

Complete Broadcasting Programmes a Week in Advance

Wireless Weekly 3^p

INCORPORATING "RADIO IN AUSTRALIA & NEW ZEALAND"

VOL. 14, NO. 24.

FRIDAY, DECEMBER 6, 1929

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

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Modern Broadcast Transmission

Notes on Crystal Control
By Ross A. Hull

How Scotland Yard Flying Squads Make use of Secret Radio.

GLIDING—
A New and Exciting Sport
By J. Ball

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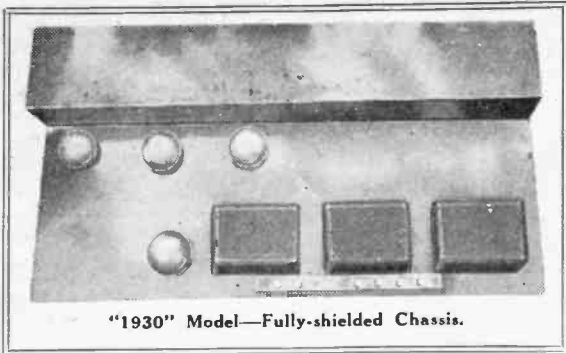
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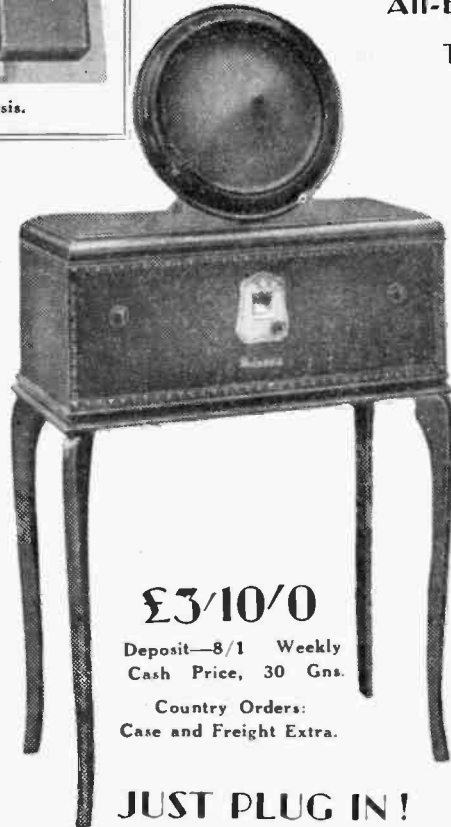


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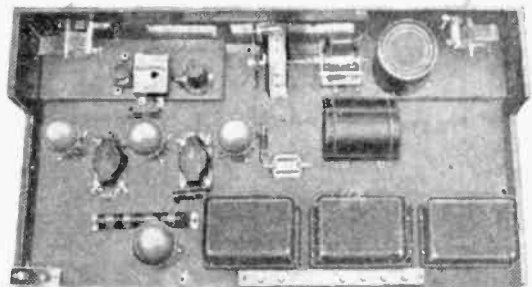
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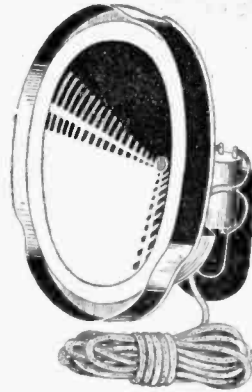
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Friday,
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Wireless Weekly

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DEVELOPMENTS PENDING

An interview with the new Superintendent of Broadcasting Stations, in which programme presentation ideas are discussed. Under Mr. Marden's direction a number of changes are to take place in the transmissions of 2FC and 2BL.

OVER four months have passed since the Australian Broadcasting Company took over its first station, and with the passing of time it continues to develop its organisation. On January 14, 5CL, Adelaide comes under the company's control, and on January 30, 4QG, Brisbane; which will give the company two stations in Sydney, two in Melbourne, and one each in Brisbane and in Adelaide and in Perth. These seven stations, so widely separated, have been placed under the superintendence of Mr. C. F. Marden, whose duties will be to provide for a close co-ordination between the stations, and generally to establish and supervise a standard of broadcasting transmissions throughout Australia.

Mr. Marden is a quiet, soft-voiced young man, with over twenty years' experience in theatrical and "entertainment" undertakings, horn-rimmed glasses, and a bland and tactful air. He was appointed Victorian manager for the Australian Broadcasting Co. when it took over 3LO and 3AR, and it is in his work as Victorian manager for the Australian Broadcasting Company that the New South Wales listener will be interested, since he has said that everything possible will be done to popularise the programmes along the lines adopted recently in Victoria.

During October the number of listeners' licences in Victoria increased by 3986, making the total number of licences 144,295, and this increase, it is generally claimed, has been due to Mr. Marden's technique of programme presentation. The trend of the Victorian programmes has been away from the stiff, item-after-item, concert style, and towards originality, towards the presentation conceived as a unit of entertainment.

For instance, when a Nautical Hour is planned, it is not simply allowed to go over as a collection of nautical songs. A running dialogue is carefully prepared, which links the songs together into a kind of sketch, so as to hold listeners' interest from beginning to end. This kind of presentation has proved very popular.

Another successful departure from old methods was the sketch written round Beethoven's "Moonlight" sonata by Mr. Gordon Ireland, who is perhaps remembered in Sydney. Two clever men have been briefed to appear regularly and debate on all kinds of subjects. The more the subjects are before the public at the time of the debate, the more the debates are appreciated. "Goanna Gully," a regular broadcast feature, concerns the Mayor, the Town Clerk, the President of the Purity League, the Parson, the Storekeeper, and so on, of that well-known retreat—what possibilities for humorous satire on the foibles of everyone are here!—and the next gathering will be at the opening of the new Mech-



Mr. MARDEN.

anics' Institute by his Worship the Mayor. Radio revues, radio plays, and, generally, anything novel and worth while, are now finding their way into the Victorian programmes.

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said Mr. Marden. "All tastes are catered for—news and utility services are maintained at a high standard (one of the highest in the world), and listeners who desire 'classical' music find it well provided for in each week's programmes. The field of radio as pure amusement, however, has only been slightly scratched. Many ideas have been tried before, but have failed because there was not sufficient understanding of the technical requirements of radio. The future of radio will be a future of development, and of the overcoming of technical difficulties. In this respect we have a great deal to learn, both from the British Broadcasting Corporation and the Americans, whose progress in the technique of different kinds of presentation is remarkable. The British radio play, 'The White Chateau,' which was put on from 3LO recently, was a revelation of what can be done with radio plays. In the actual business of broadcasting—in the broadcasting of large choirs, for instance—there will have to be constant development, so that the listeners may hear their performances as composers meant them to be heard in concert halls. For radio has passed the stage where mechanical excuses can be made for any loss of artistic effect; it stands on its feet, without the props of novelty which held it up so long, and it has to justify itself to the public as a perfect and satisfactory instrument.

"In England, on the Continent, and in America talks, plays, debates, and sketches are gaining the public's appreciation over simple musical broadcasts. This is perhaps a natural result of the development of the mechanical side of radio, which has made the transmission of speech almost perfect; it is also a sign that broadcasting is taking a greater part in the interest of the public; besides, as practical entertainment, music has less power to sustain interest than, say, the talk, the play, the debate, or the revue. However this may be, the desire for more talks and plays, and so on, is increasing in Australia, and the Australian Broadcasting Company is doing all in its power to provide the best and most original entertainments of this nature.

"This reorganisation began in Victoria, and will be continued throughout the Commonwealth, with, it is hoped, the same satisfactory results. The process, of course, will be a gradual one—such changes as we wish to make cannot be made in a day, or even a month. In Sydney, we begin from December 19 by installing a permanent orchestra and a permanent jazz orchestra. From December 19 onwards the programmes will show many new and original presentations, which, we feel sure, will meet with the approval of New South Wales listeners-in."

Between You and Me and the Microphone

It's not the Heat—

IT'S the humidity we can't stand. Yes. And bring us a few more bottles of coconut oil, and that cold cream you said you had. We know we said we wouldn't have anything to do with cold cream; but then all the other chaps were here. You don't expect a real man to know anything about cold cream before all the other chaps, do you? No. Well, go on, Anthea, be a sport; you don't know what we're suffering; every time we try to grin it cracks our face even more so.

Aaaaaah!

Ooooooooooooooh!

Ow!

You might have known better than to rub it in with your finger-nails, Anthea. That's better. Now for heaven's sake, Anthea, go away! You don't expect we can write a microphone page with you to distract us, do you?

Yes, we love you.

Yes! We love you!

Damnation! We LOVE you! Is that enough? Well

Sorry we have kept you waiting, gentle reader. Fact is, we've just come back from the surf—got very burnt. It always gets us like this at the beginning of the season, and it hurts us even more at first than the average chap, because we never put anything else but coconut oil on. Some

chaps persist in using cold cream; but that takes all the brown out—we believe in getting absolutely brown once and for the whole season. We went down early this morning, and stayed the whole day.

John went down with us. You should see John in swimming togs. We don't make any comment; but you should see John in swimming togs. After doing a few shoots, just to get in practice again, we strolled along the beach, noticing how beautiful were the backless bathing costumes—the costumes—worn by so many charming young things. (It was one of the beaches where these are allowed.) We asked John didn't he think they were very nice. John said he didn't see much in them. We said we didn't know about that, but the girls seemed to get a good deal out of them. John said that was so, and how soon did we think lunch time would be, because he felt hungry.

Just at this moment a cry of "Help! Help! Help!" was heard, and without saying a word to anyone we dashed in the direction of the sound, which seemed to come from over New Zealand way. Bravely we struck out through the thundering surf, and, battling against the breakers and overwhelming odds, we overwhelmed them, and in a few minutes were

beside the weakly struggling young thing. Grasping her firmly by the hair, and putting forth every ounce of our energy, we began the return journey, fighting every inch of the way against an irresistible undertow, until at last we were swept in on a tremendous dumper to the shallows, where many willing hands dragged us to the dry sands, while thousands cheered and cheered and cheered. John said, "Come and get wet again, James; you'll get sunstroke if you sleep there much longer."

We went in, and were shooting the breakers for a little while—we were out rather far, and it must have been about fourteen feet deep—when John suddenly stood up and put his hand to his right side, which, we were surprised to observe, was no longer there. "That's very peculiar," said John; "I'll swear I had a right side when I came in—don't know what can have happened to it!" We heard



a peculiar moaning sound, and saw a shark swimming on the surface a few feet away. He had John's right side in his mouth, ribs and all. He seemed rather unhappy for a shark, and we said, "Hey! What're you doing with John's right side?"

"Dammed if I know," mumbled the shark. "It's the most unusual right side I've ever taken from a human being. I can't make anything of it; in fact, it's too tough for me, so if he particularly values it he can have it back again." Saying which, he paddled up and put John's right side back where he had found it. Then he turned about, and made for the open sea, throwing the remark over his fin, as he went, that the hunting in these areas wasn't anything like what it used to be. John was pleased to find himself intact once again, and we returned to the shore, and sat down to sunbake in peace.

But the beach was now crowded, and there wasn't any peace. Not for radio journalists. Nearly every family or squatting party had a portable radio set, and they seemed to be competing with each other whose set would make the more noise. And it wasn't as though each set was producing the same station. The man on our right had a racing description

from 2FC. The man on our left was listening to a cricket match from 2BL. The girl in front of us was interested in Melbourne's sporting descriptions; and the party behind us were tuning in one station after another, by the simple method of working the dial round to the left until it stopped, and then back again, and so on. When 2FC put on Handel's "Largo," between races, 2BL put on the snappy "Don't ya love muh?" and Melbourne just coincided with a xylophone solo, "March of the Campbell Men"; so we said to John, "This is too much like hard work," and started off towards the dressing sheds. John said, "Just think of seeing YOU here!" and there were two very pretty creatures, with figures like that girl you admired in the street last week until you saw her face. John introduced us, and we talked for a while; then we arranged to meet outside the dressing sheds when we had taken off our swimming togs.

We were horribly burnt, and had a good deal of trouble working ourselves into our shirts. Our editor told us beforehand to wear a coatshirt like him; but we didn't do this, so it hurt us very much. And then John couldn't find his trousers. Naturally John was very annoyed. He said if he could find the — who took his trousers he'd twist his — head off. Then he walked majestically round the shed in his shirt-tails, looking at everyone else's trousers to see if they were his; but a mere glance round the shed was sufficient—you could tell John's trousers miles away—we never say anything like them for design. Then John began to curse the attendant, who said it was all very sad; but he couldn't do anything, and next time, perhaps, the gentleman would hire a locker (price 1/-) to put his trousers in. Then John sat down and said, "Well, what am I going to do about it? How am I going to get home? And there's two girls waiting for us outside, James; and I can't take them home in my shirt tails, can I?" We said, no, it wasn't usually done; and a young man came up and offered to run down to his home and get John a pair of trousers, which he did, and John put them on; but the girls had gone, and it was just as well, because the young man was a votary of the piscatorial industry, and the less said about fishy trousers while John's about the better.

However, it was a pleasant sort of day—one of those days you look back on and laugh; just as one of these days we suppose we shall look back on all our days spent in eager and unremitting toil for the benefit of the community, and laugh like anything.

James

Scotland Yard's Radio Flying Squads

How radio-equipped flying squads of London policemen are used to control traffic. Every important station has its radio telephone and a vast network surrounds London.



Traffic on the Embankment, during the general strike. When a jam occurs, the radio calls the nearest flying squad to untangle the traffic.

The flying squad handling a pressing crowd.

WHILE wireless for police purposes has been in use in Sydney and Melbourne for a number of years, Scotland Yard claims to have the most efficient police wireless system in the world, although they acknowledge the fact that the German police authorities have wireless sets in greater numbers than those owned by the British police forces.

Not only have the Yard engineers evolved sets and schemes far in advance of those of general practice at the present time, but the Scotland Yard radio equipment is in constant use for twenty-four hours every day.

The Yard engineers are no amateurs at applying wireless methods to police work; experiments in wireless transmission, it seems, have been in progress beginning with the year 1921, and sets of varying power, mostly between 100 and 500 watts, have been used at various times.

Used First on Derby Day

Among the earliest experiments in the use of wireless for police purposes was, not the catching of criminals but the controlling of traffic on Derby day. This was accomplished by aeroplanes giving wireless instructions from above. In the year 1921 and the following years the R-33 and later aeroplanes were used to survey roads and report traffic jams by wireless to listening posts on the ground or to the Yard wireless vans on the roads. These experiments proved entirely satisfactory but were not continued in view of the fact that the planes proved entirely too fast and expensive. In 1924 a stationary kite balloon was tried for the same job. Eventually recourse was made to a system of wireless communication by the ground police forces. This method—now used annually—is proving entirely satisfactory in every way.

The Scotland Yard wireless system is dependent for effectiveness upon the so-called flying squads, for it is chiefly with recent

increases in police motor transport facilities that the police wireless application has been extended.

Scotland Yard's main set is in a room right up under the roof of the headquarters. The entire radio apparatus is enclosed in a screen properly insulating all vital parts from possible interference by electric trains, trams, and lifts.

While in the earlier experiments some years ago radio telephony was employed, radio telegraphy is now the sole means of police communication, since this, after careful experiments, has been found more suitable and by far more efficient for the work it is intended for. Thus, for both transmission and reception a police code in Morse—arranged through an international police convention—is used. The wave-length employed is somewhat under 200 metres. This, however, is changed from time to time as conditions may demand or warrant. The present apparatus has a range of 100 miles; this range is from time to time extended to 200 miles, and communication carried on with success.

Sets Concealed in Vans

The flying squad sets are concealed within the police vans. The aerials are built into the van tops and the entire apparatus is shielded against interference from the auto's electrical and ignition systems. Needless to say, the flying squad vans are not marked "D.D." or "Scotland Yard," but have fictitious tradesmen's names and camouflaged numbers; they traverse all crowded thoroughfares and are in constant touch with headquarters, receiving instructions and acknowledging signals. The operator receiving the signal need not leave his seat in order to convey the message to the chief officer. The flying squads are constantly in touch with headquarters, and are enabled to communicate with one another through the Yard. To make radio policing more

effective there are a number of land operators, unknown to the public, who assist in keeping and maintaining the Scotland Yard wireless police methods entirely satisfactory for the purpose they are intended for.

Scotland Yard, however, is not the only British police organisation to recognise the value of radio for police work. The activities of the radio department of the West Riding police were brought to the attention of the world when the King and Queen visited Bolton Abbey some time in 1928. The radio results obtained by the West Riding police have been highly encouraging. The detection of criminals by a series of police radio stations on the outskirts of West Riding (York) enables a ring to be drawn round any fugitive or band "wanted." These radio posts have their own individual call letters, and are staffed by expert operators.

At Wakefield, the headquarters of the West Riding police, there is a combined receiver and transmitter that has a radius of approximately one hundred miles. Messages can be transmitted to the south of England and Wales. These sets are easily installed for utilisation by flying squads, and can receive or transmit instructions en route within an effective radius of about fifty to seventy miles. These sets are working from storage batteries.

By the aid of wireless an important message can be tapped out at headquarters or sent by microphone to the stations equipped, and within a minute twenty-one divisions of the West Riding police, with a force of 1500 men and who cover 1,634,621 acres, are in possession of the information and instructions, which are put into operation at once.

Criminals, Too

Although radio has been adopted by the police department of almost all countries, organised criminals have not been slow to take advantage of the facilities it offers. At the same time, radio has been in several instances their downfall.

A striking instance of this was afforded in the recent rounding-up of a large gang

of rum-runners by the Federal Prohibition Agents of the United States.

About six months ago an unidentified radio station was heard operating on the Atlantic coast, in the band of wave-lengths around eighty metres, which is reserved for amateurs and ships. The operator of the station, who was using two false call letters, was remaining at the key at times for stretches of eighteen hours or more. This naturally aroused suspicion, and, though the nature of the messages was suspected, their real purpose was not definitely known.

There was no record of any licence for the call letters used, and as it is part of the duty of radio inspectors to pass upon the qualifications of all radio operators, amateurs and otherwise, inspect stations applying for licences, and monitor the ether channels, the signals caused efforts at location.

A young operator, Forest Redfern, was put to discovering the source and nature of the signals. As Redfern was a former Army operator, and during the war had been a non-commissioned officer in charge of intercepting messages from enemy radio stations in the military operations along the Marne, "intercept duty," as this is known in radio parlance, was not new to him. It was easy to take down the code of the station, but it was a difficult task to decipher the messages. It was relatively easy, however, by taking bearings on the signals from different point, and using the "triangulation" method of direction finding, to place the exact location of the station.

Further effort revealed that the messages were despatches by the rum-runners to their liquor-carrying vessels. When the prohibition agents and troopers swooped down upon the radio shack, which was situated only a short distance from the rum ring's base of operation, Redfern was with them. They



The new studio at 6WF, arranged by Mr. Basil K Irke.

found the radio operator busily pounding away at his key. Redfern could now read and transmit the code message, and, as the operator was handcuffed, he sat down at the key and continued sending.

The orders he despatched to the rum vessels led to a point where a Coast Guard vessel was lying in wait. Thirty-two men were finally arrested, and large quantities of liquor seized.

Short-Wave Notes : : : : By R. N. Shaw

QUITE an appreciable improvement was noted during the week ended November 25 in the transmission from 5SW (London). For some weeks past the reception of this station has been passing through the transition stage, by which I mean that morning reception has been gradually becoming weaker, whilst reception at night has been likewise becoming correspondingly stronger. It is now quite an easy matter to log 5SW's carrier with an oscillation whistle like a local station between 10.30 and 11.30 p.m. On Tuesday night, November 19, 5SW was almost too strong for comfortable 'phone listening, and between 11 and 11.30 was excellent speaker strength. A considerable portion of the programme was comprised of organ items. Again on Friday night I heard this station at good speaker strength; but at 7 a.m. the station was unintelligible.

RADIO MANILA

This station still maintains interest for the fan who desires to listen to interesting programmes as well as whetting his thirst for D.Z. On several nights I listened to this station at various intervals up till 11.30 p.m. Fair to good speaker strength was observed each evening. On Friday night full speaker strength was reached between 11 and 11.30 p.m. The programme is very varied, and provides plenty of variety. It is rather novel, even if not altogether interesting, to hear the announcer giving such items as the weather report and weather forecast for Japan, Philippines, etc. The musical programme included such favorite items as "The Old Refrain," "Because," and "Ramona." Radio Manila was not heard announcing his wavelength, but it still remains about 26—just above 5SW, and about midway between 5SW and 5BX.

FOREIGN DX

RA97 came in nightly with plenty of punch, and, yes, plenty of talk! To the DX fan

THE PRE-SELECTOR FOUR

Full a.c. operation, splendid musical reproduction, and a high degree of selectivity, are the features of the new Pre-Selector Four to be described in full detail in the Christmas Issue. Though the original receiver is a "four" alternative circuit arrangements will be given for the use of three valves without any sacrifice of the selectivity and reproduction characteristics of the set.

We think you will agree that it is the "nicest" four valve set you've ever seen.

Even if you don't build it you will be interested in the new "pre-selector" principle in receivers.

RA97 has two drawbacks—natural static and tongue-made static. However, RA97 can at present be classed as one of the strongest stations on the higher frequencies, and also provides some excellent musical interludes. RA97 has again been testing down on 35 metres, where static is less severe. The lady announcer still says her little piece occasionally.

On November 9 I again heard a foreign station just above RA97, time 9.45 p.m. Music was being broadcast, but static was very bad.

Two stations in Siam were heard during the week, one around the 17 metre band and another around 37. HSIPJ was heard testing shortly before 8 on Monday morning, when he announced that he would again be testing between 11 on Tuesday night and 1 a.m. Wednesday.

A strong foreign station was heard at 10.5 p.m. on November 22, but I did not get his call sign. He repeated a number of times, "Hall-o. Hall-o." in broad foreign accent, followed by a flute solo, and solo by a lady in foreign tongue.

LONDON AND AMERICAN TESTS

The distant overseas stations appear to be coming in strongly between 6 and 7 p.m., and for several hours during the early morning.

On Friday, November 22, GBX was heard nicely at 6 p.m., but had risen to excellent speaker strength towards the close of the test at 6.55. I have not heard GBX at better strength. Earlier in the week, at 6 p.m., GBX was only fair 'phone.

At 5.45 a.m. on Saturday, November 23, an excellent test was heard through an American network, apparently directed from W2XG. Although I did not hear 2ME's call given, the station was apparently taking part, as the Christian name of one of the staff of 2ME was frequently addressed to the other speaker. Several wavelengths between 22 and 28 were used, the test continuing until 7.15 a.m.

Shortly after 9 a.m. on Sunday, November 24, W2XAD was busily engaged on similar tests with Australia. Very good volume.

Shortly afterwards a New York station was responsible for a conversation between father and daughter, the latter replying to a paternal injunction with "All right, father."

MODERN BROADCAST TRANSMISSION

The performance of the receiver is primarily limited by the effectiveness of the transmitter. Progress in transmission methods must therefore be of vital interest to the listener. The article below, dealing with the influences that limit the performance of the receiver and with recent advances in transmission methods in other parts of the world is likely to draw widespread comment.

By ROSS A. HULL

THE average present-day listener would appear to think of the radio world as rotating around his radio receiver. His own little set apparently would be for him the Open Sesame to everything only that the "B" battery has anaemia and the aerial coil has become discombobulated.

If it were working as it really should he would be able to listen to New Zealand, Japan, and points west; if only he could afford to add that other valve and put up a bigger aerial, KGO and KFI would promptly gurgle from his speaker in just the way he had visualised it so often. When summer conditions cause 3LO to be buried in a barrage of atmospherics he is prone to write and ask if his plate supply is faulty, or whether he should sandpaper the oxide from his aerial wire.

Expecting Too Much

So much has been said of the wonders of radio that the uninitiated enthusiast who buys a complete radio for the family is likely to have even more grossly absurd expectations. Should the heavy grind of a power leak form a background for all his reception he will lose no time in slamming the receiver; should the signals from another State be marred with crackles, or fade away at intervals, he is almost certain to make a bee-line for the radio dealer on the very next morning.

If we thought about it long enough we could probably list a half dozen reasons for this unfortunate state of affairs. Undoubtedly they would all be derived from the fact that since the earliest days of radio most enthusiasts who have built or sold sets have been cursed with an imagination far too vivid and active. To repeat the hackneyed words of some famous statistician, "If all radio dealers and set-builders who make tall or unqualified claims for their apparatus were placed end to end—it would be a darned good thing."

We may be exaggerating a bit ourselves, but we cannot see how any student of radio development can fail to admit that there is a very general feeling among

non-technical enthusiasts to the effect that there is no limit to the things a radio receiver can do; that if there is a limit, it is obviously the fault of the set itself.

Receiver Has a Big Task

By no means do we plan to say that the modern radio set is not a wonderful piece of apparatus, nor do we suggest saying that it is not often capable of a truly wondrous performance. Rather the reverse. We have the idea that if more people really appreciated or attempted to appreciate the inconceivable amplification that a receiver must provide and the positively amazing manner in which it performs the work they would be better able to understand why its capabilities must be definitely limited, and why they should really wonder at the results that are possible.

When it is operating from a signal coming over a distance of, say, 1000 miles, the radio receiver does not have much energy to work with. It has so little, indeed, that it could not possibly be measured directly with the most delicate instruments available. Computations made from indirect measurement

lead us to believe that if the energy from such a station were received continuously, and stored up for about 30 years, it would only amount to the energy that a fly would expend in walking one inch up a vertical wall. We have made that statement before, but it is surely deserving of re-statement.

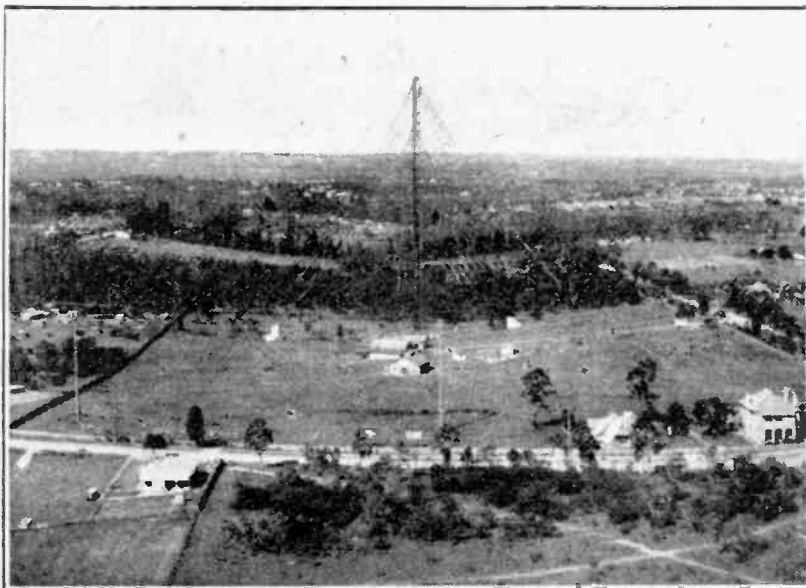
Even in the reception of comparatively near-by stations the received energy to be had is inconceivably minute, and when it is remembered that the receiver must not only amplify these inputs to fill the room with music, but must also separate them from dozens of other feeble currents of different frequencies, it must be realised that the modern receiver is certainly doing some mighty fine work in providing the radio music that it does.

Limitations of Transmission

Let us give the receiver a rest this time, and turn instead to the process of transmission, in order to see just why it is that the capabilities of the receiver must be definitely limited, even if it be the finest collection of apparatus in the whole wide world.

Just as soon as we get away from the receiver, and leave it as merely a means of making radio waves audible in the loud-speaker, we are faced with the fact that not all radio waves are produced by transmitting stations.

For this reason we at once see that not all noises made in the speaker will have originated at man-made transmitters. Faulty contacts in the house wiring, leaky insulation in the power wiring on the street, and all electrically-driven machines are capable of producing radio waves, and all these may be picked up and reproduced by any radio set. They constitute one very important limiting factor in the performance of the receiver. Should they be stronger than the broadcast radio wave they will make more noise, and the much-desired music will be irretrievably buried. Unlike the radio waves sent out by the broadcast stations, these waves are very broadly tuned. For this reason the business of tuning them out as one



Radio centre, Pennant Hills, where are situated the principal transmitters of New South Wales.



A transmitter which in no sense can be described as modern. Garden Island navy station is responsible for the most annoying interference with broadcasting.

would interference from an unwanted station is at present impractical. At the moment there are only two possible cures for the trouble. One is to have the power leaks or faulty contacts attended to, and the other (possibly the most practicable at the moment) is to move the entire family, household, and radio set to a location where such interference is not to be found.

Getting still farther away from the receiver, we run into considerations of the atmosphere itself—the transmitting medium between the broadcast station and the receiver. It is the atmosphere, the ether, or space which is responsible for the fact that we can hear signals over long distances at all. On the other hand, it is this very same atmosphere which causes the maximum range of our receivers always to be limited and never to be constant. Further, it is this atmosphere which sometimes introduces distortion into the music we receive—a fact which is not recognised by many.

Troubles in the Atmosphere

One reason why the atmosphere always limits the range of reception is that in it there are always some electrical discharges in progress. These discharges create radio waves, and they in turn cause noises in the speaker which compete with those arriving from the broadcast station. Sometimes they are louder even than the signals from near-by stations, and never are they entirely absent. The more sensitive the receiver is the louder they will be. Only on rare occasions is the atmosphere in any one part of the world so free from discharges that long-distance signals may be heard without an accompaniment of their tiresome crackles. If we could eliminate the atmosphere in some way it would by no means help us out of the difficulty, however. Without the atmosphere we would have no long-distance broadcasting at all! The upper reaches of the atmosphere are actually the medium via which our long-distance signals arrive.

When the radio waves are created at the aerial of the broadcasting station they spread out in all directions—not only in all directions in a horizontal plane, but at all angles to the horizontal as well. If our receiver is ten,

twenty, or perhaps sixty miles from the transmitter, the waves that set up currents in our aerials arrive by the ground route. That is, they travel over the ground and close to it. The waves which did not start off in a horizontal direction are by this time well up in the upper atmosphere, to return at a later date.

The waves that hit our aerial after travelling over the ground have been quite heavily absorbed and attenuated in their progress, and they now represent but an infinite fraction of the energy which left the transmitter. If our receiver is about 70 miles from the

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SPECIAL
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NEXT WEEK
84 PAGES—
TWO COLOURS

transmitter, and if it is day-time, the signal may have been so thoroughly absorbed that it is much weaker than the normal level of atmospheric disturbances. It will, therefore, be inaudible even on the most sensitive receiver.

At night-time, when the sun-rays cannot upset the lower atmosphere in the same way, these signals that travel over the ground (the "ground wave" is the term used) are able to go much farther. Even so, at a distance of possible 100 or 150 miles they are, for all practical purposes, lost. At this stage the waves which travelled upwards again come into the picture. After tooting upwards towards the outer limit of our atmosphere these waves enter a region where they are bent down again by the influence of what are termed "ionised gas molecules."

This region is termed the "Kennelly-Heavyside Layer." It is not really a layer, however, but an enormous ocean of ionised gas molecules, extending all over the earth's atmosphere and possibly a few hundred miles high. If this ocean were of constant depth and of constant consistency long-distance transmission would be similarly effective on all nights, and there would be no fading.

Causes of Fading

Unfortunately this is not so. The layer is in a constant state of turbulence. Signals which are bent down at one angle one moment are carried off in another immediately after. And from night to night and month to month the entire characteristics of the layer change. It is this which gives us our nights of good and bad reception, and the fading which accompanies it all.

All of these mighty forces, of course, are entirely beyond our control, and no means at our disposal to-day are completely effective in overcoming their effects.

And so, when crackling noises mar reception, when reception over long distances becomes impossible in the day-time, when the music fades in and out or becomes distorted, and when distant signals fail to arrive with the same gusto that they had the night before, do not be too hasty in blaming the receiver, or even the transmitter, but call down curses on that very necessary radio evil—the upper atmosphere.

Of course, a tremendous responsibility rests on the transmitting stations. For instance, there are the stations engaged in communication on wavelengths outside the broadcast band, which should not, but do, splatter their signals on territory which is not their own. The Navy station at Garden Island is one striking example. Though the station is operated far outside the broadcast band, it nevertheless causes drastic interference to broadcasting which is quite beyond the control of the unfortunate listener. This, of course, is greatly to be regretted. Though the station is operated by the Navy for possibly most important purposes, there is no apparent reason why modern technique should not be applied in the elimination of interference.

Where Broadcasters Fall Down

Possibly the greatest responsibility of all rests on the broadcasting stations. These transmitters have the work of creating a carrier wave modulated by the frequencies generated by the desired sounds in the studio, and these modulation frequencies must be as nearly a faithful copy of those in the studio as is possible. Once the signals leave the transmitter a host of factors upset them to some degree.

Consequently the received and reproduced signals never can be better than the transmitted ones. The broadcast stations, therefore, are primarily responsible for the limitations of our reception. This sounds a most obvious sort of statement, but it is strange the number of listeners who would not appear to have any appreciation of the fact. Should their reception become distorted, or should it be accompanied by a low drone, a continuous whistle, or all manner of sizzling noises, they are quick to suspect their receiver. They will be justified in doing so on some occasions, but they will be off the track on many others.

The essential work of the broadcast station is to make a big stir in the ether. The bigger the stir the better will reception be over any but the shortest distances—other things being equal. The amplitude or strength of the carrier wave, however, is not the thing which controls the amount of "stir."

Many of our broadcasting stations are high-powered in the sense that they have a powerful carrier wave, but they are ineffective because the modulation introduced by the music is so slight. Should these stations reduce their carrier output by four times, and in-

To be Broadcast for the First Time in Australia

"MACBETH"

The majestic Shakespearean Tragedy with incidental music by Locke

Other Features of the Week include . . . The Messiah . . .

Newcastle Revellists . . . and "Goanna Gully."

STUDIO production of Shakespeare's tragedy of "Macbeth" at 2FC, Wednesday, December 11. For the first time in Australia, a Shakespearean tragedy will be broadcast.

The essence of the production will be the collaboration between music, poetry, and the auditory scenic effects to give convincing verisimilitude to the performance.

The majesty of the blank verse, spoken with all the color and emotion the tragedy demands, will be fortified in effect by the music of the English composer, Locke. There will be a subtle harmony and relation between the rhythm of the verse and of the music. The supernatural elements of evil and witchcraft which penetrate this drama, and give it its tone, will be vitalised by the music. The artistic force will be strengthened by the sound effects, perfecting the illusion of reality, just as on the actual stage the illusion is rendered complete by scenery and lighting. The attention of listeners will be held and dominated solely through the ear, a process which in some measure is a return to Shakespeare's own dramatic method. He depended rather upon the imagery and emotions conveyed by language than upon mechanical stage effects, or splendor of setting, for the illusion of reality.

Macbeth, a gallant soldier and a nobleman, a cousin of Duncan, the old King of Scotland, is met, when returning from a great victory he has won for Scotland over her foes, by the three weird sisters, the witches, who prophecy that he shall be Thane of Cawdor, and afterwards King of Scotland. Ambition, which hitherto has been a mere glow in his soul, is kindled to a flame, especially when part of the prophecy is immediately fulfilled by the arrival of the King's messengers, who hail him as "Thane of Cawdor." Macbeth's wife, an ambitious and cruel woman, who has made up her mind that her husband shall be King, upon learning the witches' words, and that Duncan is coming to her castle as a guest, resolves upon the murder of Duncan. Her husband hesitates to commit the terrible crime, but his vacillation is overcome by his wife's concentrated persistency. The deed is done. Thereafter Macbeth goes from crime to crime to retain the Throne. He murders his friend Banquo. Remorse haunts him. Terrible visions crowd his mind. His wife, who is also haunted by the visions of the dead Duncan and of blood, goes mad, and commits suicide. Malcolm, the son of Duncan, and the rightful heir to the Throne, returns to Scotland with an army. Macbeth, fighting like a wild beast, is slain by Macduff.

The following scenes will be produced over the air:—

Act 1, Scene 3: Macbeth returning from battle, meets the three witches during a night of terrible storm. The witches are the incarnation of the powers of evil.

Act 1, Scene 5: Lady Macbeth receives a letter from her husband. He afterwards returns, and she begins her promptings to murder Duncan.

Scene 6: Duncan arrives at the castle, and is received with hypocritical hospitality and loyalty.

