Detailed Broadcasting Programmes a Week in Advance

Wireless Weekly
INCORPORATING "Radio in Australia & New Zealand"

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Photographs Transmitted on a Beam of Light

A new and reliable method of picture transmission has been developed. In the picture on the left Dr. Vladimir Zworykin, W.E. research engineer, is holding the projector of the beam of light over which he transmits photographs and messages.

Photographs and messages were transmitted on a beam of light through space recently in Atlantic City, U.S.A. No beam of light forged the only connection between a facsimile transmitter and receiver, which by electrolytic process reproduces transmitted images. The device is the latest development of Dr. Vladimir Zworykin, Westinghouse Electric and Manufacturing Company.

The extent to which Dr. Zworykin has developed his device reveals a new step in facsimile transmission. In the devices previously demonstrated, photographic development was necessary after the transmission had been completed. With the new receiver the transmitted image will be produced without further developing, so that an onlooker may see the image being formed at the receiving end.

Not the least interesting thing about the facsimile transmission was the fact that the waves which form the image on the receiving end are carried from the transmitter on a beam of light. This beam of light acts in the same way as the invisible waves of a radio station.

To the casual onlooker, the facsimile transmission is extremely interesting. First the picture to be transmitted is placed on a cylinder on the sending device. As the transmission starts a beam of soft light gleams from an ordinary appearing lamp, and is trained on a reflector, which may be placed at a considerable distance away. As the cylinder on the transmitter revolves, another on the receiver revolves at exactly the same speed. And passing across the cylinder is a long roll of paper, upon which is being reproduced the original photograph or message.

LONG STRIP OF PICTURES.

These reproductions are five inches by six and one-half inches in size, and they can be printed at the rate of one every four and one-half minutes. They may be reproduced continuously, one after another, on the long roll of paper.

The transmitting equipment used by Dr. Zworykin in this demonstration is the same as used in previous types. The only change in the equipment is in the receiving end.

In the sending set, an ordinary photograph or typewritten letter is placed on the cylinder, which rotates slowly, and at the same time progresses longitudinally. A beam of light is sharply focused on the surface of the picture, and in this way every point of the picture is explored by this beam of light. The reflected light is gathered by a parabolic reflector, which conveys the reflection to the photo-electric tube, or "electric eye," which issues an electrical impulse corresponding to the density of the image on the photograph.

As demonstrated by Dr. Zworykin, the impulses from the photo-electric tube are simplified, then passed through the gas-glow tube, which produces the carrier beam of light. This beam is trained on another photo-electric tube in a parabolic reflector located across the room. The photo-electric tube transforms the variations of intensity of the beam into electric impulses, which, in turn, are transmitted to the receiving equipment.

Instead of changing the electrical impulses into light again, as in previously demonstrated equipment, the new device reproduces the picture by sending the actual current through a specially compounded paper. The action of the electricity on the chemicals in the paper, through electrolysis, changes the color of the paper, and recreates the original image.

To accomplish this, the special paper from the roll is passed first through a water bath in order to make it more conductive, then over a cylinder, which is rotating in synchronism with the transmitting cylinder.

On the surface of the cylinder there is a knife edge curved in spiral from one side to the other. On top of the paper there is a straight knife edge, which, with the spiral edge, forms the two electrical contacts of the receiver. As the cylinder with the spiral rotates, it produces the sliding contact along the straight edge. This contact moves from one side to the other, and makes one line of the reproduced image with each complete revolution.

The paper slowly advances through the receiver, the motion being exactly the same as the motion of the transmitting cylinder. Therefore the two motions reproduce exactly the scanning of the photograph by the transmitter to recreate the image on the paper as the varying current produces more or less chemical change in the paper.
Queen of the Air, fair Radiona said High on a golden throne of royal State Lest we were blinded by her radiance; But by her grace were we made free And Byron's greatest Radio Men were there (1)

Arthur Williams, who beamed o'er the scene, Paced in the holding of his mortal charge To bring the Revelers, in their simple bliss The mighty Fete supplied by Horace Keats (2) Who stirred his cells soaring Orchestras From a white Cloudlet, fleeting out at last The Night was starred with Fireworks gay, and bold; Or Cheery clapped at forty thousand tones Of universal Hurry, he assumed the Risk (4) The woes was supervised by Mr. Pial. (4)

This glorious Fete had not continued long Ere Radiona asked to hear a Song. Then Anderson arose, a brilliant Actor. And sang through Thrity he compacted himself. Loud were the Plaudits of the assembled Guests And, urged ov Baritone's soft

Loud were the Plaudits of the assembled Guests: Ere Radiona asked to hear a Song; This glorious Feast had not continued long

The Night was starred with Fireworks gay, and bold; And the scaley Fare supplied by Horace Keats (41)

Another rolled the Dance Floors bubble no more, nor What is this lovely Night we've been Made poor. The Mixture strain -

A hundred Sprites set off for foreign Lands. The subtle Williams made a

And the subtle Williams made a

And Sydney's greatest Radio Men were there (31)

I ca, e

Well. Radiona's Nectar held more Sweets Than his Beaker of the blushful Hippocrene Tasting of Flora and the Country green,

and each; and each;

And, urged ov Baritone's soft

Loud were the Plaudits of the assembled Guests:

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And Sydney's greatest Radio Men were there (31)
Fitting the Right Kind of Items Together

Elementary Psychology for the Programme Director

By L. E. Strachan

(Formerly Station Director and Programme Organiser, ABC, Christchurch, N.Z.)

Sufficient comment has been made on the quality of broadcast programmes, both in Australia and New Zealand, that it would almost seem there is little left to be said.

There is, however, one aspect of the matter which has apparently not been touched on by the many who have voiced dissatisfaction with existing conditions—that is, the apparent lack of understanding of the principles of programme arrangement, as exemplified in the finished products of those responsible for the "lay-out" or the items broadcast in the so-called "concert programmes" from the various stations.

Before proceeding to discuss briefly these principles it will be advisable, perhaps, to consider the psychological effect of practically every form of entertainment in these days of hustle and bustle, as by noting the effect it is expected to have on the finished products of those responsible for the "lay-out" or the items broadcast in the so-called "concert programmes" from the various stations.

In early days the natural occupations of mankind provided a certain emotional outlet. When it was necessary, for instance, to hunt for one's food the thrill of the chase provided a very definite and healthy emotional outlet, while the necessity of being constantly on guard against marauding tribes or animal foes, provided a very effective antidote against ennui. This fact is recognised, it is actually postulated, by most leaders in the educational world. For this reason organised games are considered essential in any well-ordered school curriculum, not only for their physical results, but also that the adolescent mind may have a healthy outlet for its emotional content.

