Lotte.
9.15.—Mayo Hunter, steel guitar items.
9.24.—Piano solos by Mr. Ewart Chapple.
9.35.—A talk by Mr. G. L. Lockley on "Old Paddy's Market."
9.48.—Mr. Walter Kingsley, baritone.
9.55.—Mayo Hunter, steel guitar items.
10.—Broadcast from the Lyric Wintergarden Theatre, orchestral items.
10.30.—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

7.15.—Usual Early Morning session.
10.10.—Usual Morning session.

Afternoon Session.

During the afternoon, results of races will be broadcast immediately after each race, by courtesy of the Sun Newspapers.
9.—G.P.O. Clock and Chimes; Weather Report and "Notes from 'The Sun'."
9.10.—Resumé of night's programme.
9.15.—Du Jon Jones' Tea Room Trio.
9.30.—Music from the Studio.
9.40.—G.P.O. Clock and Chimes; David Jones' Tea Room Trio.
9.45.—Harmony Duo—Miss Rosina Palmerston (pianist and soprano), and Madame Stephanie, contralto.
9.50.—Serial story, entitled "The Mad Song" (Mabel Magnolia).
9.55.—Music from the Studio.
10.—G.P.O. Clock and Chimes; Producers Distributing Society's Market Report.
10.10.—Shipping Information when available.
10.15.—G.P.O. Clock and Chimes; Close down.

Early Evening Session.

8.—G.P.O. Clock and Chimes; Uncle Jack and the Kiddies.
8.45.—Broadcasters' Dinner Orchestra.

Special Country Session.

7.15.—Australian Mercantile Land & Finance Co.'s Stock and Wool Report.
7.20.—Weather Report.
7.24.—Talk on Land Subjects.
7.31.—Stock Exchange Report.
7.37.—Producers' Distributing Society's Fruit and Vegetable Report.
7.40.—Shorting Talk by Broadcasters' Sports Representative.
7.55.—Close down.

Evening Session.

8.—G.P.O. Clock and Chimes. Broadcasters' Topical Chorus. Miss Dorrie Ward, mezzo soprano.
8.10.—Ambassadors' Instrumental Salon Quartet, under the direction of Mr. Claude McElynn.
8.30.—A talk on music by Roland Foster, of the State Conservatorium of Music.
9.—G.P.O. Clock and Chimes; Announcements. Weather report and forecast, by courtesy of Mr. C. J. Maree, Government Meteorologist.
9.2.—Resumé of following day's programme.
9.5.—Announcements.
9.10.—Silo and Molly Owen in a Musical Act.
9.30.—Interval.
9.35.—Lecture from the Studio.
9.55.—Miss Dorrie Ward, mezzo soprano.
10.—Mr. W. E. Lewis.
10.10.—Hammett and the Ambassadors' Dance Band broadcast from the ballroom of the Ambassadors. During the intervals between dances, news reports, by courtesy of

the Sun Newspapers will be broadcast.
12.—G.P.O. Clock and Chimes; National Anthem.

3 L O

Midday Session.

12.—Time Signal. Latest cricket scores, by courtesy of Reuters Ltd. British Official Wireless news from Rugby. Reuters and the Australian Press Association cables. "Argus" and "Herald" news service.
12.15.—Community Singing, under the auspices of Community Singers and Concert Goers' Association, transmitted from the Assembly Hall, Collins St., Melbourne.
1.45.—Stock Exchange information. Meteorological information. Weather forecast for Victoria, Tasmania, South Australia, and New South Wales.
2.—Close down.

Afternoon Session.

3.—Latest Cricket scores, by courtesy of Reuters Ltd.
3.1.—Studio Quintette.
3.10.—Grace Jackson, contralto.
3.17.—Reginald Bradley, violin.
3.24.—Studio Quintette.
3.34.—Kenneth Impett, baritone.
3.41.—"Mary Gumsel." An introduction to Wilfrid Wilson Gibson, with recitals of his poetry.
4.1.—Six String Quartette.
4.5.—Grace Jackson, contralto.
4.15.—Frank Stonham, clarinet.
4.20.—Kenneth Impett, baritone.
4.27.—Studio Quintette.
4.35.—Latest cricket news, by courtesy of Reuters Ltd. "Herald" news service. Stock Exchange information.
4.45.—Evensong, transmitted from St. Paul's Cathedral.
5.30.—Close down.

Evening Session.

5.45.—Children's Hour. Answers to letters and birthday greetings.
6.—Bille Lockwood will sing "Wee McGregor" and "Walkies round the Circus."
6.10.—"Mary Gumsel." Poems: "Story for the Hosts" and "My Shadow." Where Go the littlest ones, "Billy and the Butterfly." For the bigger ones, "The Story of Oberon."
6.40.—Latest cricket scores, by courtesy of Reuters Ltd. "Argus" and "Herald" news service. Reuters and the Australian Press Association cables.
6.55.—Weather synopsis. Shipping movements. Aerial mail information, by the Australian Aerial Services Ltd.; Overseas Shipping News.
7.—Stock Exchange information.
7.4.—Fish market reports by J. R. Borrett, Ltd.
7.6.—River reports.
7.8.—Market Reports, by the Victorian Producers' Co-operative Co., Ltd. Haymarket Sales, Poultry, Grain, Cattle, Hens, Straw, Jute, Dairy Produce, Potatoes and Onions.

Night Session.

7.20.—Under the auspices of the Health Association, "Oral Hygiene."
7.40.—Mr. H. Webb, Tasmanian Government Tourist Officer, "Tasmania's Fertile North West."
8.—3 L O Dance Orchestra.
8.15.—Mr. Dod Collins, Football Talk—"Saturday's Prospects."
8.30.—3 L O Dance Orchestra.
8.40.—Kenneth Impett, baritone.
8.47.—3 L O Dance Orchestra.
8.57.—Grace Jackson, contralto.
9.—3 L O Dance Orchestra.
9.14.—Turn Out Your Lights and Listen.
9.30.—3 L O Dance Orchestra.
9.40.—Latest Cricket News, by courtesy of Reuters Ltd. British Official Wireless News from Rugby. Announcements.
9.50.—3 L O Dance Orchestra.
10.—Kenneth Impett, baritone.
10.7.—3 L O Dance Orchestra.