Scene 7: Macbeth wavers in his resolve. His wife thrusts him on, and drives him to commit the hideous crime, after a feast in the castle, when all are asleep.

Act II, Scene 1: The murder and its discovery.

Act III, Scene 3: The murder of Banquo
Scene 4: Macbeth's Coronation Banquet
Banquo's ghost appears to Macbeth's guilty conscience. The banquet breaks up in confusion.

Scene 5: Macbeth consults the powers of evil, in the persons of the three weird sisters in the cavern.

Act IV, Scene 1: Lady Macbeth, driven mad by her terrible memories, walks and talks in her sleep.

Scene 5: The death of Lady Macbeth.

Scene 7: Macbeth's last fight. Birnam

Wood comes to Dunsinane. The guilty tyrant is slain.

Prelude: Opening symphony, Antique Trio; incidental music, Antique trio.

Following Act II, Scene 1: Recitative, "Speak, Sister, Speak"; air, "Many More"; chorus, "He Will Spill More Blood"; recitative and chorus, "Agreed, agreed"; solo, "When Cattle Die"; chorus, "Rejoice."

Following Act III, Scene 4: Air, "Let's Have a Dance upon the Heath"; chorus, "At the Night Raven's Dismal Voice"; recitative, "Hecate, Come Away!"; air, "My Little Spirit"; chorus, "Come Away"; solo, "With New-fallen Dew"; air, "Now I Go, Now I Fly"; chorus, "We Fly by Night."

Preceding Act IV, Scene 1: Symphony. Antique Trio; during this scene, recitative, "Black Spirits and White"; chorus, "Mingle, Mingle"; recitative, "Here's the Blood of a Bat"; chorus, "Put in All These"; recitative, "Hold, Here's Three Ounces."

At the end: Triumphant march

Mr. W. F. Jackson, director of the Shakespeare Repertory Society, who is considered one of the most prominent Shakespearean scholars in Australia, will play the role of Macbeth; Miss Mollie Kirwan will be Lady Macbeth; the witches will be played by Miss C. Jelleff and Madame Evelyn Grieg; Banquo by H. J. Greville; Malcolm by R. H. Greville; Macduff by Edward Cavill; Hecate by Miss Beryl Jackson; and Duncan by Frank L. Edwards.

One of the many interesting features surrounding the broadcast will be the beautiful incidental music, especially composed for it by Matthew Locke, who lived from 1630-1677. He is spoken of as "The Father of English Opera," and has written incidental music for many Shakespearean dramas. The witches' music he composed for "Macbeth" will be played by the Antique Trio, which comprises:—Dulcitone, Madame Evelyn Grieg; treble viol, Miss Veta Wareham; viol de gamba, Mr. Keith Kennedy. These instruments will be in keeping with those used in the old days.

FREDERICK GEORGE HANDEL'S oratorio, "The Messiah," will be rendered at the Lyceum on Sunday afternoon, December 8, by the Central Methodist Mission's reinforced choir, under the conductorship of Mr. V. W. Peterson, B.A., B.Ec., with Miss Constance Bardsley at the grand organ, and will be broadcast through 2FC. The cast will include: Miss May Craven, soprano; Miss Bessie Cooke, contralto; Mr. Lance Jeffree, tenor; and Mr. Raymond Beatty, bass.

Although of German birth, Handel went to England, and wrote many of his most notable oratorios there. He was born in Halle in 1685, and as a boy was intended to become a lawyer, but he secretly studied the harpsichord. In 1737 operatic troubles ruined his health, and caused paralysis. He partly recovered, and in 1741 abandoned opera and devoted himself wholly to oratorio, writing successively "Saul," "Israel," "L'Allegro," and in 1743 his immortal "Messiah," followed by "Samson," "Judas," and many others.

THE WEEK'S TALKS

The feature talk of the week will be given by Wilfred Blacket, K.C., on Saturday night.



DAY SESSIONS.
FRIDAY, DECEMBER 6.—2BL: 9.0, A. C. C. Stevens. 2FC: 10.32, Oscar Lind, Sporting; 11.0, Miss Furst, Cooking.
SATURDAY.—2BL: 9.0, Wilfrid Thomas, a reading; 10.40, Mr. Cooper, Gardening. 2FC: 10.32, Mr. Ferry, Racing; 11.0, Miss Furst, "Week-end Suggestions."
SUNDAY.—2BL: 5.10, C. N. Baeyerzt, "Philosophic Thought from Bacon to Bergson."
MONDAY.—2BL: A. C. C. Stevens. 2FC: 10.32, Mr. Ferry, Racing; 11.0, Miss Furst, Cooking.
TUESDAY.—2BL: 9.0, A. C. C. Stevens. 2FC: 10.32, Mr. Ferry, Racing; 11.0, Miss Furst, "Hints to Housewives."
WEDNESDAY.—2BL: 9.0, A. C. C. Stevens. 2FC: 10.32, Oscar Lind, Sporting; 11.0, Miss Furst, Cooking.
THURSDAY.—2BL: 9.0, A. C. C. Stevens; 2.30, "Half an Hour with Silent Friends"; 3.45, Goodie Reeve, "Aids to Personality." 2FC: 10.32, Mr. Ferry, Racing; 11.0, Miss Furst, "Domestic Notes"; 12.0, Tom Gurr, Travelogue; 3.0, C. N. Baeyerzt, Spoken English; 4.0, Mrs. E. Hume, "Celebrities I Have Met in the Studio."
NIGHT SESSIONS.
FRIDAY.—2BL: 9.30, Claude Corbett, "Sporting." 2FC: 9.0, Rev. R. Piper, "South Seas."
SATURDAY.—2FC: 9.0, Wilfred Blacket, K.C., "Reminiscences of the Bar."
SUNDAY.—2FC: B. R. Gelling (president of the League of Nations Union).
MONDAY.—2FC: 9.0, Tom Gurr, "India, and Her People."
TUESDAY.—2FC: 9.0, Francis Jackson, "The Ghost in Literature."
WEDNESDAY.—2FC: 8.20, C. N. Baeyerzt, "Dialect Stories."
THURSDAY.—2BL: 9.30, Fred. Arlington-Burke, "Australia, and the Recent American Financial Crash."
NOTE.—Some of the midday and afternoon sessions have been omitted; this is to make room for cricket descriptions. It is gratifying to notice that the evening talk list is considerably strengthened.

MR. W. FRANCIS JACKSON will give an address through 2FC on Tuesday, December 10. "On With the Dance." Mr. Jackson will give a history of dancing from primitive times to the present day. With primitive men dancing is associated with war and religion—war dances and religious dances are symbolic play, which stimulates the emotions. Mr. Jackson will give a description of a Zulu war dance, in full paint, which he was privileged to see in one of his recent tours abroad. Then comes the choric dance, of Ancient Greece, associated with the worship of a god.



FRANCIS JACKSON.

David also danced in front of the Ark, and Mr. Jackson says, "Let us resort to this ancient custom, and dance in our churches. Dancing does not necessarily belong to the devil—it is a natural and innocent expression of human vibration." The great dancers of the modern world are Genee, Isadore Duncan, and Pavlova, and dancing is expressed in its highest terms in their art. Mr. Jackson will make a comparison of the dances of to-day with the dances of yesterday. He will give his views on jazz.

NEWCASTLE Civic Week will be celebrated from December 14 to December 21, and will cover many important ceremonies. The Australian Broadcasting Company has made arrangements to make available for listeners a complete programme in connection with the festivities and functions surrounding Newcastle Civic Week.

On Sunday, December 15, the morning service from the Newcastle Cathedral will be broadcast by 2FC. From 3 till 4.30 p.m. a combined church service and massed band programme will be broadcast from King Edward Park, through 2FC. A combined choral service, to be broadcast from 6 p.m. till 6.40 will go through 2FC from the Newcastle Baptist Tabernacle. At 6.40-7.0 p.m. the Rt. Reverend the Bishop of Newcastle (Dr Long) will be the feature speaker of the week.

On Monday, December 16, 2BL will broadcast a programme from the new Town Hall, in which the Newcastle Choral Society and Steel Works Band will take part. On Wednesday, December 18, at 8 p.m., 2BL will broadcast a programme by the Arcadia Operatic Society, in conjunction with the Newcastle Revue Revellists from the new Town Hall; whilst on Thursday, December 19, at 8 p.m., an orchestral programme by the Newcastle Symphony Orchestra will be broadcast through 2BL. On Friday, December 20, at 10 a.m., 2FC will broadcast the official opening and landing of the floating dock. In view of the fact that the first relay station in Australia will be in Newcastle these broadcast functions will be of great interest to listeners all over the State.

A MUSICAL programme, under the direction of the Music Teachers' Association, will be broadcast from 3LO on December 10. Assisting artists will include Stanley Adams (violin), Rita Coonan (soprano), and Phyllis Pariett (piano). It will be remembered that Rita Coonan completed her vocal studies in

Europe, where she assisted at many recitals arranged by the two famous composers, Roger Quilter and Maurice Besley, where she introduced many of their latest songs to the public.

MR. HARCOURT BAILEY has now originated an entire backblock town, "Goanna Gully," from which centre 3LO will broadcast in future all the important festivities which take place in the borough.

Listeners will come to know and to respect the leading identities of the district—namely, Mr. Cagmag the Mayor, Mr. Nibbs the Town Clerk, Mr. Drinkwater the President of the Purty League, the Rev. Hiam Merry of Greenfields Church, Mr. Nobbler the proprietor of "Rippling Brook Hotel," Mr. Chaos of the General Store, Old Dad Scarifier and his family on their selection "Barren Acres," Mr. E. Spotswell the Grand Tray Bearer of the "Frothblowers' Club," Miss Gertrude Giggle the local Singing Teacher, Miss N. E. Goode the president of the Women's Welfare League, Mr. Rhythm the conductor of the Goanna Gully Band, and Mr. Supernumerary Actor Manager of the local Dramatic Club.

The authorities of Goanna Gully have promised an entertainment at least once a week, so that listeners are assured of a good laugh every time 3LO switches over to Goanna Gully. The series will commence on Friday, December 13 (they scorn superstition in Goanna Gully), with the opening of the new Mechanics' Institute by his Worship the Mayor, and a gala programme is promised.

FROM 2BL on Thursday, December 12, at 9.30 p.m. the well-known lecturer, Mr. Frederick Arlington-Burke, will deliver an interesting talk dealing with the probable effect upon Australia of the recent financial crash in America. His recent deliveries concerning the economic relationship existing between the two nations showed a deep and studious knowledge of the conditions in both countries.



FRED. A. BURKE

MR. T. S. GURR, who has had a close association with India, will give a talk on the Indian people, dealing first with the aboriginals and then the advent of the great Aryan race. He will then trace the partial absorption of the new-comers with the old inhabitants, and the institution of caste.

Finally, Mr. Gurr will deal with the occupation of India by the British, and the consequent reaction on the more intelligent classes, leading to the present political unrest and the aspirations of the Indian people. The future of India will also be viewed in the light of a more liberal form of government being granted their country by the MacDonald Ministry. Mr. Gurr's talk will take place from 2FC on Monday, December 9.

ON December 6 the Australian Broadcasting Company has made arrangements with Mr. Gerald Tanner, Consul-General for Finland, to give a brief talk through 2BL to commemorate December 6 as the National Day of the Republic of Finland. Mr. Tanner will briefly outline the history of Finland's independence, and will also talk about the beautiful scenery for which his country is noted.

A CHRISTMAS motor picnic will be held on Friday, December 13, to Cronulla, when all members of the A.B.C. Women's Association and their friends will meet at 11 a.m. with picnic baskets, to depart in service cars to Cronulla, where they will spend the day surfing and picnicking.

A special entertainment programme is being arranged by a sub-committee, consisting of Miss Dorothy Panter, Miss Dulcie Sprod, Mrs. Bannister, and Miss Gwen Varley. Prizes are being donated by the members of the Kingsley Club, and this picnic has been chosen by the A.B.C. Committee in place of the usual Christmas afternoon tea party at David Jones'. The approximate fee for the cars will be 3/- each return, and lunch will be brought by each one present.

A MUSICAL programme will be given from 3LO on December 11, when, for the first time in the Southern Hemisphere, an abridged version of Offenbach's "Tales of Hoffmann" will be broadcast, under the direction of William G. James, by the Bartleman Male Choir and the Melbourne Choral Union, with full orchestral accompaniment by the National Broadcasting Orchestra. Soloists include Miss Winifred Mitchell, Mr. A. C. Bartleman, and Mr. Alan Mitchell. "The Tales of Hoffmann" was Offenbach's favorite opera, and achieved an unusual success when it was produced, and this version, which has been specially written for the use of musical societies, should be greatly appreciated by musical listeners.

UNDER the direction of Fritz Hart, F.R.C.M., a studio presentation of Donizetti's "The Daughter of the Regiment" will be given from 3AR on December 16. Soloists include Beatrice Oakley (soprano), Howard King (baritone), and Alan Mitchell (tenor). Immediately following the conclusion of the opera a programme of old English music will be given. Assisting artists will include Alan Mitchell and Bessie Dougall, who will be heard in traditional folk songs, while the "Three Dances" from "Henry the Eighth" will be given by the National Broadcasting Orchestra.

THE opening of the Grand Radio Choral Contest, organised by the Australian Broadcasting Company in conjunction with the Victorian Choral Association, took place at 3LO on Tuesday evening, December 3. The conditions of this contest provide that each competing choir will provide a half-hour programme for broadcasting by 3LO, but they will be judged only upon the rendition of the test selection. The competition will be continued on Friday night, December 6, when the second competing choir will be heard.

MISS VERA SPAULL requires no introduction to listeners. She is one of Australia's best-known comedienne, not only on the stage, but on the air. She will be heard from 2FC on Tuesday, December 10.



VERA SPAULL.

There was a time when Miss Spauld made three appearances a day on 3LO for one whole month. She thought perhaps the listening public would tire of her. They never did. Miss Spauld did only one number at each performance, but never once during that whole month did she repeat a song.

GLIDING

This article, by a young Australian aviation student and experimenter, is a preliminary to the publication of complete details for the construction of a man-carrying glider to appear in the next issue of "Wireless Weekly." Inexpensive, not difficult to build, and highly exciting to fly, the glider is the first real step of the aviation enthusiast on the way to true flight.

By J. BALL



A primary glider, similar to that which will be described next week, being started from the ground by rubber ropes.

LOOKING back over the years we notice that there are authentic accounts of attempts at flight in the history of every nation, and behind history are many legends of men who flew. Egypt, Assyria, India, and Greece furnish myths which almost certainly had some foundation in attempted flights.

Probably you have read of the myth of Dardalus and Icarus, and perhaps you have never stopped to pause and think, but just regarded it as a myth, but more than probable it is based on the truth, and is evidently a far-fetched account of the first two human beings who attempted to fly, and paid the effort with their lives.

First Attempts to Fly

Man's first attempts to fly were by means of artificial wings fastened to the limbs. The dusty pages of history are crammed with the daring efforts of brilliant men, though held in ridicule by their fellows, who girded themselves with crude wings, worked by levers, and moved by their own muscular efforts, risked their lives, that they might prove to an unbelieving world that man could fly.

Early in the 16th century there appeared Leonardo da Vinci, a man of undoubted genius, who, in addition to being artist, engineer, and architect, made a study of the problems of flight, and especially of the flight of birds; for he considered that if the flight of birds were perfectly understood it would go a long way towards solving the problem of human flight.

The genius of the man is shown in his "Treatise on the Flight of Birds," a work which showed that his ideas were far in advance of his time. It was he who first found evidence of the existence of rising currents of air, by observing how some birds would at times rise into the air with immovable wings, and soar for hours on end.

The time-worn desire to fly like the birds became the inheritance of all men, of all nations, and the struggle to conquer the air went on year after year. It was not until late in the 19th century that a successful heavier-than-air and man-carrying machine was built.

To Otto Lillenthal, a German, goes the honor of constructing the first glider capable of sustained a man while in flight. Lillenthal's glider did not possess inherent stability, for it was devoid of the present-day ailerons, elevators, etc. Stability and balance was maintained by the movements of his own body while in flight. In this machine Lillenthal made over 2000 successful glides up till the time of his death.

Glider Becomes 'Plane

But Lillenthal's death was not in vain, for his experiments had attracted the attention of the Wright brothers in America. By using Lillenthal's glider as a foundation, but improved in many respects, the Wrights built a successful glider, in which many glides were accomplished at Kitty Hawk. To their glider they later applied a motor, and on December 17, 1903, man's dream of the ages became no longer a dream, but a reality. For Orville Wright made the first power flight in the history of the world. Flying 540 feet in 12 seconds.

It may be observed that the foremost thinkers of the times as the years went by.

realised that the success of human flight depended not on a wing-flapping device, and worked by man's own muscular effort, but on the glider, fitted with a suitable motor to impart forward motion, and this was clearly demonstrated in the successful experiments of the Wright brothers. Until 1919, the glider was regarded as a stepping-stone in the development of the powered aeroplane.

In this year a new impetus was given to the development of the glider. Prevented by the Treaty of Versailles from any extensive aeroplane production, Germany turned her attention to the development of the glider. The progress that Germany has made in this new and fascinating sport has astonished the world. Progress in this art has been so rapid, and modern scientific construction and meteorological knowledge have enabled them to set a record of 14 hours' duration flight, and to obtain an altitude record of 2500 feet. While just a few weeks back the newspapers informed us that a glider had flown the amazing distance of 105 miles.

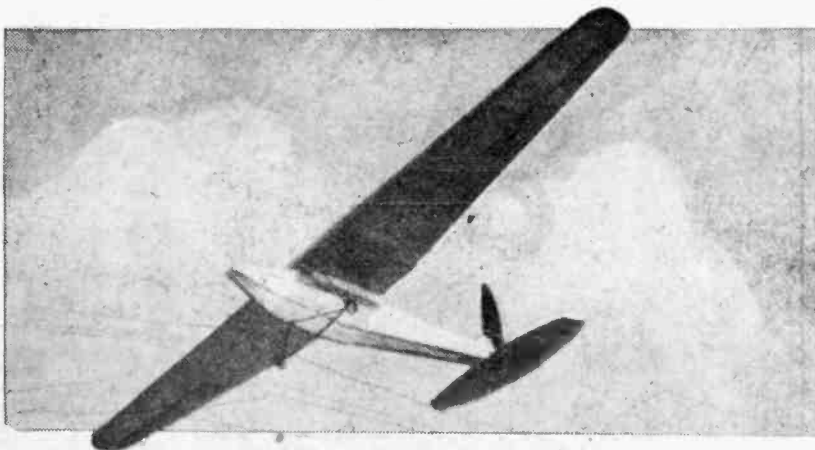
What is Gliding?

Having gone thus far over the early history of the glider, we might halt for a time, and take up the question as to what gliding actually is. Gliding is comparatively simple, and consists solely of sailing down hill, using the force of gravity to impart forward motion; while the wind in this case is merely used to balance the glider in its flight from a high level to a lower level. This form of gliding is termed "static" gliding, and a "primary" glider is generally used in this case. In "primary" gliders the fuselage consists of a few braced spars, with the pilot exposed to the wind. Due to their simplicity of construction and cheapness of manufacture, these gliders are used solely for training purposes.

Soaring is accomplished by manipulating the controls of the craft so as to cause it to ride the winds and gain altitude. This form of gliding is known as "dynamic" gliding, and it is this phase of motorless aircraft activity that offers the greatest sport, and is of the most scientific value.

For this form of gliding a "secondary" glider is used, and in this case the fuselage is similar to the usual aeroplane fuselage. But it may certainly be constructed on fine lines, to afford less drag, and weigh proportionately less.

Gliding is not dangerous. Providing that the student will accept the proven theories and facts, there is no reason why he should



A secondary glider, or sail plane, which is capable of remaining in the air for hours, soaring and gliding on air currents.

(Continued on Page 21.)

Wireless Weekly

Incorporating "Radio in Australia and New Zealand."

FRIDAY, DECEMBER 6, 1929.

OLD PROMISES

WHAT has happened to the plans for a wider broadcasting service, including the proposed relay station scheme?

Listeners-in are justified in asking that question. Months ago they were promised a vastly improved broadcasting scheme embodying local and relayed programmes for country centres. New and more powerful transmitting plants were to be erected, and thousands of pounds of listeners' money was to be spent on general improvements.

With this end in view the Government re-shuffled the division of licence revenue. Of the 24/- paid by each listener 12/- was to go to the Broadcasting Company, 3/- to Amalgamated Wireless for patent rights, and the remaining 9/- was to be held by the Government partly for the upkeep of the present stations and partly to provide for future developments.

Obviously the whole of this sum has not been required for upkeep and a large amount must now be held in reserve. But to no apparent effect. No new transmitters have been installed, no relay stations have been erected and the service has gone on very much as it always did.

What has happened or what is happening to this growing reserve fund? Listeners have every right to know. The reduction (8/-) in the revenue paid to the Broadcasting Company is having its effect on the programmes. This was expected to some extent and would not have drawn criticism had evidence of the expenditure of the money held for development been forthcoming.

Unfortunately for Mr. Doyle it is the Broadcasting Company which is receiving the kicks, and not the Government, which, not having been responsible for the plans, is not volunteering an explanation. Why then does not the Broadcasting Company demand some satisfactory account for its listeners and for its own defence?

The authorities made very definite promises. A.B.C. exhausted the alpha bet in declaring what wonderful programmes it would put on the air. But the listener-in still sighs for even a tithe of the pleasures that were to follow the change of control.

THREE RADIO PLAYS

ALTHOUGH "Caste," which will be broadcast on December 12 through 2FC, has been played all over the world since its first appearance in 1867, it still holds its attraction for the theatre-going public. The reason for this is that the problem of marriage between people of different social stations is just as vital now as fifty years ago, whatever may be said concerning class-emancipation and the new post-war freedom. The difficulties which confront Esther, whose innate gentility makes her more than a match for the aristocratic D'Alroy, are worked out to a final happy solution, but the environment of the home of the Eccles is shown in all its pitiful squalor.

It may be objected that the characters lose in realism because their creator endeavored to make them "types," but there is a great opportunity for an actor in the interpretation of any of the principal parts. In the hands of the late Dion Boucicault, for instance, the drunken Eccles became a very lovable old ruffian indeed. Sam Gerridge, Polly Eccles' slow, devoted lover, is a never-failing source of amusement in his wordy encounters with his vivacious sweetheart. There is an instructive contrast between George D'Alroy and his friend Hawtree, the correct man-about-town, who so guiltily hides his good actions. Esther lends a rather sombre touch to the brightness of the other characters; in the last scene her acting, in order to carry off a difficult situation, must be of the highest quality. Although this

comedy exhibits none of the subtlety of Galsworthy's dramatic elaboration of the same idea, nevertheless it is very entertaining.

The production will be directed by Lynwood Roberts, who, with Lew James, will head the cast. The supporting players are Dodie Wolfe, Claude Turton, Pascoe Green and Maisie Lane.

THE radio play, "The Death Ray," will be broadcast from 2EL on Friday, December 6. This episode has been written specially for broadcasting by Codrington Ball, a member of the younger school of writers, who believes in combining any amount of thrills with a maximum of probability.

The incident dramatised is well within the line of scientific fact, and, of course, it could have happened. That does not mean that anyone will want it or anything similar to be even a remote possibility when once they have heard the play.

"**WEARY RIVER,**" a dramatic sketch depicting an incident in the life of the Russian composer, Tschalkowsky, will be given from 3LO on December 9. The story is based on his famous song, "None but the Weary Heart," and will be illustrated by gems from his compositions. Favorite broadcasting artists will assist, and selections will be contributed by the National Broadcasting Orchestra.

SECRETS OF THE RADIO INDUSTRY—7



Ridding the wireless waves of summer static

Outback Listener Asks for Short-Wave Transmissions

Dear Sir,—To those of us who live in the country and "outback" districts of Australia radio has now become an essential part of our life, and wireless receivers are now to be found in nearly every farmhouse and homestead throughout the Commonwealth.

Unfortunately for us, however, atmospheric conditions are so bad during the hot summer months that there are very few nights between the months of November and March on which we can use our sets at all—at least, for the reception of stations on the broadcast band.

Short-waves, on the other hand, are not so much affected by static, and during the last few evenings I have been listening to "VK2ME" testing with GBX. Even on hot, sultry nights, when local stations on the b.c. band are quite inaudible through the static, 2ME'S transmission comes through perfectly.

Would it not be possible for the A.B.C. to arrange simultaneous transmissions on both broadcast and short-waves from one or more of the "A" stations during the summer months at least? Such transmissions would be of inestimable value to us "outback," and I would like to hear the views of others on the subject. Perhaps, if a sufficient number could get together, we could place a petition for such a service before the authorities.

During the last few weeks I have noticed many complaints in the "Safety Valve" with regard to the programmes from 2FC. These people do not know when they are well off, and if they had 5CL as their local station for a time they would soon realise it. 2FC do have good announcers, anyway, and you are not inundated with "music" from a very indifferent piano-player all day long, which is our portion during the summer months, when it is too rough, even during the day, to get the interstate stations.

Yours, etc.,
"OUTBACKER."

Kingoonya, S.A.

Taking Up "Super-Six"

Dear Sir,—Reviewing "Super-Six's" letter, he states he is a new critic, but his letter contains no logical criticism whatsoever. His letter is nothing else but a repetition of every letter that has appeared in the "Safety Valve" purporting to be criticism. Summed up, it is nothing else but a one-sided view condemning the broadcasting authorities for not catering to his particular taste, which in this instance is jazz. His denials to the contrary are amusing, especially as he admits a liking for jazz, and then enumerates his dislikes, which washes out everything else on the programme.

His accusations against "Disappointed" for his liking of religious services, and advising him to go to the places that cater for it, and of being too tired and wanting these things brought to him, are also very amusing, in

The Safety Valve

Readers are urged to express their opinions on matters pertaining to broadcasting. If you have some grievance, if you have some constructive criticism to offer, here is your chance of expression—your safety valve. The editor assumes no responsibility for statements made by readers and published on this page. Anonymous letters are not considered.

view of the fact that there are scores of places that dispense "Super-Six's" favorite amusements, although he appears to be cheerfully ignorant of the fact. In short, all his condemnations of "Disappointed" can be equally applied to himself. Let me remind "Super-Six" that the term "amusement" is relative. Probably 999 out of 1000 people would in all probability be bored to death with what would amuse "Super-Six."

My own view is this, that, pick up four issues of "Wireless Weekly" and it will be found, on studying the programmes, that the authorities have catered for each and every one's taste in an efficient and unblinded manner.

Yours, etc.,
REINARTZ.

Double Bay.

Power Leaks

Dear Sir.—The case of "L.B.R., Strathfield" ("W.W." 22/11/29), is exactly similar to mine. Occasionally I can pick up all the States, even New Zealand, but generally it is impossible to hear owing to static, which is almost deafening; nothing else comes through, the machine being useless for days, with the exception of 2FC. The situation, of course, is different to that of "L.B.R.," as I am on the Blue Mountains, so there may be a different cause; but I thought if I wrote in too it might help to influence the power companies to clear up leaks, etc.

Yours, etc.,
X.W.M

Leura.

HUMOUR, ADVENTURE, FANTASY,

Will occupy readers of the short stories in next week's special Christmas number.

STEELE RUDD

relates how radio arrived on Our Selection.

"Brasso" tells a story of an actual war-time experience with the U.S. Transports.

Felix O'Neill tells a fantastic tale of a Bored Prince with a subtle ironical ending.

DON'T MISS THIS
ISSUE

2KY Transmission

Dear Sir,—I am very pleased to see the letter by "Microwatt" ("W.W." 22/11/29) re the modulation of the different Sydney stations. I have only a home-made set—two-valve Reinartz, with a small speaker—and I can fully endorse all that "Microwatt" wrote. Especially with regard to 2KY. As he says, 2KY is very broadly tuned indeed, and interferes so much with 2UE and 2UW that I can hardly tune them in it all during the week when 2KY is on, but have no trouble at all on Sundays, when 2KY is not on the air, in separating all the stations.

I think a little publicity and criticism of the foregoing facts will not be amiss, and will assist in putting things right at 2KY.
Yours, etc.,
ROZELE A.L.S.

Without the "Ner"

Dear Sir.—Like "Super-Six," I too have recently purchased a wireless set, and would like to give him my support. I could probably add a little more to what he said about the Dinner Quartette, only I am afraid the censor would not allow it. If you should ask me, it should be "Din" without the "ner." Just at this moment from 2UE they are giving the Children's Hour, and there is playing from that station a juvenile orchestra which puts the famous "A" stations' quartette in the shade.

I also agree with "Super-Six" in his idea of an alternate programme, which, if once tried, it would instantly become a great success.

Yours, etc.,
"SCREENED THREE."

Waverley.

Candid, at Least

Dear Sir.—What has happened to "Wireless Weekly"? It is sold as a technical paper, but what do we find?—a few good radio notes and a lot of bunk "Smith's" would not lower itself to publish half of it. Take page 3 for instance (issue of 22/11/29), more like a comic paper for children; page 4, a page of rot; page 5, a full page gone to waste (I think it's time the A.B.C. censored him); page 13, on model plane building, is nothing like wireless; page 21, comparing DX notes—well, I think that takes the bun. If the subjects were what one could call reasonable, well it would be a different thing, but many readers like myself think that because too much rot is printed in "Wireless Weekly," it is going to cut its own throat. I have to buy the above paper so as to know when to tune in 2UE, 2UW, and 2GB, as the music of 2FC and 2BL is murderous.

Yours, etc.,
JOHN BULL.

[At all times the Editor welcomes candid criticism. Greater usefulness, however, attaches to comment of a more constructional nature, and we regret that the above loses much of its forcefulness as a result of anonymity.]

FRANKLY!

ARE YOU SATISFIED
WITH THE RESULTS FROM YOUR SET?

We leave the answer to you—BUT:—
READ THESE LETTERS BEFORE YOU ANSWER

They are from Customers we have helped

3LO AS GOOD AS 2BL

(Extract from Letter.)
Cremorne, N.S.W.,
24/8/29.

Economic Radio Stores,
126A Pitt Street Sydney.

Dear Sirs,—I wish to congratulate you on the "RE-
NOWN THREE," which is simple to build and simple to
operate.

The results are, as you say, equal to a five-valve set.
3LO, Melbourne, can be tuned in to give as good
volume quite as 2BL, Sydney.

My aerial is not good, only 40ft., and very close to the
roof. As far as clarity is concerned, we cannot wish for
anything better.

Yours faithfully,
C.K.P.

**WHAT DO YOU THINK OF THIS
PERFORMANCE ?**

Toongabbie, N.S.W.,
24/7/29.

Economic Radio Stores,

Dear Sirs,—What do you think of this performance on
one of your "3 VALVE RENOWN SETS"?

I have got the following stations, and have brought
them all in on our "OPERADIO SPEAKER."

N.S.W.: 2FC, 2BL, 2GB, 2UE, 2KY, 2UW, 2AD, 2AR,
2ZN, 2JO, 2AY, 2JR. Victoria: 3LO, 3AR, 3BY, 3MI, 3FR,
3KX. Queensland: 4QG. New Zealand: 2YA. South Aus-
tralia: 5CL. Tasmania: 7ZL.

Yours truly
C.G.W.

All-Electric
RENOWN
Kit,

£20/5/-

Including
Philips
Power Pack.

SEE OUR NEW
SUPER RENOWN 4

IT'S A WORLD-BEATER!
HEAR IT — AND YOU'LL WANT ONE!
REMODEL YOURS

RENOWN 3
Battery
Operated Kit
Complete

Parts, £6/13/2
Accessories
From £5/9/5
Speakers
From £1/17/6

25 TO 50 PER CENT. IMPROVEMENT GUARANTEED

SEE SPECIAL WINDOW DISPLAYS

You Too Can Obtain Wonderful Results

IF YOU ASK FOR OUR FREE ADVIC AND ASSISTANCE
WE WILL HELP YOU WITH PLEASURE
REGARDLESS OF WHERE YOU BUY

"Yours for Lower Prices and Service that Satisfies"

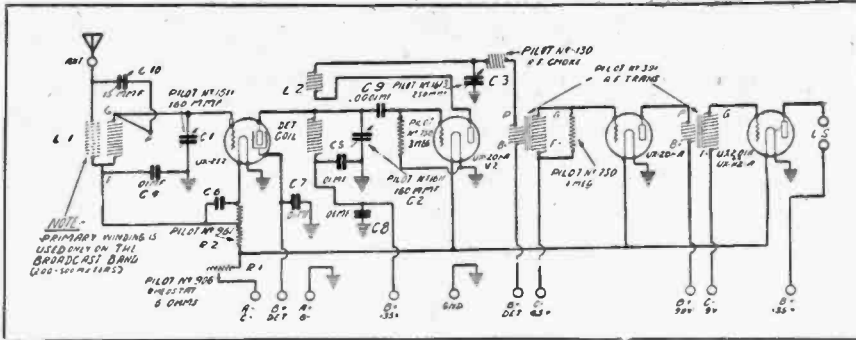
The Economic Radio Stores

Address Mail Orders, 492 GEORGE STREET.

COUNTRY CLIENTS.—Our Mail Order Service reaches every corner of the Commonwealth. Send your orders to us conditionally that your money is refunded if you are not satisfied with goods. Returns must be made within ten days of receipt. We pay carriage on all orders of 10/- and over, except on Batteries, Cabinets, and Loud Speakers. Articles specially procured cannot be exchanged. Terms Cash, or Cash on Delivery. No Discounts.

SYDNEY: 25 New Royal Arcade, near Palace Theatre. Phone, M6138. NEWCASTLE: 13 Union Street, off Hunter Street West. Phone, New, 1022.
PARRAMATTA: Corner Church and Macquarie Streets. Phone, UW9601. SYDNEY: 126A Pitt Street, near King Street. Phone, M6139.

The PILOT "SUPER-WASP"



A New Receiver Kit Designed for the Amateur Experimenter

THE Pilot Radio and Tube Corporation represented here by Messrs. Harringtons, Ltd., has produced a new receiver kit, which is particularly designed for the amateur experimenter.

The new set, called the "Super-Wasp," has the following features:—

1. It uses a tuned screen-grid radio-frequency stage that is not just a blocking valve.
2. It will tune down to 14 metres and up to 500. Two sets of plug-in coils (ten coils in all) are supplied with it. Thus it is an all-round receiver, and can always be depended on to produce some signals on some wavelengths. On the regular broadcast band it is the equivalent, electrically, of the well-known Browning-Drake.
3. The increased sensitivity and selectivity provided by the r.f. stage make the reception of short-wave broadcasting stations easier than with a highly critical straight regenerator.
4. It is double-shielded, there being no interaction between the r.f. and the detector stages.
5. There is no hand capacity effect.

By examining the accompanying diagram and illustrations you can obtain a good idea of the general electrical and mechanical arrangement. Briefly, what has been provided is this:—

The signals picked up by the aerial pass through the midget coupling condenser, C10, to a regular-tuned input circuit connected across the grid and filament of the 222 valve. The coil L1 is a plain solenoid on a form which plugs into a five-prong valve socket, while tuning condenser C1 is a regular .00016 mfd. variable. On each of the four small coils (the largest tuning up to 200 metres), there is merely a single winding, one end connecting simultaneously with the G and P pins, and the other to one of the F posts. On the fifth and largest coil, which takes in the broadcast band, there is a primary in

addition to the grid coil, connected to the G post and same aforementioned F post. However, the bridging wire between the G and P posts is absent.