At first sight it may appear that this discussion into elementary psychology can have no bearing on the matter of broadcast programmes, but in reality it is an important factor in the dissatisfaction which is apparently so widespread among listeners-in.

In the first place, it will be generally conceded that the greater part of listening-in is done in the evenings. Probably at least 75 per cent. of those who have taken up their pens to criticise the broadcasting companies have based their criticisms on evening programmes which did not appeal to them. They have probably never stopped to consider whether they themselves were "in tune" with the type of programme being presented.

This matter of being "in tune" with the entertainment being broadcast is in reality the crux of the whole position as regards the listeners' attitude to broadcasting. And it is here where the whole trouble lies with most programme organisers. They do not realise, or apparently do not know, how to so utilise the material at their disposal to put themselves "en rapport" with their unseen audience.

An analysis of most of the published programmes shows an almost complete lack of knowledge of the principles underlying the scenic arrangement of programme material. To be deemed successful a programme must exemplify four essential factors—proportion, balance, contrast, climax. The first three named factors are, of course, well known to anyone with even a rudimentary knowledge of design or display. They are to be seen any day, and every day, in a well-dressed shop window. To these factors, a fourth—climax—is added when the appeal is made through the ears. The simplest melody reaches some sort of climax, and the storyteller whose tale had no point would find himself in the same unfortunate position as programme organiser to-day.

Goods to Display

After all, a programme organiser is faced with the same problems as a window-dresser. He has certain goods to display—to attract and hold the attention of an unknown public. If he follows the recognised principles underlying display he will succeed in his purpose, but apparently most programmes are arranged in the same way as if a window-dresser picked up his goods at random and jumbled them into his window higgledy-piggledy.

The psychological effect on a listener is a series of clashes, or what in musical parlance would almost seem there is little left to be said.

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The Author's ANNOTATIONS

To Radfim's Feast

(Turn back edge of this page to face Page 6.)

(1) "In the manner of the late Mr. Pope." C. H. B., Nightingale, Vol. II., p. 156. This is to be noted that the style of this poem sometimes divagates from the classical form. However, there is a splendid description of the man, his character, his philosophy, his standing position. Moreover, there is here and there a metaphor that is sublime. Mr. Pope's view of the life in the second line, which is highly reminiscent of that poet, and a great deal of the latter part of our poem is lyrically flavored, as we read through Byron's "Don Juan" on the afternoons before the new quarter begins. However, we can still allow Mr. Pope the credit of the interpretation. And if the complete poem is a combination of many great styles, the preceding the night on which we completed our work. However, we can still allow Mr. Pope the credit of the interpretation. And if the complete poem is a combination of many great styles, some immediately superior to Mr. Pope, their attribution to that gentleman is more complimentary to him Ramm-Berger in their awareness; a fact, we have no doubt, which Mr. Pope would be among the first to appreciate.

(2) "And she was read in purest mountain Air." This line of poetry is known technically. All poems are translated, of course, into some other language, but it is not our function to translate them. However, it is of interest that the line seems to indicate the true nature of the situation.

(3) "Sydney's Greatest Radio Men." It is presumed that these might come to be high.

(4) "Scenic Pairs." Our mention here, in particular, to the necessity of "Half a Fine Chop." Orchestral Conductor.

(5) "Vadadour's Burly." 2PC Radio Engineer A Fine Chop.

(6) Mr. Flickr. Build, Nine Scenes for Window. A Fine Chop.

(7) Anderson. A Fine Chop. N.S.W. Manager, A.B.C.

(8) Sydney. A Fine Chop. N.S.W. Manager, A.B.C.

(9) "Kness. Portrait Whims." No; not Horseman.

(10) "Headed Bubble Wishing at the Brim." One of the best.

(11) "In Full Many an Em." Or in Many a Full Fine Chop.

(12) "State of waxy Chapelle." A Fine Chop. Accept. 2PC.

(13) "G. Vern Barnett. Accept 2PC, A Fine Chop.

(14) "No Good Better ever was derogated." Quite right, too.

(15) "Rammberg. A Dream of Beautiful Days." A woman.


(18) Miss Gibson. Pergo Brr. 2BL, 2PC A good woman. Calembur, Don't know who she was.

(19) Mr. Ferry. Racing. Omeus, 2BL, 2PC A Hot Chop.

(20) "The Evening Relay Race." A quaint new spectacle, which much of our present-day audience would thoroughly enjoy.

(21) "Vandalised Street." Castlereagh Street to the next. Good Experience.

(22) "Mrs. Haddon. O/C Officer Staff." A good woman.


(24) "Woolie Wales. Old legend of Captain Stevens..." A Fine Chop. Mgr. Women's Staff.


(28) "Carnon. Mr. New Annder. 2PC. A fine Chop.


(30) "C. H. B. N.S.W. A.B.C. Arta.

(31) "At the Curtain." I. e., as the Curtain fell.


(33) "Pulling Wire." Also descriptive Modern Budapest.

(34) "Upon their Legs de Prance." Archbishop.

(35) "Morning by starlight, wonderful." Moonlight. shining through cigar smoke.


(37) A pleasant, a rather more stern than sweet; a charming partner.

(38) "Clouds of rain." A cloud under the Sky.

This is a beautiful line. Tears to it your children.

(39) "It's up! It's Me. Ditto." When he was just no good, boys.

(40) "We will not fail." A common failure.

(41) "The Pipe is smoking around." But don't you believe it. We had to see that they were smoking around.


(43) "And straight we made our exit, all unseamed. In the circumstance, a Gesture of great delicacy.

SuccesS of Children's Party

Probably the largest audience that has ever taxed the capacity of the St. James Theater, attuned to the desires of an eager and expectant audience, filled the seats of the Radio Club to be present at a gala entertainment provided by the Junior Red Cross, Girl Guides, Boy Scouts, and the pupils of Miss Kathleen Hambury, Opportunity to attend at the same time for the children to take leave of their "Uncle Rus" (Mr. Rus Kirk), who left the following day for Peru. The entertainment was held by the kind permission of the Benjamin Franklin Club, the support of the Radio Club, and the generous assistance of Mr. John Poller, and the two managers of the Boy Scouts and the Radio Club's Society. It was the first held under the auspices of the Australian Broadcasting Company, Limited.
Your Morning Newspaper

A new service for voyagers which keeps them in touch with the world.