- 18.17—Thelma Brown, step dancer.
18.22—3LO Dance Orchestra.
18.32—Grace Jackson, contralto.
18.48—3LO Dance Orchestra.
18.48—"Argus" news services, Meteorological Information, Announcements.
11—God Save the King.

4QG

Midday Session

- 12.55—Tune-In Signal.
12.58—Time Signal.
1—Market Reports; Weather Information; "The Daily Mail" News; the "Daily Standard" News.
1.5—From the Hotel Carlton, lunch hour music by the Carlton Orchestra.
2—Close down.

Afternoon Session.

- 3.40—A programme of music from the Studio.
4.15—"The Telegraph" News.
4.30—Close down.

Early Evening Session.

- 6.25—Tune-in.
6.30—The Children's Session: Stories by "The Sandman."
7—The Farmers' Session; Market Reports; Lectures: "Spraying," by Mr. J. W. Howie Horticulturist, Queensland Agricultural High School and College.
7.28—"The Standard" News, Stock Exchange.
7.30—Close down.

Night Session.

- 7.45—Lecture Session: A talk on literature, by Mr. W. A. Brisdon (McLeod's Bookstore).
8—St. Stephen's choir, Weather information officially supplied by the Commonwealth Weather Bureau, Announcements.
9—An Operatic entertainment.
10—From the Studio, "The Daily Mail" News Service, Close down.

5CL

Morning Session.

- 11.30—G.P.O. Chimes.
11.31—Featuring a *Steak Duo Art Number*
11.40—"Advertiser" News Service.
11.55—Vocalion number.
12—G.P.O. Chimes.
12.1—"Advertiser" News Service and Cricket scores.
12.16—Featuring a *Steak Duo Art Number*;
12.30—5CL Studio Orchestra will be heard in a series of classical numbers.
1.55 (approx.)—Ward & Co.'s Stock Exchange Intelligence; Weather Reports and Station Announcements.
2—G.P.O. Chimes.

Afternoon Session.

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

Evening Session.

- 8.30—G.P.O. Chimes.
8.51—Bedtime Stories.
7.15—Health talk, by Mr. A. M. Whitenbury.
7.30—Market Reports.
7.40—Poultry talk, by Mr. A. M. Whitenbury.
8—G.P.O. Chimes.

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- 8.1—Instrumental numbers by the Studio Orchestra, interspersed with vocal items.
9—G.P.O. Chimes.
9.1—Weather reports.
9.3—Studio Concert, continued.
10.15—"Advertiser" news service, and ships within wireless range.
10.30—Studio Concert. Continued.
10.55—Station Announcements.
11—G.P.O. Chimes. National Anthem.

7 ZL

Morning Session.

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

Afternoon Session.

- 3—G.P.O. Clock and Chimes; Musical Items from the Studio.
4—G.P.O. Clock Chimes. Hobart stock Exchange Quotations; Weather Forecasts. Early Evening Session.

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

- 7.15—The adventures of George, the Book-shelf Cat. "George visits the Metropole" by Aunt Stella.

Evening Session.

- 8—G.P.O. Clock Chimes; "The Mercury" special Tasmanian news service; Railway auction produce sales; Weather information and sporting results.
8.5—Hobart Stock Exchange quotations.
8.10—Selections by Jones' I.X.L. Band, conductor, Mr. L. Barnett.
8.50—"The Mercury" special Interstate news service. Weather synopsis. Station announcements. National Anthem.

2 BE

Wavelength, 215 metres. Power, 100 watts. Every Tuesday and Thursday evening, from 6.30 p.m. to 9 p.m.

6.30 to 7.30—Mealtime Music, consisting of vocal and orchestral items.

7.30 to 9—Lectures, orations and vocal items.

2BE will be glad to get into touch with artists willing to give their services to this station.

N.Z. Broadcasters.

The transmissions from IYA, the Auckland station, which recently went on the air, are as follows:—

Tuesdays and Fridays.—Afternoon sessions, 3 to 4.30; children's session, 6.30 to 7; news and market session, 7.15 to 7.45; evening session, 8 to 10.

Wednesdays and Thursdays.—Afternoon session, 3 to 4.30; news and market session, 7.15 to 7.45; evening session, 8 to 10.

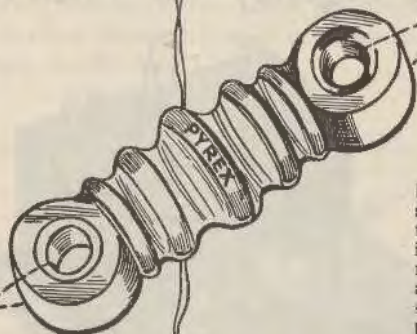
Saturdays.—Afternoon session, 3 to 4.30; news and market session, 7.15 to 7.45; evening session, 8 to 11.

Sundays.—Evening session, 7 to 9.

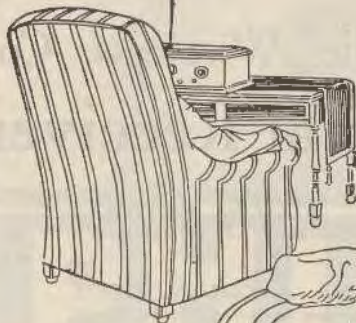
There will be no transmissions from the Auckland station on Mondays. The new Christchurch station will be completed about August 21, and its time table will be so arranged that it will be working on full power on Mondays.

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Buccaneers of the Ether

(Continued from Page 4.)

any complete records and others complained that the work of entering up the list of sales interfered with the more important work and selling sets and components. A more serious objection lay in the fact that so many sets are home-assembled. People buy the headphones at one shop, the coils and condensers at another, and so on; thus no record would be kept at all. Added to this would be the possibility of incorrect addresses being given, and thus the scheme would fail, owing to the inability of the Postal Department to enforce its regulation.