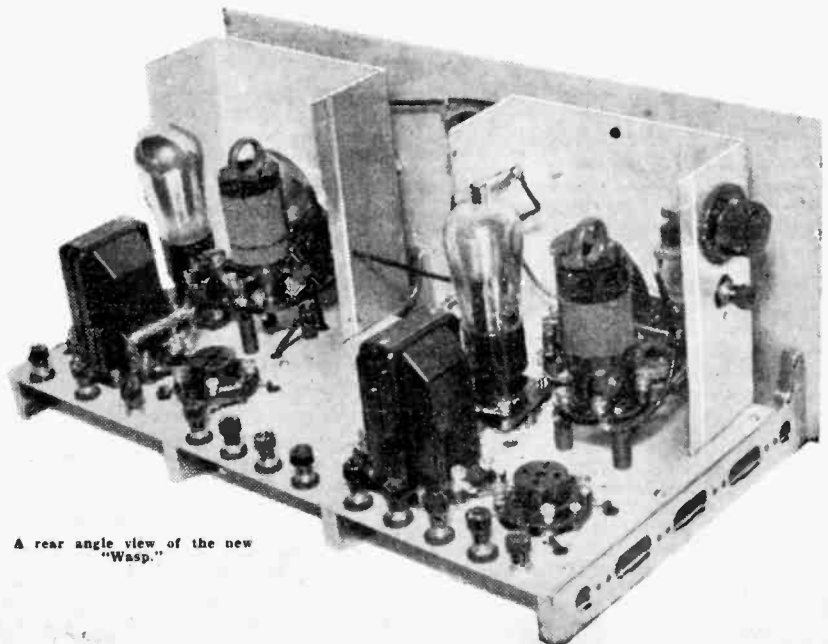
By means of this arrangement the aerial is coupled to the tuning coils of the four short-wave inductors through the midget condenser C10. This condenser is too small for the 200-500 metre region, so when the largest coil is plugged in it is automatically cut out of the circuit, and the aerial coupled to the grid coil by means of the more adequate primary winding. There are no switches to be thrown or wires to disturb.

The plate current for the 222 valve is fed right through the detector grid coil, being kept off the grid of the detector, V2, by the grid condenser, C9. As the rotor of the

tuning condenser, C2, is grounded to the aluminium chassis of the set, the L2-C2 tuning circuit is completed by a .01 mfd. condenser, C5. This condenser, in series with the .00016 mfd. of C2, is too large to have any appreciable effect on the tuning, but prevents the B positive 135 from short-circuiting against the framework. A similar blocking condenser, C4, is used in the r.f. stage, to allow the grid of the 222 to be biased by the voltage drop across the tapped filament resistor, R2.

The detector coils, L2, each contain two windings, the usual grid and tickler coils. These also are plug-in coils, which fit in a five-prong valve socket.

The detector is made regenerative by the tickler of L2, the action being controlled by



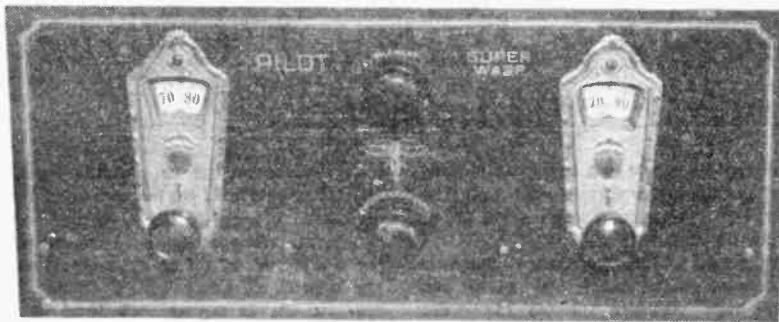
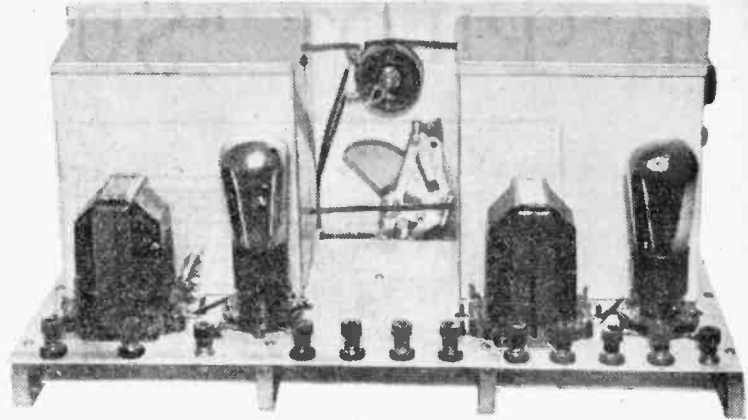
A rear angle view of the new "Wasp."

a .00025 mfd. variable condenser, C3 The detector is followed by two transformer-coupled audio stages.

The mechanical layout of the parts in the Super-Wasp is the result of many trials with several different experimental models. The front and sub-panels are of metal, accurately drilled for all parts. The components of the antenna and the detector stages, respectively, are enclosed within aluminium shield cans of unique design. These cans split down the centre, and are very easy to assemble.

The two audio stages fit neatly along the back of the sub-panel. The under side of the latter supports the .01 mfd. by-pass condensers, C6, C7, and C8, and the 222 filament resistor, R2.

The only long leads in the set are filament wires, which do not count much, anyway. There is so little wire, because one side of



practically all the parts is grounded directly to the aluminium framework.

Battery connections are made to a row of insulated binding posts, along the back edge of the sub-panel. Separate "B" and "C" posts are provided for each of the audio stages, so that any combination of tubes may be used.

A filament rheostat is used instead of fixed resistors, so that a man not owning a storage battery can run his outfit on dry cells. As the cells weaken, the rheostat can be turned up to keep the valves working properly. The instrument also acts as a switch for the entire set.

A full-size working blue print is furnished with the kit, along with a pamphlet containing detailed assembly instructions.

A.B.C. Women's Association Session

Programme for week commencing Friday December 6, to Thursday, December 12:—
SPEAKERS AND THEIR SUBJECTS.

FRIDAY, DECEMBER 6.

10.40 a.m.: "Madame, Do You Know?" by Miss Gwen Varley. Miss Varley will continue her exclusive hints on unique information regarding homecraft. She will point out the many uses of the electric fan, the value of the electric iron, how to hang pictures, clean suede coats and shoes, to get a professional touch to the home-made garment, etc.

10.50 a.m.: "Home Confectionery," by "Priscilla" (Mrs. L. C. Norton). As Christmas approaches, many women are writing in to "Priscilla" for further recipes for Christmas festivities. Every Friday afternoon throughout the winter 50 of her followers met to receive tuition in needlecraft, and seldom an afternoon passed without beautiful boxes of home-made sweets being proudly displayed by the members.

MONDAY, DECEMBER 9.

10.40 a.m.: "Suitable Clothes for Holiday Wear," by Miss Gwen Varley. Miss Varley will help the would-be holiday-maker to select suitable clothes for her holiday, and advise her against the fallacy of taking too many dresses away with her. She will also advise economy by choice of colors.

10.50 a.m.: "Humorous Side of the Fight for Women's Freedom," by Mrs. Albert Littlejohn. This brilliant speaker, and vice-president of the A.B.C. Women's Association, Mrs. Albert Littlejohn, will sketch some

Conducted By MISS GWEN VARLEY

humorous incidents in the fight for women's freedom.

TUESDAY, DECEMBER 10.

10.40 a.m.: "Our Health Bureau," talk by Miss Gwen Varley. Hundreds of women are writing in to Miss Varley for exercises that will reduce the double chin. Many mothers write in, too, for advice to strengthen their growing boys and girls. This session is proving a boon to many women.

10.50 a.m.: "Come With Me to Africa," by Mrs. Edith Glandville. Mrs. Glandville will give the second of her series of travel talks. She is one of our most vivid and cultured speakers.

Younger Set Session.

6.45-7 p.m.: "Junior Red Cross Session," by Mrs. MacKinnon. Mrs. MacKinnon, whose name rings far and wide in the Junior Red Cross world, speaks every alternate Tuesday on the work of this association. It bands together several thousand young people throughout New South Wales, who work to help others.

WEDNESDAY, DECEMBER 11.

10.40 a.m.: "Tennis Coaching," by Miss Gwen Varley. Miss Varley is doing extensive work in tennis coaching through the medium of the air, and each week new Radio Tennis Clubs crop up as a result of her enthusiastic talks.

10.50 a.m.: "An Introduction to an Out-

standing Personality," by Miss Varley. Miss Varley hopes to be able to introduce to her many hundreds of listeners someone whose name cannot yet be divulged. If permission is given, it will be a very red letter ten minutes to every listener.

THURSDAY, DECEMBER 12.

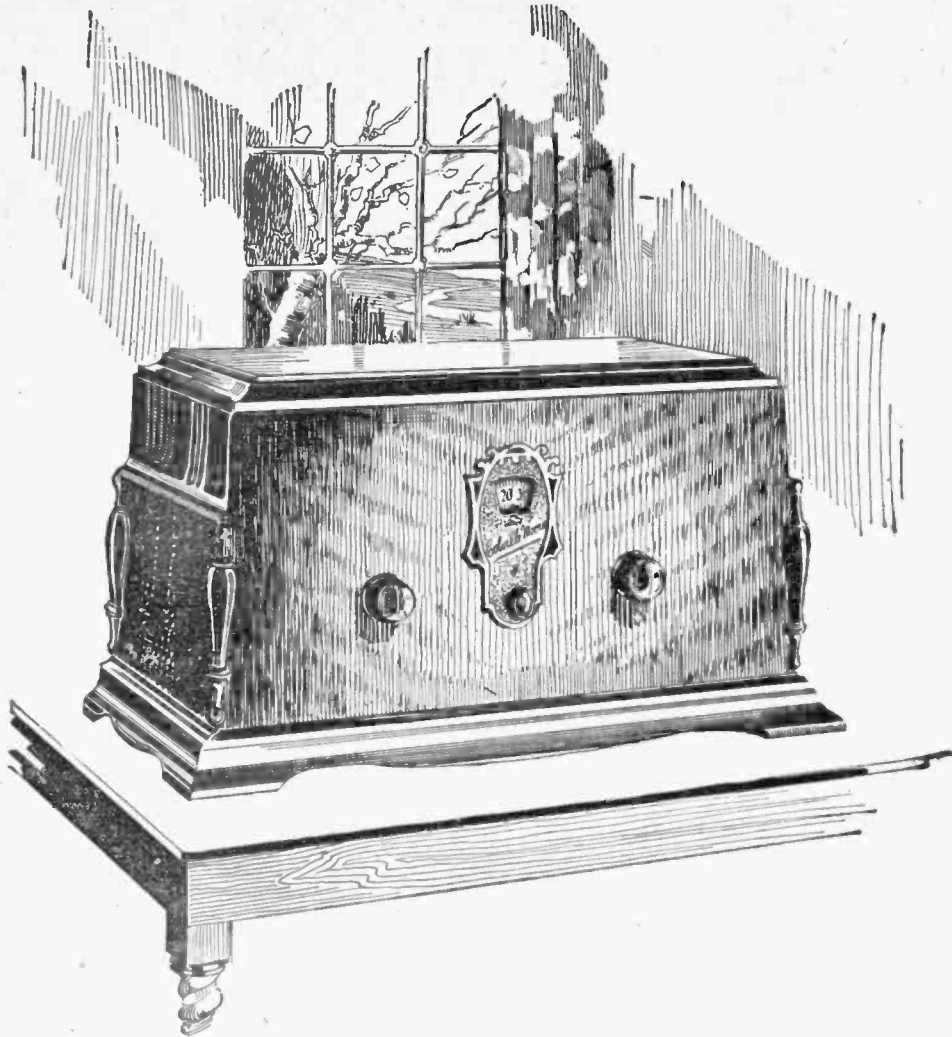
10.40 a.m.: "Holiday Resorts for Christmas Time," by Miss Gwen Varley. Miss Varley will suggest numerous holiday resorts, and give their special qualifications. Having personally visited most holiday towns, she can speak with knowledge and assurance.

10.50 a.m.: "Thrift," shopping economically for Christmas, by Miss Janet Mitchell. Miss Janet Mitchell is a regular speaker during the Women's Session, and her advice in spending money wisely has helped hundreds of women to make their income go considerably farther.

Younger Set Session.

6.45 p.m.: "Girls' Radio Club," by Miss Gwen Varley. Miss Varley will continue to tell the members of the Girls' Radio Club the many activities of the club.

6.55 p.m.: "Horse Riding for Beginners," by Miss Mollie McWilliam. Miss McWilliam, the well-known horse-woman, will give a talk on hints for the beginners in riding. This will encourage members of the Younger Set to take up riding during their holiday time. Miss McWilliam will answer any questions pertaining to horse riding, so keen is she on this sport.



COLVILLE MOORE A.C. THREE RECEIVER

A TRIUMPH IN TONE AND MECHANICAL PERFECTION.

100% ALL ELECTRIC

RIGHT OFF YOUR POWER OR ELECTRIC LIGHT SOCKET.
PLUG IN—TUNE IN

No Aerial or other loose wires. Solves your entertainment problem.

SOME POINTS OF COLVILLE MOORE SUPERIORITY

Duocoed Maple Cabinet, of unique and pleasing design. Power equipment and valves totally Philips. Super selectivity obtained with special wave trap. Tonal reproduction unequalled by any other receiver. Twelve months' guarantee and service. Imposing and binding warranty issued with every receiver.

LET US SHOW YOU ALL OUR LATEST MODELS AT No. 4 ROWE STREET.

AC THREE, Table Model, complete with speaker.	CASH PRICE, £29.	Deposit, £6.	Monthly, £2/2/9.
AC THREE, Console Model, complete with speaker.	CASH PRICE, £34.	Deposit, £7.	Monthly, £2/10/1.
AC SIX, Console Model, complete with speaker.	CASH PRICE, £56.	Deposit, £12.	Monthly, £4/1/5.

DEMONSTRATIONS IN YOUR OWN HOME WITHOUT OBLIGATION

COLVILLE MOORE WIRELESS SUPPLIES LIMITED

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MILLIONS MILLIONS MILLIONS
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Emmco Radio Products have proved themselves to be the finest and most efficient complete line in Australia to-day. The largest Australian Radio Factory employing the largest number of specialised workers under the most efficient conditions.

Australian made in every way; and proving their satisfactory performance every day.

**ALL UP-TO-DATE RADIO DEALERS
STOCK EMMCO RADIO PRODUCTS
ASK FOR THEM! DEMAND THEM!**

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A New Method of Describing Selectivity

Curves Ahead

The Experimenters' Department of Technical Progress... Conducted by Ross A. Hull M.I.R.E.

CONSIDERABLE difficulty has always been experienced when attempting to specify the selectivity of a receiver. For many years, receivers were spoken of as "as sharp as a razor," or "as broad as a beetle's back." These terms, of course, are no more useful than would be the expression "my car goes a long way to the galton."

Various methods have been devised for describing the selectivity in terms which could be readily appreciated, and in America a standard procedure has been adopted. As we mentioned recently on this page, the scheme is to take curves at various points on the broadcast band of the input necessary to give a standard output of 50 milli-

watts with the receiver tuned 10, 20, and 30 kilocycles off resonance. Families of such curves provide a splendid idea of the selectivity characteristics of the receiver across the band and make comparisons between the performance of various receivers a simple matter.

In England a new scheme has been suggested. It is described by R. T. Beatty, M.A., B.E., D.Sc., in the issue of the "Wireless World" for October 16. Describing the new system, the writer says:—

"A set consisting essentially of a single tuned circuit such as the crystal set, is

equivalent from the H.F. point of view to a circuit in which the resistive loads due to the aerial, the crystal and the 'phones are incorporated as an equivalent series resistance.

"The shape of the resonance curve of this circuit depends solely on the ratio of the reactance of the coil to the series resistance. This ratio is called the coil magnification. If it is large the curve is steep; if small, the curve is flat.

"All these differently-shaped curves can, however, be reduced to a single curve by the simple device of plotting them on logarithmic paper. In Fig. 1 the curve corresponding to a single tuned circuit is shown. If, now, the value of the coil magnification m be changed, the shape of this curve is unaltered; it is merely shifted bodily in a horizontal direction (to the right if m be decreased to the left if m be increased).

"Accordingly, if we copy the curve on a piece of tracing paper and slide the paper horizontally by the requisite amount in any particular case, we can obtain immediately the resonance curve for any single tuned circuit.

THE SELECTIVITY NUMBER

"In order to decide where to put the tracing paper, we must fix on some reference point on the resonance curve; this point we will take to be the intersection of the curve with the cross-hatched horizontal line in Fig. 1, that is, the number of kilocycles by which the circuit must be detuned in order that the ordinate of the curve may fall to 0.1 of its value at resonance. In Fig. 1 this value is 5 kilocycles for all the curves.

"The position of this reference point can be found by giving to the single tuned circuit in question a number, called the selectivity number (and this proposal is the kernel of the present article), so chosen that the following statement is true

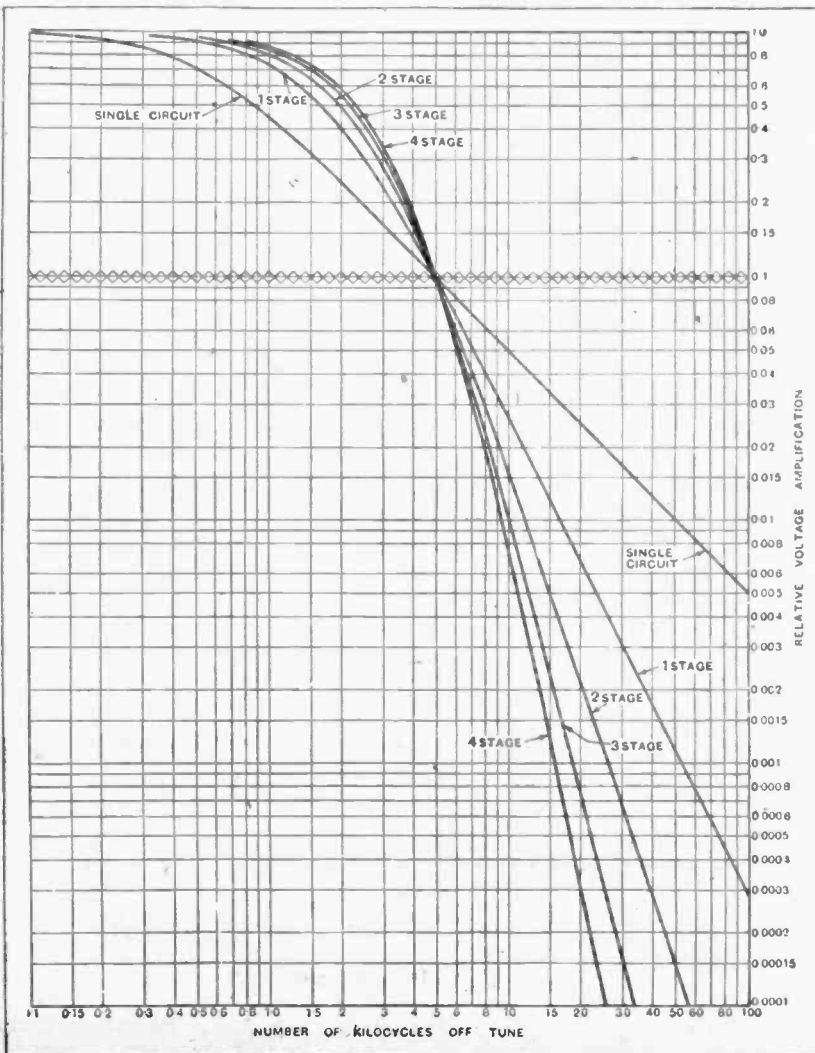
"The number of kilocycles by which a single tuned circuit must be detuned to cause the ordinate of the resonance curve to fall to 0.1 of its value at resonance is obtained by dividing the frequency of the carrier wave in kilocycles by the selectivity number.

"Thus, if the frequency of the incoming signal is 1000 k.c., and the selectivity number is 200, the resonance curve will cut the cross-hatched line in Fig. 1 at 1000/200—5 k.c.; this is the position actually shown.

"It has already been stated that the position of this intersection depends only on the coil magnification m , so that the selectivity number must depend on m .

"Add the number of H.F. valves to the number of H.F. tuned circuits, and multiply this sum by 0.2 times the geometric mean product of the coil magnifications. The result is the selectivity number."

This extract contains the substance of the new proposal, though it does not, of course, provide a very clear picture of it. Technically inclined students will find the complete article of considerable interest.



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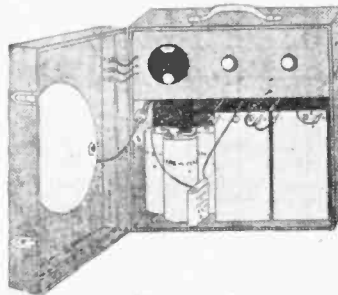
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Please add Freight, as Prices are cut to the Quick. Satisfaction Assured.

Modern Broadcast Transmission

(Continued from page 8.)

crease the percentage of modulation by four times, their effectiveness would remain the same. Alternatively, should they leave their carrier power as it is, and increase the percentage of modulation by four times, the same big improvement would be obtained as when the carrier power was quadrupled, the percentage of modulation remaining the same.

Modern broadcast practice is not only to use a high carrier power, but a high percentage of modulation. In other parts of the world, for instance, we find a host of stations with a carrier output of 50 kilowatts, which can be completely modulated by the music from the studio. This represents a useful output or "stir" probably a couple of hundred times greater than the average Australian station. Obviously, modern stations of that type are much more effective in forcing their music through atmospheric and power leak interference than those typified by the equipment at present manufacturing our radio signals.

Aside from producing a well-modulated and high-power carrier, the broadcasting stations have some decidedly formidable work to do. Their first problem is to assemble the means of making or re-creating some effective music, or of providing a talk on some absorbing topic. Whatever the means may be, it or they will produce vibrations which will be transmitted to a metal element.

This may be the diaphragm of a microphone or the reed of a gramophone pick-up, but in either case its duties are similar. It must convert the musical vibrations into a faithful copy in the form of electrical impulses. Most of the pick-ups and many of the microphones do not accomplish this by any means, and right at the start of the whole broadcasting business we have some distortion introduced. Usually both the higher and the lower musical frequencies are cut off for a start, while bands of frequencies throughout the audible range are either accentuated or attenuated.

Aside even from this, the microphone introduces further troubles. If it is not placed correctly with respect to the individuals making the music it can well pick up too much of some sounds and not enough of others. One only needs to listen attentively to any of our broadcast transmissions to hear instances where the microphone is getting too much of part of the music and not enough of others.

The technique of picking-up music with microphones has been given exhaustive study in many parts of the world, both in connection with broadcasting and gramophone recording. So far has it progressed in some instances that the reproduction provided by the multiplicity of ears that the microphones can simulate is even more effective than the performance as heard by any one listener right alongside the performers. Unfortunately, we can by no means say this of the technique as applied in Australia.

From the microphones the electrical impulses may pass into a "mixer," in which the output of several microphones, placed in various parts of a hall or studio, may be combined in the correct quantities. From this the impulses pass through amplifiers, which should be (but often are not) of very high quality. From these amplifiers the impulses may travel over a few miles or a few hundred miles of telephone wires, and in this process much pitiful and unnecessary distortion may take place, as Sydney listeners, at least, are well aware. Along these wires and at the studio end there will be equalisers, with which the operators should be able to make up for musical frequencies lost in transit. The control-room operator at the studio also has within reach a host of further amplifiers, indicating instruments, meters, and monitoring

devices. Usually he is obliged to keep at least one hand in the neighborhood of what is sometimes termed a "gain control"—a gadget with which he can swing even the most passionate soprano top notes down to a whisper, should he ever be considerate enough to think it necessary.

When the very greatly amplified impulses have left the control-room, bound for the transmitting station, they have a gloriously rough time ahead of them. At the station they must be amplified tremendously, and eventually injected into the transmitter in such a manner that they will modulate the carrier wave. At all stages of this process distortion can occur and troubles can arise. Sound engineering, precise adjustment, and constant expert operation are necessary to avoid them.

Should the equipment be antiquated or incorrectly adjusted it is quite certain that serious distortion will occur, that a generator growl or "a.c. hum" will be transmitted with the music, and that the carrier wave of the transmitter will not only be modulated in amplitude but in frequency. Modern broadcast technique demands that modulation of the carrier frequency be avoided, and because they fail in this respect alone many of our stations would fail to attain the classification of "modern." In the up-to-date transmitter the carrier frequency is generated by an oscillator—usually controlled by an oscillating quartz crystal—which is electrically isolated from those portions of the transmitter in which the modulation takes place. Consequently, the carrier frequency or wavelength is constant.

When this precaution is not taken the carrier wavelength swishes back and forth in accordance with the musical frequencies, and the transmitter gives the effect of being broadly tuned. That is, it causes much greater interference to stations on a near-by wavelength than is justified. Aside even from this result, the frequency modulation greatly increases the problems of fading.

All in all, our broadcast transmission systems are riddled with problems, and not all of them have yet been overcome by any means. The technique and methods necessary for very definite improvement are available, however, and we are justified in anticipating some very pleasant changes in the immediate future.

THE REV. R. PIPER, who is in charge of the Methodist Church, Haberfield, was a missionary in Fiji for 19 years. He recently returned from a holiday trip to the South Seas, and will be speaking from 2FC on interesting phases of life in the isles of enchantment on Friday, December 6, at 9.2 p.m.

On one occasion, by special request from Fiji, Mr. Piper spoke in Fiji over the air to a large assembly of Fijian natives in an isolated island. Crowded round a wireless receiver, operated by a visiting magistrate, they heard a broadcast programme. On that occasion, too, a great grandson of the old cannibal King of Fiji spoke into the same microphone, and sent a message of goodwill to these wondering natives.

MANY housewives will be waiting for the talk programmed for Miss Kathleen Benningfield at 3AR on December 9, when she will discuss "Meals for Christmas." During the holidays, when unexpected guests arrive, hasty lunches have to be prepared and picnic baskets packed, any suggestions for the variation of the daily menu will be most welcome, and interested listeners should not fail to make a note of the date.

Wins £3-3-0 Prize

The winner of the recent competition held by Price's Radio Service for a letter in connection with broadcasting is Mr. F. McLoughlin. If Mr. McLoughlin will call at Mr. Price's store in Angel Place he will receive a cheque for £3/3/-.

"International Goodwill"

MR. B. R. GELLING, president of the League of Nations Union, New South Wales Branch, also past president of the Rotary Club of Sydney and on the executive committee of the Boy Scouts' Association, will be the feature speaker for Sunday, December 8, from 6.30 to 6.50 p.m. from 2FC. He will speak on "International Goodwill."

The League of Nations is the greatest system in the world to-day for the settlement of disputes. Disputes will continue to arise among the nations, as they do among ourselves. The whole problem is—shall they be settled on the basis of law and justice, or by insane appeal to war?

The objects of the League of Nations are to promote international co-operation and to achieve international peace and security. Mr. Gelling proposes to indicate the methods that the League adopts to fulfil these things. He will then show that the differences which divide mankind into races and nations are minute in importance compared to the compelling unities which bind them together as members of the great human family.

"**THE TWO JESTERS**" will be at 3LO on December 9 in a bright and original programme of witty topicalities. Their up-to-date version of Shakespeare and other classics strikes a breezy note.

GLIDING

(Continued from page 11.)

not enjoy this new and fascinating pastime in comparative safety.

Modern gliders are inherently stable, and balance and control are maintained with the usual ailerons, elevators, and rudder, as in a powered machine. Easily the most important part of a glider is the wings, and in constructing the wing ribs every care must be taken to ensure that the outline of the aerofoil be true to 1-32in. of the dimensions shown of the aerofoil in the drawings. Whether constructing a glider or aeroplane, things must not be done by halves. They should be exact, and we should not abuse this point in constructing our motorless plane.

In order to rise with a motorless craft it is necessary to make use of the air currents which move vertically, because these winds are themselves rising, and are capable of exerting a lifting force upon the aerofolls or wings. For this reason the ideal spot for gliding is a hill of normal shape, well cleared of trees and undergrowth, and facing into the wind. The air currents sweeping along the ground are deflected upward upon striking the foot of the hill. These air currents, passing up the hill, form what is called the wind zone, and this wind zone is said to extend into the air for a distance of about twice the height of the hill.

Local Programmes, Friday, December 6

2FC

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 481 Metres).

EARLY SESSION—7.0 to 8.15 a.m.

- 7.0: "Big Ben" and Meteorological Information for the Man on the Land.
- 7.3: This morning's news, from the "Sydney Morning Herald."
- 7.5: Austradio Musical Reproduction.
- 7.45: Mails and Shipping.
- 7.48: What's On To-day?
- 7.50: Children's Birthday Calls.
- 8.0: Music from the Studio.
- 8.15: CLOSE.

MORNING SESSION—10.30 a.m. to 12.30 p.m.

- 10.30: Announcements.
- 10.32: To-morrow's Sporting Events, by Oscar Lind.
- 10.45: HORACE WEBER at the GRAND ORGAN
- 11.0: HOUSEHOLD HINTS—Cooking, by Miss Ruth Furst.
- 11.10: CABLES (copyright)—"Sun"—"Herald" and A.P.A. News Service.
- 11.15: MORNING DEVOTION: Conducted by Rev. W. J. Crossman.
- 11.30: Austradio Musical Reproduction.
- 11.53: British Official Wireless Press.
- 12.0: "Big Ben." Stock Exchange and Metal Quotations.
- 12.5: Austradio Musical Reproduction.
- 12.20: Midday weather forecast and weather synopsis. Special produce market session for the man on the land, supplied by the State Marketing Board.
- 12.30: CLOSE.

THE LUNCH HOUR AND AFTERNOON SESSION.

- 1.0: Lunch Hour Music.
- 1.55: Stock Exchange, second call. A Glance at the afternoon "Sun" and "News."
- 2.0: FROM THE SYDNEY CRICKET GROUND—Description of the Trial Match, Australia v. The Rest.
- 4.0: FROM THE STUDIO—Dance Music.
- 4.28: Stock Exchange, third call.
- 4.30: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Children's "Good-night" Stories, told by the "Hello Man," assisted by the Farmyard Five.
- 6.45: Dinner Hour Music.
- 7.20: A.B.C. Sporting Service.
- 7.25: Special Country Session, Stock Exchange Resume, Markets Weather Forecast. Late news service from the "Sun" and "News." Truck Bookings.
- 7.58: To-night's Programme.

THE EVENING PRESENTATION—8.0 to 11.30 p.m.

- The Friday Night relays through 2FC will continue in favor, and our Listeners to-night will have the opportunity of hearing 3LO's Programme from 9.15 to 10.15. Prior to that there is Organ Music, Harp Solos, Song Groups, and an interesting talk on the South Seas by Richard Piper.
- 8.0: FROM FULLERTON MEMORIAL CHURCH—Organ Recital arranged by Ronald Marston—All Request Numbers.
 - (a) "Toccata and Finale in D Minor" (Bach).
 - (b) "Largo" (Handel).
 - (c) "Londonderry Air" (Irish).
 - (d) "The Lost Chord" (Sullivan).
 - 8.15: FROM THE STUDIO: MABEL BACHELOR, Soprano—
 - (a) "He is Tender with the Beasts" (Ford).
 - (b) "But Why?" (Brown).
 - (c) "Of a' the Airts" (Auld Scoten).
 - 8.22: SIGNOR BUTTA, Harp Solos—
 - (a) "Waves of Danube" (Invanovier).
 - (b) "Rustling Spring" (Navarre).
 - 8.30: FROM FULLERTON MEMORIAL CHURCH: Organ Recital arranged by Ronald Marston—All Request Numbers.
 - (a) Prelude to "Parsifal" (Wagner).
 - (b) "Abide With Me" (Liddle).
 - (c) The celebrated "Melody in F" (Rubinstein).
 - 8.45: FROM THE STUDIO—MABEL BACHELOR, Soprano—
 - (a) "The Letter" (Sullivan).

INDEX

To Local Programmes

FRIDAY, DECEMBER 6—	
2FC, 2BL	22
2GB, 2UW, 2UE, 2KY	23
SATURDAY, DECEMBER 7—	
2FC, 2BL, 2GB, 2UW, 2KY, 2UE ..	26
SUNDAY, DECEMBER 8—	
2FC, 2BL, 2GB, 2UW	28
MONDAY, DECEMBER 9—	
2FC, 2BL	30
2GB, 2UW, 2KY, 2UE	31
TUESDAY, DECEMBER 10—	
2FC, 2BL	34
2GB, 2UW, 2KY, 2UE	35
WEDNESDAY, DECEMBER 11—	
2FC, 2BL, 2GB, 2UW, 2KY, 2UE ..	38
THURSDAY, DECEMBER 12—	
2FC, 2BL	42
2GB, 2UW, 2KY, 2UE	43

To Interstate Programmes

FRIDAY, DECEMBER 6—	
3LO, 3AR, 3DB, 4QG, 5CL	24
6WF, 7ZL	27
SATURDAY, DECEMBER 7—	
3LO, 3AR, 4QG, 5CL, 6WF, 7ZL ..	27
SUNDAY, DECEMBER 8—	
3LO, 3AR, 4QG, 5CL	29
MONDAY, DECEMBER 9—	
3LO, 3AR, 4QG, 5CL	32
TUESDAY, DECEMBER 10—	
3LO, 3AR, 4QG, 5CL	36
WEDNESDAY, DECEMBER 11—	
3LO, 3AR, 4QG, 5CL	40
THURSDAY, DECEMBER 12—	
3LO, 3AR, 4QG, 5CL	44

- (b) "Answer" (Sullivan).
- (c) "At the Ball" (Sconzia).
- 8.52: SIGNOR BUTTA, Harp Solos—
 - (a) "Gounod's Serenade" (Oberthur).
 - (b) "Angels Guard Thee" (Godard, arr. Butta).
- 9.0: THE COUNTRY MAN'S WEATHER SESSION—
 - (a) New South Wales Forecasts.
 - (b) Interstate Weather Synopsis, Yachtsman's and Fisherman's Forecast.
- 9.2: RICHARD PIPER will speak on "The South Seas."
- 9.15: RELAY FROM 3LO MELBOURNE.
- 10.15: FROM THE STUDIO—Announcements. Late Official Weather Forecast.
- 10.20: ROMANO'S CAFE DANCE ORCHESTRA, conducted by Bennie Abramans.
- 11.30: CLOSE. "National Anthem."

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 353 Metres).

OPENING SESSION—8.15 to 11 a.m.

- 8.15: G.P.O. Chimes and Announcements.
- 8.16: Music for every Mood.
- 8.40: Meteorological data for the country.
- 8.45: Mails and Shipping Information.
- 8.50: Memory Melodies.
- 9.0: This Morning's Story.
- 9.30: A Musical Interlude.
- 9.40: British Official Wireless Press.
- 9.45: New Music.
- 10.5: FROM THE 1929 DISPLAY AT THE STATE SHOPPING BLOCK—News from the "Sydney Morning Herald."
- 10.10: Austradio Musical Reproduction
- 10.40: THE AUSTRALIAN BROADCASTING COMPANY'S WOMEN'S ASSOCIATION—Conducted by Miss Gwen Varley.
- 11.0: G.P.O. Chimes. Close down.

MIDDAY SESSION—12 to 2.30 p.m.

- 12.0: FROM THE SYDNEY CRICKET GROUND—
 - A Description of the Trial Match, AUSTRALIA v. THE REST.
- 1.15: FROM THE STUDIO: News from the "Sun" and "News."
- 1.20: Austradio Musical Reproduction
- 1.45: A Pianoforte Recital.
- 2.15: Melodies of yesterday and to-day.
- 2.30: IVY BAKER, Popular Vocalist—
 - (a) "Excuse me, Teacher" (Manuscript).
 - (b) "Baby Vampire" (Manuscript)
- 2.37: MODERN MUSIC.
- 2.50: THE MELLOW MAIDS, in Moments of Melody—
 - (a) "Beautiful" (Stern).
 - (b) "Sheila O'Shay."
 - (c) "Since You Called Me Sweetheart" (Klickman).
 - (d) "If Your Face Wants to Laugh, Well Let It."
- 3.0: FROM THE BALLROOM OF THE ORIENTAL—Sdney Simpson's Syncopaters in Dance Music.
- 3.12: FROM THE STUDIO—IVY BAKER, Popular Vocalist.
 - (a) "Then I'll be Lonely" (Dixon).
 - (b) "Sing Me a Baby Song" (Kahn)
- 3.19: FROM THE BALLROOM OF THE ORIENTAL—Sdney Simpson's Syncopaters in Dance Music.
- 3.30: FROM THE STUDIO. THE MELLOW MAIDS, in Moments of Melody—
 - (a) "Am I Blue" (Akst).
 - (b) "My Sin is Loving You" (Henderson).
 - (c) "The Hours I Spent With You" (Lewis)
- 3.40: GEMS FROM THE OPERAS.
- 4.0: FROM THE BALLROOM OF THE ORIENTAL—Sdney Simpson's Syncopaters in Dance Music.
- 4.15: FROM THE SYDNEY CRICKET GROUND—
 - A Description of the Trial Match, AUSTRALIA v. THE REST
- 6.0: CLOSE DOWN.