Our first choice for the title of this article was "Newspapers at Sea," which, taken literally, is exactly what we want to write about. But, as someone was sure to read into it an underground reference to the condition of the modern press, we decided upon the one which now decorates the top of the page. Yet the first title might easily have stood in all senses, if we are to believe Mr. Marr, M.L.A., who had some caustic things to say about newspaper readers at sea, on his arrival in London recently. Why, asked Mr. Marr, wasn't there a better wireless news service on the ships he traveled? Why was it not possible for passengers to follow world events in exactly the same way as they do at home?

In the Beginning

Ships' newspapers are not new by any means, but singularly few, except the widely travelled, know very much about them. They were begun many years ago, almost as soon as radio stations on shore began broadcasting news, and their development was rapid. In the first place they were just notes, scribbled by a wireless operator for the amusement of his favorite passengers. The shipping companies soon realized the value of this new service and gave the operators duplicators, typewriters, and instructions to issue a daily news bulletin. Then came the advertisement sheets, already made up in magazine form, in which the operator pasted his typewritten news reports, and which were sold for a consideration.

But it is the source of the news which evidently aroused Mr. Marr. Every powerful nation was quick to realize the propaganda possibilities of a free radio news service. Thus we have Nauem, Germany, transmitting news of a distinct German flavor; Rochester, with a peculiarly American leaning, and Rugby, with the taste of whatever party is in power in England. The wireless operator, therefore, must choose his news with a good deal of discrimination. Then there are other factors which prevent him extending his usefulness in this direction. News reports are probably the least vital of his duties; he has to handle a large amount of ordinary traffic in messages to and from passengers. Weather reports, time signals, and other necessities of navigation, also occupy him. It is not always possible, therefore, to provide news at sea in the way everyone would like it without considerable expense to the steamship companies.

Australian Service

But the demand for wireless news at sea is becoming more insistent, and more attention is being paid to the service than ever before. This is well demonstrated by the rapid rise of the wireless newspapers of our own ships and ships on the Australian run.

Early in 1923 the Niagara left Sydney for Vancouver with all the necessary equipment for the inauguration of the "Wireless News," the first daily newspaper to be published on board a British steamer in the Pacific Ocean. The issue of May 4, 1923, was an immediate success, and since that eventful day publication has been extended to most of the principal Australian and New Zealand passenger steamers. Still later, the paper was published daily on the five Bay steamers of the Australian Commonwealth Line, which has since been sold to English interests.

At one time the Bay steamers enjoyed the distinction of being the only daily newspaper publishers on the England-Australia voyage. And, indeed, to this very day, the only other ocean news sheets published on the Orient, P. and O. and other lines, are news bulletins which are not for sale, and do not carry advertisements, but are simply typewritten sheets of news drawn from Rugby and Australian stations, and distributed from each department of the ship.

"Wireless News"

Since its inception, the "Wireless News" has grown from an eight page to a twenty-four page paper, which sells at threepence, and it is published on all the larger passenger ships of the Australian mercantile marine. It is read by ocean travelers between all States of the Commonwealth, and between Australia and New Zealand, and Australia and the Far East. The news is typed on specially prepared stencils, is printed on board ship, and is released in magazine form for early morning distribution. The advertising columns contain a list of hotels, and firms interested in securing the patronage of sea travelers.

There are special settings for every port of call, for instance, a ship nearing Sydney prints advertising peculiar to Sydney firms, and a full sheet map of the harbor and its surroundings, with notes and instructions, of which the following is an excellent example: "The traveler from abroad, entering the harbor for the first time, obtains his latest impression of the city from the metropolis air imparted by a mass of immense buildings, standing on the elevations back from the water, and silhouetted in clear-cut outline against the western sky." Thus does the wireless operator add patriotism to a strong sense of public service, and put Sydney on the map.

Then there is what an announcer might call an interesting resume of Sydney, and a list of places well worth seeing. Turning over, we come to "Harbor Trips," which give details of the various places to which one may go when one hasn't the time to go anywhere else. Also an essay on Sydney's historic features; another on Manly, and another on the Blue Mountains. Thru the traveler to Sydney is instructed in the necessary features of our civilization, as well as in the general happenings of the world, before he enters our harbor. The same is done with every other port of call.

How It's Done

The actual preparation of the news copy is done in Sydney, at the offices of Amalgamated Wireless, whence it is transmitted by landline to the transmitting station at Pennan Hills. Thence it is transmitted simultaneously on two wavelengths, one for steamer nearby, the other for steamer in distant parts. All publishing steamers are equipped with the company's receivers, and, irrespective of distance, Australian news bulletins are always available for publication.

It is certain that we are fast approaching the time when complete and probably illustrated newspapers will be published aboard ships touching Australian ports regularly. Already this is done on the large Atlantic liners, as Mr. Marr will, no doubt, observe, if he returns via America.
In the last issue of WIRELESS WEEKLY, under the above caption, appeared an interview with a visiting American "pianiste" (why pianiste?), Madame Sonya Michell, in which the lady, protesting too much methinks, is reported to have said inter alia—

"I am thoroughly convinced that all musicians should agree, in the interest of both artists and audiences, to omit from their programmes for at least two years all compositions of (by?) Beethoven, and probably of Chopin as well. The world, including all musicians who are too timid to admit the fact, is fed up with Beethoven.

"Some people have simply got the Beethoven habit as others have got the opium habit. I prefer to be freed from the inescapable influence of the wonderful new harmonies of which the air is full. A great modern school of composers is at work to-day. Some of them will outlive Beethoven. Why should we cram Beethoven down the throat of our students when we can give them Stravinsky, Prokofiev, Schoenberg, and Ravel? It is like teaching a modern soldier to shoot with a crossbow.

"Madame Michell professes amazement that Pizzetti is practically unknown in Australia, asserts that Beethoven's Symphonies, Sonatas, Quartets, and Trios are so overdone as to become positively revolting, and that people look at her when she tells them that she hears with keen enjoyment and admiration such compositions as Honegger's "Pacific 231," Varèse's "Amériques," and Stravinsky's "Sacre de Printemps." Madame plays all the moderns she can lay her hands on—and loves them.

"Dialle for Beethoven allured to a love for "all the moderns" is an eccentricity which would arouse as little surprise in certain circles in America as the profession of hatred of Shakespeare and the reverential worship of Edgar Lee Masters and Miss Amy Lowell, or of consent for Velsaguer, Ravel, and adoration of Cezanne or Kandinsky. Perhaps it is matter of taste, but I find it difficult to believe that any sane musician could stigmatisede the symphonies, sonatas, quartets, and trios of the greatest master of modern instrumental music as positively revolting, merely because of frequent repetition.