There appears to be but two methods to ensure a maximum compliance with the law: (1) the broadcasting company to broadcast special announcements concerning licenses frequently, and (2) the postal department to vigorously prosecute offenders. If the broadcasting companies regularly made tactful and carefully worded announcements regarding the necessity for licenses, the method of obtaining them and the penalties that follow detection of offenders, the number of licenses would certainly increase. R.L.O., Melbourne, has done this effectively and the huge number of licenses in Victoria is one result. The Postal Department should exert itself more in locating offenders against its own law, and however objectionable the procedure may appear to the P.M.G., it is his duty to see that offenders are prosecuted without fear or favour. The deterrent effect of such prosecutions is proof of the effectiveness of such a procedure and it is the business of the P.M.G. more than anyone else to see that his own regulations are observed.

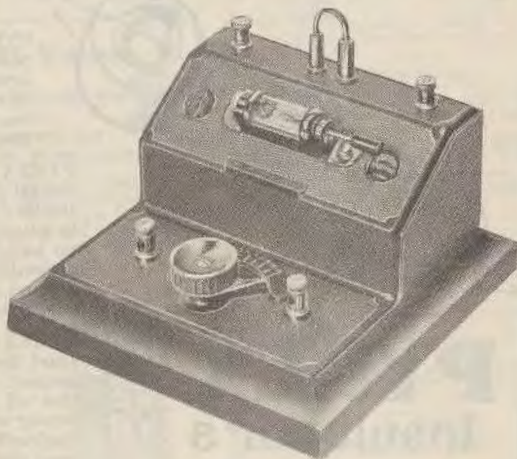
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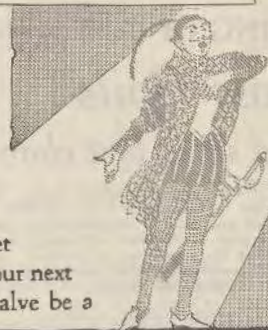
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Radio Auction Bridge

Game No. 7—Broadcast by 2 F C

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

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

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

THE complete hands held by each of the players of the Radio Auction Bridge game played on September 1st, were as follows:—

"South" deals and holds:—

Spades: Ace, K, J, 2.

Hearts: Ace, 9, 6.

Diamonds: Q, 8, 4.

Clubs: Q, 9, 4.

"West" holds:—

Spades: Q, 8, 3.

Hearts: K, Q, J, 8, 3.

Diamonds: K, 7, 3.

Clubs: 5, 2.

"North" holds:—

Spades: 9, 4.

Hearts: 5, 4, 2.

Diamonds: Ace, 8, 5.

Clubs: Ace, J, 10, 8, 7.

"East" holds:—

Spades: 10, 7, 6, 5.

Hearts: 10, 7.

Diamonds: J, 10, 9, 2.

Clubs: K, 6, 3.

South (the Dealer) opens the bidding with one spade. With this hand South has the option of one of two declarations, either a spade or a No Trump. With a holding of this character, however, South prefers to bid the four card Major suit first, which is in accordance with modern expert practice.

"West" bids two hearts. With hearts as trumps, he holds the probability of more than four tricks, which allows him to bid two hearts, a sound following declaration.

North has only two of her partner's suit. Therefore, she should not help his spade bid, in spite of her two side aces. However, it is expedient for her to show that she has not a dead hand, so North bids three clubs.

East, of course, passes, as his hand is not strong enough to warrant an assist of his partner's bid, particularly as he holds only two cards of his partner's suit.

South feels that game in clubs is very doubtful. In order to have bid three clubs, his partner must hold a help for a No Trump. Of course, South realises that if North had held normal assistance for his spades, she would have helped that suit rather than have bid clubs, so that her bid of clubs constitutes a denial of the spade suit. Therefore, South should not rebid his spades. Although he only has the heart suit stopped once, South considers that with a long and strong club suit in his partner's hand, No Trump offers the best opportunity for game, although to bid two No Trumps with the hearts only stopped once, is taking a chance; South bids two No Trumps.

West passes. He dare not rebid his hearts without assistance from his partner. With his hand, it looks as though it might be possible to set the No Trump contract, although he has not strength enough to double it.

North passes, as South's No Trump declaration suits her hand perfectly.

East again passes.

The contract is two No Trumps with South as the Declarer.

West leads the king of hearts. This is the proper lead from a king, queen, knave, suit. West wishes to establish his winning heart tricks as quickly as possible. From the original spade bid on his right, he thinks that his queen of spades will probably be an entry which will allow him to make any hearts he is able to establish.

North is Dummy.

Dummy plays the 2 of hearts, East plays the 7, and South the 6.

Attention is called to East's play of the 7 of hearts. If he had been playing against a suit bid, he would have played the 10 first and then the 7 to show his partner that he had no more of the suit and wished to trump the third round, but against a No Trump bid, such a play, being a command to partner to continue the suit, is not advisable.

South does not take the first trick in hearts, because he sees that it is necessary for him to take the club finesse in Dummy, and if the club finesse should lose, he wants to be sure that East has no more hearts left to lead back to his partner. Therefore, South ducks the first heart trick.

West continues with the queen of hearts. Dummy plays the 4 of hearts, East plays the 10, and South plays the ace.

South can afford to win this second

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heart trick, as he is now sure that West had five hearts originally, and that East only held two, so that East has now no more hearts.

South now counts his winning tricks; he is sure of four clubs, two spades, one diamond, and he has already won a heart, making eight tricks in all. If West should hold the king of clubs so that the club finesse in Dummy would win, he can see nine tricks and game. However, in case the club finesse should lose, he must pick up a trick in some other suit in order to make three over. This trick perhaps can be obtained by finessing the knave of spades in his own hand, but if West should hold the queen it would allow West to make his hearts good and thus probably prevent Declarer going game. He sees that it is first necessary to establish the club suit, and if possible, force West to discard. South determines that it may be advisable to save a heart, either in his own hand or in Dummy's, in order to be able to throw West into the lead in the end play, if such a move becomes the winning play.