THE DINNER HOUR—6.15 to 7.58 p.m.

- 6.15: DINNER QUARTET.
- 6.45: THE BOY SCOUTS' CLUB, conducted by Mr. Norman Lyons
- 7.5: The Country Man's Market Session—Wool, Wheat, Stock, Farm Produce, Fruit, and Vegetable Markets.
- 7.20: DINNER MUSIC.
- 7.45: ADDRESS by the FINNISH CONSUL on the occasion of the Independence Day of Finland.
- 7.58: What's on the Air To-night?

TO-NIGHT'S PRESENTATION—8 to 10.30.

- Song groups by Fraser Coss, a pianoforte recital on distinctive lines by Lily Price with foreword by C. N. Baeyerz, The National Broadcasting Orchestra, and Scott Alexander in sketches specially written for radio by Codrington Ball will complete our offering through 2BL.
- Through 2FC Service organ music, harp solos, songs by Mabel Batchelor, and the witchery of the "South Seas" in Richard Piper's talk will constitute the first half of the evening's programme. At 9.15 p.m. 2FC will cross to 3LO Melbourne for the relay.
- 8.0: THE NATIONAL BROADCASTING ORCHESTRA—
 - (Conducted by Horace Keats.)
 - "The Rose" (Middleton).
 - 8.12: FRASER COSS, Baritone—
 - (a) "Lucrezia Borgia" (Donizetti).
 - (b) "Mother Macbrree" (Ball) By Request.
 - 8.19: LILY PRICE, Pianoforte Recital, with foreword by C. N. BAeyerz.
 - (a) "Sonata in C Minor" (Beethoven).
 - (b) "Fatehique" Op. 13, 1st Movement.
 - (c) "Cradle Song" (Brahms-Grainner)
 - 8.34: THE NATIONAL BROADCASTING ORCHESTRA—
 - (a) "The Turkish Patrol" (Michaelis).
 - (b) Suite: "The Conqueror" (German).
 - 8.45: SCOTT ALEXANDER presents the startling dramatic episode by Codrington Ball, entitled—"THE DEATH RAY."

Scene: The Inventor's Laboratory.

- 8.56: LILY PRICE, Pianoforte Recital, with foreword by C. N. BAERYERTZ.
 - (a) "Prelude in D Flat, No. 15 (Raindrops)" (Chopin).
 - (b) "Impromptu in F Sharp Minor" (Chopin).
 - (c) "Sheep and Goat Walkin' to Pasture" (Gulon).
- 9.10: FRASER COSS, Baritone—
 - (a) "The Lute Player" (Allitsen).
 - (b) "Song of the Soul" (Brell).
- 9.17: THE NATIONAL BROADCASTING ORCHESTRA—
 - (a) "Spanish Dance No. 5" (Moszkowsky).
 - (b) "Dorothy" (Cillier).
- 9.30: Weather Information for the Man on the Land
- 9.32: A Talk on "General Sporting," by CLAUDE CORBETT.
- 9.52: THE NATIONAL BROADCASTING ORCHESTRA—
 - "Keltie Suite" (Foulds).
- 10.2: SCOTT ALEXANDER will give a thrilling comedy by Codrington Ball, entitled—
 - "A DARLINGHURST SENSATION."
 Scene: At the top of William Street (King's Cross), at 1 a.m.
- 10.12: THE NATIONAL BROADCASTING ORCHESTRA—
 - "Madame Butterfly" (Puccini).
- 10.25: Late News from "The Sun" and "The News." Late Weather Forecast.
- 10.30: NATIONAL ANTHEM. CLOSE

2GB

Theosophical Broadcasting Station, 29 Bligh St., Sydney (Wavelength, 316 Metres).

- 10.0: Music.
- 10.10: Happiness Talk, by A. E. Bennett.
- 10.20: Music.
- 10.30: Women's Session by Mrs. W. J. Stelzer.
- 11.30: Talk by Mrs. Jordan.
- 11.45: Close.
- 2.0: Music.
- 2.5: Women's Radio Service, by Mrs. Dorothy Jordan.
- 2.50: Movie Know All.
- 3.0: Address by Miss Mary Rivett.
- 3.15: Music.
- 3.30: Close down.
- 5.15: Children's Session, by Uncle George.
- 6.50: M-G-M Radio Movie Club Session.

- 7.0: Music.
- 7.45: Feature Story.
- 8.0: All Russian Programme. Madame Bennett North, Contralto.
- 8.7: Symphony Orchestra.
- 8.15: Mr. Clement Hosking, Baritone.
- 8.22: Instrumental Quartette.
- 8.25: Mr. Jack Win and Mr. Heath Burdock. Humour.
- 8.30: Miss Barbara Russell, Soprano.
- 8.40: Symphony Orchestra.
- 8.45: Madame Betts-Vincent in an illustrated talk on Tschaiakowsky.
- 9.0: Weather Report.
- 9.1: Madame Bennett North, Contralto.
- 9.10: Symphony Orchestra.
- 9.20: Clement Hosking, Baritone.
- 9.30: Mr. Jack Win and Mr. Heath Burdock. Humour.
- 9.35: Symphony Orchestra.
- 9.45: Miss Barbara Russell, Soprano.
- 9.55: Symphony Orchestra.
- 10.0: Instrumental Music.
- 10.30: Close down.

2UW

Radio Broadcasting, Ltd., Palling's Building, Ash St., Sydney (Wavelength, 367 Metres).

- MIDDAY SESSION.**
- 12.30: Request numbers.
- 1.0: Music.
- 1.15: Talk on Homecraft, by Pandora.
- 1.40: Music and request numbers.
- 2.30: Close.
- 4.30: Musical programme.
- EVENING SESSION.**
- 5.30: Children's hour, conducted by Uncle Jack.
- 6.30: Close.
- 7.0: Request numbers.
- 8.0: Recital of popular music.
- 9.0: Comments on Foreign Affairs, by Mr. J. M. Prentice.
- 9.10: Music and request numbers.
- 10.30: Close.

2KY

Trades and Labor Council, Goulburn St., Sydney (Wavelength, 280 Metres).

- MORNING SESSION.**
- 10.0: Tune in to the ticking of the clock.
- 10.3: Popular Fox Trots.

- 10.15: Calls and announcements.
- 10.30: WOMEN'S SESSION. Home hints and information, Mrs. GRAY.
- 11.0: A few laughs.
- 11.5: Pianoforte selections.
- 11.15: Calls and announcements.
- 11.20: Musical Interlude.
- 11.30: Request numbers.
- 11.40: Music and vocal items.
- 11.55: Where to go to-night.
- 12.0: Closing announcements.
- CHILDREN'S SESSION.**
- 6.0: Birthday calls, request numbers, and Kiddies' Entertainment. UNCLE BERT AND UNCLE MAC.
- EVENING SESSION.**
- 7.0: Musical interlude.
- 7.5: Birthday calls.
- 7.15: SPORTING FEATURE. Turf topics. Review of Candidates and their prospects for to-morrow. Mr. GEO. A. DAVIS
- 7.40: Request numbers.
- 8.0: Hawaiian steel guitar selections.
- 8.10: Women's Information Service Mrs. GRAY.
- 8.30: Music and vocal items from the studio.
- 9.10: Full description of main 15-round event.
- 10.0: Closing announcements.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra, Sydney (Wavelength, 298 Metres).

- EARLY MORNING SESSION.**
- 7.15: Breakfast Time Hour Orchestral Music. 8.0: Clock and Chimes. 8.1: Musical Items. 8.30: Weather Forecast. Close down.
- MIDDAY SESSION.**
- 10.0: Women's Session conducted by Miss Dorothea Vautier. 11.30: Orchestral and Vocal Music. 12.0: Close down.
- AFTERNOON SESSION.**
- 1.0: Orchestral and Vocal Music. 1.45: Organ Recital. 2.0: Close down.
- EVENING SESSION.**
- 6.30: Wendy's Hour with the Children, and Birthday Greetings. 7.15: Orchestral Items. 7.20: Health Talk by Mr. T. Gordon Marsden. 7.30: Orchestral Dinner Music. 7.55: Programme Announcements, and news from the "Sun." 8.0: Clock and Chimes. 8.1: Overture, "Bohemian Girl" Selections. 8.10: Vocal and Orchestral Concert. 10.15: National Anthem. Close Down.

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Interstate Programmes, Friday, December 6

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 371 Metres).

EARLY MORNING SESSION.

7.0: Time signal. 7.1: Shipping news. 7.3: Physical exercises to music. 7.20: Reproduced music. 7.40: Mail notices. 7.42: What's on to-day. 7.45: Market reports. 7.52: Weather forecasts. 7.55: News and cables. 8.0: Time signal. 8.1: Arrival times of express trains. 8.4: Musical interlude. 8.15: Close down.

MORNING SESSION.

10.30: Current happenings in sport, by Eric Welch. 10.45: Musical reproduction. 11.0: Fish market reports. 11.5: Musical reproduction. 11.30: Morning sales, Melbourne Stock Exchange; metal prices. 12.0: Melbourne Observatory time signal. 12.1: Musical reproduction. 12.15: News and cables. 12.30: Close down.

MIDDAY SESSION.

1.0: Time signal. Stock Exchange information. Meteorological data. Weather forecast for Victoria, New South Wales, South Australia, and Tasmania. Ocean forecast. River reports. Rainfall data. 1.15: Comments on the day's news. 1.30: Musical interlude.

EDUCATIONAL SESSION.

2.0: The Races and Peoples of the World—Mr. H. J. C. Howard. 2.15: Musical interlude. "Oems of English Literature—Friede and Prejudice," by Jane Austen. Prof. G. H. Cowling, M.A. 2.35: Musical interlude. 2.40: A Talk in German—Mr. G. E. Green, M.A., Dip.Ed. 3.0: Melbourne Observatory time signal.

THE RADIO MATINEE.

3.1: The Studio Light Orchestra—"Three Irish Dances" (Ansell). 3.10: Albert Schoebel and Ida Lauer—folk songs, "Das War in Schoneberg" (Kololo), "Mein Schatzlie ist fein" ("My Beloved is Beautiful"). 3.17: K. R. Aitken, piano accordion—"Toy Drum Major," "Four Little Blackberries." Comedy sketch. 3.23: "Moonshine," by Arthur Hopkins. Cast: Luke Bazy (a "Moonshiner"), John Coyne; Revenue Officer, Gordon Scott. Produced by John O'Keefe. 3.38: The Studio Light Orchestra—"The Dream Me" (Herbert). "Berceuse de Jocelyn" (Goddard). 3.48: Ernest Wilson, baritone—"Sallor's Paradise" (Richards), "Well-a-Day" (Eathope Martin). 3.55: Joseph Barille, flute solo, selected. 4.0: Albert Schoebel and Ida Lauer—folk songs, "Auf den Bergen in Tirol" (the Tyrol Alps), "Guter Mond" ("Kind Moon"), "Erinnerung" ("Remembrance"). 4.7: K. R. Aitken, piano accordion—"Stars Are the Windows of Heaven," "My Angel." 4.13: Ernest Wilson, baritone—"A King's Man" (Hilliam). "The Last Hour" (Kramer). 4.20: The Studio Light Orchestra—selection from the musical comedy, "Tangerine." 4.30: Close down. During the afternoon results of the Ballan races will be broadcast as they come to hand; also progress scores in the cricket match, "Australia v. The Rest," at the Sydney Cricket ground.

THE CHILDREN'S CORNER.

5.45: "Plain Peter" and "Rollicking Rilla" are entertaining to-night. Would you like to hear the songs your daddies used to march to? Stories of adventure for the older ones, and birthday greetings for "Plain Peter." 6.35: Musical interlude.

EVENING SESSION.

6.40: Tennis—Some advice to young players, Miss Patricia Dawson. 6.55: Musical interlude. 7.0: Melbourne Observatory time signal. 7.1: Countryman's session. Stock Exchange information. Corn Exchange report. Associated Stock and Station Agents' official report. Wool Exchange report. Mines and Metals. Fish and rabbit prices. Farm and dairy produce report, supplied by the Interstate Dairy Produce Committee. Wholesale fruit prices, supplied by the Wholesale Fruit Merchants' Association. Retail fruit prices, supplied by the Victorian Fruit-growers' Association. Citrus fruit prices, supplied by the Victorian Central Citrus Association. Weather synopsis. River reports. Rainfall data. 7.25: Gardening hints—planting and care of dahlias toppers, Mr. R. Lee. 7.40: News and cables. 7.45: The future of wrestling, Mr. R. Lean. 8.0: Melbourne Observatory time signal.

NIGHT SESSION.

8.0: Brunswick City Band; conductor, Hugh Niven—overture, "Les Trompettes" (Hume). 8.8: Clifford Lathlean (the well-known Sydney baritone)—selections from his repertoire. 8.15: Elmer from the theatres, arranged by Gregory Vauchoir, introducing well-known classics and popular numbers of to-day. 8.30: Second night of the grand radio choral contest, organised by the Australian Choral Association, in conjunction with 3LO. 9.0: "The A.B.C. White Coons"—up-to-the-minute minstrelsy (arr. Round). 9.15: Brunswick City Band—selection of operatic gems (arr. Round). 9.25: Nora O'Malley—and a piano. 9.32: G. Mulgrew, cornet—polka, "Snapshots." 9.38: Clifford Lathlean, baritone—selections from his repertoire. 9.42: Brunswick City Band—Suite, "Bohemia" (Hume). 9.53: Nora O'Malley—and a piano. 10.0: Paul Jencks and His Band—novelty numbers. "The Toymaker's Dream" (Golden), "An Elephant Can't Buy Can't" (Abbott). 10.7: Brunswick City Band—selection, "Old Kentucky" (Biowne). 10.15: Eric Welch will speak on, "To-morrow's B.C. Benevolent Fund Race Meeting at Moonee Valley."

10.25: Brunswick City Band—serenade, "A Night in June" (Niven). 10.30: British official wireless news. Meteorological information. Items of interest. 10.40: Peaul Jeacle and His Band—song and syncopation. 11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 484 Metres).

MORNING SESSION.

8.15: Musical reproduction. 8.45: Weather data. 9.0: G.P.O. chimes. 9.1: News. 9.5: Musical reproduction. 10.0: G.P.O. chimes. 10.1: British official wireless news. 10.10: Announcements. 10.30: Arnold Coleman at the Wurlitzer. 10.50: The daily broadcast service. 11.0: Close down.

MIDDAY SESSION.

12.0: Chimes. 12.1: Famous Women—Peg Woffington, Miss Agnes St. Clair. 12.15: Fifteen minutes syncopation. 12.30: Luncheon music supplied by the Studio Light Orchestra. 2.0: G.P.O. chimes.

AFTERNOON SESSION.

2.1: Orchestral, Six Jumping Jacks. 2.3: Comedian, Al Johnson. 2.8: Saxophone, Rudy Wiedorf. 2.9: Soufrette, Bessie Brown. 2.12: Orchestral, Six Jumping Jacks. 2.15: Frank and James McCrary. 2.18: Band, Brunswick Military Band. 2.21: Baritone, John Barclay. 2.24: Violin, Max Rosen. 2.27: Soprano, Florence Easton. 2.30: Band, Brunswick Military Band. 2.33: Tenor, Mario Chamlee. 2.37: Orchestral, Metropolitan Opera House Orchestra. 2.45: Tenor and baritone, Charles Hart and Elliott Shaw. 2.50: Violin, Frederick Pradkin. 2.53: Tenor, Mario Chamlee. 2.57: Orchestral, Minneapolis Symphony Orchestra. 3.0: From Kooyong Tennis Courts; Description of interstate tennis matches by Mr. A. W. Dunlop. 3.20: "A chat by a prominent woman." 3.35: Musical interlude. 3.40: Topical Chatter—The Flapper and Aunt. 3.55: Musical interlude. 4.0: A Woman's Wanderings through the Empire—Mrs. Charles King. 4.15: From Kooyong Tennis Courts, description of interstate tennis matches by Mr. A. W. Dunlop. 4.30: "Australia" musical reproduction. 5.0: G.P.O. chimes. 5.1: From Kooyong Tennis Courts, description of interstate tennis matches by Mr. A. W. Dunlop. 5.15: "Australia" musical reproduction. 5.30: Weather data. 5.45: Close down.

EVENING SESSION.

6.15: Dinner music supplied by Paul Jencks and his Band. 7.30: What's on the Air To-night? 7.32: Sporting results. 7.35: Room notes. 7.40: Latest musical releases. 8.0: G.P.O. chimes. 8.1: A.I.P. recollections: The Twentieth Round, Mr. C. Ellis. 8.15: Community Singing, transmission from the Town Hall Ballarat. Conductor, Stan Jones. 10.20: Weather and news. 10.30: God Save the King.

3DB

The "Herald" Broadcasting Station, Flinders Street, Melbourne (Wavelength, 355 Metres).

MORNING SESSION.

11.0: Women's Radio Service, "Diet and Cookery Problems," conducted by Miss Iris Turnbull. Dr. George Payne Philpotts, "Salads." 12.0: State Opera Orchestra, "The Boy" (Strauss). C 1414. 12.30: Prahran Trades' Association Community Singing Session, transmitted from Prahran Town Hall. Conductor, Mr. G. J. Mackay. Accompanist, Mr. Reg. Brown.

AFTERNOON SESSION.

2.30: Coldstream Guards' Band, Overture, "Zampa," C 1421. 3.0: Stuart Robertson, "In Summer Time on Bradon," B 2594. 3.30: Pablo Casals (cello), "Apres un Reve." DA 731. 4.0: Close down. 5.0: State Opera Orchestra, Overture "Oberon," D 1316. 5.30: Leviathan Session. 6.30: Mavis Bennett, "Orpheus with His Lute," B 2762. 7.0: Jean Goldkette and His Orchestra, "Just a Little Kiss," EA 319. 7.15: Market Reports, John McNamara and Co. Pty. Ltd. 7.20: Gene Austin, "Lonesome Road," EA 550.

EVENING SESSION.

8.0: Symphony Orchestra, Prelude Act. 3, and Bridal Music, "Lohengrin," D 954. 8.30: Tudor Davies (tenor), "On Wings of Song," D 1283. 9.0: Victor Oloff Sextet, "Keltic Lament," C 1678. 9.30: Elsie Suddaby, "Blackbird Song," B 3076. 10.0: "Varying's Pennsylvanians," "I Used to Love Her," EA 558. 10.30: Anona Win. Harold French, and George Baker, "Before I go to Sleep," EA 584. 10.45: News. 11.0: God Save the King.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).

EARLY MORNING SESSION.

7.30: News service. 7.58: Time signals. 8.0: Music. 8.15: News. 8.30: Close down.

MORNING SESSION.

11.0: Music. 11.5: Social news. 11.15: A cookery talk by the "Etiquette Girl." 11.30: Music. 11.35: More social news. 11.45: Music. 12.0 (noon): Close down.

MIDDAY SESSION.

1.0: Market reports and weather information. 1.15: Music. 2.0: Close down.

AFTERNOON SESSION.

3.0: Music. 3.30: Mail train running times. 3.31: Music. 4.15: This afternoon's news. 4.30: Close down.

EARLY EVENING SESSION.

6.0: Mail train running times; mail information; shipping news. 6.5: Music. 6.25: Commercial announcements. 6.30: Bedtime stories conducted by Little Miss Brisbane. 7.0: News in brief. 7.5: Stock Exchange news. 7.8: Metal quotations. 7.7: Market reports. 7.25: Fenwick's stock report. 7.30: Weather information. 7.40: Announcements. 7.43: Stock exchange time signals. 7.45: To-morrow's sporting fixtures reviewed.

NIGHT SESSION.

8.0: Mrs. Matthews Cadenza Plectral Club and Banjo Band: "The Toy Parade" (Nicholls). 8.5: Alice Raven, contralto; "Salaam" (Lang). 8.9: Clare Matthews, violinist; "Valse Bluette" (Drigo). 8.14: Sid Smith and the Banjo Band: Popular numbers. 8.24: L. Sheridan, baritone; "A Light Song, a Bright Song" (Drummond). 8.31: Mrs. Matthews Cadenza Plectral Club: "Festudiantina" (Waldteufel). 8.37: Elspeth Capper, soprano: Selected. 8.45: Mrs. Matthews' Banjo Band: "Our Director" (Bigelow). Popular numbers. 9.0: Metropolitan weather forecast. 9.1: Week-end road information officially supplied by the R.A.C.Q. 9.15: Mrs. Matthews' Cadenza Plectral Club: "The Swan" (Saint Saens). 9.20: Huzlie O'Donnell (tenor banjoist); "My Lady" (Weidt). 9.15: Ruth Tregurtha, elocutionist; "Teddy Bear" (Milne). 9.30: The Cadenza Trio: "Cuckoo Song" (Jonas). 9.35: Alice Raven, contralto; "Mother o' Mine" (Tours). 9.39: Leo Crump with the Banjo Band: Popular numbers. 9.45: Ruth Tregurtha, elocutionist; "In the Dark" (Milne). 9.50: Clare Matthews and Elspeth Capper, violin duets; "Abandon" (Goddard), "Berceuse" (Goddard). 10.0: L. Sheridan, baritone; "Uncle Rome" (Homer). 10.5: Mrs. Matthews' Cadenza Plectral Club and Banjo Band: "The American Medley" (Arr. Somers). 10.10: News; weather. 10.20: The Rhythm Rascals. 11.0: Close down.

5CL

Central Broadcasters, Ltd., 111 Hindmarsh Square, Adelaide (Wavelength, 409 Metres)

MORNING SESSION.

11.15: Chimes. 11.16: Recordings. 11.45: Kitchen craft and menu talk. 12.1: Recordings. 12.15: News. 12.40: Recordings. 12.52: Railway and Stock Exchange. 1.0: Chimes. 1.1: Player Piano session. 1.59: Meteorological information. 2.0: Close down.

AFTERNOON SESSION.

3.0: Chimes. 3.1: Programme review and announcements. 4.1: Player piano session. 4.15: An educational talk. 4.25: Stock Exchange and meteorological information. 4.30: Close.

EVENING SESSION.

6.0: Chimes. 6.1: Birthday greetings. 6.15: Children's request numbers. 6.30: Dinner session. 7.1: Senior Birthday League greetings, sporting service, general market reports. 7.20: "Mo" Manning will review the cricket. 7.35: Miss Laurie McLeod will speak on "Physical Culture." 7.45: Dr. Jethro Brown will speak to you.

NIGHT SESSION.

8.0: Chimes. 8.10: A description of the Railways Institute Radio Exhibition. 9.0: Chimes. 9.1: Meteorological information, including semaphore tides. 9.2: Overseas grain report. 9.3: Announcements. 9.5: The Steiner Trio: Selection: "The Fledermans" (Strauss), "Andante" (Reissiger). 9.15: Lady Vocalist (winner 5CL radio vocal championship). 9.22: Dave Howard, comedian. 9.29: The Steiner Trio: Intermezzo, "Nalla" (Dellibes), "Rhapsody Appassionata" (Ketybey). 9.37: Gentleman Vocalist (winner 5CL radio vocal championship). 9.44: erid Gioacchino, cellist. 9.51: Dave Howard, comedian. 10.0: Lady Vocalist (winner 5CL radio vocal championship). 10.4: The Steiner Trio: "Dream Dances" (Coleridge Taylor). 10.10: Gentleman Vocalist (winner 5CL radio vocal championship). 10.15: News, selections for races at Flemington and Tallen Bend to-morrow. 10.30: Dance music: Brunswick records. 11.0: Close down.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 485 Metres).

EARLY MORNING SESSION.—7.30: Chimes. 7.31: Meteorological report. 7.32: The day's maxim. 7.35: Musical reproduction. 7.55: Mails and shipping intelligence. 8.0: What's on to-day. 8.5: World-wide cables. 8.10: Musical reproduction. 8.27: Features of to-day's programme. 8.30: Close down.



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GIVE "FREE SPEECH" TO YOUR RADIO—WITH A PHILIPS SPEAKER

Local Programmes, Saturday, December 7

2FC

Australian Broadcasting Company Ltd., Market St., Sydney (Wavelength, 431 Metres).

- EARLY SESSION—7.0 to 8.0 a.m.**
 7.0: "Big Ben" and Meteorological information for the Man on the Land.
 7.3: This morning's news, from the "Sydney Morning Herald."
 7.6: Austradio Musical Reproduction
 7.45: Mails and Shipping.
 7.48: What's On To-day?
 7.50: Children's Birthday Calls.
 8.0: Music from the Studio.
 8.10: **CONDITION OF THE ROADS**, supplied by the Main Roads Board
 8.15: CLOSE.

MORNING AND AFTERNOON SESSIONS.

- 10.30: Announcements.
 10.32: A.B.C. Racing Observet.
 10.45: Studio Music.
 11.0: **HOUSEHOLD HELPS**—Week-end Suggestions, by Miss Ruth Furst.
 11.10: **CABLES** (copyright), "Sun" "Herald" and A.P.A. News Service.
 11.15: Austradio Musical Reproduction
 11.53: British Official Wireless Press.
 12.0: "Big Ben" Stock Exchange and Metal Quotations.
 12.5: Studio Music.
 12.50: Midday Weather Forecast and Weather Synopsis.
 1.30: Studio Music.
 12.50: **FROM RANDWICK**—Description of the A.J.C. Meeting in the running.
 NOTE: At 2 o'clock—A Glance at the afternoon "Sun" and "News." During intervals between races a musical programme will be broadcast from the Studio.
 4.35: **FROM THE STUDIO**—Late Sporting Results
 4.45: CLOSE

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 6.45: Children's "Good-night" Stories, told by the "Hello Man," assisted by Aunt Willa and Cousin Gwen.
 6.45: Dinner Hour Music.
 7.20: A.B.C. Sporting Service.
 7.30: Special Country Session, Stock Exchange Resume, Weather Forecast, Late News from the "Sun" and "News."
 7.58: To-night's Programme.

THE EVENING PRESENTATION—8.0 to 11.30 p.m.

The Scottish Concert from the Rockdale Town Hall to-night will be welcomed by the old people to whom the favorites of Scotland are still dear. Through 2BL Service the description of the fight from the Stadium is eagerly anticipated by listeners to whom that sport appeals.

- 8.0: **FROM THE ROCKDALE TOWN HALL.** Concert arranged by the Rockdale and District Scottish Association—Opening Remarks—The Chief, Pipe Selections—Piper Keith Club, Bryson Taylor, Tenor—"My Ain Dear Nell," Nance Marley, Contralto—"Callin' Herrin'." Laurence Macauley, Baritone—Border Ballad, Gwiadys Evans, Soprano—"Bonnie Prince Charlie" Comedian—Les Coney.
 9.0: **FROM THE STUDIO**—The Country Man's Weather Session—(a) New South Wales Forecasts (b) Interstate Weather Synopsis Yachtsman's and Fisherman's Forecast.
 9.2: **WILFRED BLACKET**, in "Reminiscences of the Bar."
 9.17: **LIONEL HART** and **HIS MUSICAL ENSEMBLE**—Instrumental Trio—1st Movement Op. 49 (Mendelssohn)—Florence Paton, Lionel Hart, R. Irvine. Flute Solo—"The Nightingale"—Robert Irvine. Vocal and Instrumental—"Hindu Song" (Bemberg)—Florence Paton; Violin Obligato by Lionel Hart. Instrumental Trio, "Rondo Grazioso," Op. 186 (Reissiger)—Florence Paton, Lionel Hart, R. Irvine. Songs at the Piano—Florence Paton—(a) "Ah, Sweet Mystery of Life" (Herbert). (b) "Mean to Me." Violin Solo—"Bagatelle" (Saunders)—Lionel Hart. Grand Ensemble, "Pale Moon" (Knight-Logan), Original Arrangement—Florence Paton, Lionel Hart, R. Irvine.
 10.0: A **CELEBRITY RECITAL**.
 10.15: Announcements, Late Official Weather Forecast.
 10.20: **FROM THE BALLROOM OF THE ORIENTAL**—Sydney Slinpson's Syncopaters in Dance Music.
 11.30: CLOSE. "NATIONAL ANTHEM."

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 332 Metres).

OPENING SESSION—8.15 to 11 a.m.

- 8.15: G.P.O. Chimes and Announcements.
 8.18: Music for every Mood.
 8.40: Meteorological data for the country.
 8.45: Mails and Shipping Information.
 8.50: Memory Melodies.
 9.0: This Morning's Story.
 9.30: A Musical Interlude.
 9.40: British Official Wireless Press.
 9.45: New Music.
 10.5: News from the "Sydney Morning Herald."
 10.10: Austradio Musical Reproduction.
 10.40: MR. G. COOPER, Park Superintendent of City Parks, will speak on "GARDENING."

11.0: G.P.O. Chimes. Close Down.

MIDDAY SESSION AND AFTERNOON SESSION—12 to 6 p.m.

- 12.0: **FROM THE SYDNEY CRICKET GROUND**—A Description of the Trial Match. AUSTRALIA v. THE REST.
 1.15: **FROM THE STUDIO**: News from "The Sun" and "News."
 1.20: Austradio Musical Reproduction.
 1.45: A Pianoforte Recital.
 2.0: **FROM THE SYDNEY CRICKET GROUND**—A Description of the Trial Match. AUSTRALIA v. THE REST.
 4.0: **FROM THE STUDIO**: Memory Melodies.
 4.15: **FROM THE SYDNEY CRICKET GROUND**—A Description of the Trial Match. AUSTRALIA v. THE REST.
 6.0: CLOSE DOWN.
THE DINNER HOUR—6.15 to 7.58 p.m.
 6.15: DINNER QUARTET.
 6.45: "THE CAPTAIN" to His Comradios.
 7.0: The A.B.C. Sporting Service.
 7.20: DINNER MUSIC.
 7.45: Austradio Musical Reproduction.
 7.58: What's on the air To-night?
TO-NIGHT'S PRESENTATION—8 to 12.
 2BL'S Sporting feature on Saturday night

—description of the fight from the Sydney Stadium—is the big event of the week for sport lovers. In addition, there are songs by Louise Homfrey, lady baritone, comedy numbers and sketches, and dance groups by the Australian Broadcasting Dance Orchestra.

2FC offers contrast in the Scottish Concert from the Rockdale Town Hall, arranged by the Rockdale and District Scottish Association. Wilfrid Blacket's talk at 9 o'clock, "Reminiscences at the Bar," will attract many 2FC listeners, followed by a pot pourri of popularity by Lionel Hart's Musical Ensemble.

8.0: **THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA**, Conducted by Cec. Morrison.

- 8.10: **LOUISE HOMFREY**, Lady Baritone—(a) "Building a Nest for Mary" (Greer). (b) "There's a Four Leaved Clover in My Pocket" (Weindling).

8.20: **JOHN STUART**, Comedian—Comedy Sketch, "Nothin' That You'd Notice." (Specially written for the Radio by John Stuart).

CHARACTERS: Big Station Owner, NORMAN THOMPSON Jones JOHN STUART

SCENE: Country Railway Station. Humorous Dissertation: "Girth Control."

8.27: **I EW JAMES** and **DODI WOLFE**, Entertainers—

"Musical Oddity" (James).

8.34: **FROM THE SYDNEY STADIUM:** A Description of the Fight.

9.34: **FROM THE STUDIO**—Weather Information for the Man on the Land.

9.56: **LOUISE HOMFREY**, Lady Baritone—

(a) "Aren't We All" (Western). (b) "Half Way to Heaven" (Robinson).

(c) "Lady Divine" (Shilkret).

9.46: **THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.**

9.58: **JOHN STUART**, Comedian—

Song and Patter: "Back Answers."

10.8: **THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.**

10.18: **I EW JAMES** and **DODI WOLFE**, Entertainers—

"Musical Oddity" (Low James).

10.25: Late News from "The Sun" and "News." Late Weather Forecast.

10.30: **THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.**

12.0: **NATIONAL ANTHEM.** CLOSE.

2GB

Theosophical Broadcasting Station, 29 Bligh St., Sydney (Wavelength, 316 Metres).

3.0: Musical Session.

5.15: Children's Session by Uncle George

7.0: Request Hour.

8.0: Musical Session.

10.30: Close down.

2UW

Radio Broadcasting, Ltd., Palling's Building, Ash St., Sydney (Wavelength, 267 Metres).

5.30: Children's hour, conducted by Uncle Jack.

6.30: Close.

7.0: Musical programme.

10.30: Close.

2KY

Trades and Labor Council, Gougham St., Sydney (Wavelength, 260 Metres).

EVENING SESSION.

6.0 to 10.0, as usual.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra, Sydney (Wavelength, 293 Metres).

EARLY MORNING SESSION.

7.15 to 8.30, as usual.

EVENING SESSION.

8.30: Wendy's Hour with the Children, and Birthday Greetings. 7.15: Turf Talk by Mr. T. Hopkins, Turf Expert. 7.40: Dinner Music.

7.55: Programme announcements and news from the "Sun." 8.0: Overture, "Dance of the Hours." 8.10: Vocal and Instrumental Music.

10.30: Close down.

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Interstate Programmes, Saturday, December 7

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 371 Metres).

EARLY MORNING SESSION.

7.0 to 8.15: See Friday.

10.30 to 12.30: See Friday.

MIDDAY SESSION.

1.0 to 1.30: See Friday.

AFTERNOON SESSION.

1.58: Description of Handicap Hurdle Race, two miles, by Eric Welch, V.R.C. Benevolent Fund race meeting at Moonee Valley. 2.5: Musical reproduction. 2.25: Description of Two-Year-Old Handicap, five furlongs, V.R.C. Benevolent Fund race meeting at Moonee Valley, by Eric Welch. 2.35: From Kooyong tennis courts, description of interstate tennis matches, by Mr. A. W. Dunlop. 2.55: Description of Welter Plate, six furlongs, V.R.C. Benevolent Fund race meeting at Moonee Valley, by Eric Welch. 3.5: Sporting results to hand. 3.10: "Aust-radio" musical reproduction. 3.25: Description of interstate tennis matches, from the Kooyong tennis courts, by Mr. A. W. Dunlop. 3.35: Description of the Fund Handicap, 1¼ miles, V.R.C. Benevolent Fund race meeting at Moonee Valley, by Eric Welch. 3.45: "Austradio" musical reproduction. 4.0: Melbourne Observatory time signal. Sporting results to hand. 4.5: Description of interstate tennis matches, from the Kooyong tennis courts, by Mr. A. W. Dunlop. 4.15: Description of High-weight Handicap, one mile, V.R.C. Benevolent Fund race meeting at Moonee Valley, by Eric Welch. 4.55: Sporting results to hand. 5.0: Close down. During the afternoon results of the Hamilton and Colac races will be broadcast as they come to hand; also progress scores will be given of the cricket match, Australia v. The Rest, at Sydney Cricket Ground.

THE CHILDREN'S CORNER.

5.35: Sporting results to hand. 5.45: "Little Miss Kookaburra." 6.20: Jobs for the holidays—Mr. Alex. Smith.

EVENING SESSION.

6.40: Sporting results. 6.55: Musical interlude. 7.0: Melbourne Observatory time signal. 7.1: Countryman's session. 7.25: Stories of our mining fields. Wallaroo and Moonta. Mr. R. Elford. 7.40: News and cables. 7.45: Wanderings around the world—Mexico. Mr. H. G. Esmond. 8.0: Melbourne Observatory time signal.

NIGHT SESSION.

8.0: National Broadcasting Orchestra—overture, "The Sunny South" (Lake).

8.10: The Bullratt Male Harmonists (under direction Stan. Jones, H. Davey). Personnel of the company: Ted Daff, E. Vincent, A. Blinckhorn, S. Glenton, H. Clogan, J. Trethowan, J. Brimacombe, S. Jones, G. Peters, W. Johnson, G. Johnson, Jas. H. Davey, Medley. "The Old and the New." The Harmonists. Solo. "Climbing the Golden Stair." Jas. H. Davey. Baritone solo. "Scott's Wha Hae." J. Brimacombe. Concerted number. "Goin' Home." The Harmonists. Solo. "Uncle Joe" (Erson). A. Blinckhorn. Tenor solo. "Farewell" (Liddle). Ted Daff. Concerted item. "A Rehearsal." The Harmonists. Bass solo. "Simon the Cellarer." Stan. Jones. Tenor solo. "Lazy Joe." Brimacombe. Jones. Blinckhorn, and Daff. Humorous sketch. "The Twins." J. H. Davey and Stan. Jones. Plantation medley. The Harmonists. Orchestral interlude, National Broadcasting Orchestra—"Dance of the Hours" (Ponchelli).