"Madame Michell does us a service when she calls our attention to the work of the moderns, but she does her cause a disservice when she sacrifices Beethoven and Chopin on the altar of her modernity.

"The world is fed up with Beethoven," yet his compositions still find an honored place in the programmes of every great pianist and violinist and all the most illustrious orchestras in Europe and America (where, indeed, the finest orchestras in the world are to be heard). And why? Because all the great conductors and pianists and violinists are too timid, forbiddingly, to admit it.

"Two years ago in Vienna, on the centenary of Beethoven's death, musicians from all over the world met and were "fed up with Beethoven," pure and unadulterated, for nearly two weeks.

"As an American, it is perhaps not surprising that Madame Michell should hear with keen enjoyment Honegger's "Pacific 231"—an expressionist, patternless symphonic composition inspired by what was, when it was written, the latest American locomotive; and Paul Varese's "American," a frenetic imitation of Schoenberg.

"As for Chopin, most musicians will be apt to prefer the esthetic of Rubinstein: "The piano bard, the piano rhapso'd, the piano rhapsodist, the piano soulful, the piano dreamy, brilliant, grand, simple. All possible expressions are found in Chopin's compositions, and all are sung by him upon his instrument."

"Madame Michell quite justly deplores the fact that we know so little of the moderns, and she should approach their work with a perfect purity of mind. It prevents them from hearing the wonderful new harmonies of which the air is full. It is merely criticism and iconoclasm, who has thrown overboard key, tonality, sequence, modulation—everything but sound, line, and color. He is the apostle of ugliness. The three men have existed, and should exist, and Madame Michell, greatly daring, assures us that some of them will outlive Beethoven.

"As a brilliant countryman of Madame Michell has observed, "The prophesying business is like writing fugues; it is fatal to everyone save the man of absolute genius." As for Chopin, most musicians will be apt to prefer the esthetic of Rubinstein: "The piano bard, the piano rhapso'd, the piano rhapsodist, the piano soulful, the piano dreamy, brilliant, grand, simple. All possible expressions are found in Chopin's compositions, and all are sung by him upon his instrument."

"Madame Michell quite justly deplores the fact that we know so little of the moderns, and she should approach their work with a perfectly open mind. Beethoven and Chopin were both great innovators, and both suffered from ignorant contemporary criticism. Beethoven was, in fact, a revolutionary in art has been made by complete revolution, or topsyturvydom. There seems to be a law of growth in music as in life, and music, like nature, n't fret per systam.

"It is unlikely that Chopin will be displaced from our repertoires or our affections by any of the original atonality, or their host of imitators. And most musicians will agree that the music of Beethoven is still unsurpassed for nobility, grandeur, and sublimity—emotive and intellectual.
COMING UP FOR YOUR JUDGMENT

Features in Next Week's Programme

Professor Budden
MORRIS, President

STANLEY E. CATLETT, Tenor

MURDOCH-CONSERVATORY ORCHESTRA

ON Saturday Sydney will have an opportunity of hearing one of the finest classical concerts ever presented in this city, at prices well within the reach of all. This will be on the occasion of the Australian Broadcasting Company's first classical broadcast concert, which will be held at the Town Hall, and which will enable music-lovers to hear the State Conservatorium Orchestra of TS, under the conductorship of Dr. Arundel Orchard; William Murdoch, world-famous pianist; and Mr. Spencer Thomas, operatic tenor and Professor of Singing at the Conservatorium. Popular prices only (2d., 3d., 4½d.) are being charged for this concert, and the advance booking plan is now open at Parking's.

Among numbers to be presented by the Conservatorium Orchestra are the overture from William Tell; the "Peer Gynt" Suite (Grieg); "Czas" (Boccherini); Symphonic Fugue (Saint-Saens); William Murdoch's presentation will be Beethoven's Concerto in C Minor, No. 3.

The directors of the Australian Broadcasting Company, Limited, are endeavoring in the series of concerts to make it possible for the public in Sydney to hear out-standing programmes at considerably reduced prices, and if the support is forthcoming an endeavor will be made to secure the very best talent available.

The Turret Players

THIS Turret Theatre was brought into existence by its managing director, Mr. Don Finney, who designs all the scenery of the plays that are produced at the theatre, which is situated at Milson's Point. He has the assistance of some of the leading men and women of Sydney. The Turret Players will present a one-act radio play, "Danger," through 2FC, on August 15, when the artists will include Miss Phyllis Magrath, Mr. John Gould, and Mr. Richard Parry.

English Actress Says Something

MISS ANNIE HUGHES, the well-known actress, will speak on Queen Mary on August 9, in her series of "Great Personalities." She has met," from 2BL.

Miss Mimi Gressier

MISS MIMI GRESSIER, young Australian lyric soprano, will appear shortly before the listeners of Sydney. She has a fine radio personality. Miss Gressier left for abroad a few years ago to continue her vocal studies in London under Miss Nellie Row and later in America she took lessons from Serge Klibansky. While in America she attracted the attention of Dame Nellie Melba who made arrangements for a scholarship for Miss Gressier at her own conservatorium. Miss Gressier has met with notable success abroad, giving recitals in London, and in the leading cities of America, appearing in Boston, Chicago, Detroit, and St. Louis. She will appear in a series of recitals through stations 2FC and 2BL, her first being through station 2BL on August 9.

Virginia Bassetti

MISS VIRGINIA BASSETTI will appear over 2BL on August 11. She has been associated with broadcasting since its inception, and she has received letters from out-of-the-way corners all over Australia and New Zealand. Miss Bassetti has appeared with great success with the Royal Philharmonic Society, the Welsh Choral Society, and all the leading Scottish societies. Her most recent appearance was with Harold Williams at the Sydney Town Hall, in "Eli-th," Miss Bassetti specialises in classical numbers, oratorio, light ballads, and Lieder.

Stanley Catlett

ONE of the most popular tenors in Sydney is Stanley Catlett, who will be heard through 2BL on August 11. Mr. Catlett has been singing over the air for a number of years; in fact, he was associated with broadcasting before it was actually established in recognized studios, and he had to sing through a telephone instead of a microphone.

The Public Forum

THE Monday midday talks under the heading are given from the studio in Sydney by Rev. V. C. Bell, B.A., a clergyman well-known and widely known throughout the State. The subjects are always of human interest, and the aim of all the talks is to make listeners feel that life is worth while. Literature, travel, history, economics, psychology, art, and other branches of thought and experience will be called upon to contribute material from week to week.