South leads the queen of clubs, West plays the 2; Dummy plays the 7; and East plays the 3.

South led the queen of clubs in order to continue the club suit from his hand in case West should hold the king.

East does not win the first club trick, because he realises that it is necessary for the Declarer to set up the clubs in Dummy, and that he will, of course, lead them again and take the finesse. If West should happen to have only a singleton club, East expects West on the second club lead to give him an informatory discard, so that he will know what to lead when he wins with the king of clubs.

South now leads the 9 of clubs. His queen having won, it looks to him as if West holds the king. West plays the 5; Dummy plays the 8, and East is forced to win with the king, otherwise he would lose it.

East leads the knave of diamonds, the higher of his two touching honors. He judges this to be the best lead, as, unless Declarer has both the king and queen, he may be able to eventually take a diamond trick.

South plays the 6 of diamonds. He can gain nothing by covering the knave with the queen, because he

knows that East would not have led the knave unless he also holds the 10, so he false-cards with his small cards. West plays the 7 of diamonds. This "Come-on" card urges his partner to continue the suit. Dummy plays the 5 of diamonds.

South realises that West probably has the king of diamonds, which would be a re-entry for his hearts, so that South does not wish to play the ace while there is a chance of winning West's king with it.

East plays the 10 of diamonds. South has already lost a heart trick, a club trick, and a diamond trick, so he can not afford to give his opponents another diamond trick. It looks as if it would be better for him to force West's king and to make his good clubs in Dummy, thus compelling embarrassing discards from his opponents; then, after the club suit has been run, to play the remainder of the hand in accordance with the information gained from those discards. Therefore, South plays the queen of diamonds; West covers with the king; and Dummy wins with the ace.

Before playing Dummy's good clubs South considers it best to take a round of spades, in order to reduce the spade holdings of his opponents, so that their discards on the clubs will be more difficult and more enlightening. Dummy leads the 4 of spades, East plays the 5; South the ace; and West the three. South does not finesse the knave of spades for three reasons; first, because with such a suit holding it is advisable to postpone the finesse; second, because South, at this stage of the game, cannot take the chance of West holding the queen of spades; and, third, because South does not wish to take the finesse at all, if he can avoid it.

Declarer now leads the 4 of clubs; West discards the 3 of diamonds; Dummy wins with the ace of clubs; and East plays the 6.

West can see that he must make three discards and that it will be impossible for him to keep his protection in spades, a card of his partner's suit and his own good hearts. Therefore, he makes the best of a bad bargain, and throws away the diamond.

Dummy leads the knave of clubs. East plays the 2 of diamonds; he

wants South to think that he has a high spade, the suit that was bid originally by Declarer. South discards the 4 of diamonds, and West the 3 of hearts.

Dummy leads the 10 of clubs. East discards the 6 of spades; of course, he cannot play his 9 of diamonds, because Dummy's 8 would then be good. South discards the 9 of hearts. West is now in a difficult position. He realises that South bid originally on a four-card spade suit, as Declarer has already played three hearts, three diamonds, three clubs, and one spade, so that the three cards remaining in Declarer's hand are all spades. If South should hold the king and knave, and should he (West) discard a heart, keeping but one heart, South would, on the next trick, lead a heart so as to force West to lead a spade up to Declarer's king knave. This West cannot allow. Should he discard a spade, it will bare his queen, but at the same time, it may induce Declarer to feel that he is safe in taking his finesse, in which case West's queen of spades would win and he would make his two good hearts. West knows also that South cannot be sure that he (West) has not a diamond, so that the discarded spade may be his last spade. Therefore, West discards the 8 of spades.

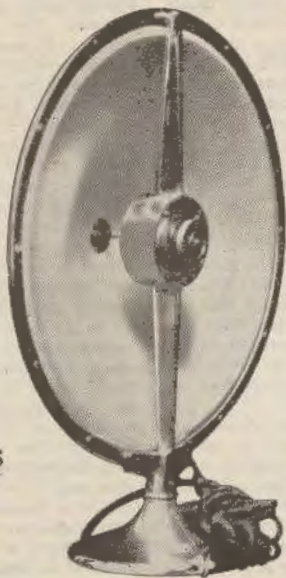
South considers the situation. From West's discard of the 8 of spades the finesse of his knave is very tempting, and appears to be fairly certain of winning, but he knows that West is a very shrewd player and may be laying a trap for him. He knows that West originally held five hearts and two clubs. The question is, did he hold four diamonds and two spades, or three diamonds and three spades?

From West's discard of the 8 of spades, South can infer that West's three remaining cards are two winning hearts and either the 9 of diamonds, or the 10, or queen of spades. But if West is out of spades, then East held originally five spades headed by the queen-10, and so probably would have led a spade in preference to leading a three-card diamond suit, when he had received no diamond indication from his partner, and when the ace was in Dummy. Furthermore, West would hardly discard his only remaining spade, as he would endeavour to conceal his weakness in

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the suit in order to discourage South making a possible finesse against East. Hence, South concludes that West has another spade and that East led the knave, and then the 10 of diamonds from four headed by knave, 10, 9, in the hope of establishing a diamond trick in his hand. Dummy now leads the 9 of spades; East covers with the 10, the 8 having already been played; South plays the king because if West now has a spade, it must be the queen; and West plays the queen. As South's knave and 2 of spades are now both good, he makes four odd.

In the bidding, I want to emphasise that South's holding justifies either a bid of one No Trump or one spade. Many players bid No Trump at every opportunity, but South prefers to bid a Major suit rather than No Trump, in order to encourage bidding by the other players. He has found from his experience that bidding gives him information, and allows him to make deductions that would not be possible were he to start with a No Trump, because a No Trump so often shuts out other bidding. Besides, a suit bid gives his partner more definite information in regard to his holding than does a No Trump.