Part II: The Male Harmonists have a night out. Opening selection, "Good Evening." The Harmonists. Tenor solo. "The Old Refrain." (Kreischer). Ted Daff. Humorous item. "The Philosopher." G. Johnson. Baritone solo. "My Friend" (Behrend). J. Brimacombe. Concerted number. "The Sweetest Story." The Harmonists. Humorous sketch. "The Oldest Inhabitant." Jas. H. Davey. Concerted number. "The Lost Chord." The Harmonists. Bass solo. "Dinking." Stan. Jones. Humorous finale. "Hall Hall." The Harmonists.

10.10: National Broadcasting Orchestra—selection. "Going Up" (Hirsch).

10.20: British official wireless news. Meteorological information. Items of news. 10.30: Paul Jeacle and His Band—dance music. 11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 484 Metres).

MORNING SESSION

8.15 to 11.0. as usual.

MIDDAY SESSION

12.0 to 3.0. as usual.

THE RADIO MATINEE

3.1: Paul Jeacle and his Band. "I Love You, I Hate You" (Bryan). "Dawning" (Silver). 3.6: Metro Male Quartette. "Kentuck Babe" (Geibel). "Smilin' Through" (Jenn). 3.12: Claude Jeacle, baritone. "The Fiddling Jer, in Melody, and Music. 3.23: Paul Jeacle and His Band. "Fashionette" (King). "I'm More Than Satisfied" (Walker). 3.30: Marlon Daniels, mezzo soprano. "I Love You, Truly" (Bond). "Don't You Mind It, Honey" (Cairo Roma). 3.37: Bob Libbis trombone. "O Sole Mio" (Capua). 3.40: One-Act Play, "The Grey Parrot." By W. W. Jacobs. (Produced by Catherine Nellie.) Jim Gammet, E. Nelson; Sam Rogers, Thomas Leslie; Hodson, G. Hamilton; Mary Gammet, Grace Chester, Jane Rogers, Catherine Nellie. 3.55: Paul Jeacle and his Band. "Painting the Clouds with Sunshine" (Burke). "Clemen-

fine from New Orleans" (Creamer). 4.1: Madoline Knight, contralto. "The Sunshine of Your Smile." "Mighty Like a Rose" (Nevin). 4.8: "Anson," the Fiddling Jer, in Melody, and Music. 4.15: Metro Male Quartette. "Annie Laurie" (Hertz). "Robin Adair" (Decks). 4.21: Paul Jeacle and His Band. "Broadway Baby Dolls" (Meyer). "He Ain't Done Right by Nell" (Howard). 4.27: Marlon Daniels, mezzo soprano. "The Little Green Balcony" (Coates). "To a Miniature" (Brahe). 4.34: George Bodley, saxophone. "Song of India" (Korsakoff). 4.38: Madoline Knight, contralto. "The Bells of Home" (Holiday). "Come, Sing to Me" (Thomson). 4.45: Bruce Wile, piano, "Sparks" (Mansman). 4.48: Metro Male Quartette. "In the Motor Car" (Sullivan). "Close Harmony" (O'Hara). 4.54: Paul Jeacle and His Band. "South Wind" (Henderson). "A New Kind of Man" (Clare). 5.0: G.P.O. chimes. 5.1: Musical reproduction. 5.30: Weather data. 5.45: Close down.

NIGHT SESSION

8.1: Transmission from the Malvern Town Hall. The Malvern Symphony Orchestra will render the following items: "Italian Symphony" (Mendelssohn); "The Holberg Suite" (Grieg); "Tam O' Shanter" (Drysdale). (First performance in Australia). "Gavotte" from "Manon" (Massenet). "Shepherd's Hey" (Grainger). "March Militaire" (Schubert). "1812 Overture" (Tschikowsky), assisted by the Malvern Tramways Band. Soloist, Miss Rita Coonan. (During the interval, approximately 9 p.m., sporting results will be given from the Studio). 10.15: Weather information and "Herald" news. Cable news service (copyright Australian Press Association and Sun-Herald News Service Ltd.). 10.20: Rex Dance Band. 10.30: God Save the King.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).

8.0: A programme by the Annerley Choral Society. EARLY MORNING SESSION: As usual. AFTERNOON SESSION: As usual. EARLY EVENING SESSION: As usual.

NIGHT SESSION.

8.0: A programme by the Annerley Choral Society (conductor, Tom Muller)—Annerley Choral Society: "The Fox Hunt" (Wheeler). Mrs. Theodore, soprano; "Nightingale's Trill" (Ganz). J. Lather, baritone; "The Village Blacksmith" (Goring Thorn). Annerley Choral Society: "O Peaceful Night" (German). Mrs. Corbett, soprano, and Marie Muller, contralto; "Go Lovier Rose" T. Muller, monologist; "A Johnnie's Summing Up of Life." Annerley Choral Society: "He That Hath a Pleasant Face" (Hatton). "The Rells" (Wheeler). Nina Duley, contralto; "Music When Soft Voices Die" (R. Tall). "A Minuet for Two" (R. Tall). Lou Miller, tenor; "The King's Minstrel" (Pinsuit). Annerley Choral Society: "Lord Ullin's Daughter" (Jackson). T. Muller, bass; J. Martin, tenor—vocal duet: "I Wish to Tune My Quivering Lyre" (Watson). Jessie Lack, contralto; "Little Rose of Love" (Forster). Annerley Choral Society: "True Till Death" (Scott Gately). Miss Haskins, soprano; "Break o' Day" W. Taslem, contralto, and Fred Beckett, tenor—duet: "Awake" (Pellissier). C. Reis, baritone; "Curfew" (Gould). Annerley Choral Society: "The Viking Song" (Brahe). M. McCord, bass; "Four Jolly Sailors" (German). Annerley Choral Society: "Dream, Baby, Dream" (Bayman). Note: At suitable times during the evening the third heat and the final of the main trophy event at the Davies Park Speedway will be described. 10.0: News supplied by the Metropolitan Dailies; weather information; close down.

5CL

Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).

Day sessions as usual. During the afternoon musical numbers interspersed with Tallem Bend and Flemington race results will be given. 7.40: Resume of Tallem Bend and Flemington race results. Yachting, rowing, athletic, cycling, tennis, and other sporting results.

NIGHT SESSION.

8.0: Chimes. 8.10: The Hindmarsh Municipal Band, conducted by Mr. J. Radcliff. March, "Kalgoorlie" (Hume). "White Lillie." "Wedding of the Painted Doll" (Brown). 8.20: A Nigger Minstrel Entertainment, arranged by Frank Perrin. 9.0: The Hindmarsh Municipal Band: Selection. "The Porter of Harvey March." 9.10: Nigger Minstrel Entertainment. 9.50: The Hindmarsh Municipal Band: Overture "Elfin Revel" (Rowling). 10.0: P. H. Nicholls and Bessie Francis in a Lounge-lounge interlude. 10.20: Sporting service. 10.30: Recordings. 11.0: Close down.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 485 Metres).

Day sessions as usual (see Friday). EVENING SESSION.—8.0: Chimes. 8.2: Walkie-Luo, instrumentalists. 8.9: The Versatile Two, entertainers. 8.31: Beryl Scott, entertainer at piano. 8.28: Walkie-Luo, instrumentalists. 8.35: Beryl Scott, entertainer at piano. 8.42: Description of the motor-cycle races, broadcast from the Speedway meeting, Claremont. 9.1: Announcements. 9.7: Description of motor-cycle races, broadcast from Speedway meeting, Claremont. 10.1: What's on the air to-morrow. 10.7: Temple Court Dance Band, conducted by Mrs. Lyons. 10.59: Weather report. 11.0: Close down. "God Save the King."

7ZL

Tasmanian Broadcasters Pty., Bursary Bldg., Elizabeth Street, Hobart (Wavelength, 516 Metres).

11.30 a.m.: Sopora recital. 11.34: Weather. 11.35: Sonora recital. 11.55: Tasmanian stations' 9 a.m. weather report. 12.0: G.P.O. clock chimes the hour. 12.1: Shipping information, mail notices, housewives' guide. 12.8: Sonora recital. 12.30: News service, announcements. 12.40: Sonora recital. 1.5: Railway auction sales. 1.10: Sonora recital. 1.30: Close down. 3.0: Transmission from the North Hobart Oval cricket match. E grade. New Town v. North-west, described by Sid. Jones. 5.10: All sporting results to hand. 5.16: Close down. During the afternoon descriptions will be given of the V.R.C. Benevolent Fund races, held at Flemington race-course, Flemington, Victoria. 6.10: All sporting results. 6.25: Children's corner, with "Uncle David." 7.10: Recorded music. 7.40: "Jack O' Hartz" will continue his talk on "A Game of Bridge." 7.50: James Counsel will speak on "European Affairs." 8.0: G.P.O. clock chimes the hour. 8.1: A programme of request numbers, supplied by Paton's Music Warehouse. 10.30: Close down.

Friday, December 6

(Continued from page 24.)

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 485 Metres).

MORNING SESSION.—10.0: Chimes. 10.1: Musical reproduction. 10.10: Women's interest talk, by Dorothy Graham. 10.30: Organ recital from Ambassador's Theatre. 11.0: Close down.

MIDDAY SESSION.—12.30: Chimes. 12.31: Musical reproduction. 12.35: Market reports. 12.45: A.B.C. midday news service (British official wireless and world-wide cables). 12.55: Item of interest. 1.0: Weather report. 1.1: Luncheon music by the National Broadcasting Orchestra. 2.30: Close down. THE RADIO MATINEE.—3.30: Chimes. 3.31: Musical reproduction. 3.45: Women's interest talk, "The Labor Women's Executive." 4.0: Reproduced concert. 4.55: Features of this evening's presentation. 5.0: Close down.

EARLY EVENING SESSION.—3.45: Chimes. 5.40: Children's good-night stories, by Uncle Bas and Aunt Maxine. 6.15: A.B.C. Younger Set session. 6.30: Dinner music. 7.30: Weather report. 7.40: Stock Exchange information. 7.42: Review of to-morrow's sporting fixtures. 7.57: Features of to-night's presentation.

EVENING SESSION.—8.0: Chimes. 8.2: Sporting talk, by A.B.C. Sporting Observer. 8.17: Grand vocal and instrumental concert, in aid of Kindergarten Building Fund, Church of Christ, Inglewood, broadcast from Unity Theatre. 9.1: Announcements. 9.5: Grand concert, in aid of Kindergarten Building Fund. 10.1: What's on the air to-morrow. 10.7: Temple Court dance band, conducted by Merv. Lyons. 10.59: Weather report. 11.0: Close down. "God Save the King."

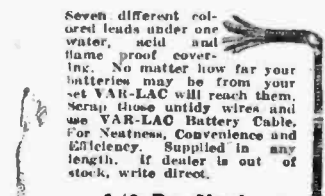
7ZL

Tasmanian Broadcasters Pty., Bursary Bldg., Elizabeth Street, Hobart (Wavelength, 516 Metres).

11.30 a.m.: Record recital. 11.34: Weather. 11.35: Record recital. 11.55: Tasmanian stations' 9 a.m. weather report. 12.0: G.P.O. clock chimes the hour. 12.1: Shipping information, mail notices; housewives' guide. 12.8: Record. 12.30: News service, announcements. 12.40: Record recital. 1.5: Railway auction sales. 1.10: Record recital. 1.30: Close down. 3.0: G.P.O. clock chimes the hour. 3.1: Record recital. 3.4: Weather information. 3.5: Record recital. 4.15: Readings. 4.30: Close down. 6.15: Children's corner, with "Uncle David." 7.10: Recorded music. 7.15: T. F. Portnell, secretary, Augusta Progress Association, will speak on "Lady Franklin Museum." 7.25: Record recital. 7.30: News session. 7.40: An hour with Joseph Hislop, tenor, and Geraldine Farrar, soprano. 8.45: J. M. Counsel—"The History and Development of Music." 9.45: News session. 10.0: G.P.O. clock chimes the hour. 10.1: Close down.

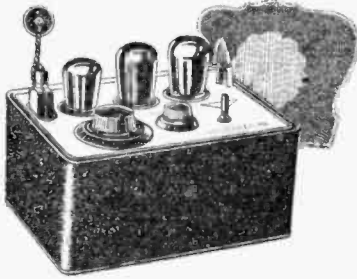
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Local Programmes, Sun., Dec. 8

2FC

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 451 Metres).

THE CHURCH HOUR—10 a.m. to 12.30 p.m.
10.0: Announcements.
10.5: Studio Music.
10.30: This morning's news from the "Sunday Sun," "Sunday Times," and "Truth"; British Official Wireless Press.
10.45: Musical Items.
11.0: FROM ST. ANDREW'S CATHEDRAL Morning service, conducted by the Very Rev. The Dean of Sydney.
Preacher, Rev. P. A. Micklem, D.D.
12.15: Studio Music.
12.30: CLOSE.

AFTERNOON CONCERT—3 to 4.30 p.m.
3.0: FROM THE LYCEUM HALL—CENTRAL METHODIST MISSION. Chairman, Rev. H. C. Foreman, M.A.
"THE MESSIAH" (Handel).
Principals: Miss May Craven, Soprano; Miss Bessie Cooke, Contralto; Mr. Lance Jeffrey, Tenor; Mr. Raymond Beatty, Bass.
Conductor, Mr. V. W. Peterson, B.A., B.Ec.
Organist, Miss Constance Bardsley, L.T.C.L.
Overture—First Movement.
Tenor. Recit.—"Comfort ye my people."
Tenor. Aria—"Ev'ry Valley shall be Exalted."
Chorus—"And the Glory of the Lord."
Bass. Recit.—"Thus saith the Lord."
Bass. Aria—"But Who May Abide?"
Contralto. Recit.—"Behold! a Virgin shall conceive."
Contralto. Aria—"O Thou that tellest good tidings."
Chorus—"O Thou that tellest good tidings."
Bass. Recit.—"For, behold, Darkness."
Bass. Aria—"The People That Walked in Darkness."
Chorus—"For unto us a Child is Born."
Organ Solo—Miss Constance Bardsley, L.T.C.L.

Second Part of "Messiah" (Handel).
Pastoral Symphony.
Soprano. Recit.—"There were Shepherds."
Soprano. Recit.—"And Lo! The Angel of the Lord."
Soprano. Recit.—"And the Angel said unto them."
Soprano. Recit.—"And suddenly there was."
Chorus—"Glory to God in the Highest."
Soprano. Aria—"Rejoice Greatly."
Contralto. Recit.—"Then shall the Eyes of the Blind."
Contralto. Aria—"He shall Feed His flock."
Soprano. Aria—"Come Unto Him."
Chorus—"Behold the Lamb of God."
Contralto. Aria—"He was Denied."
Chorus—"Surely He hath borne."
Chorus—"All we, like sheep."
Tenor. Recit.—"Thy Rebuke hath broken His Heart."
Tenor. Aria—"Behold! and See."
Tenor. Recit.—"He was cut off."
Tenor. Aria—"But Thou didst not leave."
Chorus—"Lift up Your Heads."
Bass. Aria—"Why do the Nations?"
Tenor. Recit.—"He that Dwelleth in Heav'n."
Tenor. Aria—"Thou shalt break."
Chorus—"Hallelujah."
Soprano. Aria—"I know that my Redeemer Liveth."
Chorus—"Worthy is the Lamb."
Amen.
Benediction. 4.30: CLOSE.

EVENING PROGRAMME—6 to 10.30 p.m.
6.0: INSTRUMENTAL QUINTETTE, conducted by Walter Thorman—
(a) "Scherzo" from Dvorak's Quintet.
(b) "Quintet," Op. 1, C Minor (Dohnanyi).
Allegro, Scherzo, Andante, Allegro.
6.30: B. P. GELLING, Chairman of the League of Nations Union, will speak on "International Goodwill."
6.50: FROM PITT STREET CONGREGATIONAL CHURCH—Organ Recital by Lillian Frost.
7.0: EVENING SERVICE from Pitt Street Congregational Church, conducted by Rev. T. E. Ruth.
8.30: FROM COOGEE PIER—Programme arranged by the N.S.W. Professional Musicians' Band—
Prelude—"Festal" (O'Neill).

Overture—"Ru' Blas" (Mendelssohn).
Selection—"Student Prince" (Bomberg).
March—"March of the Dwarfs" (Moszkowski).
Tone Poem—"Uncle Tom's Cabin" (Lampe).
Foxtrot—"Here we are" (Kahn).
Waltz—"Pin D'Or" (Wautaufel).
Suite—"Henry VIII." (German).
Selection—"Waltz Dream" (Strauss).
March—"Children of the Regiment" (Quick).
10.0: FROM THE STUDIO—MEDITATION MUSIC.
10.30: CLOSE. NATIONAL ANTHEM.

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 353 Metres).

MIDDAY SESSION—10.55 to 3 p.m.
10.55: Announcements.
11.0: FROM PETERSHAM BAPTIST CHURCH—
Morning Service.
12.15: FROM THE STUDIO—
Musical Items.
12.30: News from "The Sunday Sun," "Sunday News," and "Truth."
12.38: A specially arranged programme of instrumental music.
2.15: "Cheer-up" Session, conducted by Uncle Frank.
2.45: Austradio Musical Reproduction.
3.0: Close Down.

LATE AFTERNOON—4.30 to 6 p.m.
4.30: CELEBRITY RECITAL OF GRAND OPERA. Arranged by Madame Evelyn Grieg.
5.10: C. N. BAEYERTZ continues his series, "Philosophic Thought from Bacon to Bergson."
5.30: RECITAL OF CLASSICS—ANCIENT AND MODERN. Arranged by Madame Evelyn Grieg.

EVENING SESSION—6 to 10
6.0: For Children in Hospital, Session conducted by Uncle Steve, and assisted by Aunt Goodie and Cousin Marjorie.
6.50: Organ Recital.
7.0: FROM CHALMERS STREET PRESBYTERIAN CHURCH.
Evening Service, conducted by REV. D. F. BRANDT.
8.30: FROM THE STUDIO—
Weather Information for the Man on the Land.
8.32: RELAY FROM 3AR MELBOURNE.

2GB

Theosophical Broadcasting Station, 29 Bligh St., Sydney (Wavelength, 316 Metres).

9.0: Address by Miss Mary Rivett.
9.30: Address by Mr. Victor E. Cromer.
10.0: Music from Studio.
10.15: Organ Music from St. Alban's Church, Regent St., Sydney.
10.30: Morning Service from St. Alban's Church. 12 noon: Close down.
3.0: Musical Session.
5.30: Children's Session by Uncle George.
7.0: Short Vespers from St. Alban's Church.
7.20: Miss Kathlene Cracknell, Contralto.
7.27: Mr. Barend Harris, Basso.
7.35: Lecture from Adyar House.
8.15: Sacred Concert. Miss Ruth Pearce Jones Pianiste.
8.23: Miss Elsie Peerless, Soprano
8.30: Mr. John Muirhead, Tenor.
8.37: Mr. Gregory Valentine, Violinist.
8.45: Miss Beatrice Kendrick, Contralto.
8.52: Miss Ruth Pearce Jones, Pianiste.
9.0: Weather Report.
9.11: Miss Elsie Peerless, Soprano.
9.15: Mr. John Muirhead, Tenor.
9.15: Mr. Gregory Valentine, Violinist.
9.23: Miss Beatrice Kendrick, Contralto.
9.30: Address by Mr. Victor E. Cromer.
9.45: Close down.

2UW

Radio Broadcasting, Ltd., Palling's Building, Ash St., Sydney (Wavelength, 267 Metres).

10.30 a.m.: Music and request numbers.
1 p.m.: Close.
5.30: Children's hour, conducted by Uncle Jack. 6.30: Close.
7.0: Musical programme. 8.0: Opera Hour.
9.0: Request items. 10.30: Close.
12.15: **2UE as Usual.**
11 to 1, 6 to 10.15.

Interstate Programmes, Sun., Dec. 8

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 371 Metres).

MORNING SESSION.

10.0: Melbourne Observatory time signal. 10.1: Musical reproduction. 10.20: Express train information. British official wireless news. Items of interest. 10.30: Bells of St. Paul's Cathedral. 10.45: Morning service from St. Paul's Cathedral, Melbourne; preacher, Rev. Roscoe Wilson. 12.30: Close down.

AFTERNOON SESSION.

3.0: Pleasant Sunday afternoon, from Wesley Church Central Mission. Speaker, Dr. Douglas Thomas. Subject, "Our Greatest Asset." Entertainers, "The Versatile Four." Conducted by Rev. J. H. Cain.

THE CHILDREN'S CORNER.

6.0: "Brother Bill," "Plain Peter," and "The Mouth Organ Man."

THE EVENING SESSION.

7.0: Arved Norit violin, and Vassili Ilster, piano—Sonata in C Minor (Grieg), first three movements. 7.20: The Beauty Spots of Australasia—Mr. L. S. Bruce. 7.35: Vassili Ilster, piano—Paraphrase of Concerto, by Rigoletto (Liszt-Verdi). 7.45: Universal Safety—Your Railways and Safety, Mr. Harold W. Clapp, chairman of Commissioners, Victorian Railways.

NIGHT SESSION.

Musical ensemble, presented by Hamilton Webber and his All-Australian Orchestra.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 484 Metres).

MORNING SESSION

11.0: Service from Scots Church, Collins St., Melbourne. Special service for college girls. Preacher, Rev. Dr. Borland, M.A.

MIDDAY SESSION

12.0: A Studio programme of specially selected reproduced music. 2.0: Frank Lanterman at the Wurlitzer, with assisting artists. 3.0: Close down.

AFTERNOON SESSION

4.30: Programme by the Salvation Army's Headquarters Band. March, "Wellingtonian." Band. Prayer. Brig. Rook. Tenor solo, "Just for To-day." Capt. Saunders. Trombone solo, "The Conqueror." Bandsman Hocking. Selection, "Gems from St. Paul" (Mendelssohn). Band. Song, "Gospel News." Male Voices. Bible Reading. Adjutant Harewood. Cornet solo, "Glory to His Name." Bandsman Wilcox. Chorus, "And the Glory of the Lord" (Messiah). Tenor solo, "I will lift up mine eyes." Bandsman Heath. Recitation, "The Vision Beautiful." Capt. Dale. Hymn, "Sandon." Anthem, 23rd Psalm, Male Voices. Meditation on hymn tune, "Harlan." Brass quartet. Excerpts from Great Masters. Band. Address, Capt. Dale. March, "Teighley Citadel." Band. 5.45: The Week's Good Cause. Life Saving Clubs. Mr. A. P. Newey. 6.0: A Recital of Reproduced Music for the Music Lover. "Oberon" overture. Capital Grand Orchestra (Weber). 6.8: "Nightingale Song." Florence Easton, soprano (Zellou Rockar). 6.11: "Hungarian Rhapsody No. 2." Josef Hoffman, piano (Liszt). 6.19: Selection from "Robin Hood." Brunswick Light Opera Company (De Koven). 6.27: Special requests. 6.45: What's on the Air Tonight? 6.47: St. Paul's Cathedral Bells.

EVENING SESSION

7.0: Divine Service from Baptist Church, Collins St., Melbourne. 87th Anniversary Service. Preacher, Rev. W. D. Jackson, B.A. Choir director, Madame Ella Kingston. Sermon, "In Him all things hold together." Special music. Quartette and chorus, "I will give thanks" (Mozart's Twelfth Mass). Anthem, "Inflammatus" (Rossini's Stabat Mater).

NIGHT SESSION

Programme arranged by Professor Bernard Heinze. 8.30: Malvern Tramways Band, "Semiramide" (Rossini). 8.36: Isobel Biddell, contralto, "Fainter and Fainter is My Slumber" (Brahms), "The Sandmen" (Brahms). 8.43: Instrumental Trio: Reg Bradley, violin; Joan Smith, cello; Vassili Ilster, piano. "Syncopation" (Fritz Kreisler). 8.56: Muriel Cheek, soprano, "Nymphs and Shepherds" (Purcell), "Polly Willis." 8.53: Malvern Tramways Band, Waltz from "Eugene Onegin" (Tschalkowsky). 8.58: Reg. Bradley, violin, "Andante" (Symphonie Espagnole), (Lalo). 9.4: Isobel Biddell, contralto, "At Night" (Rachmaninoff), "To the Children" (Rachmaninoff). 9.11: Instrumental Trio, "Trio in B Minor" (Tschalkowsky). 9.36: Muriel Cheek, soprano, three songs: "A Soft Day," "Johnnie," "The City Child" (Stanford). 9.43: Vassili Ilster, piano, "Liebestraum" (Liszt), "Etude C Sharp Minor" (Scriabine). 9.50: Malvern Tramways Band, selection, "The Flying Dutchman" (Wagner). 9.58: Weather. 10.0: God Save the King.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).

MORNING SESSION.

11.0: From St. Barnabas', Red Hill: Holy Eucharist, Book of Common Prayer, sung by Congregation to Merbecke's music. Introit 47: "Hark! A Thrilling Voice is Sounding." Epistle: Romans, Chap. 15, Verses 4 to 13. Gradual: Solo, Mr. W. G. Ashlin—"Comfort Ye, My People," "Every Valley Shall be Exalted" (from "The Messiah"). Holy Gospel: St. Luke, Chapter 21, Verses 25 to 33. Sermon by Canon Garland. Offertory 213: "Thou Art Coming, O, My Saviour." Communion 191: "Jesu, My Lord, My God, My All." Ablutions 51: "Lo! He Comes With Clouds Descending." 12.15 (approx.): Close down.

AFTERNOON SESSION.

3.0: The celebration of the 125th anniversary of the British and Foreign Bible Society will be relayed from Albert Street Methodist Church: Addresses will be delivered by His Grace Archbishop and prominent citizens. 4.0: Band concert. 4.30: Close down.

EARLY EVENING SESSION.

6.0: From the Studio: A session for little listeners.

NIGHT SESSION.

7.0: From St. Barnabas' Church of England, Red Hill. Children's Service Hymn 48: "The Advent of Our King." Hymn 565: "Up in Heaven, Up in Heaven." Lesson: St. Matthew, Chapter 25, Verses 31 to end. Hymn 346: "Now the Day is Over." Catechising of Children by Canon Garland.

7.30: Evensong—Book of Common Prayer Hymn 288: "A Few More Years Shall Roll." Psalm 96. Lessons, Isaiah, Chapter 10, Verse 33, to Chapter 11, Verse 9—St. Matthew, Chap. 24, Verse 29, to end. Hymn 52: "Great God, What Do I See and Hear?" Hymn 463: Litany of the Four Last Things Solo—Miss Honnibal: "The Lord is My Light" (Francis Allitsen). Hymn 51: "Lo! He Comes with Clouds Descending." Sermon by Canon Garland. Hymn Book: "Ancient and Modern."

8.30: Conclusion. Concert by Brisbane Municipal Concert Band (conductor, E. Jackson). 9.30: Close down.

5CL

Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).

MORNING SESSION.

10.45: Carillon of bells from the Adelaide Town Hall. 11.0: Chimes. 11.1: Service from St Peter's Cathedral, Minster, Rev. Flinnis. Organist, Mr. John Dunn. 12.10: Close.

AFTERNOON SESSION.

3.0: A pleasant Sunday afternoon service from Maughan Methodist Church. 4.0: Close.

EVENING SESSION.

6.45: Church Choir numbers. 7.1: Service from Stow Memorial Church. Minister, Dr. G. H. Wright. Organist, Mr. Foxhall Robinson.

NIGHT SESSION.

8.20: From 5CL studio: Whitfield Institute District Mission. 8.30: Malcolm Reid and Co.'s special concert from the Regent Theatre. 9.55: From 5CL Studio: General news service, British Official Wireless News. 10.0: Chimes; close down.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra, Sydney (Wavelength, 293 Metres).

Sunday, December 8

MIDDAY SESSION.

11.0: Mass from St. Mary's Cathedral. 12.35: Studio announcements. 12.37: Orchestral and Vocal Concert. 1.0: Close down.

EVENING SESSION.

6.0: Music from Radio House, 6.5: Instruction arranged by Rev. Father T. Walsh, S.J. 6.25: Music. 6.30: "Question Box" Talks by Dr. L. Rumble, M.S.C. 7.30: Announcements 7.32: Evening Devotions from St. Mary's Cathedral. 8.35: Announcements. 8.37: Overture, "Maritana." 8.45: Instrumental Music. 10.15: National Anthem. Close Down.

"ALREADY
AWASH,
THE
SHIP
ASTERN
WAS
SETTLING
DOWN
QUICKLY,
THE
WATER
AROUND
DOTTED
WITH
HUNDREDS
OF
FLOATING
MEN....
AND
SO
THE
CONVOY
MOVED
STEADILY
ON."

Thus reads a passage from Brasso's account of a wireless operator's experience with the American Transports in the War Zone—a true story of enthralling interest in the Special Xmas number, next week.

Local Programmes, Monday, December 9

2FC

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 451 Metres).

EARLY SESSION—7 to 8.15 a.m.

- 7.0: "Big Ben" and Meteorological information for the man on the land.
7.3: This morning's news from the "Daily Telegraph Pictorial."
7.8: Austradio Musical Reproduction.
7.45: Mails and shipping.
7.48: What's on to-day?
7.50: Children's Birthday Calls.
8.0: Music from the Studio.
8.15: CLOSE.

MORNING SESSION—10.30 a.m. to 12.30 p.m.

- 10.30: Announcements.
10.32: A.B.C. Racing Observer.
10.45: HORACE WEBER at the GRAND ORGAN.
11.0: HOUSEHOLD HELPS—Cooking, by Miss Ruth Furst.
11.10: CABLES (Copyright), A.P.A. and "Sun"-Herald News Service.
11.15: MORNING DEVOTION, conducted by Rev. H. W. A. Barder.
11.30: Austradio Musical Reproduction.
11.53: British Official Wireless Press.
1.0: "Big Ben"; Stock Exchange and Metal Quotations.
12.5: Studio Music.
12.20: Middav weather forecast and weather synopsis; special produce market session for the man on the land supplied by the State Marketing Board.
12.30: CLOSE.

THE LUNCH HOUR and AFTERNOON SESSION

- 1.0: Lunch Hour Music.
1.55: Stock Exchange, second call.
A Glance at the afternoon "Sun."

2.0: FROM THE SYDNEY CRICKET GROUND—Description of the Trial Match, Australia v. The Rest.

4.0: FROM THE STUDIO—MARJORIE COLE, Soprano—

- (a) "My Love is a Silent Forest" (Woolmer)
(b) "He is Tender with the Beasts" (Ford)
4.7: MODERN MUSIC.
4.21: MARJORIE COLE, Soprano—
(a) "Sunbeams" (Ronald).
(b) "Fragile Things" (Phillips).
(c) "The Dawn" (D'Hardelet).
4.28: Stock Exchange, third call.
4.30: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Children's "Good-night" Stories, told by the "Hello Man," assisted by Aunt Eily.
6.45: Dinner Hour Music.
7.20: A.B.C. Sporting Service.
7.25: Special Country Session; Stock Exchange Resume; Markets; Weather Forecast; late news from "The Sun"; Truck Bookings.
7.58: To-night's Programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.

Our Classic offering to-night is contributed by Clement Williams, Dagmar Thomson, Madame Emily Marks, and Enid Hynes; and the National Broadcasting Orchestra, conducted by Horace Keats. Tom Gurr's talk at 9 o'clock on "India and its People" will provide a pleasant interlude.

- 8.0: CLEMENT Q. WILLIAMS, Baritone—
(a) "Im Wunderschönen Monat Mai" (Schumann).
(b) "Wenn Ich in Dein Augen Seh" (Schumann).
8.7: DAGMAR THOMSON, Violinist—
(a) "Serenade" (Schubert).
(b) "Scherzo Tarantelle" (Wienlawski).
8.14: THE NATIONAL BROADCASTING ORCHESTRA—
(a) "La Tosca" (Puccini).
(b) Meditation "Thais" (Massenet).
8.30: MADAME EMILY MARKS and ENID HYNES, in a Recital of American Compositions.
Songs, Madame Emily Marks—
(a) "Ah, Love, But a Day" (Beach).
(b) "April" (Denmore).
Piano Solo, Enid Hynes—
"Tone Portrait" (McDonald).
8.42: DAGMAR THOMSON, Violinist—
(a) "The Prize Song" (Wagner).
(b) "Guitarre" (Aosykowska).
8.49: THE NATIONAL BROADCASTING ORCHESTRA—
(a) "H.M.S. Pinafore" (Sullivan).
(b) Three Dances "Henry VIII." (German).
9.5: TOM GURR will speak on—"India and its People."
9.20: CLEMENT Q. WILLIAMS, Baritone—
(a) "Les Berceaux" (Faure).
(b) "Bon Jour Suzon" (Delibes).
9.27: THE NATIONAL BROADCASTING ORCHESTRA—
(a) "Valse Bluette" (Drigo).
(b) "Bedouin Love Song" (Pinsuti).
(c) "The Firefly" (Friml).
9.42: MADAME EMILY MARKS and ENID HYNES, in a Recital of American Compositions.
Songs, Madame Emily Marks—
(a) "Wood Song" (Winter-Watts).
(b) "Three Chinese Tone Poems" (Carpenter).
Piano Solos, Enid Hynes—
(a) "Shadow Dance" (MacDowell).
(b) "Bluette" (MacDowell).
(c) "Improvisation" (MacDowell).
(d) "Novellette" (MacDowell).
9.56: THE NATIONAL BROADCASTING ORCHESTRA—
(a) "Petite Suite" (Chaminade).
(b) "Merrie England" (German).
10.15: Announcements.
Late Official Weather Forecast.
10.20: FROM THE BALLROOM OF THE ORIENTAL—Sydney Simpson's Syncopaters, in Dance Music.
11.30: CLOSE.
NATIONAL ANTHEM.

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 333 Metres).

OPENING SESSION—8.15 to 11 a.m.

- 8.15: G.P.O. Chimes and Announcements.
8.16: Music for every Mood.
8.40: Meteorological data for the country.
8.45: Mails and Shipping Information.
8.50: Memory Melodies.
9.0: This Morning's Story.
9.30: A Musical Interlude.
9.40: British Official Wireless Press.
9.45: New Music.
10.5: News from the "Daily Telegraph Pictorial."
10.10: Austradio Musical Reproduction.
10.40: THE AUSTRALIAN BROADCASTING COMPANY'S WOMEN'S ASSOCIATION: Conducted by Miss Gwen Varley.
11.0: G.P.O. Chimes. Close down.

MIDDAY SESSION—12 to 2.30 p.m.

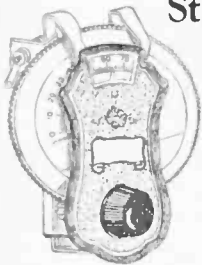
- 12.0: FROM THE SYDNEY CRICKET GROUND—
A description of the Trial Match—AUSTRALIA v. THE REST.
1.15: FROM THE STUDIO: News from "The Sun."
1.20: Austradio Musical Reproduction.
1.45: A Pianoforte Recital.
2.15: Memory Melodies.

AFTERNOON ENTERTAINMENT—2.30 to 6 p.m.

- 2.30: KATHLEEN TEWKESBURY, Soprano—
(a) "A Heart That's Free" (Robyn).
(b) "A Field of Daisies" (Aspinall).
2.37: MODERN MUSIC.
2.50: NORMAN FRITH, Violinist—
(a) "Paderewski's Minuet" (Arr. Kreisler).
(b) "Hejre Kati" (Hubay).
2.57: A NEW SONG.
3.0: FROM THE BALLROOM OF THE ORIENTAL—
Sydney Simpson's Syncopaters in Dance Music.
3.12: FROM THE STUDIO: KATHLEEN TEWKESBURY, Soprano—
(a) "Blackbird's Song" (Cyril Scott).
(b) "The Roumanian Mountains" (Hermann Lohr).
3.19: FROM THE BALLROOM OF THE ORIENTAL—
Sydney Simpson's Syncopaters in Dance Music.
3.31: FROM THE STUDIO: NORMAN FRITH, Violinist—
(a) "Melodie" (Tschalkowsky).
(b) "On Wings of Song" (Mendelssohn).
3.40: FROM THE BALLROOM OF THE ORIENTAL—
Sydney Simpson's Syncopaters in Dance Music.
4.50: FROM THE STUDIO: Modern Music.
4.15: FROM THE SYDNEY CRICKET GROUND—
A description of the Trial Match, AUSTRALIA v. THE REST.
6.0: CLOSE DOWN.
THE DINNER HOUR—6.15 to 7.55 p.m.
6.15: DINNER QUARTET.
6.45: THE BOYS' AERO CLUB, conducted by Mr. Norman Lyons.
7.5: The Country Man's Market Session—
Wool, Wheat, Stock, Farm Produce, Fruit, and Vegetable Markets.
7.20: DINNER MUSIC.
7.45: Austradio Musical Reproduction.
7.55: What's on the Air To-night?