The weekly lectures will roam over all periods for material. Mr. Bell holds that no one age has a monopoly of the good things, but that there is something of interest and value if we can find it, in every part of human history. For this reason he has used what we regard as a new word; it is "Chronopolist," or one who claims to be a citizen of all time. This will be the keynote of all his talks.

National Broadcasting Orchestra

OWING to the success of the dinner and luncheon music through stations 2FC and 2BL, the directors of the Australian Broadcasting Company, Limited, have decided to utilise the National Broadcasting Orchestras for the supply of luncheon music between 12 and 1, through 2BL and 1 and 2 through 2FC. The dinner music sessions are heard through both 2BL and 2PC from 6 to nearly 8 o'clock, and the National Broadcasting Orchestras will also provide music for both sessions.

Old-time Dance Night—2FC

AN "Old-time Dance Night" is listed for Tuesday, August 27. Listeners who are anxious for any particular old-fashioned waltz or lancers tune they want to have broadcast on that occasion are asked to send in their request items immediately to the Australian Broadcasting Company, Limited, 90-98 Market Street, Sydney.

Well-known Psychologist

FRED ARLINGTON-BURKE, who has been everywhere and seen everything, has been chosen "Nature's Laws of Compensation" as the subject for his weekly radio address over 2BL on August 15, from 2.30 to 2.45. He will give geographical peculiarities of flora and fauna.
A Single A.C.

Although designed more particularly for use with the standard high quality amplifier described last week, this unit may be operated as a simple receiver in itself.

There is nothing intricate about the circuit. As will be seen, the aerial connects to the first turn of the primary coil through a midget condenser. This allows adjustment for selectivity. The two midget condensers actually perform the same adjustment as would be possible by having the primary and reaction coils variable with relation to the secondary. Selectivity is increased by moving the primary further away from the secondary (or turning the plates of the aerial condenser outward) and sensitivity and selectivity are increased by placing the reaction coil nearer the secondary (or centering the plates of the reaction condenser).

The other end of L1 (aerial coil) connects to earth, and thence to the last turn of L2, to the rotor plates of the main tuning condenser, 0.005 mfd., to the cathode terminal of the valve socket (of the UY type) and to the rotor plates of the reaction condenser.

The first turn of the secondary (L2) connects to the stator plate of the 0.005 condenser, then to one side of the grid leak and condenser. From the other side of the grid leak and condenser, a lead is taken to the grid terminal of the valve socket (of the UY type) and to the rotor plates of the reaction condenser.

The input transformer (if the amplifier is to be used in conjunction with the all-electric amplifier, an A.C. valve is used. This does not mean that the detector unit cannot be used with any other type of amplifier. It may be used, if desired, as a straight detector with or without stages with quite good results.

The next point is that special attention has been paid to the reproduction of the higher notes. It is not generally known that the grid condenser has the effect of limiting the reproduction of the higher frequencies (we refer to the radio frequencies) and it is generally believed that a 0.0005 grid condenser is suitable for any receiver. This is correct-but because a thing is "suitable" it does not follow that the very best of results are obtainable with it.

This is only one of the stereotyped ideas that exist. Another is prevalent regarding the method of regeneration. There are quite a number of methods available. Some builders prefer one method, and others plump for another. A lot depends on circumstances, and these include financial resources, space available, vernier required, type of circuit, and other things. There are, for instance, the following principal methods of obtaining regeneration:

Use of a tickler coil the coupling of which is made variable by its relation to the secondary, i.e., variable reaction coil, fixed tickler with variable by-pass condenser, fixed reaction coil with variable resistance; fixed reaction coil, and fixed condenser (in this case regeneration is controlled by means of the filament rheostat).

The method that concerns us most at the moment is that of fixed reaction with variable condenser.

There are three ways in which the condenser may be used. In this circuit, the moving plates of the reaction condenser (a midget condenser is used) connect to the moving plates of the main turning condenser, and also to the cathode of the valve. The stator plates are connected to one side of the reaction.
**Detector Unit**

The circuit is quite straightforward and presents no difficulties for the amateur constructor. As material for a first attempt at radio construction it is ideal.

The actual construction of the unit presents no problem. The panel should receive first attention. That used in the receiver was described was made up with a panel measuring 7½ inches by 13 inches, but this can be made much smaller if desired. It is a matter that rests entirely with the constructor, who may desire to mount the unit in a cabinet together with the amplifier and gramophone, or in a small cabinet as a single valve receiver.

The drilling of the panel is made extremely simple by the template that is supplied with the vernier art dial. The two midget condensers should be mounted on the panel in positions corresponding to those shown on the photograph. Keep these as low as possible, so that the leads may be taken below the baseboard, and also for the sake of appearance. Care should be taken when mounting these midget condensers to see that they are not too low, otherwise they will foul the baseboard. If the hole for the condenser spindle is drilled approximately 2½ inches from the bottom of the panel, this distance will allow the midget condensers to be mounted at an equal distance from the bottom of the panel, giving just enough room to clear the baseboard without complications.

If the baseboard is 1 inch thick, the mounting holes in the panel should be drilled 1 inch from the bottom (one in the centre, and one at each end, approximately three inches from the sides of the panel). A good guide is provided by the holes made for the condenser spindle of the midget condensers, These were made exactly three inches from the sides of the panel, and in a line almost with the vernier control knob.

The layout is fairly symmetrical. Looking down on the receiver, with the baseboard facing you, the valve socket is placed on the left side of the baseboard, with the grid terminal facing the grid terminal of the coil, and so placed that the grid lead to the var-
Famous Women in History

A SERIES of talks, "Famous Women in History," is being given from 3AR by Miss Jessie Webb, who will take for her subject during the Women’s Hour on August 14, the Greek poetess, Sappho. This series has been arranged with the idea of giving a brief outline of the lives of famous women and of keeping listeners in touch with the progress of "the eternal feminine" throughout the ages.

Child Mimic

ADGE GUNNER, whose child studies have made him a most popular concert artist, will be heard over the air from 3LO on August 13. Possessed of an agreeable, well-trained voice, a sense of comedy and a gift of mimicry, Miss Gunner has all the qualifications for a radio entertainer.

For Dog Lovers

LISTENERS who are interested in the breeding of Alsatian dogs will learn much from the talk to be given from 3AR on August 15 by Mr. Norman Mitchell, the president of the Canine Control Council. The talk, 'Talks About Our Animals' series is proving deservedly popular, and, in view of the fact that the advisability of breeding the Alsatian in Australia has recently been discussed in the press, this talk should be of considerable interest.