South's bid of one spade with only four cards in the suit was essentially sound, according to modern bidding practice. American writers have dealt largely with four-card suit bids and the authority for the statement that a four-card suit with two high honors guaranteeing one sure trick in the suit, together with a quick trick on the side, is a sound original bid.

North showed her keen knowledge of the game by unhesitatingly bidding three clubs over the opposing two heart bid. It was necessary for her to show her partner that she had two sure tricks in her hand, and at the same time that she did not hold normal assistance for his spade suit.

In the play: The play of the 7 of diamonds on East's lead of the knave is a play that is always made by an expert player when he desires his partner to continue the suit. West, of course, could place the queen of diamonds in South's hand because he knew that East would not have led the knave if he held the queen; nor would he have led it unless he also

held the 10. Consequently, by encouraging East to continue with the diamonds, West was endeavouring to establish a diamond trick in his partner's hand and to relieve his own hand from keeping guards to both diamonds and spades.

Your attention is called particularly to the very clever play by West when he discarded a spade, thus leaving his queen unprotected. Against an ordinary player he would have kept his protection in spades, and would have parted with a small heart. Knowing the ability of South and realising that Declarer would throw him (West) into the lead with a heart had he kept his two spades and the knave of hearts, and thus force a spade lead, he took the bold risk of giving Declarer an extra trick in order to induce the spade finesse and save game. That West's ruse failed of its purpose is no reason to condemn it; on the contrary it was a shrewd, clever play that was justified by the desperate situation, and a play that would usually succeed.

It may be argued that South should have finessed the knave of spades, since West would not have unguarded the queen of spades and, therefore, must hold the 9 of diamonds instead. On the contrary, it was South's deduction that a player of West's calibre would certainly be shrewd enough to realise Declarer could use Dummy's last heart as a card of exit, and so his (West's) only chance to save game would be to unguard his queen.

South's intention was to try to force West to discard all his hearts but the knave, and then to lead the heart from Dummy, thus compelling West to lead a spade up to Declarer's king, knave. By doing so, he would be sure of his contract. But West upset this plan by keeping two hearts.

This hand is an example of what is called the Squeeze Play. West was "squeezed," that is, he was forced to part with cards that he wished to hold, and his forced play of these cards benefited his opponent. The opportunity for the Squeeze Play in its different forms often arises at the Bridge table.

I suggest that you play this deal over.

(Continued on Page 47.)



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BOYS' WEEK.

Radio is the hobby of thousands of boys in N.S.W., and we call the attention of our hundreds of boy readers to Boys' Week, now being organised by the Rotary Club, of Sydney. This worthy piece of civic and national work will cover the period from September 24 to October 1, and should claim the interest and support of every boy in N.S.W. Watch for announcements.

In answering readers' queries, we regret that our correspondence has reached such a volume that we have had to cease replying to queries by post. Under the new system, the Technical Editor will answer questions through the columns of the journal only. Owing to the increase in business since the reorganization of "Wireless Weekly," we are unable on any condition to answer queries made by personal callers or by telephone.

NATIONAL NIGHTS.

The whole programme on Tuesday, September 7th, will be devoted to Australian items. The State Military Band will play Australian selections. Artists will include Murray Gibbs, baritone and Australian composer; Bryson Taylor, tenor, who inaugurated the Australian Composers' League; Mr. Grattan Smith, the well known Australian author, who will talk on Australian books; Mr. Lionel Lawson, violin solos by Australian composers, and a novelty supplied by Miss Lillian Frost at the organ, with Miss Esther Kahn, composer, at the piano, who will play Miss Kahn's concerto for organ and piano. These national night transmissions are now a feature with 2FC, and Scotch, Irish, Welsh, American, New Zealand and Australian programmes are to be regularly broadcast.

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

QUERIES ANSWERED.

C.L.M. (Raymond Terrace): The first suggestion in your letter of the 19th instant has been adopted and the hands will be given out on Tuesday or early on Wednesday. I do not quite see the point of your second suggestion. I do not always play the hand. Twice I have been Dummy, and once have played against the Declarer. If I take no part in the hand how am I to know what has been done?

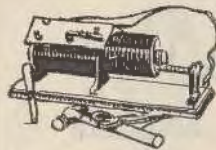
H.E.H. (Garrah): North played the king of diamonds because his partner called diamonds, and the king was the highest of his partner's call. Your reasoning is quite sound if North had wanted to secure the lead at a later date; but supposing the Declarer was playing a No Trump hand? It is essential for North to retain the lead as long as possible in diamonds, so as to be able to lead through the Declarer in that suit, and cut off his guard. Your suggestion has been adopted by 2FC Studios. Many thanks.

W.H.T. (Hazelbrook): Yours of the 17th to hand. The question of fairness or otherwise does not come into the informatory doubling. Two expert players as partners together against two mediocre players will always win, and they will obtain a further advantage by using the informatory doubling, but it is open for anybody to buy books explaining all about these things, so where does the unfairness come in?

The case you cite would certainly be quite fair, and the people who play without reference to modern methods of bidding can only put their losses down to ignorance.

Try reading R. F. Foster or W. Dalton.

S.O.S. (Auckland): Am glad to hear that you can pick up the Radio Auction Bridge so easily. You ask why did East take the spade finesse on August 11th? It was not necessary, inasmuch as East had only one spade in her hand and if the finesse had failed she would have made only five tricks over. But if it succeeded it meant grand slam. After the first lead little slam was in sight, and East gambled for big slam. I agree with you it was not justified with little slam here, but there is nothing that succeeds like success.



Beginners' Problems



February 18th. Full back of panel views, showing point to point wiring, makes it particularly easy for readers to follow.

"R.S." (Adamstown): "Having constructed the four-valve loop receiver described in 'Wireless Weekly,' of August 6th, I feel it my duty to write and say how efficient the set is. It is the most selective circuit I have handled. 3LO can be tuned in without the slightest interference from any other stations. I have tuned in 1YA, Auckland, with loud speaker strength, without any interference whatever. I notice by the circuit you have two 002 condensers across the potentiometer; I have only used one and find excellent results. Can you advise me through 'Wireless Weekly' how to add an extra valve to improve daylight range?"