TO-NIGHT'S PRESENTATION—8 to 10.30 p.m.

- 2BL's feature to-night is the "Something Different" offered by Goodie Reeve. Each week she plans a surprise for the listeners and each week it is just a little better than anticipated. In addition, there are groups by the Metropolitan Band, comedy numbers by Nat Hanley, popular songs, 2BL's weekly sound film feature, and new sketches by Billy O'Hanlon and Zara Clinton.
9.0: THE METROPOLITAN BAND—
Grand Fantasia, "Memories of Britain" (Rimmer).
8.15: BILLY O'HANLON and ZARA CLINTON, in a Radio Sketch: "The Safety Valve."



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- 8.25: GRACE QUINE, Popular Vocalist—
 (a) "That Old Sweetheart of Mine" (Goodwin and Shay).
 (b) Impression, Maurice Chevalier singing "Louise" (Robin and Whiting).
 8.32: 2BL'S WEEKLY SOUND FILM FEATURE.
 9.47: FROM THE STUDIO—
 GOODIE REEVE in "SOMETHING DIFFERENT."
 9.2: THE METROPOLITAN BAND—
 March, "Royal Australian Navy" (Lithgow).
 9.31: Weather Information for the Man on the Land.
 9.33: GRACE QUINE, Popular Vocalist—
 (a) "Think of Me Thinking of You" (Abbot).
 (b) "Junior" (Donaldson).
 9.40: BILLY O'HANLON and ZARA CLINFON in a Radio Sketch: "Odds and Ends."
 9.52: THE METROPOLITAN BAND—
 Selections, "Old Memories" (Rimmer).
 10.2: NAT HANLEY, Comedian.
 10.9: THE METROPOLITAN BAND—
 Descriptive Fantasia, "Trooping the Colours" (Holloway).
 10.25: Late News from "The Sun."
 Late Weather Forecast.
 10.30: NATIONAL ANTHEM.
 CLOSE.

2GB

Theosophical Broadcasting Station, 29 Bligh St., Sydney (Wavelength, 316 Metres).

Day Sessions as usual.

- 8.0: Miss Lily Davies, Contralto.
 8.7: Symphony Orchestra.
 8.15: Mr. Cecil Chaseling, Baritone.
 8.22: 'Cello Solos.
 8.30: Mr. Jack Win and Mr. Heath Burdock Humour.
 8.35: Miss Mary Mulconry, Soprano.
 8.45: Address.
 9.0: Weather Report.
 9.1: Symphony Orchestra.
 9.10: Miss Lily Davies, Contralto.
 9.20: 'Cello Solos.
 9.30: Mr. Jack Win and Mr. Heath Burdock Humour.
 9.35: Mr. Cecil Chaseling, Baritone.
 9.45: Band Selection.
 9.50: Miss Mary Mulconry, Soprano.
 10.0: Instrumental Music.
 10.30: Close down.

2UW

Radio Broadcasting, Ltd., Paling's Building, Ash St. Sydney (Wavelength, 267 Metres).

MIDDAY SESSION.

12.30 to 4.30: As usual.

EVENING SESSION.

- 5.30: Children's hour.
 6.30: The Meccano Club.
 6.45: Close.
 7.45: Radio Talk, by Mr. E. Homfray.
 8.0: Chamber music recital.
 9.0: Foreign Affairs by Mr. J. M. Prentice.
 9.10: Music.
 10.30: Close.

2KY

Trades and Labor Council, Goulburn St., Sydney (Wavelength, 280 Metres).

MORNING SESSION.

10.0 to noon, as usual.

CHILDREN'S SESSION.

- 6.0: Birthday calls, request numbers and Kiddies' Entertainment. UNCLE BERT AND UNCLE MAC.

EVENING SESSION.

- 7.0: Musical interlude.
 7.15: Dance Music.
 7.30: Talk on Gardening. Mr. G. L. GEL-LATLY.
 7.45: Militant Women's Group.
 8.0: Overture.
 8.8: Tenor Solos. Mr. A. HILLMAN.
 8.15: Dance Music.
 8.30: Request numbers.
 8.45: Soprano Solos.
 9.0: Novelty numbers.
 9.10: Request numbers.
 9.30: Selection of latest Brunswick, Columbia, Parlophone, Regal, and Golden Tongue Records.
 10.0: Closing announcements.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra Sydney (Wavelength, 293 Metres)

EARLY MORNING SESSION

7.15 to 8.30, as usual.

(NO EVENING SESSION.)



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EVER-READY DRY BATTERIES

Interstate Programmes, Monday, December 9

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 371 Metres).

EARLY MORNING SESSION.
7.0 to 8.15, as usual.

MORNING SESSION.
10.30 to 12.30, as usual.

MIDDAY SESSION.
1.0 to 1.30, as usual. 1.36: Transmission from the Constitution Club luncheon.

EDUCATIONAL SESSION.
2.0: The Earth We Live On—Mr. W. C. Groves, B.A., Dip.Ed. 2.15: Musical Interlude. 2.20: Science in Everyday Life—Dr. Loftus Hills, D.Sc. 2.35: Musical Interlude. 2.40: Our Australian Writers—Mr. F. Wilmott. 2.55: Musical Interlude.

THE RADIO MATINEE.
3.0: Regal Brass Band—march, "The Flying Squadron." 3.8: George Cowley, baritone—"Arise, O Sun" ("Craske Day"). "Rosette, Do You Recall" (Morris). 3.15: Elsie Westcott, violin—"Ave Maria" (Schubert), "Minuet" (Beethoven). 3.22: Adeline Levey—A recital of short poems, "Don't Worry," "On the Day I Got to Heaven," "Daddy and Babsy." 3.29: Regal Brass Band—selection from "The Bohemian Girl." Comedy. 3.31: Les. Hansen, comedian, will entertain. 3.45: Regal Brass Band—cornet solo, "When You and I Were Young." 3.49: George Cowley, baritone—"Glorious Devon" (German). Selected. 3.56: Regal Brass Band—"The Midnight Waltz." 4.2: Adeline Levey—short recital, "A Smile." "He Met Her on the Stairs." "My Alphabet." 4.10: Elsie Westcott, violin—"Rondino" (Beethoven). "The Swan" (Saint-Saens). 4.17: Les. Hansen, comedian, will entertain. 4.24: Regal Brass Band—selection of choruses. 4.30: Close down. During the afternoon progress scores of cricket, Australia versus The Rest, at Sydney, will be broadcast as they come to hand.

THE CHILDREN'S CORNER.

5.45: "Billy Bunny" and "Humpty and Dumpty."
6.35: Musical Interlude.

EVENING SESSION.
8.40: Public School Life and Sport—Mr. E. C. H. Taylor. 6.55: Melody broadcast. 7.0: Time signal. 7.1: Countryman's session. 7.25: The latest in patents—Artificial Rubber, Mr. R. H. Wilmott. 7.40: News and cables. 7.45: The World's Kaleidoscope, Prof. K. H. Bailey, M.A., B.C.L. 8.0: Time signal.

NIGHT SESSION.

8.0: National Broadcasting Orchestra—overture, "Rienzi" (Wagner).
8.10: Victor Evans, baritone—"Farewell in the Desert" (Adams). "Toreador's Song," from "Carmen" (Bizet).
8.17: "Happy Heart"—An incident in the life of Tschaiakowsky, based on his famous song, "None But the Weary Heart," especially written for radio by Gordon Ireland.
8.47: A comedy interlude—"The Two Jesters," in a comedy of Shakespeare.
9.57: Les. Raphael—syncopated pianisms.
9.5: Choral music—transmission from Athenaeum Hall. Part-songs, "Hymn of the Goths" (Liebe). Unaccompanied part-songs, (a) "A Lullaby" (Williams), (b) "The Laurel and the Rose" (Grell). Part-song, "The Martyrs of the Arena" (De Rille). Unaccompanied part-songs, (a) "Vesper Hymn" (Beethoven), (b) "The King's Messenger" (Bantock). Part-songs, "Song of the Northmen" (Maunder).
9.35: Variety. National Broadcasting Orchestra—"Three Dances from 'Nell Gwynne'" (German).
9.45: Victor Evans, baritone—"The Gay Highway" (Drummond). "Old Clothes and Fine Clothes" (Mar tin Shaw).
9.52: Les. Raphael—syncopated pianisms.
10.0: "The Two Jesters" will entertain.
10.10: Gertrude Hutson, contralto—"Sacrament" (MacDermid). "How Shall I Know" (Phillips).

NEXT WEEK SPECIAL XMAS NUMBER SHORT STORIES ARTICLES ILLUSTRATIONS

10.17: National Broadcasting Orchestra—selection from "The Chocolate Soldier" (Strauss).
10.27: News session.
10.37: Paul Jesicle and His Band—latest dance numbers.
11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 481 Metres).

MORNING SESSION

8.15 to 11.0, as usual.

MIDDAY SESSION

12.0 to 3.0, as usual.

AFTERNOON SESSION

2.1: Orchestral, Brunswick Concert Orchestra. 2.8: Baritone, Richard Bonelli. 2.11: Violin, Max Rosen. 2.14: Soprano, Florence Easton. 2.17: Orchestra, Brunswick Concert Orchestra. 2.20: Entertainer, Vernon Dalhart. 2.23: Orchestra, The Six Jumping Jacks. 2.26: Comedian, Banjo Buddy. 2.29: Brass Band, Walter B. Rogers' Band. 2.32: Soprano, Florence Easton. 2.35: Violin, Max Rosen. 2.38: Baritone, Richard Bonelli. 2.41: Orchestral, The Six Jumping Jacks. 2.44: Entertainer, Vernon Dalhart. 2.47: Brass Band, Walter B. Rogers' Brass Band. 2.50: Comedian, Banjo Buddy. 2.53: Hawaiian music, Toots Paiva-Hawaiians. 2.56: Quartette, Market Shrine Quartette. 2.59: Request numbers. 3.20: Art in Modern Life, Miss Stephanie Taylor. 3.35: Musical Interlude. 3.40: Your Garden, Planning for next Spring, Mr. H. Bruen. 4.15: Musical reproduction. 5.0: Chimes. 5.1: Musical reproduction. 5.30: Weather data. 5.45: Close down.

EVENING SESSION

6.15 to 8.0, as usual.

NIGHT SESSION
8.1: Transmission from the Prahran Town Hall. A concert arranged by the Alfred Hospital Auxiliary. Paul Jesicle and His Band; Beatrice Oakley, soprano; Jean Hambleton, contralto; "Winks" Smith, xylophone; Dorothy Turner Crawford, soprano; and Joe Brennan, comedian.
10.20: Weather and news.
10.30: God Save the King.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).

Day Sessions as usual.

NIGHT SESSION.
8.0: Mixed Octette (conductor, Sydney May): "Song of the Gale" (Foster).

8.4: W. L. Burch, bass: "Mate o' Mine" (Elliott).
8.8: Constance Buchanan and Nance Hicks: Vocal duet, "In Dewy Dale."
8.13: Jack Land, tenor: "O, Cool is the Valley Now" (Koenmenich).
8.18: The Rhythm Rascals, Syncopaters.
8.28: Mixed Octette: A Cycle of Nautical Songs (Branscombe).
8.33: Jill Manners, soprano: "Piper June" (Carew).
8.38: Nance Hicks and Jack Atkinson: Vocal duet, "The Merry Heart" (Mozart).
8.44: Vera Parker, contralto: "I Hid My Love" (D'Hardelot).
8.50: Mark Solomon and his Banjo.
8.55: Jack Atkinson baritone: "Like to the Damask Rose" (Elgar).
9.0: Meteorological weather forecast.
9.1: "Tecoma" will give his ninth talk in connection with 4QG's Home Garden Scheme, "Flowers for Exhibition."
9.10: Mixed Octette: "The Last Rose of Summer" (Flemming), "Dreaming" (Schumann).
9.18: W. L. Burch, bass: "The Stoker."
9.27: Jill Manners and Jack Atkinson: Vocal duet, "Mother in Heaven" (Verdi).
9.30: The Rhythm Rascals, Syncopaters.
9.40: Nance Hicks, soprano: "Hedge Roses" (Schubert).
9.44: Mixed Octette: "He Watching Over Israel" (Mendelssohn).
9.50: John Steele, tenor: "Maiden Mine" (Bennett).
9.55: Mixed Octette: "Chanson Indoue" (Rimsky-Korsakov).
10.0: Constance Buchanan, soprano: "Scenes That Are Brightest" (Wallis).
10.5: News; weather.
10.15: The Rhythm Rascals: Dance music.
10.38: Close down.

5CL

Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 400 Metres).

Day sessions as usual (see Friday). 7.20 a.m. Capt. Donald Maclean will continue his series of talks, entitled "Purple Patches in the Conquest of Peru." 7.35: 5CL Twinkler Boys' Club: Entertainment by "The Twinklers" (Mr. F. U. Mills).

NIGHT SESSION.

8.0: Programme review and announcements.
8.10: Walter Barratt and his Maison Masters of Melody: "Good Little, Bad Little, You" (Green). "Love Sings a Song in My Heart" (Cherniavsky). "Louise" (Whiting).
8.20: Harold Tidemann, baritone: "Pass Everyman" (Sanderson).
8.24: Walter Barratt and his Maison Masters of Melody: "Honey" (Simon), "Promise Me" (Van Coon), "Chilly Pom Pom Fee" (Bryan).
8.38: Beryl Counter, mezzo-soprano: "Pirate Dreams."
8.38: Walter Barratt and his Maison Masters of Melody: "Happy Humming Bird" (De Sylva), "I'm Just a Vagabond Lover," "The Wedding of the Painted Doll."
8.48: Harold Tidemann, baritone: "Debonair" (Bessley).
8.52: Walter Barratt and his Maison Masters of Melody: "I'll Always be in Love with You," "You're Just a Little Bit of Everything I Love."
9.1: Meteorological information, including semaphore telegrams.
9.2: Overseas grain report.
9.3: Announcements.
9.5: Capt. Donald Maclean will continue his series of talks entitled, "Feats of the Mighty."
9.15: Beryl Counter, mezzo-soprano: "Daffodil Gold."
9.19: Walter Barratt and his Maison Masters of Melody: "Misery Farm" (Wallis), "Just a Night for Meditation," "The Breakaway" (Conrad).
9.29: Harold Tidemann, baritone: "Tai' Ho" (Leoni).
9.33: Walter Barratt and his Maison Masters of Melody: Johnnie Gardner, banjoist, selected: "Building a Nest for Mary" (Rose), "Dream Train" (Newman).
9.43: Beryl Counter, mezzo-soprano: "Now Sleeps the Crimson Petal."
9.47: Walter Barratt and his Maison Masters of Melody: "Sleepy Valley" (Hanley), "Round and Round" (Le Clerq), "A Little Bird Told Me So" (Gillbert).
9.57: Harold Tidemann, baritone: "Sylvia" (Speaks), "Five Eyes" (Gibbs).
10.1: Walter Barratt and his Maison Masters of Melody.
10.11: Beryl Counter, mezzo-soprano: "Valley of Laughter."
10.15: News.
10.30: Walter Barratt and his Maison Masters of Melody, request numbers.
11.0: Close down.



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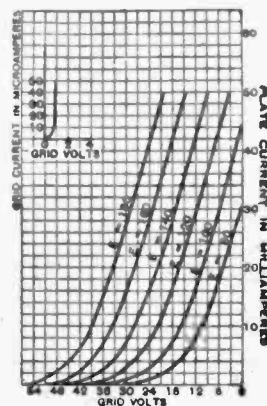
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Local Programmes, Tuesday, December 10

2FC

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 451 Metres).

EARLY SESSION—7 to 8.15 a.m.

- 7.0: "Big Ben" and Meteorological information for the man on the land.
- 7.3: This morning's news from the "Daily Telegraph Pictorial."
- 7.8: Austradio Musical Reproduction.
- 7.45: Mails and shipping.
- 7.48: What's on to-day?
- 7.50: Children's Birthday Calls.
- 8.0: Music from the Studio.
- 8.15: CLOSE.

MORNING SESSION—10.30 a.m. to 12.30 p.m.

- 10.30: Announcements.
- 10.32: A.B.C. Racing Observer.
- 10.45: HORACE WEBER at the GRAND ORGAN.
- 11.0: HOUSEHOLD HELPS—Hints to Housewives by Miss Ruth Furst.
- 11.10: CABLES (Copyright)—A.P.A. and Sun-Herald News Service.
- 11.15: MORNING DEVOTION, conducted by Rev. J. L. Cope.
- 11.30: Austradio Musical Reproduction.
- 11.53: British Official Wireless Press.
- 12.0: "Big Ben" Stock Exchange and Metal Quotations.
- 12.5: Studio Music.
- 12.20: Mid-day weather forecast and weather synopsis. Special produce market session for the man on the land, supplied by the State Marketing Board.

12.30: CLOSE THE LUNCH HOUR AND AFTERNOON SESSION.

- 10: Lunch Hour Music.
- 1.55: Stock Exchange, second call. A Glance at the afternoon "Sun."

- 2.0: FROM THE SYDNEY CRICKET GROUND—Description of the Trial Match, Australia v. The Rest. NOTE.—Race results from Gosford will be transmitted as received.
- 4.0: FROM THE STUDIO—Radio Rhythm.
- 4.28: Stock Exchange, third call.
- 4.30: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Children's "Good-night" Stories, told by Aunt Willa, assisted by Cousins Gwen and Clarice.
- 6.45: Dinner Hour Music.
- 7.20: A.B.C. Sporting Service.
- 7.25: Special Country Session. Stock Exchange Resume. Markets. Weather Forecast. Late news from the "Sun." Truck Bookings.
- 7.58: To-night's Programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.

- The State-wide Radio Dance Night will attract 2FC Listeners to-night, but the attention of our Listeners is drawn to the alteration which has been effected through 2BL Service, when the Overture and Presentation from the Capitol will be given, and there will also be a Pianoforte Recital by Alexander Hmelnitzki, and Song Groups by Vladimir Elin.
- 8.0: FROM THE DOMAIN BATHS—Description of the Water Polo Matches.
 - 8.20: FROM THE STUDIO—THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
 - 8.32: FRANK RYAN, Entertainer—"Colonel Crewitt" (Hickman).
 - 8.40: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
 - 8.52: VERA SPAULL and her Ukelele—(a) "I'll Get By" (Turk and Ahlert). (b) "Walking with Susie" (Conrad and Mitchell).
 - 8.59: THE COUNTRYMAN'S WEATHER SESSION—(a) "New South Wales Forecasts." (b) "Interstate Weather Synopsis."
 - 9.1: FRANCIS JACKSON—"ON WITH THE DANCE."
 - 9.13: THE AUSTRALIAN BROADCASTING ORCHESTRA, featuring—"The Toymaker's Dream." Soloist, Les Harris.
 - 9.25: VERA SPAULL, Popular Vocalist—(a) "Sweet Sue—Just You" (Young). (b) "Good Little, Bad Little You" (Green and Stept).
 - 9.32: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
 - 9.44: FRANK RYAN, Entertainer—"Lecture on Building" (Ryan).
 - 9.51: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
 - 10.15: Announcements.
 - 10.20: British Official Weather Forecast.
 - 10.20: THE AUSTRALIAN BROADCASTING ORCHESTRA.
 - 11.30: CLOSE. NATIONAL ANTHEM.

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 353 Metres).

OPENING SESSION—8.15 to 11 a.m.

- 8.15: G.P.O. Chimes and Announcements.
- 8.16: Music for every Mood.
- 8.40: Meteorological data for the country.
- 8.45: Mails and Shipping Information.
- 8.50: Memory Melodies.
- 9.0: This Morning's Story.
- 9.30: A Musical Interlude.
- 9.40: British Official Wireless Press.
- 9.45: New Music.
- 10.2: News from the "Labor Daily."
- 10.5: News from the "Daily Telegraph Pictorial."
- 10.10: Austradio Musical Reproduction.
- 10.40: THE AUSTRALIAN BROADCASTING COMPANY'S WOMEN'S ASSOCIATION: Conducted by Miss Gwen Varley.
- 11.0: G.P.O. Chimes. Close down.
- MIDDAY SESSION—12 to 2.30 p.m.
- 12.0: FROM THE SYDNEY CRICKET GROUND: A description of the Trial

- Match, "AUSTRALIA v. THE REST."
- 1.15: FROM THE STUDIO—Afternoon news from "The Sun."
- 1.20: Memory Melodies.
- 1.30: A Pianoforte Recital.
- 1.50: Austradio Musical Reproduction.
- 2.15: Modern Music.

AFTERNOON ENTERTAINMENT—2.30 to 6 p.m.

- 2.30: DORIS LASCELLES, Entertainer—"The Hat Shop" (Anonymous).
- 2.42: MELODIES—GRAVE AND GAY.
- 2.52: A. PODINOVSKY, Violinist—"Rondo Capriccioso" (Saint-Saëns).
- 3.0: ROMANO'S DANCE ORCHESTRA, under the direction of Bennie Abrahams.
- 3.12: FROM THE STUDIO—DORIS LASCELLES, Entertainer—"Suzanna" (Anonymous).
- 3.19: ROMANO'S DANCE ORCHESTRA, under the direction of Bennie Abrahams.
- 3.31: FROM THE STUDIO—Popular Songs.
- 3.40: ROMANO'S DANCE ORCHESTRA, under the direction of Bennie Abrahams.
- 3.52: A. PODINOVSKY, Violinist—(a) "Serenade Espagnole" (Chaminade-Kreisler). (b) "L'Abeille" (The Bee) (Schubert).
- 4.0: ROMANO'S DANCE ORCHESTRA, under the direction of Bennie Abrahams.
- 4.15: FROM THE SYDNEY CRICKET GROUND—A Description of the Trial Match. AUSTRALIA v. THE REST.
- 6.0: Close Down.

THE DINNER HOUR—6.15 to 7.55 p.m.

- 6.15: DINNER QUARTET.
- 6.45: THE GIRL GUIDES' CLUB, conducted by Miss Gwen Varley.
- 7.5: The Country Man's Market Session—Wool, Wheat, Stock, Farm Produce, Fruit, Vegetable and Pig Markets.
- 7.20: DINNER MUSIC.
- 7.45: Austradio Musical Reproduction.
- 7.55: What's on the Air To-night?

TO-NIGHT'S PRESENTATION—8 to 10.30 p.m.

- An alteration has been effected in our programme to-night, whereby we will take the overture and presentation from the Capitol Theatre. In addition there are song groups by Vladimir Elin, the well-known Russian Baritone, a pianoforte recital by Alexander Hmelnitzki, Sketch by H. W. Varna, Des Tooley, the Girl with the unusual voice, and violin solos by Dulcie Blair. Through 2FC Service the State-wide radio dance night on Tuesday will prove a popular feature.
- 8.0: FROM THE CAPITOL THEATRE—Overture by Horace Sheldon and the Capitol Orchestra.
 - 8.7: FROM THE STUDIO—VLADIMIR ELIN, Baritone—(a) "Monologue of Boris" (Moussorgsky). (b) "After a Dream" (Faure). (c) "What Sound is That?" (Cornelius). (d) "I Attempt from Love's Sickness" (Purcell).
 - 8.17: ALEXANDER HMELNITSKY Pianist—(a) "Etude Op. 8 No. 4" (Scriabine). (b) "Etude Op. 8 No. 5" (Scriabine). (c) "Etude Op. 8 No. 10" (Scriabine).
 - 8.29: FROM THE CAPITOL THEATRE—The Capitol Orchestra, conducted by Horace Sheldon.
 - 8.42: FROM THE STUDIO—THE H. W. VARNA COMPANY in a Radio Play, entitled "A DOCTOR'S HONOR." Lady Muriel Ridgley FLORENCE CLARK Arthur Kingsley WILLIAM HUME A Nurse MURIEL CONNER A Doctor ARTHUR TURNER Sir Max Rideley H. W. VARNA Scene: Consulting Room at Sir Max Ridgley's.
 - 9.12: VLADIMIR ELIN, Baritone—(a) "Hev for the Town's Factotum so Rage" (Rossini). (b) "Love Lasts for Aye" (Brahms). (c) "Sapphic Ode" (Brahms). (d) "Wandering" (Schubert). (e) "Impatience" (Schubert). (f) "Song of Kasan" (Moussorgsky).
 - 9.22: FROM THE CAPITOL THEATRE—Stage Presentation.



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- 9.35: FROM THE STUDIO—
Weather Information for the Man on the Land.
- 9.37: DES TOOLEY, the Girl with the Un-usual Voice.
- 9.44: DULCIE BLAIR, Violinist—
(a) "The Swan" (Saint-Saens).
(b) "Serenata" (Moszkowski).
- 9.51: ALEXANDER HMELNITSKI, Pianist—
(a) "Elegie" (Rachmaninoff).
(b) "Valse-Impromptu" (Liszt).
- 10.3: DES TOOLEY, the Girl with the Un-usual Voice.
- 10.10: Austradio Musical Reproduction.
- 10.25: Late News from "The Sun."
Late Weather Forecast.
- 10.30: NATIONAL ANTHEM. CLOSE.

2GB

Theosophical Broadcasting Station, 29 High St., Sydney (Wavelength, 316 Metres).

- Day Sessions as usual.
- 8.0: Miss Mary Neal, Contralto.
- 8.7: Symphony Orchestra.
- 8.15: Mr. Len Howell, Tenor.
- 8.22: Violin Solos.
- 8.30: Mr Jack Win and Mr. Heath Burdock.
Humour.
- 8.35: Miss Margaret Best, Soprano.
- 8.42: Band Selections.
- 8.50: Miss Mary Neal, Contralto.
- 9.0: Weather Report.
- 9.3: Address.
- 9.15: Symphony Orchestra.
- 9.25: Mr. Len Howell, Tenor.
- 9.35: Mr. Jack Win and Mr. Heath Burdock.
Humour.
- 9.40: Violin solos.
- 9.50: Miss Margaret Best, Soprano.
- 10.0: Instrumental Music.
- 10.30: Close down.

2UW

Radio Broadcasting, Ltd., Palling's Building, Ash St. Sydney (Wavelength, 267 Metres).

MIDDAY SESSION.

12.30 to 4.30: As usual.

EVENING SESSION.

- 5.30 to 6.30: Children's Hour.
- 7.0: Request numbers.
- 8.0: Recital of songs by Benjamin Gigli.
- 9.0: Foreign Affairs by Mr. J. M. Prentice.
- 9.10: Music.
- 10.30: Close.

2KY

Trades and Labor Council, Goulburn St. Sydney (Wavelength, 280 Metres).

MORNING SESSION.

10.0 to noon, as usual.

CHILDREN'S SESSION.

6.0: Birthday calls, request numbers and Kiddies' Entertainment. UNCLE BERT AND UNCLE MAC.

EVENING SESSION.

- 7.0: Musical interlude.
- 7.15: SPORTING FEATURE. Turf Topics. How they should run to-morrow. Mr. GEO DAVIS.
- 7.45: Request numbers.
- 8.0: Orchestral selections.
- 8.10: Women's Information Service. Mrs. GRAY.
- 8.15: Baritone Selections. Mr. HIGGINS.
- 8.30: Pianoforte selections. Mr. HANCOCK.
- 8.45: Request numbers.
- 9.0: SPORTING FEATURE. McHuga's Leichhardt Stadium. Results of early events, and full descriptions of main 15-round event. HERBERT BEAVER.
- 9.40: Dance Music from the Studio.
- 10.0: Closing announcements.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra, Sydney (Wavelength, 293 Metres).

EARLY MORNING SESSION.

7.15 to 8.30, as usual.

MIDDAY SESSION.

10.0 to 12.0, as usual.

AFTERNOON SESSION.

1.0 to 2.0, as usual.

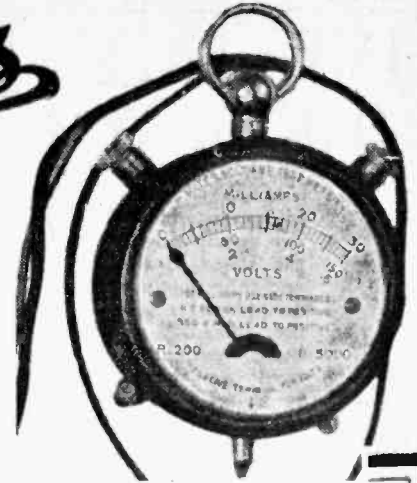
EVENING SESSION.

- 6.30: Wendy's Hour with the Children, and Birthday Greetings. 7.15: Instrumental Dinner Music. 7.55: Programme announcements and news from the "Sun." 8.0: Clock and Chimes. 8.1: Overture, "Selections from Faust." 8.10: Instrumental and Vocal Programme. 10.15: National Anthem. Close down.

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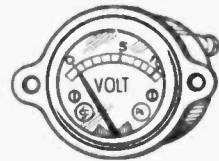


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ARTICLES

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Next Week!

84 PAGES—2-COLOURS

Interstate Programmes, Tues., Dec. 10

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 371 Metres).

EARLY MORNING SESSION.

7.0 to 8.15, as usual.

MORNING SESSION.

11.30 to 12.30, as usual.

MIDDAY SESSION.

1.0 to 1.30, as usual.

EDUCATIONAL SESSION.

2.0: Stories from the Operas—Miss Lucy Ahon, B.A. 2.15: Musical Interlude. 2.20: Romance of the Slave and Gold Coasts—Mr. A. A. Downs. 2.35: Musical Interlude. 2.40: A Talk in French—mons Th. Rouel, B.A. 2.55: Musical Interlude.

VARIETY MATINEE.

3.0: Paul Jeacle and His Band—"Broadway Baby Dolls" (Clarke). "In a Kitchenette" (Dublin). 3.6: Courtney Ford and Ivy Davis—a musical comedy sketch. "The Lady and the Burglar." 3.13: Bruce Wite—piano novelty. 3.17: Russell Callow, tenor—"Dolorosa" (Phillips). "At Dawning" (Cadmian). 3.24: Paul Jeacle and His Band—"Love Thrills" (Bryan). "Mother's Boy" (Green). 3.30: Ted Nelson, entertainer—songs and sketches at the piano 3.38: Paul Jeacle, saxophone—"Sax-antics" (Jeacle). 3.42: Courtney Ford and Ivy Davis—a musical comedy sketch—"Writing a Play". 3.52: Paul Jeacle and His Band—"Outside" (Flynn). "Oh, Lizzie" (Bibol). 4.0: Russell Callow, tenor—"The Vagabond Lover" (Wallace). "A Whispering Stream" (Vaughan). 4.7: Bob Adams, trumpet—"At Sunset" (Percy Code). 4.12: Ted Nelson, entertainer—songs and sketches at the piano. 4.20: Paul Jeacle and His Band—"I'm More Than Satisfied" (Waller). "Trail of Dreams" (Swen). "When My Dreams Come True" (Berlin). 4.30: Close down. During the afternoon progress scores of the cricket match, Australia versus The Rest, at Sydney, will be broadcast as they come to hand.

THE CHILDREN'S CORNER.

5.45: "Bobby Bluegum" and "Clever Clarice." 6.35: Musical Interlude.

EVENING SESSION.

6.40: Boy Scout Doings—Mr. F. Sanders. 6.55: Musical Interlude. 7.0: Melbourne Observatory time signal. 7.1: Countryman's session. 7.25: For the man on the land—Marketing of Produce. Mr. H. Crowe. 7.40: News and cables. 7.45: Microbes, Good and Bad—The Discovery of the Microbe. Prof. H. A. Woodruff. 8.0: Melbourne Observatory time signal.

NIGHT SESSION.

8.0: V.R.S. and S.L. Memorial Military Band (conductor, R. J. Abbott)—march, "The Cameronians" (Lovell). 8.5: Frederick Whitlow—A South Sea Island monologue, with musical accompaniment, "Swandelayo" Monologue. "The Girl at the Ball." 8.13: Les. Rohmer, "The Prince of Variety." 8.22: V.R.S. and S.L. Memorial Military Band—overture, "Zampa" (Harold).

WITH THE MASTERS.

Programme arranged by the Music Teachers' Association.

8.30: Violin solo—Romance (Svendsen). "Variations on Theme by Corelli" (Tartini-Kreisler), Stanley Adams. Songs, "Whether I Live" (Parry), "The Maiden" (Parry), "Lovers' Lane" (Besley), "Chloe" (German). Rita Coonan, Piano, "Prelude in G Minor" (Bachminoff), "Passpeid" (Delibes), "Aralesque" (Lisztinsky), Phyllis Parlett. 9.0: Light music, V.R.S. and S.L. Memorial Military Band—selection of Irish airs (arr. J. Hartmann).

9.10: A Little Bit of Blarney—Irish song scene, arranged and produced by F. Clarke Cottrell. 9.30: Continuation of grand radio choral contest, organised by the Australian Choral Association, in conjunction with 3LO.

10.0: V.R.S. and S.L. Memorial Military Band—second grand selection from "Faust" (Gounod), selected and arranged by Fred. Godfrey, Coldstream Guard.

10.12: Frederick Whitlow, entertainer—semi-humorous monologue, "Some Boys Have Muvvers." Humorous monologue, "The Caretaker."

10.20: Les. Rohmer, "The Prince of Variety." 10.30: V.R.S. and S.L. Memorial Military Band—"The Turkish Patrol" (Michaelis), "Intermezz Russe" (Michaelis).

10.35: News session. 10.45: Paul Jeacle and His Band—latest dance numbers. 11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 484 Metres).

MORNING SESSION

8.15 to 11.0, as usual.

MIDDAY SESSION

12.0 to 3.0, as usual.

AFTERNOON SESSION

2.1: Quartette, Roth String Quartette. 2.8: Tenor, Richard Tauber. 2.12: Quartette, Roth String Quartette. Australian Artists. 2.20: Baritone, Peter Dawson. 2.23: Piano, Una Bourne. 2.31: Soprano, Dame Nellie Melba. Light Music. 2.39: Bands, Massed Military Bands. 2.41: Comedy, North and South. 2.44: Saxophone, Arnold Ehrhart. 2.50: Orchestral, Smith Ballens. 2.53: Comedy, North and

South. 2.56: Bands, Massed Military Bands. 3.0: Request number. 3.20: The Baby, suitable summer clothing, Sister Anne Purcell. 3.35: Musical Interlude. 3.40: Useful Crafts at Home: Some more Christmas presents, Mrs. Henrietta C. Walker. 3.55: Musical Interlude. 4.0: The Latest Fashions, Madame La Mode. 4.15: Musical reproduction. 5.0: Chimes. 5.1: Musical reproduction. 5.30: Weather. 5.35: Close down.

EVENING SESSION

6.15 to 8.0, as usual.

8.1: Trices and Tricksters, Dr. Loftus Hills, D.Sc. 8.15: Performance of "The Daughter of the Regiment" (Donizetti), Under the direction of Fritz Hart, F.R.C.M. Cast: Maria, Beatrice Oakley; The Countess, Bessie Dougall; Tonio, Alan Mitchell; Sulpizio, Howard King; Oriensio, Harold Malins; Corporal, Ray Harding. Act I: A Rustic Scene in the Tyrol. Act II: Room in Castle Berkenfeld. Suite: Three Dances from "Henry VIII" (German), National Broadcasting Orchestra. Songs: "A Willow" (Old English), (Arr. Lane Wilson). "Good Morrow Mistress Bright," Bessie Dougall. Songs: "Mary of Allende" (arr. Lane Wilson). "My Lovely Cella" (Munro), Alan Mitchell. Suite of English Folk Songs (Vaughan Williams), (a) "I'm Seventeen come Sunday." (b) "My Bonnie Boy." (c) "Folk Songs from Somerset," National Broadcasting Orchestra. Songs: "Strawberry Fair" (Old English), "The Cuckoo" (Old English), Beatrice Oakley. Songs: "The Vicar of Bray" (Old English), "There was a Jolly Miller" (Old English). At 10 p.m. Weather and news. 10.30: God Save the King.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).