Baritone Robust at 3LO

FREDERIC EARP, whose robust baritone brings to life the folk songs of the West Country, will be on the air from 3LO on August 12, in a programme of early English numbers. For many years Mr. Earp was director of singing at the Teachers’ College.

NETTIE PROGRAMMES

You Cannot Afford To Miss

Life’s Sterner Side

MORE who would like to overcome the ills and perplexities of life should pay close attention to the series of talks to be given by Mr. J. A. Gunn, Professor of Psychology at the Melbourne University. The sterner side of life’s problems will be treated in a genial vein by the professor.

Popular Freda Northcote

FREDA NORTHCOSE will be singing some dainty little numbers from 3LO during the Children’s Hour on August 13. Miss Northcote is one of the most popular broadcasting artists, and has been particularly successful in competitive work securing many first prizes. Her little pupils will be on the air again at an early date.

Grand Opera Company Contrastio

MISS CLAIRE SCOTT, who will shortly make her debut at 3AR, is a contralto with much operative experience with the Melba Opera Company, being selected to tour with the principal artists throughout Tasmania. Miss Scott studied in England under Madame Marchesi, and since her return to Australia, has taken part in important musical productions.

The Confidential Two

A TALENTED pair, contralto and pianist aptly styled "The Confidential Two," will be making their debut at 3LO on August 12 in a programme of useful vocal and instrumental numbers. Some original compositions will be included in their selections with popular and classical excerpts.

Australian Writers

LOVERS of literature will be interested in the series of talks to be given by Mr. Percival Seile, the well-known authority on Australian writers. In these days of imported literature, we are apt to forget our own gifted writers, many of whom have achieved considerable distinction in the world of letters, and these talks will do much to keep their memory green.

Ern Trotman and His Banjo

LISTENERS should remember to tune in to 3LO on August 13 when Ern Trotman and his banjo will be on the air. This versatile entertainer is known in every corner of Australia, and his original numbers always strike the popular taste. Particularly entertaining is his rendering of Grand Opera arias in which he caricatures every type of voice.

The Radio Magician

GUS QUINN, the radio magician, has stepped into immediate popularity with listeners, as, after his first appearance at 3AR, a host of congratulatory letters arrived, asking for more. Unlike the majority of magicians, Mr. Quinn does not rely on an extensive stage setting, but depends on his nimble fingers to get his effects. His programme of radio tricks with cards is equally mystifying, and "even at the other end of the ether" he is able to discover what number the listener has written on his slip of paper.

Champion of Champions

HAROLD WEBB, a fine Melbourne baritone, will be heard from 3AR on August 13, in some arousing numbers. Mr. Webb is well known in the musical circles of Melbourne, and has also made many successful tours of Victoria. He has been successful in competitive work, and a few years ago, gained the coveted title of "Champion of Champions."

Well-known Dramatic Entertainer

KEITH DESMOND will be on the air from 3LO on August 13, in a specially selected programme. Mr. Desmond has won fame on both sides of the Atlantic, and has appeared in London on the same programme with such distinguished artists as Sir Herbert Tree and Sir George Alexander.

Boy and Girl Life

AN interesting talk will be given from 3LO on August 12 by Mr. N. D. Harper, the well-known authority on English history. For his talk Mr. Harper will give outlines of boy and girl life throughout the ages, touching on the educational and home life, and drawing some little word pictures of the world of youth in bygone days.
A Dramatic Discussion on Radio Drama. With Mr. Don Finley, of the Turret Theatre, in which the participants allow themselves complete freedom, although bound down by the harsh wires of Society.

Time: 8.00 p.m.

Cast: Mr. D. J. (Don) Finley and They and Us.

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Friday, 9th August, 1929

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PROGRAMME

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Radio will make possible a richer type of play. The Inner Ear...

Drama.

-er—there's too much to see, you see?

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MUSICAL APPRECIATION

Radio is bringing about an increased study of instrumental and vocal music throughout the country. The best of our artists, performing frequently over the air, are inspiring many listeners to develop their own musical talents.

Evidence of this is assembled from correspondence received from listeners. All kinds of requests for musical advice are made—where one particular of musical scholarship be obtained, where to find a good oboe instructor, can one learn musical notation by mail, how to decide whether one is a soprano or a contralto. Where are musical instruction are made—where can parsley can be played by a girl.

The better known performers appearing at the broadcasting stations whose profession it is to give musical instruction find that many of their pupils were directed to them as a result. Of listening-in. Equally also a microphone performance of a famous musician, such as Braithwaite, will entice hundreds of people with the desire to play. Others already fairly adept at playing an instrument, listen to the interpretations given by artists over the air, and practise the compositions accordingly.

Sudden waves of musical interest are often observed after the visits of famous musicians, but seldom outside those circles which attend the Town Hall concerts. The influence of broadcasting far wider and more permanent than this, reaches people who may possibly be unaware of the existence of visiting musicians.

It is in this direction that broadcasting exercises its greatest value as an educational medium. Without a doubt the next generation will have a much more intimate knowledge of music, not only because they are hearing more, but because many are studying it themselves. This will not necessarily result in a greater number of professional artists to glut the musical market, but it does mean that there will be a deeper appreciation of the art, since personal study cannot help but make for greater understanding.

Here lies the true educational work of broadcasting. Organized properly, it can become both entertainment for some and instruction for others. Besides this influence, its use as an educational medium in other directions falls into insignificance.
Carey on Old-time Nights

Dear Sir,—In your issue of 12/7/29, I read with interest a letter signed “Old-Timer.” Tasman. Unfortunately, I was away, and not able to listen to the last dance, and therefore did not hear station 3LO announce on the night of 24/6/29 that it would probably be their last old-time night. I am a lover of jazz music, but always look forward to the old-time dance music so ably supplied by Hoffman’s Dance Band.

I would like to beg or our new broadcasting company to carry on an old-time night from 3LO once a month. There would be a lot of disappointment from the general listeners if all these old-time nights were stopped and looked for night were cut out.

Would it be to able to read other reader opinions on this subject, also wishing that “Old-Timer’s” wish comes true.

Yours etc.

A H GROSSER

Curlew.

Dear Sir,—In common with “Old-Timer,” writing in the last issue, it was with a sigh of regret that I also heard the announcer from 3LO say the possibility that would be their last old-time night.

If unfortunately this should be, then I venture to say that it will be more than a knock-back, it will be “knock-out” to thousands of listeners-in in the Commonwealth as the monthly old-time programme from 3LO, together with the popular M.C. Hoffman’s Dance Band, and hundreds of boys and girls of the village was in itself worth the license fee.

What about it “old-time friends”? Insist upon the privilege of our regular monthly treat as of yore—Yours etc...