A.: "Wireless Weekly," dated April 23rd, gives the circuit diagrams and back views of the receiver you require, together with constructional details of an efficient loop aerial. Thank you for your report.

"L.N.S." (Granville) writes: "I write to inform you that I have constructed the one-valve crystal reflex set recently published by you, and have had splendid results, using an ordinary crystal and eatwhisker in lieu of the carborundum type you recommend. Apart from all the Sydney stations, I have received 3LO and 4QG loud speaker strength, 3AR, 5CL, and 6WF, good phone strength. I now contemplate adding another valve. Would you please tell me what ratio transformer I should use?" The first is 5 to 1. Would I get better results by using the fixed carborundum crystal?"

A.: We suggest the second transformer be a 3 to 1, but do not think the carborundum crystal can possibly improve your excellent results. It would, however, be an advantage, inasmuch that it requires no adjustment.

"A.W." (Manly), writes: "I have a loud speaker which is only a few months old, but it does not seem to give the volume it did when new.

"H.N.P." (Sydney) writes: "It is with pleasure that I write you and let you and your technical staff, who evolved the one valve loud speaker receiver a few weeks ago, know what success I have had with it. I get the local stations on the loud speaker Amplion Dragon-fly, and 4QG, 3LO, and 5CL very easily on the phones. In fact, last night I had three sets of phones on, and one of these on an extension cord 20 feet long, and then got good loud clear results. For the information of others who have built this set, I would like to tell them that for interslate stations, I use a wave trap, made up of a 35-turn coil, and a .001 variable condenser. I heard every word of Mr. Bruce's speech from Dandenong on Wednesday last. I think it only right, when we get such results, that your staff should have full credit for their work, which is gratis to readers of your valuable paper."

"H.W.S." (Cooroy) requests information for a switching arrangement to change from the outside aerial to a loop. Fig. 1 answers his query, but it is necessary to state that one or two stages of H.F. amplification will be needed for satisfactory reception of long distance stations (see "Wireless Weekly," dated April 23rd, or W.W. Receiver No. 7.)

"J.M.C." (Naremburn): "Will you please advise me concerning my son's three valve receiver, which has never been a real success. He has recently had it rewired by a Sydney firm, but it is still very unsatisfactory."

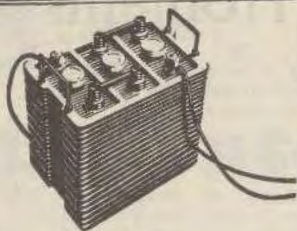
A.: We fear your "A" or "B" batteries are defective. It is advisable to read the voltages occasionally. Your local garage proprietor will probably lend you a voltmeter, or read your batteries for you. When purchasing new "B" batteries, be sure that they are of the large capacity type. We advise you to use the "All Australian" Receiver, which was fully described in the issue of "Wireless Weekly," dated

Can you please inform me how I can improve it?"

A.: The distance between the diaphragm and the magnets affects the sensitivity of a phone or loud speaker unit. Generally speaking, the nearer the diaphragm is to the magnets without actually touching, the more sensitive will the unit be. At the same time, however, there is a certain critical position where the instrument works most satisfactorily under all average conditions. It is for this reason that, where cost is not the primary consideration, phones or loud speaker units with adjustable diaphragms are to be preferred.

A simple method of adjusting the distance between the diaphragm and magnets in the non-adjustable type, is to obtain a piece of sheet glass about 2 feet square. To this is stuck a sheet of medium emery paper. The receiving unit should next be connected up for test, and ear pieces or top case diaphragms and washers removed. The unit is now grasped firmly in the hand and rubbed with a circular motion on the emery surface. Great care should be taken to see that the whole unit is kept perfectly flat during this rubbing process. The edges of the case will naturally be reduced in height as a result, thus bringing the diaphragm a fraction of an inch nearer to the magnets. It will, of course, be necessary to go carefully, and compare the sensitiveness after each small rubbing process. Great care is necessary to see that the outside case is not rubbed down too far, and allow the diaphragm to actually touch the magnet poles. Should this happen, the distance may be increased by taking a small amount off each magnet pole-piece, or using a small paper washer between the case and the diaphragm.

With the above mentioned minor adjustments, it is often possible to make even a very low priced loud speaker unit, giving really excellent results.



Hope's Free — why buy it?

When you see a capacity in amp-hours printed upon a P. & R. Battery, then you know it's the *capacity*. It isn't what somebody thought it might be: it isn't optimism: it isn't an oh-so-hopeful "intermittent" rating: it's *capacity*: honest-to-goodness valve burning capacity.

Here are a few more points about P. & R. Batteries. First of all the "Dagenite" is a material the invention and secret of P. & R. It is absolutely acid-proof and leak-proof and it is practically unbreakable even if dropped from a height. Corrosion of terminals is stopped by petroleum-jelly glands: paste is "keyed" in place by a special section of grid: **NO MESSY, EXPENSIVE, EVER-LASTINGLY-ROTTING CRATE IS REQUIRED.** The battery is *complete*.

And, other things being equal, it costs no more than the other kind.

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H. & H. Grid Leak Resistance

Fixed resistance or grid leaks are steadily increasing in popularity. H. & H. resistances are composed of a permanent impregnated material which is not affected by change in temperature or atmospheric conditions. Made in 50,000, 70,000, 100,000 ohms, 1/4, 1/2, 1, 2, 3 and 5 megohms.

Variable Grid Leak Resistances

The W-251 is variable from 100,000 ohms (0.1 megohm) to 5 megohms. Use with UV-200, C-200, DV-6, or any soft detector tube. In fact, use where a grid leak up to 5 megohms only is required.

The W-262 is variable from 2 to 10 megohms, and works wonderfully well with WD-11, WD-12, UV-201-A, UV-192, C-201-A and C-209.