Day Sessions as usual.

NIGHT SESSION.

8.0: The Studio Orchestra: Overture, "Die Felsenmühle" (Reisszer). 8.8: Clare Matthews, violinist: "Midnight Bells" (Kreisler). 8.14: Elsie Hooper, soprano: "Bird of Love Divine." 8.20: Ruth Treurtha, elocutionist: Selection of Poems (Walter Delaware). 8.30: The Studio Orchestra: Valse Ballet, "First Waltz" (Durand). 8.36: J. P. Cornwell, bass: "The Friend for Me" (McCall). 8.42: Clare Matthews, violinist: "Serenade" (Schubert). 8.47: Alice Raven, contralto: "A Summer Night" (Thomas). 8.50: Claude Walker: Ten minutes with Henry Lawson. 9.0: Metropolitan weather forecast. 9.1: The Studio Orchestra: Nocturne No. 3, "Liebestraum" (Liszt). 9.6: Ruth Treurtha, elocutionist: Selection of Poems (John Drinkwater). 9.11: Elsie Hooper, soprano: "Beyond the Dawn." 9.16: H. Jackson: Cornet solo—selected (accompanied by the Studio Orchestra). 9.20: J. P. Cornwell, bass: "Where the Great Ships Harde" (Sanderson). 9.25: The Studio Orchestra: Dance music. 9.30: A Recital of Electrically-reproduced Records. 10.0: News, Weather.

5CL

Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 409 Metres)

Days sessions as usual (see Friday). 7.20 p.m.: Capt. Donald Maclean, 7.35: Mr. H. Brewster Jones will continue his series of talks, entitled "Art Culture of Native Races." 7.45: Dr. Herbert Basedow, M.P., in an interesting Australian talk.

NIGHT SESSION.

8.0: Programme review and announcements. 8.10: A special programme has been arranged. 9.1: Meteorological information, including semi-dome tides. 9.2: Overseas grain report. 9.3: Announcements. 9.5: Capt. Donald Maclean will continue his series of talks, entitled "Feats of the Mighty." 9.15: Special programme continued. 10.15: News. 10.30: Recordings. 11.0: Close down.

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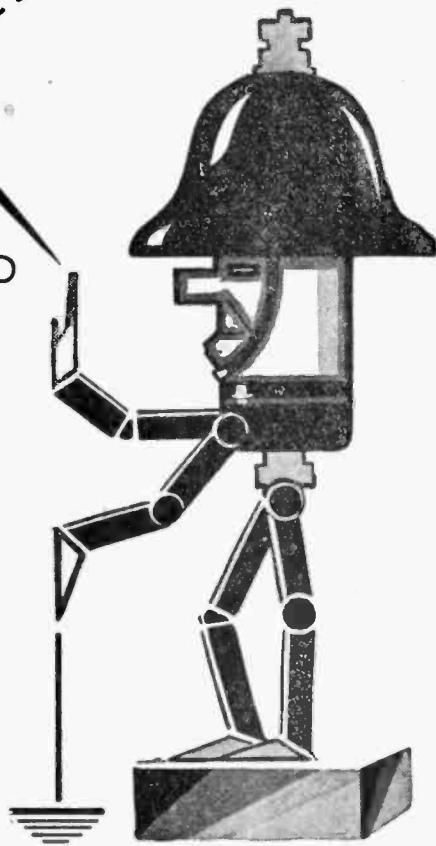
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Local Programmes, Wednesday, December 11

2FC

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 451 Metres).

EARLY SESSION—7 to 8.15 a.m.

- 7.0: "Big Ben" and Meteorological information for the man on the land.
7.3: This morning's news from the "Daily Telegraph Pictorial."
7.8: Austradio Musical Reproduction.
7.45: Mails and shipping.
7.48: What's on to-day?
7.50: Children's Birthday Calls.
8.0: Music from the Studio.
8.15: CLOSE.

MORNING SESSION—10.30 a.m. to 12.30 p.m.

- 10.30: Announcements.
10.32: General Sporting Talk by Oscar Lind.
10.45: HORACE WEBER at the GRAND ORGAN.
11.0: HOUSEHOLD HELPS—Cooking by Miss Ruth Furst.
11.10: CABLES (Copyright)—A.P.A. and Sun-Herald News Service.
11.15: MORNING DEVOTION, conducted by Rev. J. H. King.
11.30: Austradio Musical Reproduction.
11.53: British Official Wireless Press.
12.0: "Big Ben." Stock Exchange and Metal Quotations.
12.5: Studio Music.
12.20: Mid-day weather forecast and weather synopsis. Special produce market session for the man on the land, supplied by the State Marketing Board.
12.30: CLOSE.
NOTE: Race results from Victoria Park will be transmitted as received.

THE LUNCH HOUR AND AFTERNOON SESSION.

- 1.0: Lunch Hour Music.
1.55: Stock Exchange, second call.
A Glance at the afternoon "Sun."
2.0: FROM THE SYDNEY CRICKET GROUND—Description of the Trial Match, Australia v. The Rest.
4.0: FROM THE STUDIO—Dance Music—Old and New.
4.28: Stock Exchange, third call.
4.30: Radio Rhythm.
4.45: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Children's "Good-night" Stories, told by the "Hello Man," assisted by Uncle Ted and "Sandy."
6.45: Dinner Hour Music.
7.20: A.B.C. Sporting Service.
7.25: Special Country Session. Stock Exchange Resume. Markets. Weather Forecast. Late news from the "Sun." Truck Bookings.
7.58: To-night's Programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.

- 2FC offers Listeners to-night a Studio Production of "Macbeth." Through 2BL Service the Overture and Presentation from the State Theatre, Radio Plays, Popular Songs, a Pianoforte Recital, and Humorous Stories in Dialect will contribute to a bright evening's entertainment.
8.0: "MACBETH," GREAT POETRY WEDDED TO BEAUTIFUL MUSIC.
(See Features Page).
10.0: FROM THE BALLROOM OF THE ORIENTAL—Sydney Simpson's Syncopaters in Dance Music.
10.15: FROM THE STUDIO—Announcements.
Late Official Weather Forecast.
10.20: FROM THE BALLROOM OF THE ORIENTAL—Sydney Simpson's Syncopaters in Dance Music.
11.30: CLOSE.
"NATIONAL ANTHEM."

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 353 Metres).

OPENING SESSION—8.15 to 11 a.m.

- 8.15: G.P.O. Chimes and Announcements.
8.16: Music for every Mood.
8.40: Meteorological data for the country.
8.45: Mails and Shipping Information.
8.50: Memory Melodies.
9.0: This Morning's Story.

- 9.30: A Musical Interlude.
9.40: British Official Wireless Press.
9.45: New Music.
10.5: News from the "Daily Telegraph Pictorial."
10.10: Austradio Musical Reproduction.
10.40: THE AUSTRALIAN BROADCASTING COMPANY'S WOMEN'S ASSOCIATION. Conducted by Miss Gwen Varley.
11.0: G.P.O. Chimes. Close Down.

MIDDAY SESSION—12 to 2.30 p.m.

- 12.0: FROM THE SYDNEY CRICKET GROUND—A Description of the Trial Match. AUSTRALIA v. THE REST
1.15: FROM THE STUDIO: Afternoon news from "The Sun."
1.20: Austradio Musical Reproduction.
1.45: New Songs.
2.0: A Pianoforte Recital.

AFTERNOON ENTERTAINMENT—2.30 to 6.

- 2.30: MALCOLM HANNA, Tenor—
(a) "Who is Sylvia?" (Schubert).
(b) "A Dream" (Bartlett).
2.37: MODERN MUSIC.
2.57: ROY MACKAY, Pianist.
3.0: ROMANO'S DANCE ORCHESTRA, under the direction of Bennie Abrahams.
3.12: MALCOLM HANNA, Tenor—
(a) "Love's Garden of Roses" (Haydn Wood).
(b) "At Dawning" (Cadman).
3.19: ROMANO'S DANCE ORCHESTRA, under the direction of Bennie Abrahams.
3.31: FROM THE STUDIO: MEMORY MELODIES.
3.40: ROMANO'S DANCE ORCHESTRA, under the direction of Bennie Abrahams.
3.42: FROM THE STUDIO: ROY MACKAY, Pianist.
3.49: ROMANO'S DANCE ORCHESTRA, under the direction of Bennie Abrahams.
4.1: FROM THE STUDIO: DANCE NUMBERS.
4.15: FROM THE SYDNEY CRICKET GROUND—A Description of the Trial Match. AUSTRALIA v. THE REST
6.0: Close Down.

THE DINNER HOUR—6.15 to 7.55 p.m.

- 6.15: DINNER QUARTET.
6.45: THE BOYS' RADIO CLUB, conducted by Mr. Norman Lyons.
7.5: The Country Man's Market Session—Wool, Wheat, Stock, Farm Produce, Fruit, and Vegetable Markets.
7.20: DINNER MUSIC.
7.45: Austradio Musical Reproduction.
7.55: What's on the air To-night?

TO-NIGHT'S PRESENTATION—8 to 10.30.

- The State Theatre overture and presentation will be broadcast through 2BL to-night, as 2FC is to take a studio production of "Macbeth," under the direction of Francis Jackson and Madame Evelyn Grieg. Brunton Gibb is featuring the usual Wednesday night's play, and there are humorous stories in Dialect by C. N. Baeyertz.
8.0: FROM THE STATE THEATRE—Overture by Will Prior and the State Orchestra, with Price Dunlavy at the Grand Organ.
9.0: FROM THE STUDIO.
MARJORIE ALLOMES, Contralto—
(a) "To the Forest" (Tchaikowsky).
(b) "Sometimes When Night is Nigh" (Phillips).
8.16: C. N. BAEYERTZ will continue his series of humorous stories in Dialect.
8.36: IRIS DE CAIROS REGO, Pianist—
(a) "Prelude, Fugue, and Variation" (Franck).
(b) "Waltz in A Flat" (Chopin).
(c) "Arabesque in E" (Debussy).
(d) "Mejodie" (Paderewski).
(e) "Tango" (Albeniz).
(f) "Noel" (Gardiner).
8.58: MARJORIE ALLOMES, Contralto—
(a) "A Maori Slumber Song" (Rangi Pal).
(b) "Honey Chile" (Strickland).
7.5: BRUNTON GIBB, Radio Play—"SOMETHING TO TALK ABOUT" (Phillips).
9.31: Weather Information for the Man on the Land.
9.33: FROM THE STATE THEATRE. Stage Presentation.
9.45: FROM THE STUDIO.

- NEA HALLETT, Popular Vocalist—
(a) "An Old Italian Love Song" (Harrison).
(b) "My Sin is Loving You" (Henderson).
9.52: MURIEL LANG, 'Cellist.
10.0: NEA HALLETT, Popular Vocalist—
(a) "What Wouldn't I do for That Man" (Gorney).
(b) "Mean to Me" (Turk).
10.7: MURIEL LANG, 'Cellist.
10.15: Dance Music.
10.25: Late news from "The Sun."
Late Weather.

2GB

Theosophical Broadcasting Station, 29 High St., Sydney (Wavelength, 316 Metres).

Day Sessions as usual.

- 8.0: Italian Programme.
Miss Heather Kinnaird, Contralto.
8.7: Violin solos.
8.15: Mr. Cecil Houghton, Tenor.
8.22: Symphony Orchestra.
8.30: Mr Jack Win and Mr. Heath Burdock. Humour.
8.35: Miss Gwen Selva, Soprano.
8.42: Miss Ada Brook, Pianiste.
8.50: Miss Heather Kinnaird, Contralto.
9.0: Weather Report.
9.3: Address.
9.15: Symphony Orchestra.
9.25: Mr. Cecil Houghton, Tenor.
9.35: Mr. Jack Win and Mr. Heath Burdock. Humour.
9.40: Violin solos.
9.50: Miss Gwen Selva, Soprano.
10.0: Instrumental Music.
10.30: Close down.

2UW

Radio Broadcasting Ltd., Palling's Building, Ash St., Sydney (Wavelength, 267 Metres).

MIDDAY SESSION.

- 12.30 to 4.30: As usual.

EVENING SESSION.

- 5.30 to 6.30: Children's Hour.
7.0: Request numbers.
8.0: Wagnerian recital.
9.0: Foreign Affairs by Mr. J. M. Prentice.
9.10: Music.
10.30: Close.

2KY

Trades and Labor Council, Goulburn St., Sydney (Wavelength, 280 Metres).

MORNING SESSION.

- 10.0 to noon, as usual.

CHILDREN'S SESSION.

- 6.0: Birthday calls, request numbers and Kiddies' Entertainment. UNCLE BERT AND UNCLE KAC.
EVENING SESSION.

- 7.0: Musical interlude.
7.15: Hawaiian steel guitar selections.
7.40: Health feature.
8.0: AL ROSENBERG, Novelty Pianist.
8.30: Banjo Solos. MASTER HARRY WEIR.
8.45: Contralto Solos. MISS OTER.
9.10: SPORTING FEATURE. Full description of main 15-round event from the ringside. Stadium.
9.55: Result of main 15-round event.
10.0: Closing announcements.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra, Sydney (Wavelength, 293 Metres).

EARLY MORNING SESSION.

- 7.15 to 8.30, as usual.

MIDDAY SESSION.

- 10.0 to noon, as usual.

EVENING SESSION.

- 6.30: Wendy's Hour with the Children, and Birthday Greetings. 7.15: Musical Item. 7.20: Turf talk by Mr. T. Hopkins, Turf Expert. 7.40: Dinner Music. 7.55: Programme announcements and news from the "Sun." 8.0: Clock and Chimes. 8.1: Overture, "Il Trovatore." 8.10: Instrumental Items. 10.15: National Anthem. Close down.

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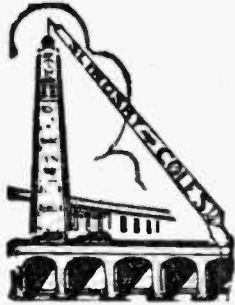
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Interstate Programmes, Wed., Dec. 11

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 371 Metres).

EARLY MORNING SESSION.

7.0 to 8.15, as usual.

MORNING SESSION.

10.30 to 12.30, as usual.

MIDDAY SESSION.

1.0 to 1.30, as usual.

EDUCATIONAL SESSION.

2.0: Reading—Poetry, as distinguished from Verse—and Verse (James Fitzhugh), Mr. John Coyne. 2.13: Sporting Interlude. Description, Hurdle Races, 2 miles, by Eric Welch, Kyneton Turf Club races. 2.20: From the Studio—"The Wonders of Nature, Mr. J. D. Jennings, B. Ag. Sc. 2.35: Musical Interlude. 2.45: Description of Maiden Plate, 5 furlongs, by Eric Welch, Kyneton Turf Club races. 2.55: Modern Democracies—Hon. J. H. Keating, LL.B.

THE RADIO DIATINEE.

3.10 Paul Jeacle and His Band—"Tip Top Thru the Hills" (Burke). "Laughing Marionette" (Collins). 3.17: Description of Turf Club Gold Cup, 8 1/2 furlongs, by Eric Welch, Kyneton Turf Club races. 3.25: Leslie Jephcott, tenor—"I Hear You Calling Me" (Marshall). "Coming Home" (Willeby). 3.32: Paul Jeacle and His Band—"Sweetheart of All My Dreams" (Fitch). "Lili" (Gottler). 3.40: Elsie Stewart, soubrette—"Mean to Me" (Ahlert). "Sing a Little Song" (Conrad). 3.47: Harry Bennett, xylophone—"I Love You Truly" (Jacobs-Bondi), Selected. 3.52: Claude Jeacle, soubrette—"Come to the Fair" (Martin). 3.55: Description of Handicap Trot, 1 1/4 miles, by Eric Welch, Kyneton Turf Club races. 4.5: Paul Jeacle and His Band—"Pa's Old Hat" (Guy). "The Toymaker's Dream" (Golden). 4.12: Leslie Jephcott, tenor—"Salome" (Melisande in the Wood" (Coetz). 4.20: Harry Bennett, xylophone—"Mighty Lak a Rose" (Nevin), Selected. 4.25: Description of Trial Handicap, 5 furlongs, Kyneton Turf Club's races, by Eric Welch. 4.35: Paul Jeacle and His Band—"I Love You, I Hate You" (Bryan). "Ready for the River" (Kahn). "It's a Wonderful World, After All" (Davies). 4.45: Elsie Stewart, soubrette—"Too Wonderful for Words" (Stamper). "Steppin' Along" (Curnell), Selected. 4.55: Description of Welter Handicap, 6 furlongs, Kyneton Turf Club's races, by Eric Welch down.

THE CHILDREN'S CORNER.

5.45: "Little Miss Kookaburra". 6.35: Esperanto—Mr. R. Rawson. 6.45: Cultivating Good Health—"The Prevention of Tuberculosis, Dr. Bell Ferguson. 6.55: Musical Interlude 7.0: Melbourne Observatory time signal. 7.1: Countryman's session. 7.25: Modern Steels—Hard Treatment of Special Steels. Prof. J. Neill Greenwood, D.Sc. 7.40: News 7.45: Our Radio Service to Listeners—Mr. H. K. Love. 8.0: Melbourne Observatory time signal.

NIGHT SESSION.

8.0: National Broadcasting Orchestra. 8.8: The Two Daleys, in stop-press topicalities. 8.18: Pierrot and Pierrette—Pierrot with his piano, and Pierrette with her saxophone. 8.26: We are now about to give you a performance of Offenbach's celebrated opera.

"TALES OF HOFFMAN."

The first performance of this opera was at Paris on October 30, 1880. It was Offenbach's favorite among the many operas he composed and it achieved enormous success. In 1907 the opera was revived, and since then it has been one of the outstanding public favorites. To-night we are giving you an abbreviated version, which has been prepared for the use of musical societies, and our performance is given by courtesy of Allan and Co. Pty., Ltd., agents for J. B. Cramer and Co., London. So far as we are aware, this is the first broadcast performance in the Southern Hemisphere. This performance is under the direction of and conducted by Wm. James.

Cast: Olympia, Winifred Mitchell; Coppellus, A. C. Bartleman; Hoffman, Alan Mitchell. Chorus: The Bartleman Male Choir and the Melbourne Choral Union. Full orchestral accompaniment by the National Broadcasting Orchestra. 10.0: The Two Daleys will entertain. 10.8: Pierrot and Pierrette—Pierrot with the piano, and Pierrette with her saxophone. 10.28: National Broadcasting Orchestra—selection from "The Firefly" (Friml). 10.36: Paul Jeacle and His Band—latest dance numbers. 11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 484 Metres).

MORNING SESSION

8.15 to 11.0, as usual.

MIDDAY SESSION

12.0 to 2.0, as usual.

AFTERNOON SESSION

2.1: Orchestral, New Symphony Orchestra. 2.8 Duet, Dora Maughan and Walter Pehl. 2.9: Wurli-tzer organ, Reginald Foort. 2.12: Male Voices, Salon Group. 2.16: Orchestral, Reginald King and His Orchestra. 2.19: Comedian, Frank Crumit. 2.22: Violin, Fritz Kreisler. 2.25: Duet, Dora Maughan and Walter Pehl. 2.28: Band, Band of H.M. Cold-stream Guards. 2.31: Comedian, Frank Crumit. 2.34: Wurli-tzer Organ, Reginald Foort. 2.37: Male Voices, Salon Group. 2.40: Band Music, Band of H.M. Cold-

stream Guards. 2.43: Soprano, Dusolina Giannini. 2.46: Novelty Piano Duet, Victor Arden and Phil Ohman. 2.49: Comedian, Eddie Cantor. 2.51: Band, Le Garde Republicain Band. 2.54: Soprano, Dusolina Giannini. 2.57: Orchestral, Reginald King and His Orchestra. 3.0: Request numbers. 3.20: The Pre-School Child; Creating a love for music, Miss M. Lush. 3.35: Musical interlude. 3.40: Homes throughout the Ages; Dr. Loftus Hills, D.Sc. 3.55: Musical Interlude. 4.0: Women's Status in other Countries; Miss Nora Collison. 4.15: Musical reproduction. 5.0: Chimes. 5.1: Musical reproduction. 5.30: Weather. 6.45: Close down.

EVENING SESSION

6.15 to 8.0, as usual. NIGHT SESSION 8.0: Why We Behave as Human Beings: The Psychology of Belief, Prof. J. A. Gunn, M.A., B.Sc., Ph.D. 8.15: Orchestral Programme with the following Symphony Orchestra, with assisting artists: Conductor, A. Beicher. Overture, "Raymond" (Thomass), Orchestra. Duet, "The King's Heroes" (Theo Von-huer). Alf. Davey and Alex. Wotherspoon. Selection, "Inland" (Gullstrand), Orchestra. Soprano, "A Brown Bird Singing" Wyn. Gates. Piano, "Romance" (Hinton), "Humoreske" (York Bowen), Victor Stephenson). Baritone, "Up from Somersa" (Sanderson), Alex. Wotherspoon. Suite, Three Dances from "Nell Gwynne" (German), Orchestra. Tenor, "Flower Song" from "Carmen" (Bizet), Alf. Davey. Pot Pourri, "Melodious Memories" (Finck), Orchestra. Soprano, "Just Because the Violet" (Kennedy) Russell. "Wala! Pot-pourri, Gates. Duet, "Watchman, What of the Night" (Sargeant), Alf. Davey and Alex. Wotherspoon. Incidental Music to "The Merchant of Venice" Orchestra, Soprano, "Silent Noon" (Vaughan Williams). Wm. Gates. Piano, "Capriccio" (Frank Bridge), Victor Stephenson. Baritone, "Sunny Boy" Alex. Wotherspoon. Grand March from "Tannhauser" (Wagner), Orchestra. 8.25: "Just Because the Violet" (Kennedy) Russell, news service, cable news service (copyright Sun-Herald News Service, Ltd., and Australian Press Association). 10.30: God Save the King.

4QG

Queenland Government Radio Service, Brisbane (Wavelength, 385 Metres).

Day Sessions as usual. NIGHT SESSION. 8.8: The Studio Dance Orchestra. Dance music. 8.10: Monument and Harrow: The Argumentative Pair. 8.15: The Studio Dance Orchestra: Dance music. 8.25: Shirley Adair, soprano: Request numbers. 8.45: The Studio Orchestra: Dance music. 9.0: Metropolitan weather forecast; movements of light-house steamers. 9.5: Harry Borradaile, entertainer. 9.15: The Studio Dance Orchestra: Dance music. 9.25: Mrs. Roy Parkinson, soprano: "Spiran" (Ronald). "Come While the Twilight Closes" (Gluck). 9.35: The Studio Dance Orchestra: Dance music. 9.45: John Morrison, entertainer: "His Post of Duty" (Morrison). 9.55: The Studio Dance Orchestra: Dance music. 10.0: News supplied by the Metropolitan Dailies; weather information. 10.15: The Studio Dance Orchestra: Dance music. 10.25: John Morrison, entertainer: "The Baron's Doom" (Morrison). 10.30: The Studio Dance Orchestra: Dance music. 11.0: Close down.

5CL

Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).

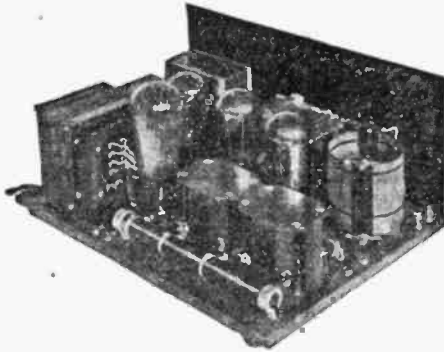
Day sessions as usual. 7.20 p.m.: 5CL Bluebird Girls' Club. 7.40: Captain Donald Maclean. 7.55: An address to Boy Scouts. NIGHT SESSION 8.8: Waltz: "Sweet Bunch of Daisies" 8.17: Cheerios to all Old-timers: Old-time Choruses by the Madrigal Singers: "Good News the Charlot Comes" (O'Donnell). "Peter, Go Ring Dem Bells" (Mendindie). 8.24: Marine Four-step: "Come With Me to Canada." 8.33: Dave Howard, comedian, will entertain you. 8.43: Barn Dance, "Dem Golden Shippers" 8.50: Phyllis Sweetser, soprano. 8.54: Mrs. Celia: "Pretty Little Girl From Nowhere." 9.1: Meteorological information, including sea-bore tides. 9.2: Overseas grain report. 9.3: Announcements. 9.5: Alberts: "Old Refrains." 9.21: Captain Donald Maclean will continue his "Jks, entitled "Feats of the Mighty." 9.21: Military Two-step. 9.39: Special Cheerios to all the Old-time Dancers in the Country. Old-time Choruses by the Madrigal Singers: "Just a Little Ring." "Hark, Hark, the 'Lark." 9.45: Lancers: "Variety." 10.0: Dave Howard, comedian. 10.8: Polka. 10.15: News. 10.30: Schottische: "I'll Take You Home Again, Kathleen." 10.37: Greetings and Cheerios. Old-time Choruses by the Madrigal Singers: "Who's That a'Calling." "The Arcthusa." 10.44: Valeta: "Supplication." 10.51: Linda Ward, soprano. 10.55: Brood Dance. 11.0: Close down.

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8—1 Lewbury power transformer			
9—1 choke	3	10	0
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1 Vox or standard American AC tube 226	0	12	6
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1 Vox or standard American AC tube 171A	0	15	0
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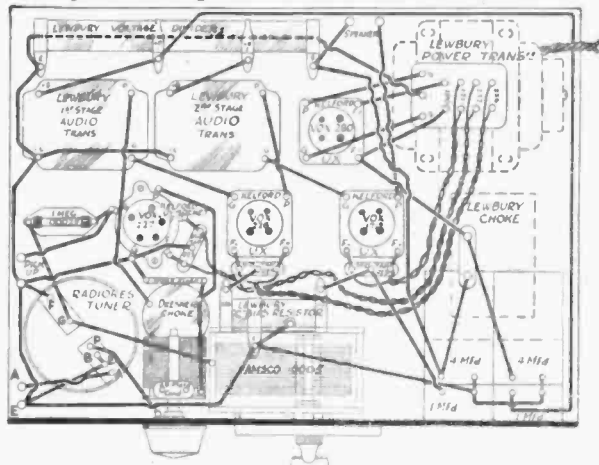
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32 Clarence Street, Sydney

Local Programmes, Thursday, December 12

2FC

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 451 Metres).

EARLY SESSION—7 to 8.15 a.m.

- 7.0: "Big Ben" and meteorological information for the man on the land.
7.3: This morning's news, from the "Daily Telegraph Pictorial."
7.8: Austradio Musical Reproduction.
7.45: Mails and shipping.
7.48: What's on to-day?
7.50: Children's Birthday Calls.
8.0: Music from the Studio.
8.15: CLOSE.

MORNING SESSION—10.30 a.m. to 12.30 p.m.

- 10.30: Announcements
10.32: A.B.C. Racing Observer.
10.45: HORACE WEBER at the GRAND ORGAN.
11.0: HOUSEHOLD HELPS; Domestic Notes, by Miss Ruth Furst.
11.10: CABLES (Copyright, A.P.A. and "Sun"—"Herald" News Service.
11.15: MORNING DEVOTION.
11.30: Austradio Musical Reproduction.
11.53: British Official Wireless Press.
12.0: "Big Ben," Stock Exchange and Metal Quotations.
12.5: TOM GUN will give a talk.
12.20: Midday weather forecast and weather synopsis. Special produce market session for the man on the land, supplied by the State Marketing Board.
12.30: CLOSE.

THE LUNCH HOUR—1 to 2.30 p.m.

- 1.0: Lunch Hour Music.
2.0: Stock Exchange, second call.
2.2: A glance at the afternoon "Sun."
2.7: Studio Music.
2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.

- 2.30: THE HAPPY TRIO.
2.42: JAMES WALKER, Pianist—
(a) "Prelude and Fugue in D Minor" (Bach).
(b) "Gigue in G Major" (Bach).
2.52: THE HAPPY TRIO.
3.0: C. N. BAEYERTZ will speak on "Spoken English."
3.15: THE HAPPY TRIO.
3.30: JAMES WALKER, Pianist—
(a) "Scherzo in E Minor" (Mendelssohn).
(b) "Arabesque in E Major" (Debussy).
3.40: THE HAPPY TRIO.
3.55: Mrs. E. HUME—Celebrities I have met at the Studio.
4.10: THE HAPPY TRIO.
4.28: Stock Exchange, third call.
4.30: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Children's "Good-night" Stories, told by Aunt Goodie.
6.45: Dinner Hour Music.
7.20: A.B.C. Sporting Service.
7.25: Special Country Session. Stock Exchange Resume. Markets. Weather Forecast. Late news from the "Sun." Truck Bookings.
7.58: To-night's Programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.

2FC offers listeners to-night a complete production of Robertson's famous play, "Caste," produced by Lynwood Roberts. Through 2BL the programme is on popular lines—a bright sketch, humorous nonsense, popular songs, a spice of talkie, and piano novelties will offer a varied contrast to 2FC's programme.

8.0: FROM THE LITTLE THEATRE: "CASTE" (Robertson), (Produced by Lynwood Roberts.

C A S T E

Of all the Robertson dramas, probably "Caste" took the most decided hold on popular favor. Its sentimental story, its strongly-drawn characters, which allowed to half a dozen actors equally good opportunities in very different lines of business, gave it an instant success. It is doubtful if any other modern play was so many times performed and in so many different theatres within a year as was "Caste."

"Caste" has been called by those who wish to put a little contempt on it "a cup and saucer" drama. But as a play it will always remain a model of its kind. It is terse, well constructed, with capital acting opportunities, and absolutely no halt in its movement and interest. If it be in any sense really a "cup and saucer drama," it is a pity that some modern writers do not catch the trick.

- 10.0: FROM THE HOTEL AUSTRALIA: Cec. Morrison's Dance Band.
10.15: FROM THE STUDIO: Announcements. Late Official Weather Forecast.
10.20: FROM THE HOTEL AUSTRALIA: Cec. Morrison's Dance Band.
11.30: CLOSE. NATIONAL ANTHEM.

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 353 Metres).

OPENING SESSION—8.15 to 11 a.m.

- 8.15: G.P.O. Chimes and Announcements.
8.16: Music for every Mood.

- 8.40: Meteorological data for the country.
8.45: Mails and Shipping Information.
8.50: Memory Melodies.
9.0: This Morning's Story.
9.30: A Musical Interlude.
9.40: British Official Wireless Press.
9.45: New Music.
10.2: News from the "Labour Daily."
10.5: News from the "Daily Telegraph Pictorial."
10.10: Austradio Musical Reproduction.
10.40: THE AUSTRALIAN BROADCASTING COMPANY'S WOMEN'S ASSOCIATION. Conducted by Miss Gwen Varley.
11.0: G.P.O. Chimes. Close Down.

MIDDAY SESSION—12 to 2.30 p.m.

- 12.0: G.P.O. Chimes and Announcements.
12.2: A Pianoforte Recital.
12.30: LUNCH MUSIC.
1.0: Afternoon news from "The Sun."
1.5: Austradio Musical Reproduction.
1.30: New Songs.
1.40: Pianoforte Recital.
2.10: Memory Melodies

AFTERNOON ENTERTAINMENT—2.30 to 5.45.

- 2.30: HALF-AN-HOUR WITH SILENT FRIENDS.
3.0: ROMANO'S DANCE ORCHESTRA, conducted by Bennie Abrahams
3.12: GERTRUDE GRAY, Mezzo—
(a) "At Sunrise" (Landon Ronald).
(b) "The Cuckoo Clock" (Grant-Schaefer).
(c) "Mighty Lak' a Rose" (Nevin).
3.19: ROMANO'S DANCE ORCHESTRA, conducted by Bennie Abrahams.
3.31: MELODIES OF YESTERDAY.
3.45: GOODIE REEVE, "Aids to Personality."
4.0: ROMANO'S DANCE ORCHESTRA, conducted by Bennie Abrahams.
4.12: GERTRUDE GRAY, Mezzo—
(a) "Danny Boy" (Weatherly).
(b) "Songs my Mother Taught Me" (Dvo-rak).
4.19: ROMANO'S DANCE ORCHESTRA, conducted by Bennie Abrahams.
4.31: RADIO RHYTHM.
4.45: The Trade Hour—Demonstration Music.
5.45: Weather Information. Close Down.

THE DINNER HOUR—6.15 to 7.55 p.m.

- 6.15: DINNER QUARTET.
6.45: GIRLS' RADIO CLUB, conducted by Miss Gwen Varley.
7.5: The Country Man's Market Session—Wool, Wheat, Stock, Farm Produce, Fruit, and Vegetable Markets.
7.20: DINNER MUSIC.
7.45: Austradio Musical Reproduction.
7.55: What's on the air To-night?

TO-NIGHT'S PRESENTATION—8 to 10.30.

- 2BL's programme to-night is a merry medley. A farcical sketch—nonsensical nonsense—Sound Film Feature—Piano Novelties—here is a little of everything for everybody. 2FC Service offers a complete production of the famous play "CASTE," produced by Lynwood Roberts.
8.0: 2BL's Sound Film Feature.
8.20: FROM THE STUDIO: Farcical Sketch. "YOU'RE ANOTHER," produced by Miss Robinson and Theresa Carmo.
8.35: HAL STEAD, Novelty Pianist—
(a) "When the Real Thing Comes Your Way" (Spler).
(b) "I'm Fascinated With You" (Karslake).
8.42: SI MEREDITH and MAUDIE STEWART, in Nonsensical Nonsense—
(a) "That's All" (Low).
(b) "Ain't It Nice" (Weston and Lee).
(c) Patter.
(d) "Hundred Years from Now" (Meredith)
9.52: VINCENT ASPEY, Violinist—"Second Polonaise Brillante" (Wienlawski).
8.59: MAY WEBSTER and PAUL DALY, Entertainers—
(a) "Good Little Boy and the Bad Little Boy" (Weston and Lee).
(b) "Someday, Somewhere" (Berlin).
(c) "Song of Sixpence" (Rose).
9.9: FRED, ARLINGTON-BURKE will talk on "Australia—and the Recent American Financial Crash."
9.24: THERESA CARMO, Popular Songs—
(a) "Do Something" (Green and Stept).
(b) "I've Never seen a Smile like Yours" (Johnson).

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- 9.31: Weather Information for the Man on the Land.
- 9.33: **ST MEREDITH and MAUDIE STEWART**, in Nonsensical Nonsense—
 - (a) "Sun Will Soon be Shining" (Gibson).
 - (b) "Best Pal of All" (Meredith).
 - (c) Fatter.
 - (d) "Our Village" (Low).
- 9.43: **HAL STEAD** in Plano Novelties—
 - (a) "Mean To Me" (Ahler).
 - (b) "Blue Shadows" (Alter).
- 9.50: **MAY WEBSTER and PAUL DALY**, Entertainers—
 - (a) "Gadabout Mama" (Weston and Lee).
 - (b) "There's a Cradle in Caroline" (Lewis).
 - (c) "It Must Be Me" (Paul Daly).
- 10.0: **VINCENT ASPEY**, Violinist—
 - (a) "Maloguena Spanish Dance" (Sarasate).
 - (b) "Deep River" (Elman).
- 10.7: Austradio Musical Reproduction.
- 10.25: Late News from "The Sun."
- Late Weather Forecast.
- 10.30: **NATIONAL ANTHEM. CLOSE.**

2GB

Theosophical Broadcasting Station, 29 Bligh St., Sydney (Wavelength, 316 Metres).

- Day Sessions as usual.
- 8.0: Miss Florence Gordon, Contralto.
- 8.7: Symphony Orchestra.
- 8.15: Mr. William Green, Tenor.
- 8.22: Instrumental Trio.
- 8.30: Mr. Jack Win and Miss Nora Windle, in a humorous sketch.
- 8.40: Cello Solos.
- 8.50: Miss Gladys Verona, Soprano.
- 9.0: Weather Report.
- 9.3: Address.
- 9.15: Miss Florence Gordon, Contralto.
- 9.25: Mr. Jack Win and Miss Nora Windle, in a humorous sketch.
- 9.35: Mr. William Green, Tenor.
- 9.45: Symphony Orchestra.
- 9.50: Miss Gladys Verona, Soprano.
- 10.0: Instrumental Music.
- 10.30: Close down.