Maroubra.

J F

We Pay for Service

Dear Sir,—I agree with “Country Listener,” pay for service. Why has the early morning and midday and late news service been cut out from 2FC? When those living in the country and near Penrith Hills have to depend on 2FC for their news items, could not some of those brain-racking violin solos be cut out for the news session?

Yours etc.

A LISTENER-IN

Wahroonga.

Market Reports

Dear Sir,—I wish to voice my keen disappointment at the decision of Dalgety’s market reports (wheat, wool, and stock) from the new programmes. This was a distinct boon to the man on the land, and enabled him to keep his finger on the pulse of values of commodities from which he gets his livelihood. It was not easily knowledge of which could easily involve a gain or a loss of many pounds. The other market reports do not meet the needs of the pastoralist or wheat farmer. The new management caters largely for the city and suburban folk, almost to the exclusion of the man to whom politicians all times destitute as the backbone of the country.

Yours etc.

WM EDWARDS

Alectown.

No “Desert Song”

Dear Sir,—Last night (20/7/29) 3BL were to broadcast the production of “The Desert Song.” Quite a lot of publicity was given to this project, and numbers of people like myself were looking forward to a night’s enjoyment. At the conclusion of the act the great Mr. E. J. Talst said a few words to the listeners-in, and also remarked that “The Desert Song” would be given in its entirety for the last time. However, at the conclusion of his speech items were given over to the studio, until the time of closing down. Many people were disappointed, more especially so when they had to listen to the class of entertainments from the studio. What was 3BL’s idea of disappointing the public on the second last night under the old regime? It certainly was not like 3BL at all.

Yours etc.

AUDLIN PARK.

Disappointed.
Get Your Money Back

Here's a Picture of Our Wonderful New "AMPLO" "B" ELIMINATOR

SOLD ONLY BY THE ECONOMIC RADIO STORES

IF you are not satisfied with your New "Amplo," return it to us in good condition, within seven days, and GET YOUR MONEY BACK.

THE NEW "AMPLO" B ELIMINATOR supplies 4 different B plus Voltages, ranging from 20 volts to 150 volts. FREE FROM HUM. CONNECTS EASILY. Price, £5/15/-

SOMETHING NEW --- Have you seen the new AMPLO "B" and "C" ELIMINATOR

Does all the "B" Eliminator does and more — It provides for 2 C— adjustments

THE AMPLO "B" and "C" ELIMINATOR

PRICE, £6/5/-

LIND VERNIER VARIABLE CONDENSERS
Low Loss, .0005. 6/6

HEGRA CONE SPEAKERS
Adjustable. Were 38 6. Now 27/6

All Electric RENOWN
The New Home Building Electric Set.
You've tried the battery Renown — now try the Electric.
Parts, complete with Valves and wiring sheet, £17 15/-

LAYOUT AND WIRING SHEET FOR THE ALL ELECTRIC RENOWN.

PRICE, FREE WITH KIT. 1'.

Andrews Low Loss Variable Condensers SIZE .00035 ONLY. 3/6

"YOURS FOR LOWER PRICES AND SERVICE THAT SATISFIES."

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COUNTRY CLIENTS—Our Mail Order Service reaches every corner of the Commonwealth. Send your orders to us unconditionally 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 £1 — 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. 1622.

PARRAMATTA
Corner Church and Macquarie Streets. 'Phone, UW 9601.

SYDNEY
126A Pitt Street, near King Street. 'Phone, M6139.
ADDING A SECOND STAGE OF SCREEN-GRID R.F. AMPLIFICATION TO THE MARCO

From correspondence received, it would appear that many owners of "Marco" receivers are anxious to install a second stage of screen grid radio frequency amplification in order to obtain greater selectivity and improved sensitivity. We present details of one "Marco" type receiver remodeled successfully in this manner:—

By E. R. PARK.

This is the list of parts required:—
1 Diccelo panel, 3½in. x 10½in.
3 tin. aluminium, 1½in. x 8½in.
1 piece aluminium, 2½in. x 19½in.
1 piece aluminium, 3½in. x 15½in.
1 sub panel brackets.
5 Forma De Luxe condensers, .0005.
1 Forma De Luxe condenser, .00025.
1 Pilot Art Dials.
2 10-ohm. rheostats.
1 30-ohm rheostat.
2 8025 valves.
1 HL410 valve.
1 DEP610 valve.
1 P635A valve.
2 value brackets.
2 transformers (any good make).
5 001 condensers fixed.
1 00025 condensers fixed.
2 mags, leads.
2 chokes, Leucas.
1 single circuit back.

All coils are wound on 3-inch diccelo tubing with 26 SWG double silk covered wire. The first coil, L1, comprises an untuned primary of 15 turns, the grid coil L2 is of 47 turns wound in the same direction spaced 4 inch away from the primary. The length of tubing for this coil is 2½ inches. Coil L3 is of 1½ turns wound on 1½ inches of bakelite. Coil L4 is 25 turns wound on 1 inch bakelite. Coil L5 is a coil of 67 turns wound in the same direction with a tap at the first 29 turns. The length of bakelite required for this will be 21 inches long. These coils must be mounted at least 11 inches from shield for best results.

Any reliable condenser may be used for tuning, but Formo have been used in this particular set. This condenser does not take up much space in the set, and, furthermore, it may be mounted on the panel without the rotor plates making contact with it. This I find to be a point which means a great deal in this circuit. I have found in shielding that it is best not to run the rotor plate wires or negative leads to the shield direct but to a point on the shield as near as possible to earth.

The aluminium for shielding being purchased at John Danks and Son, Pitt Street, and the cutting, bending, etc., may be done by A. Benetti, Sheet Metal Worker, 13 Cunningham Street, off 429 Pitt Street. This will give you a "professional" looking job which could not be duplicated without special facilities.

To mount condensers...
and rheostats is to cut out a fairly large hole in shield and mount a square of bakelite behind it. Alternatively, a bakelite panel may be used in front of the shield. The size of one described is fairly large, the panel being 24 in. x 18 in. the sub-panel 22 in. x 15 in. and the shields 14 in. x 8 in.

Just a few words in conclusion re bakelites, valves, and tuning. The B batteries for antenna results are as follows:—First—two plates 100 volts, second grid of first two valves 67 volts, detector, either 22 or 45 volts. Final plate 220 volts. In the audio stages make sure you are using the right grid bias.

Phelps A and C Eliminator will work quite satisfactorily on the B side, giving all the desired voltages. Nearly every type of valve has been tried in this receiver and many types will work quite satisfactorily. Trouble possibly will be avoided if valves with characteristics as near as possible to valves specified are used.