Grid Leak Resistance Mounting



W.265.

W. 265.

Fig. W-265 shows the handy leak holder. It's small, yet affords good, stiff contacts, and permits instant interchangeability of leaks.

The cleverest, handiest "leak" holder made; adjustable in an inconceivable number of ways; particularly useful in resistance coupled amplification hook-ups.

Dielectric insulation material is moisture proof. Metal portions are spring brass, nickel-plated.

H. & H. RADIO GOODS ARE OBTAINABLE AT ALL LEADING STORES, AND INCLUDE:

Sockets (see No-Loss Porcelain Socket);
 Rheostats
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 Mica Condensers
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 Jacks and Plugs,
 Potentiometers
 Dials and Knobs
 Battery Switches
 Lever Switches
 Etc., Etc.

Send for Complete Catalogue to the
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BOSWELL & CO.

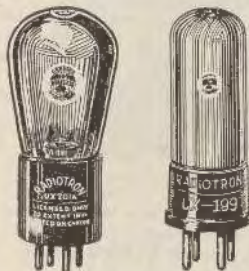
51 YORK STREET, SYDNEY, and
 403 BOURKE STREET, MELBOURNE.



New Radio Apparatus

POPULAR RADIO VALVES.

The UV.199 (or UX.199) valve is the smallest Radiotron made, and is adaptable to either portable or home dry battery operated sets. It is equally serviceable as a detector or as a high efficiency radio or audio frequency amplifier. Economy of operation is particularly pronounced



when used in circuits having more than five valves.

These Radiotrons have thoriated filaments which emit electrons so abundantly at low temperature that the dry cells of the "A" battery are subjected to very slight drain. The two Radiotrons are electrically identical, differing only in their bases.

The Characteristics of the Valve are:

Filament battery, volts 4.5.
 Filament terminal, volts, 3.
 Filament consumption, .06 amps.
 Plate voltage, detector, 45.
 Plate voltage, amplifier, 90.
 Negative "C" battery volts, 4.5.
 Plate current amperes, 2.5.
 Output resistance, ohms, 15,000
 Mutual conductance, micro-ohms, 415.

Voltage, amplification, 6.25.

The sturdy UX-201A has long been the accepted touchstone of the radio engineer and amateur. It is equally efficient as a detector or amplifier.

All the results of modern electron

tube research are embodied in UX-201A. Thus its thoriated filament has an electron emission which is not simply high, but extraordinarily high; and this at low current consumption with resulting long life.

Amalgamated Wireless Ltd., are the sole agents in Australasia.

Characteristics of the UX-201A:

Grid condenser, m.f., .00025
 Grid leak, 2-9.
 Filament battery volts, 6.
 Filament terminal volts, 5.
 Filament battery current, .35 amps.
 Plate voltage, detector, 45.
 Plate voltage, amplifier, 90/135.
 Negative C battery volts, 4.5-9.
 Plate current milliamperes, 3-4.
 Output resistance, ohms, 12,000-11,000.

Mutual conductance micro-ohms, 675-725.

Voltage amplification factor, 8-8.

"ALL AMERICAN" SUPER-HET. KIT.

We wish to draw our readers' attention to the fact that the "All American" Super-Het. Kit, as supplied by O. H. O'Brien, 29 Pitt Street, Sydney, is particularly suitable for Australian conditions. The intermediate frequency transformers which

plied, which can be plugged into suitable adaptors provided for the purpose. Particular attention is drawn to readers who have been complaining that they cannot purchase the Precise Super Kit as previously recommended.

MIDGET CONDENSER.

Those radio experimenters who have found the need for a thoroughly reliable low loss condenser of very small capacity should examine the Radio Condenser Company's Midget low loss condenser, at present being sold by The Economic Radio Stores, 25 Royal Arcade, and 589 Hunter Street West, Newcastle.

This condenser is sturdily built of solid aluminium and brass, with hard rubber insulation. The condenser is arranged so that one hole only is required when fixing the panel, and having five plates only, that is two fixed, and three movable, the capacity is sufficiently low for practically all purposes where a midget condenser can be used. The capacity of a Midget low loss condenser ranges from .0000013 to .00005 mf.

The uses of this wonderful little piece of apparatus are many. For instance, neutralising on Browning Drake and neutrodyne sets, as a vernier adjustment when connected in parallel with a larger condenser, as a balancing condenser on super-heterodyne and unit control sets, to say nothing of the immense possibilities when used in connection with short wave reception. Attention has been paid to every detail in the construction of this condenser, and more particularly to those requirements necessary in order to produce the lowest possible losses. The insulation of this condenser is the best hard rubber.

The Midget low loss condenser has also a bigger brother, which many radio experimenters are already familiar with, the Certified low loss condenser



are of the broad aperiodic type, viz., 4,000 to 20,000 metres, make them particularly suitable for the "Wireless Weekly" Receiver No. 4.

Separate oscillator coils are sup-

They're in the Wireless Room of the Lusitania

Standard Equipment of United States Submarines

Photo C. & D. Photo

The World's First Control Surface

The Adventures of BURGESS RADIO BATTERIES

Remarkable are the adventures of Burgess Radio Batteries. And where there's danger—upon, above, or below the earth, sky and sea, will be found Burgess Batteries—laboratory products.

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Obtainable only from Quality Radio Dealers

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Sydney, Melbourne, Adelaide

Did You Know This?

Concerning Burgess Batteries

The Burgess Battery Company, Harris Trust Building, Chicago, periodically issue Engineering Circulars. Amateurs should watch for these and write for copy.

The latest is a complete description of the Arctic Radio Equipment.

Some others have been "Short Wave Receiver No. 3 of 9XH GEK." Also "Baby Radio Transmitter D." and "Dry Cell Battery capacities for Radio Transmitting."

"A man is known by the Company he keeps." So is a Battery, so read of Burgess users.

"The wagging tongues of satisfied users." Burgess says it

their most effective advertisement.