2UW

Radio Broadcasting, Ltd., Palling's Building, Ash St., Sydney (Wavelength, 267 Metres).

MIDDAY SESSION.

12.30 to 4.30: As usual.

EVENING SESSION.

- 5.30: Children's Hour.
- 6.30: The Meccano Club.
- 6.45: Close.
- 7.45: Garden Talk, by Mr. S. H. Hunt.
- 8.0: Violin and cello recital.
- 9.0: Comments on Foreign Affairs, by Mr. J. M. Prentice.
- 9.10: Music and request numbers.
- 10.30: Close.

2KY

Trades and Labor Council, Goulburn St., Sydney (Wavelength, 280 Metres).

MORNING SESSION.

10.0 to noon, as usual.

EVENING SESSION.

- 6.0: Children's Session.
- 7.0: Musical interlude.
- 7.5: Birthday calls.
- 7.15: Request numbers.
- 7.30: Hawaiian Steel Guitar Selections.
- 7.45: Humorous interlude.
- 8.0: Orchestral Selections.
- 8.10: Tenor Solos, Mr. G. MASON.
- 8.18: Humorous Interlude.
- 8.30: **FREDERICK HOLT** presents a recital of Australian compositions and composers with musical and vocal illustrations.
- 9.10: Request numbers.
- 9.40: Continue record recital.
- 10.0: Close down.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra, Sydney (Wavelength, 298 Metres).

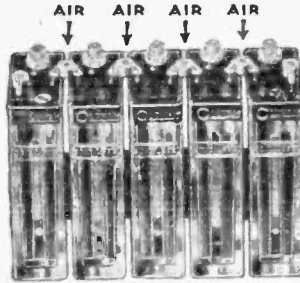
EARLY MORNING SESSION.

7.15 to 8.30, as usual.

EVENING SESSION.

- 6.30: Wendy's Hour with the Children, and Birthday Greetings.
- 7.15: Instrumental Dinner Music.
- 7.55: Programme announcements, and news from the "Sun."
- 8.0: Clock and Chimes.
- 8.1: Overture, "Orpheus in Hades."
- 8.10: Vocal and Orchestral Selections.
- 10.15: Close down.

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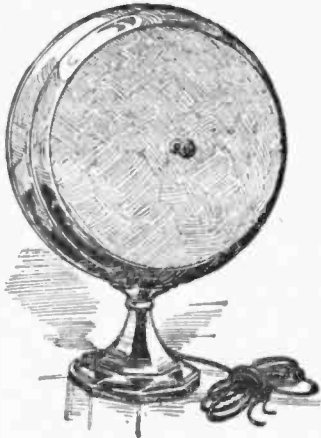
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Interstate Programmes, Thurs., Dec. 12

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 371 Metres).

EARLY MORNING SESSION.

- 7.0 to 8.15, as usual.
- MORNING SESSION.
- 10.30 to 12.30, as usual.
- MIDDAY SESSION.
- 1.0 to 1.15, as usual.

THE EDUCATIONAL SESSION.

- 2.0: Great Australians—George Coppin, Mr. J. Howlett Ross. 2.15: Musical interlude. 2.20: Music Explained and Illustrated—Mr. C. E. Monteath, F.R.C.O. 2.35: Musical interlude. 2.40: Moments with Mark Twain, by The Storyteller. 2.55: Musical interlude. 3.0: Time signal.

THE RADIO MATINEE.

- 3.0: Orpheus Brass Band—march, "Sambo's Wedding"; overture, "Napoleon." 3.10: Hazel Foletta, soprano—"Songs My Mother Taught Me" (Dvorak). "Last Night" (Kjerulf). 3.17: "The Angelus Players"—"The Angelus." "Dance Hongroise." 3.26: Garnet Kensley, entertainer—"Wedding-day Speeches." 3.31: Orpheus Brass Band—fox-trot, "Is Izzy Azzy Wozzy?" march, "The Return." 3.37: "The Angelus Players"—saxophone solo, "Rubenola" (Wiedorf). 3.40: Hazel Foletta, soprano—"Twas April" (Vivian). "Butterfly Wings" (Phillips). 3.47: Cecil Fraser, at the piano. 3.54: Orpheus Brass Band—"Fondly I Love a Maiden." "Invocation to Battle," from Wagner opera, "Rienzi." 4.0: Garnet Kensley, entertainer—a dramatic recital, "Rio Grande's Last Race" (A. B. Paterson). 4.7: "The Angelus Players"—"Bad Habits," clarinet solo; "Sextette," from "Lucia" (Donizetti). 4.17: The Orpheus Brass Band—cornet solo, "The Jewel Song," from "Faust." 4.25: Acceptances and barrier positions for Moonee Valley races, Saturday, December 14, 1929. 4.30: Close down.

THE CHILDREN'S CORNER.

- 5.45: "Bobbie Bluegum" and "Clever Clarice." 6.35: Musical interlude.

EVENING SESSION.

- 6.40: Let's Talk About Our Animals—Sheep-dog Yarns, Mr. J. L. Moore. 6.55: Musical interlude. 7.0: Time signal. 7.1: Countryman's session. 7.25: For the man on the land—Government Herd Tests for Pure Breeds, Mr. A. J. Gill. 7.40: News. 7.45: The Latest Books—Mr. A. E. McEicken. 8.0: Time signal.

NIGHT SESSION.

- 8.0: National Broadcasting Orchestra—descriptive novelty, "The Evolution of Dixie" (Lake), a fantasia depicting the gradual evolution of the American national air, "Dixie." Slowly through "The Creation." "Dance Aboriginal," and the "Minuet," the melody is developed, until there emerges the "mortal" "Dixie." This in turn becomes a "waltz," then "jazz," and then "grand opera." 8.8: Hale and Dale, entertainers—"In the Land of Make-believe" (Baer), "My Dear" (Sanders). 8.15: You will hear the outstanding personality or question of the week.

OUR DANCE NIGHT.

- 8.30: Paul Jecale and His Band—dance numbers. 8.40: Rosa Pollock, soprano. 8.45: Paul Jecale and His Band—dance numbers. 8.53: Kate Cornell, entertainer—"A Queer Physician." 8.56: Paul Jecale and His Band—dance numbers. 9.6: Grace Jackson, contralto—"Little Miss Melody" (Monckton). 9.10: Paul Jecale and His Band—dance numbers. 9.20: Moran Hillford, bass—"Walkin' With Susie." 9.23: Paul Jecale and His Band—dance music. 9.33: Rosa Pollock, soprano. 9.36: Paul Jecale and His Band—dance numbers. 9.46: Kate Cornell, entertainer—"His Mistake." 9.50: Paul Jecale and His Band—dance numbers. 10.0: Grace Jackson, contralto—"Don't Ye Mind Honey" (Roma). 10.3: Paul Jecale and His Band—dance music. 10.13: Rosa Pollock, soprano. 10.16: Paul Jecale and His Band—dance music. 10.26: Grace Jackson, contralto—"Little Brown Cottage" (Dickson). 10.30: News session. 10.40: Paul Jecale and His Band—dance numbers. 10.50: Kate Cornell, entertainer—"The Singing Article." 10.53: Paul Jecale and His Band—dance numbers. 11.0: Moran Hillford, bass—request number. 11.3: Paul Jecale and His Band—selected and request items. 11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 381 Metres).

MORNING SESSION

- 3.15 to 11.0, as usual.
- MIDDAY SESSION
- 12.0 to 2.0, as usual.

AFTERNOON SESSION

- 2.1: Orchestral, Minneapolis Symphony Orchestra. 2.8: Tenor, Mario Chamlee. 2.12: Piano, Ignace Hillsberg. 2.20: Contralto, Marie Morrissey. 2.24: Orchestral, Miniature Concert Orchestra. 2.30: Entertainer, Nick Lucas. 2.33: Dance music, Anglo Perstians Dance Orchestra. 2.36: Comedian, Al Jolson.

- son. 2.39: Banjo, Harry Reser. 2.42: Soubrette, Esther Walker. 2.45: Band, Vesella's Italian Band. 2.48: Entertainer, Nick Lucas. 2.51: Dance music, Anglo Perstians Dance Orchestra. 2.54: Comedian, Al Jolson. 2.57: Band, Vesella's Italian Band. 3.0: Request numbers. 3.20: Christmas presents, Miss Hatlie Knight. 3.35: Musical interlude. 3.40: Food and Cookery: Gas Cooking, Miss E. Noble. 3.55: Musical interlude. 4.0: Your Health and Appearance: Walking Tours and Health, Miss Evelyn N. Ellis. 4.15: Musical reproduction. 4.45: Evensonsg, transmitted from St. Paul's Cathedral. 5.30: Weather data. 5.45: Close down.

EVENING SESSION

- 6.15 to 8.0, as usual.

NIGHT SESSION

8.1: Round and About by the Odd Men Out: Who To-night will talk about "Broadcasting Programmes." 8.15: A Special Studio Reproduction of "The Barber of Seville" (Rossini). Opera in two acts, first produced at the Argentina, Rome, in 1816. Rossini's "The Barber of Seville" is his sole opera properly to survive the passage of time. His other great works have succumbed to the change of taste and musical fashion, though "William Tell" obtains an occasional revival at the Paris Opera and elsewhere. The principal characters are: Count Almaviva, tenor; Figaro, the Barber of Seville, baritone; Doctor Bartolo, baritone; Basilio, a music teacher, bass; Rosina, a ward of Bartolo, soprano or contralto. 10.20: Weather and news. 10.30: God Save the King.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).

Day Sessions as usual.

NIGHT SESSION.

4QG Concert Orchestra and Male Chorus. Group I.—Grand Opera. 4QG Concert Orchestra (conducted by Eric John): "Overture" to "Fra Diavolo" (Auber). Tom Ryan, bass, with Concert Orchestra: "Vulcan Song" (from "Philemon and Baucis," Gounod). Mildred Bell, contralto: "O, Love From Thy Power" (from "Samson and Delilah"—Salmst Saens). 4QG Concert Orchestra: Selection from "La Traviata" (Verdi). Group II.—Folk Songs. Arthur Smith, tenor, with Male Chorus and Concert Orchestra: "Cossack's Song" (Russian). Ernest Harper, baritone, and Concert Orchestra: "The Millwheel" (German). Mildred Bell, contralto, and Stanley Tamblin, bass-baritone: "Tritomba" (Italian). Jack Lord, tenor, and Male Chorus: "Once a Farmer and His Wife" (Welsh). 4QG Concert Orchestra: "Norwegian Dance No 5" (Greig). Group III.—Sacred. Mrs. Robert Bell, soprano: "Hear Ye, Israel" (from "Elijah"—Mendelssohn). 4QG Male Chorus: "Power of Love" (Bartolomsky). Albert Falk, baritone: "His Almighty Hand" (Hamblen). 4QG Concert Orchestra: "Largo" (Handel). 4QG Metropolitan weather forecast. Group IV.—Miscellaneous Grand Opera, baritone, with Male Chorus: "We Are All Bound to Go" (Sea Chanty). Jack Lord, tenor, with Concert Orchestra: "Beppo is Singing" (Oliver). Mildred Bell, contralto: "An Open Secret" (Woodman). W. W. Crisp, tenor, and Stanley Tamblin, bass-baritone, with Concert Orchestra: Vocal duet, "The Lovely Tenor and the Melancholy Bass" (Fanel). 4QG Concert Orchestra: Waltz, "Sirones" (Waldteufel). Group V.—Classical. Hugh Olive, tenor, and Ernest Harper, baritone: Duet, "Corielius March" (Mendelssohn). J. P. Cornwell, bass, with Male Chorus: "The Hours Are Fleeting" (Schubert). W. W. Crisp, tenor: "To the Moon" (Schubert). 4QG Concert Orchestra: "Waltz in E Minor" (Chopin). Group VI.—In the Land of Almond Blossoms." George Williamson, tenor: "Enoshima" (Arundale). "When Spring and Cherry Blossoms Come" (Arundale). Mrs. Robert Bell, soprano: "Gelsa's Song" (Arundale). Stanley Tamblin, bass-baritone: "Almond Blossoms" (Arundale). 4QG Concert Orchestra: "Japanese Rhapsody" (Yamada). "Sarashi" (Dance of the Bleachers). "O Edo" (Travelers' Chorus). "Kappore" (Peasant Dance). 10.0: News and weather.

5CL

Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 400 Metres).

Day sessions as usual. 7.20: Dr. G. H. Wright will continue his series of literature talks. 7.35: Captal Donald Maclean. 7.45: Mr. A. M. Whittenbury: Hints to Poultry Breeders.

NIGHT SESSION

8.0: Chimes. 8.1: Programme Review and announcements. 8.10: A Radio Revue (exclusive to Station 5CL), by arrangement with Ozone Theatre, Limited, presented by Jack Fewster, entitled "A Trip to Hollywood." 9.1: Meteorological information, including semi-weather tides. 9.2: Overseas grain report. 9.3: Announcements. 9.5: Capt. Donald Maclean will continue his talk entitled "Feats of the Mighty." 9.20: Continuation of Jack Fewster's Revue, entitled "A Trip Hollywood." 10.15: News. 10.30: Recordings. 11.0: Close down.

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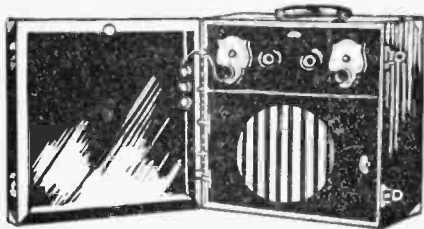
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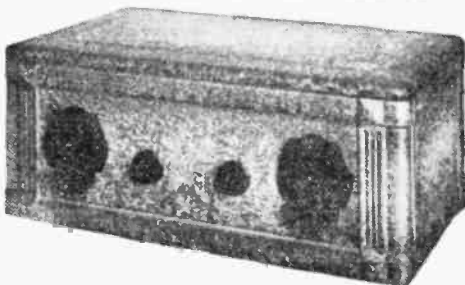
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What is the Cause of Crackling Noise?

R.V.G. (Warwick): "During the past few weeks an almost continual source of annoyance has set up in my receiver. This consists of crackling noises which are interfering with my reception. I have noticed that this noise is worse when lightning is about, but it is on to some degree most of the time."

Answer: The noises are almost certain to be the result of atmospheric disturbances, or static, which usually are rather prevalent at this time of year. You can quickly check the origin of the noise if you disconnect the aerial and tune in the set without it. If there is almost complete silence, you can well assume that the trouble is not within the set. Possibly the noise is originating in a power leak, or in faulty wiring in the house, though in this case the noise would probably be continuous. There is no known method of eliminating static interference, though sometimes it can be improved somewhat by the use of a very small aerial and a highly selective set. The best plan is to depend for your radio music on the local stations when the interference is bad. Of course, similar noises can be made by a faulty contact, or a run down "B" battery in the receiver.

R.S.V.P. (Newcastle):—Mr. S. Poulter, Post Office, Warwick, wishes to get in touch with you regarding the Countryman's three-valve receiver.

S.P. (Warwick):—Regret we have not R.S.V.P.'s full address, but we have requested him (through these columns) to get in touch with you. The Countryman's three-valve receiver was published in queries columns some few months back. An amplifier suitable for use with the Countryman's one-valve was also treated.

"Maniac" (Narriekville) writes to explain what he meant by the question, "What is the average amperage of a Leclanche cell (Columbia 1½-volt positive), with zinc half-way round a mixture of 3oz. pint sal-ammoniac?" He states, "that the pen-pusher who answered the query in a recent issue should push a pen for a scooter manufacturer, and leave radio problems to mechanics who understand them. I spoke in such a technical manner that I flabbergasted him. I know you haven't the time to publish this smack in the eye, you lot of cheap radio quacks." He adds other similarly pleasant remarks for our benefit.

Answer: We bow to your superior radio knowledge and brilliant mastery of the English language.

H.R. (Randwick):—"I would like to know if there is in existence an effective wave-trap for the elimination of 2BL. My set is five-valve, using an indoor aerial, is situated about ½ mile from that station, and I cannot separate 2BL from 2UE. Several traps I have tried were useless. All the other locals are pretty good, but with 2UE it seems hopeless, and I particularly would like to get 2UE without interference. Perhaps one of your readers living in my locality knows of a suitable wave-trap, and I should be glad to hear of it through your paper, as I feel sure it would be very acceptable to listeners in the vicinity of 2BL. I have heard mentioned the Furness wave-trap, but do not know how to make it or where it can be purchased."

Answer: Instructions for building this trap, which should suit your requirements, were given in "Wireless Weekly" some little time ago. The trap may be purchased from Mr. Furness, radio dealer, Furness Chambers, Sydney. The Lewcos trap is also good. Try a .0001 fixed condenser in series with the aerial. A simple trap consists of 50 turns 24 gauge D.C.C. wire on a three-inch diameter former, shunted by a .0005 mfd. variable condenser. The aerial is connected to the fixed plates of the condenser, and the variable plates are connected to the aerial terminal of the set. If this is unsatisfactory, and you have the necessary space, you could leave the aerial connected to the primary coil as it was at first, and couple up the trap to the primary.

General.—Mr. S. W. Loon, 15 Tahlee Street, Burwood, asks if any reader can supply him with a copy of "Wireless Weekly" containing the Countryman's one-valve receiver. The inquirer is willing to pay postage and return copy after he has copied information required.

Radio Information Service

Under the direction of
ROSS A. HULL, M.I.R.E.

W.J.C.S. (Casino):—"In your answer to V.W. (Melbourne) you give details of wiring base coil. Below you will find drawings of side and top views given by another paper, which they state is correct. Yours is the opposite way. Which is correct?"

Answer: It does not matter which way round you make the connections providing the leads to the socket are made accordingly. The method given by us, however, is more efficient, since it allows an exact number of turns to be given, and keeps leads as short as possible. A valve base would not lead enough turns for the broadcast band, and, if you were to bank-wind the turns, it would not be so efficient. The best way is to attach the base to a length of bakelite tubing. If your tuning condensers are of .0005 mfd. capacity, you could use a two-inch diameter former and wind about 75 turns. For a 2½-inch diameter former, approximately 60 turns would suffice. A three-inch diameter former would require 50 turns.

(2) "Following up Radio Proficiency, I notice that Fig. 2 of October 11 shows circuit as reproduced below, while No. 13, in explaining receiver, shows differently. See sketch. The A plus is shown connected to B minus in one, while A minus is connected to B minus in the other. Which is correct?"

Answer: Both methods are correct. As explained in the article, the lead not connected to the B battery is the grid return. The polarity of this may vary with the type of valve used, whilst either polarity may be O.K. In any case, the reason the "A" battery is connected to negative B is to allow a path for the return of electrons in the plate circuit to the filament. Polarity does not enter into the question, apart from the fact that A negative and B negative is a better arrangement where possible, since it is less dangerous if a short-circuit occurred.

(3) "I trust I am not asking too many questions at once? Re G.H.Y.'s letter to you. Tell him to go to the hot place and melt his loose screw."

"Baker" (via Tarlee):—"The performances rank about the same. See Mr. Hull's recent articles on "Common-sense About Circuits," etc. It is not possible to make the connection mentioned, otherwise the filament of the valves will be burnt out. It would be necessary to use a fixed condenser in series with the lead, as in the Extraordinary One. Neither of the coil arrangements suggested will be suitable. Using 24 gauge D.C.C. wire and a three-inch diameter former, wind 15 turns for the primary. Space quarter-inch, and wind 47 turns for the secondary. Space 3-8 inch, and wind a reaction coil of 25 turns."

H. Mel. (Randwick):—"Sorry, cannot advise re the valve as the symbols given are rather badly written, and it is difficult to gather just what valve is referred to. You are invited to write again on this matter."

(2) "I have a transformer marked as below. Which are the F, G, B, and P terminals?"

Answer: S1 is G, S2 is P, P1 is B, and P2 is P.

(3) "What age does one have to be to join the "Proving Radio Club"? What is the nearest branch to my address?"

Answer: I understand the age is between one and one hundred, though other ages will be considered. Write to Mr. C. Y. Hook, organising secretary, 29 Blairgowrie Street, Dulwich Hill. The "Proving Radio Club" now have a transmitter and an operating licence.

(4) "I think this column is very helpful to wireless enthusiasts."

Answer: Thanks.

S.J. (Cremorne):—Try W. E. Smith, Ltd., and W. C. Penfolds, Ltd.

J.L.L. (Belmont):—"I have a receiving set which I believe is called a "P.I." I sometimes call it by another name. The other day I placed the aerial wire on the earth terminal and the earth wire on the aerial terminal, and the set performed as usual. Would you tell me if the above performance is O.K.?"

Answer: Quite O.K. The primary coil is merely reversed by these connections, and performs as usual.

J.A.H. (Five Dock):—"The set I have takes from 20 to 60 volts 'B' battery. If I used a 63-volt 'B' battery with a 30 ohm rheostat, as shown in circuit below, would it control the volume without filtering the tuning?"

Answer: The rheostat would not control the volume. The resistance is too low. One of about 50,000 ohms would be required, but the scheme would not be very good. Back of panel wiring of the Countryman's One was published recently.

S.V.L. (Bernie):—"Yes, the Countryman's One. You would not be able to obtain back numbers from newsagents, since back numbers are returned. Your request published below."

R.C.C. (Mudgee):—"Would you kindly publish a circuit suitable for D.C. operation of the 1930 Super-net through your paper?"

Answer: An article on this was published a few weeks ago.

(2) A terminal strip can be used if desired.

(3) The B current drain would be anything between 20 and 45 mls., depending on the power valve used. Details were given in the article by Mr. Hull.

(4) Write to the agents regarding the speaker unit.

H.H. (Newport):—"Is an aluminium panel as good as a bakelite panel?"

Answer: In some respects the aluminium panel is better, though it is largely a matter of technical requirement according to the type of set used, and personal likes and dislikes.

(2) "Does an aluminium panel produce hand-capacity?"

Answer: It is not the panel that produces hand-capacity. It is generally faulty wiring or spacing of parts. An aluminium panel, with components insulated from it, but connected to the earth terminal is a safeguard against hand-capacity.

(3) "What is the best method of abolishing hand-capacity?"

Answer: Total shielding, earthed. A fixed condenser placed across the telephones often eliminates capacity due to headphone cords in a short-wave receiver. Often hand-capacity is due to reversed variable condenser connections. The remedy here is obvious. Keep coils away from condensers and also from the panel. The reason why the coils should not be placed near the panel is not because the panel produces hand-capacity, but because the coil is very near the coil when tuning, unless the coil is moved farther away from the panel. The field from the coil passes through the bakelite panel unless a shield is placed over the coil, when hand-capacity is minimised. Some types of short-wave receivers are very sensitive, and suffer badly from hand-capacity, which is difficult to eradicate.

A.J.H. (Newcastle):—"Suggest you use (instead of the second last valve mentioned), A415. It will be necessary to re-wire parts of the circuit if you wish to use screen grid valves, and, since you admit you do not understand much about radio, suggest you hand the set over to a reliable concern. 7/22 enamelled copper wire makes a good aerial."

C.S.C. (Believe Hill):—"Would you be good enough to inform me through queries columns of your paper details of the double coils for the Standard A.C. Four?"

Answer: Use two lengths of 1½-inch diameter bakelite tubing. Wind 75 turns 26 gauge D.S.C. wire on each. The coupling between the coils is very important, and if you intend building the coils yourself you should make the coupling variable. The coils are made up by Radiokes, Ltd. The valves are O.K.

QUERY COUPON

If you are in difficulties about reception or set-construction, let us know, and we will endeavor to set you right. Make your questions brief to the point, and, where possible, show lay-out and wiring design. Under no circumstances will answers to queries be made by letter or by telephone. All answers will appear in the columns of this department in the order in which they are received.

The Radio Information Service, 117, P.O. Box 3306, PP. Please enclose the accompanying postage stamp. This coupon in order to indicate your editorial convenience. I enclose that I am a bona fide reader.

(2) "Frankly criticise this set, as compared with the A.C. Marco, using two stages of S.G.R.F."

Answer: The A.C. Four would probably be more selective than the A.C. Marco, and would give better reproduction. The hum present in the latter receiver would exceed that of the A.C. Four.

(3) "Can the latter be satisfactorily used as a one-dial tuning outfit?"

Answer: No. There would be three tuned stages, and a regeneration control. It would be necessary to have at least two controls (apart from the regeneration control), and it would be a difficult matter to balance up the circuits to the detector. The best plan would be to use a double drum dial, tuning the first R.F. separately, and ganging the second R.F. and detector.

A.J.B. (Marrickville).—Write to Metropolitan Electric Co., who are marketing kits with instructions on building these coils. The crystal will be quite satisfactory. Do not forget to try reversing crystal if results seem poor on interstate stations. The coil you have on hand is for use in the "Old Reliable circuit," which uses one tuning condenser across the secondary. The circuit is: Aerial to first turn of small rotor coil. Earth to last turn of this coil, thence to last turn of fixed coil, and to rotor plates. A .0005 mfd. variable condenser, to one of the filament terminals of the valve socket, and to A plus. The first turn of the fixed coil connects to one side of a .00025 mfd. grid condenser, shunted by a 2 megohm grid leak, and the other side of this connects to the grid terminal of the valve socket. The plate of the valve connects to one terminal of the other rotor coil, and the other end of this coil connects to one side of the telephones. The other side of the telephones, connects to B plus 45 volts. B minus is connected to A minus across the first transformer. If an amplifier is used, is generally helpful. The circuit is a good one, but may be rather broad in tuning in your locality.

S.C.H. (Cessnock).—"Would you tell me through your columns what the black substance is around the carbon rod in an ordinary sal-ammoniac dry battery?"

Answer: This generally consists of a mixture of zinc oxide, sal-ammoniac, and plaster of Paris.

(2) The circuit requested would not be an efficient one, and would not, therefore, be of general interest.

J.J. (Queanbeyan).—Pleased to hear you like the All-Empire S.W. receiver. See remarks to W.C.J.S. (Casino). Do not advise the procedure. If you follow the idea given in reply to W.C.J.S. you will require approximately twice as many turns.

F.B. (Wollongong).—See reply to J.J. (Queanbeyan), above, and also reply to W.C.J.S. (Casino).

"Assembler" (Chatswood).—A two-volt 40 amp-hour capacity accumulator will be required. The receiver is O.K.

General.—Mr. H. H. Morton, O'Donnell Street, opp. Vicar's Avenue, North Bondi, has all copies of "Wireless Weekly" between August, 1928, to January, 1929, in perfect order, and any reader requiring same can have them by forwarding cost of postage to that address. There are 46 copies.

D.C.T. (Grafton).—"How many turns are there in a 30 ohm rheostat, and what size wire is used? I intend making a new kind of rheostat."

Answer: The resistance is not dependent on the number of turns, but on the length of wire used. Its resistivity per foot, etc. Another factor to be considered is the current that is to be carried by the resistor. There are several types of resistance wire (ordinary copper wire would be useless, owing to the length required). The best plan is to work out the current that is to be carried by the resistor, then buy a reel of resistance wire that will carry the current. On the reel will be marked the resistance per 1000 feet. If this is 12,000 ohms, then you will require one foot of this wire for 12 ohms, two feet for 24 ohms, and 2½ feet for 30 ohms, etc. You do not mention if you intend using the resistor in a power amplifier, radio set, or switch-board, so we are unable to give you greater details.

General.—Can any reader please supply Mr. A. J. M., "Richon," Holdsworth Street, Merrylands, with a back number of "Wireless Weekly" containing the back of panel layout of the three-valve Reinartz receiver? This was also published in queries.

W.J.B. (South Ashfield).—The serial and earth are quite O.K., and the receiver should give you reception of interstate stations on the loud-speaker at night.

A. C. McD. (Aramac).—Either arrangement is satisfactory. The reason why we do not recommend a short-wave receiver for broadcast use is that the tuning condensers require for short-wave work would be unsuited for broadcast, and vice versa.

A short-wave receiver can be used on the broadcast band, however.

(2) "In conclusion, I would like to say how much I appreciate "Wireless Weekly," which I find most interesting and instructive. I am now in my third year's subscription."

Answer: We thank you for your kind remarks "Newhand" (Rushcutters' Bay).—The eliminator can be used. Yes, an amplifier could be added at any time. Using the eliminator on short waves, you may strike trouble with hum, especially as you only intend using two valves, and, therefore, ear-phones.

(2) "Could you tell me how to wire a rheostat? Is only one rheostat required?"

Answer: If you use an R.F. and a detector, would advise a rheostat in series with each A negative lead to valve sockets. If, however, you intend using a detector and one audio, only one rheostat will be necessary. Connect the two filament negative terminals of the two-valve sockets together, and also to one side of the rheostat. The other terminal of the rheostat should then connect to the negative terminal of the A battery.

M.E.L. (Stammore).—"I should like to see the "Radio Frequency Short Wave Four," described about six weeks ago in the "Wireless Weekly." If possible, I should like to see this set in action. If you could help me to get in touch with someone who has built the same, I would be grateful."

Answer: The receiver described by us was built by an experimenter in New Zealand. If some reader can help, we should be pleased if he writes to M.E.L., "Louray," 6 Liberty Street, Stammore.

A.H.R. (Leichhardt).—"I have a two-valve set, which works for five minutes, fades away, then comes on again, so on. The 'B' battery is only a fortnight old, and the 'A' battery has only been recharged recently. Can you tell me the trouble, please?"

Answer: If aerial is not swaying or touching some earthed object, test transformers. See that there are no loose leads. See below.

General.—Recently a friend asked me to have a look at his set, which was a three-valve receiver of well-known make. It appeared reception was

J.C. (Randwick).—No formula is available from which the undistorted output of the Pentode can be determined readily.

T.H.D. (Toowoomba).—The short-wave adaptor could be used. Several have been described in "Wireless Weekly," and a number of good circuits have been published in queries columns. You will have to remove the R.F. valves of this receiver.

T.M. (Homebush).—The circuit has already been published beginning of 1929. The transformer would be O.K. B443 valve.

L.A.D. (Vik Kandos).—Faulty detector valve or grid trouble in detector stage. Try another grid leak, and adjust plate voltage and grid bias.

W.B. (Brisbane).—Your 5/ P.N. has been returned, since the advice you require can be given through these columns. The best battery-operated four valves are the Marco, the Screen Grid Marco, the Portex, the Browning, Drake, the Wasp. The only copy we have is that of the Marco, and we understand you have this circuit. Re battery consumption, use type of valve with low filament consumption, such as Philips. Try a .001 fixed condenser across primary of first transformer. This will allow you to get an increase in regeneration without using such high detector plate voltage. The Tetrode valves could be used. These only require a very small "B" voltage.

G.T.F. (Armidale).—Regret we have no copies left. Use a gauge of C gauge for the Countryman's one-valve. Thanks for kind remarks.

General.—Mr. Allan J. Eldridge, 33 Bunnyong Street, Yarraville, Melbourne, V.13, writes: "I would be pleased if you will insert a par in your paper asking if any of your subscribers would forward me a copy of the "Wireless Weekly" dated March 22, 1929, in which is contained the original circuit and instructions of the 'Renown Three.' I will pay postage and price of copy."

K.F. (Wollongong).—"While testing a home-made grid-leak with a three-volt tapping off the 90-volt battery, I accidentally touched the 'phone tags on the 90-volt tapping of the 'B' battery for about three seconds. Would this harm the 'phones, or short the battery? I have had the headphones about nine months."

Answer: No, probably not, owing to the high resistance of the 'phones. This treatment only becomes really dangerous if the contact is made for a long period, when the wire on the electromagnets may heat up and break.

General.—Can any reader please supply Mr. Jackson, Salisbury West, Salisbury Street, Waterloo, with a copy of "Wireless Weekly" containing the Economist eliminator?

MACARTNEY ON WOOLLEY

THE precise qualities that are to be most admired in the M.C.C. star performer, Frank Woolley, as a batsman are singled out for discriminating praise by C. G. Macartney in the current issue of "The Australian Sporting and Dramatic News." Admiration and seasoned judgment are well blended in the "Governor-Generals" dissection of Woolley's methods. Cricketing enthusiasts should not fail to read this expert's discussions, which are a regular feature of this magazine.

Finely-produced illustrations give close-ups of interesting figures and incidents in the big match at the Sydney Cricket Ground with a vividness only possible in the high class of printing and special paper in this publication. The art of the photographer is given its fullest expression in highly skilled reproduction.

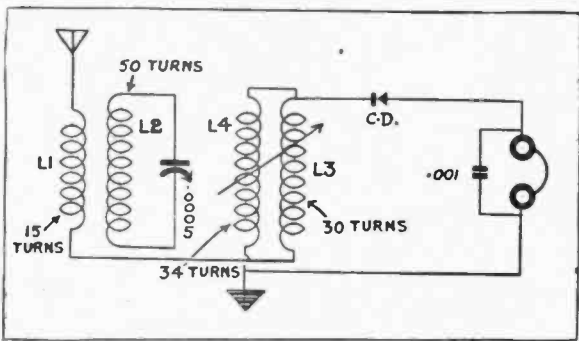
Smartly-written reviews cover society sport and stage and screen with lively comment. The "Sporting and Dramatic" is on sale for sixpence.

DOMESTIC PROBLEMS SOLVED

WORRIES that beset housewives and mothers have often, in the light of experience, a simple solution. In the discussions by experts in the "Woman's Budget" on fashion, cooking, home craft, and mother craft are found many suggestions that make feminine problems easy.

Troubles that mothers encounter in feeding children between the ages of one and two are considered in the current issue by the woman doctor who presides over this valuable section of the magazine. The special medical article has some timely counsel on the treatment of whooping cough.

Pictorially illustrated fashion features present attractive ideas for sports wear, and a free pattern is offered of a coat without belt that can be worn for tennis, motoring, or golf. The "Woman's Budget" is on sale at all book-stalls and newsagents for 3d.



Crystal circuit reprinted for "R.S." Newcastle.

very faint for several minutes, but it was very slightly improved by breaking open the C battery connection. After about half an hour reception would get very faint, but by closing the C circuit reception became perfectly normal. If the set was switched off, the same procedure had to be gone through, i.e. removing the C connection, waiting until reception got poor, then replacing the lead. Everything was tested, and it was found that one of the transformers was defective. A new transformer eradicated the trouble entirely. This is an uncommon fault, and one that would be generally hard to find, because there are no direct indications that the fault was in the transformer. The information is therefore given here, in case any of our readers have suffered a similar inconvenience.

W.C.J.S. (via Casino).—The condensers will have too small capacity, but the transformers are O.K. You may have your copies sent direct if you wish. Write to Subscribers' Department. The Midget condenser is too small.

L.H.F. (Mascot).—"Am still waiting patiently and expectantly for the folder, exponential horn you promised in the issue of 25/10/29, so how about it?"

Answer: Arrangements have not yet been concluded for the publication of this article.

J.O.K. (Kogarah).—Should not make any difference to selectivity of set. It would be a better proposition, however, to carry out your second plan and purchase a ready-built three-valve all-electric set.

Three-phase (Botany).—The Countryman's one-valve is O.K. Yes, can be adapted to short waves by using smaller coils and condensers.

"Crystal Set."—See last week's queries. Your suggestion will be considered.

F.H. (Chatswood).—Doubt if you would receive these interstate stations with any degree of success. The receiver will be rather broad in tuning, and such a receiver is not very satisfactory for interstate reception. See reply to J.J. (Queanbeyan).

General.—An inquiry came to hand for Mr. G. H. Gee's address. This has now been received, and Mr. Gee can be found at 35 Redmyre Road, Strathfield.

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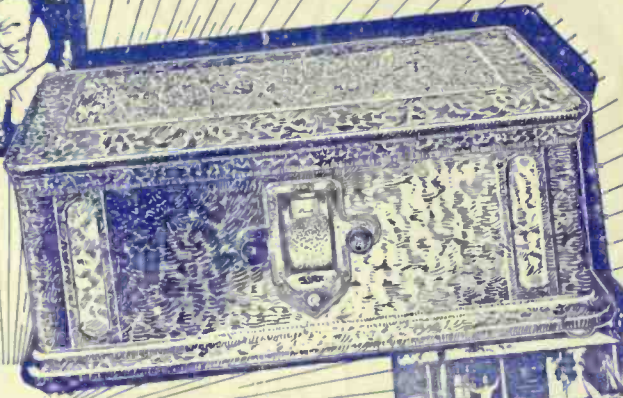
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D.S.G./2/26



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