Burgess Plants take the entire output of "DeFluoculated Graphite" of the Acheson Graphite Company.

Burgess have their own Manganese Mines and treat the material in Burgess Laboratories by Burgess Patented methods.

Burgess also have their own Paper Mills.

The average hourly rate of pay for girls in the Canadian Factory is 1/3 an hour.

The men average about 3/- an hour.

"Ask any Radio Engineer" and Burgess says they'll say "Burgess."

A Wireless Problem

What happened to the ether waves
In days of long ago?
Before the clan were caught and tamed.

By such as 3LO.

A weighty question, and, indeed,

It puzzles me a lot;

The ages that they rained around

And no one cared a jot.

When Cæsar set his Roman ships

Towards the cliffs of white,

I wonder if the ether waves

Worked overtime that night,

And if it was they bustled round,

Imagine their regret

At finding old Caræacus

Without a super-het.

When Burke and Pitt displayed the might

And magic of their words.

The ether waves must all have felt

Like dumb and wingless birds.

When Cook went up the Eastern coast.

The ether waves, I fear,

To put it mildly, must have grieved

The abas couldn't hear.

I wonder if the ether waves

Still sigh for future days,

When man will more appreciate

The wonder of their ways.

The little we have learned of them

These dozen years or so

Is more than likely "little fish"

To what we yet will know.

Yes, think of all the ether waves

In days of long ago,

Before they all were civilized

By such as 3LO.

It's marvellous they waited till

We found the super-het;

The wonder of the age is why

They didn't pack and get.

—C.E.



HOYT'S ORCHESTRA,

Hoyt's Imperial Orchestra, playing from the Theatre de Luxe, in George street, will be broadcast by 2BL on September 10th. This combination of musicians is under the direction of Mr. L. Hart, and provides music incidental to the films which are being projected. Mr. Hart succeeds admirably in providing the setting for the films which are being screened.



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NO MATTER how fine or well made your radio set may be, its satisfactory performance is absolutely dependent on its batteries.

That is why leading radio engineers who design the finest sets, select the high-quality, super-power CLYDE as standard equipment, and why thousands of radio users throughout Australia always use Clyde.

Dependably rugged, super-powerful, and remarkably long lived, Clyde batteries built for every make or model of car—render better service for a longer time.

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The Clyde Engineering Company, Ltd.
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EFFICIENT RADIO SYSTEM IN DARKEST AFRICA.

IN AFRICA the most primitive natives maintain a system of "wireless" telegraphy that is as efficient for their needs as the great new systems which span the world. The bark drum is the unpretentious sending instrument, and the highly attuned and sensitive ears of the natives are the only receivers.

Scattered villages are linked up by simple drum beats, somewhat resembling our Morse signalling code, and natives for dozens of miles are warned of coming battle, the enemy's approach, or anything likely to be important to the dwellers in the low bush or jungle.

The Kafirs are very clever drum telegraphers. In the dead of night drum signals are heard many miles, especially in some parts of the South African plateaus, where the air is more rarefied and sound carries much farther.

The millions of natives from every part of Africa, Cape to Cairo, Niger and Nile, perfected years ago a system of drum "wireless" hardly less valuable to them than that used between the great cities of the world. Events of real importance are known within a few hours, as the rate these drum messages travel is something like 80 miles an hour—a truly wonderful achievement in its primitive way.

All parts of Africa in the night hours vibrate with drum taps. The bark drum with its tightly-drawn skin talks to the next village as easily as the natives can speak. In fact, the drum could be called the native's newspaper. All events and news affecting his life are tapped out in the night and discussed at the breakfast table next morning in the same way as we read our daily paper.

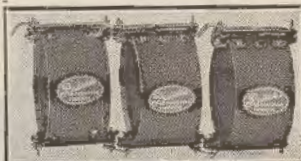
Another ingenious custom the natives have is that of shouting certain words in a voice they know by experience will carry long distances. These words have pronounced meanings, and are taken up from village to village with incredible rapidity. It is a curious thing for travellers arriving in the most lonely parts of the African continent to find the natives have come out to meet them, having known of their approach for days.

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I will remodel or re-wire your receiver, making every valve give of its best. Let me modernise your receiver.

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with Loud Speaker and All Accessories, in
handsome Cabinet.

PRICE, £19/10/-



This Beautiful and
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Also 4 and 5 valve sets.

The best value ever offered in 3-Valve Sets
Call in and see it, hear it, buy it.
Easy Terms. Easy Terms.

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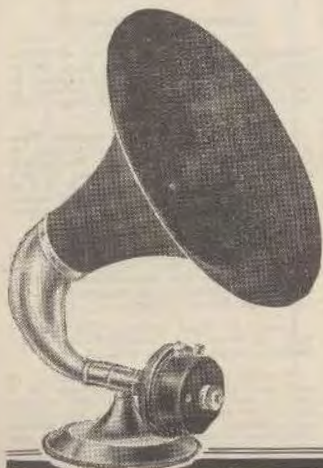
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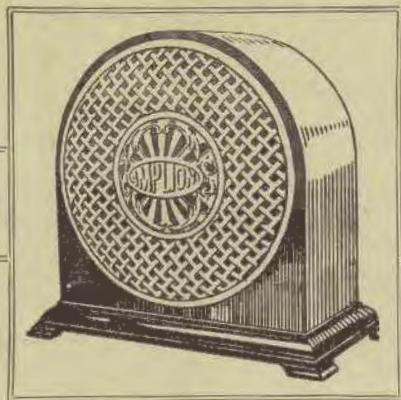
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AMPLION WEEK

August 30th to September 4th

THE AMPLION Range, which comprises the most extensive selection of Loud Speakers in existence, will be displayed at all main City dealers during AMPLION Week.

Dealers will be glad to arrange demonstrations of these Natural Tone Loud Speakers.

A special feature of the famous AMPLION Radiolux Loud Speakers is that the whole of the beautiful cabinet work is produced in Australia.

Amplion week is arranged in the interests of
BETTER RADIO REPRODUCTION

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