In tuning this receiver you will find the dial readings are nearly all the same when all dials are on zero and are in accordance with the dial readings expected.

The Old Order Changet

A T 3LO, nowadays, upon entering the busy Studio offices, one hears the programme managers being addressed as "Doctor" or "Professor," and so on, instead of plain "Mister." Professor Bernard Heine is a busy man these days directing the musical destinies of broadcasting, and so is Dr. Loftus Hills in his position as Lectures Director, whilst W G James is revelling in conducting auditions for the thousands of budding broadcasting artists, and Percy Code is latching into shape the National Broadcasting Orchestra, from which great things are expected.

Children's Hour Entertainers

NICHOLLS and Mack, two newcomers to the broadcasting world, have been engaged for the Children's Hour at the new 3LO Studio, where they will introduce some delightful musical novelties to amuse your youngest radio listeners. Both are very versatile artists and with guitar and one-string fiddle can imitate practically every known instrument. And the trio is by no means all, for one of the duo is a master in the art of mimicry, especially when it comes to domestic animals; and he is so true to life that listeners will be forgiven if they think the office cat has been suddenly called upon to join a turn.

Will Prior's Broadcasting Ensemble

M R. WILL PRIOR, conductor of the State Theatre Orchestra, will arrange a number of Sunday evening concerts to be relayed to 3AR, Melbourne. Mr. Prior has formed an ensemble of artists from the personnel of the State Theatre Orchestra. All of them are soloists of the highest order. Lionel Lawson (violinist), Bryce Carter (cellist), Harry Winfie (pianist), R.A.M. Abbey (trombonist), and the original Tom Katz Band Leader are names that are sufficient to assure listeners all over Australia of the quality of the programmes to be offered. Orchestral items will be featured as well as soloists by the various members of the ensemble. There will also be a string quartet, chamber music, organ solo, and the State Theatre's organist. Mr. Price Dunlay, and vocal numbers by well-known Sydney artists. Mr. Prior stresses that the programme numbers of the more melodious type will be included whenever possible, and will not be made without lowering the standard which Mr. Prior hopes to set.

NEW PROGRAMME FEATURES

Frazier Cosz

FRAZER COSZ, the well-known baritone, who will broadcast from station 2BL on August 9, is not unknown to listeners, as he has done a considerable amount of radio work in the last couple of years. He is a young University student, and holds the degree of B.A. He is now completing a law course, and hopes to be through next year when he intends acting on the advice of Browning Mummy, who told him to go abroad and complete his vocal studies. Mr. Cosz found himself in a very enviable position one Sunday night when broadcasting from 2PC. An episcopal gentleman had just finished giving a twenty-minute address, and Mr. Cosz was appearing immediately after him. His choice of song was "It Is Enough," from Elijah.

Mr. G. E. Smith, one of Ampol's country sales representatives, well known to Astor dealers in the north and north-west.

The Spanish Serenaders

Three Spanish serenaders, who will appear on 2BL's programme on August 5, are three very clever instrumentalists, well known to 2FC listeners as "Bill and Molly Owen." They were with the "Bandleaders" in London, a troupe of mandolinists and guitarists, and travelled all over England and the Continent with them playing before the Kaiser at Leipzig (Germany) in 1907. Sid Owen, the leader of the Serenaders, ran the string quartet for "Broken Wing," at the Palace Theatre, for J. C. Williamson, not long ago.

Interesting Woman Speaker

ROBE ANTILL DE WARREN, a Sydney journalist, is giving a series of talks over 2BL every Tuesday from 11.15 to 12.30. The title of her talk for August 13 is "The Delights of New Zealand," where the speaker has spent many happy holidays.

Well-known Radio Lecturer

One of the best known radio lecturers is Mr. C. Price Conigrave, who speaks from 2BL every Monday in the "Magic Carpet" travelogue. He has something interesting to say to all his hearers. On August 13 he will speak on "Cancas and Pots in Papua," detailing some of his experiences there when afoot a few months ago with the Lukatoe Fleet.

Popular Male's Talks

MAJOR SANDFORD-MORGAN is one of the contributors to the "Magic Carpet" series of travel talks from 2BL. He is one of the most widely known men in Australia. On August 9 he will transport his listeners to New Zealand and will speak on "Mount and the Tomb of Jonah."

The National Broadcasting Orchestra

The personnel of the National Broadcasting Orchestra for 3LO has been announced by Mr. Stuart F. Doyle on behalf of the directors of the Australian Broadcasting Company, as follows:—Director-general of music, Prof. Bernard Heine; director, William G. James; conductor, Percy Code; leader violin, Edouard Lambert; first violin, Bertha Jorgensen; pianist, Cecil Fraser; second violin, Guilford Bishop and Alfred Ackland; viola, Dorothy Barns; cell, Thomas Tiernan; bass, G. G. Franklin; flute, J. Bartle; oboe, Mignon Westen; clarinet, A. Anderson; trumpets, J. Geary, Walter Sim, trombone, J. Shackley; born, L. J. Davis.

An Irish Night

A FEW musical numbers have a wider appeal than Irish melodies, and the programme arranged by 3LO on August 13 should prove most popular. "An Irish Farewell" will be played by the National Broadcasting Orchestra, and "The A.B.C. Glee-singers," with solos, quartettes, and chorus numbers, will contribute "A Night of Irish Melodies, with song and story."
RADIOKES "MARCO" COIL KIT

is again specified for this week's receiver

Old Circuits or new—the consistency with which "Radiokes" products are specified leaves you with no option in purchasing.

The number of times this old favorite has been "written up" by technical editors throughout the Commonwealth is proof positive of its value—and leaves nothing to be said further to its merits.

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THE "SALONOLA"
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Mechanically identical with our famous
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Full-Size Console
Cabinet Models

---but much more convenient, because
you can place it just where you want it.
A new device---

DETAChABLE
LEGS
---are fitted as standard (Patent
applied for). If you wish to place your
Set on a table or a cabinet you can
dispense with the legs in a moment.

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Salonola "Threes"
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TERMS
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Battery "Standard" £25 0 0 6/3 "
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CASH
TERMS
All Electric "Standard" £42 0 0 10/9 wkly.
All Electric "De Luxe" £43 10 0 11/- "
Battery "Standard" £32 10 0 8/- "
Battery "De Luxe" £34 0 0 8/6 "

Salonola "Sixes"
CASH
TERMS
All Electric "Standard" £47 0 0 12/- wkly.
All Electric "De Luxe" £48 10 0 12/3 "
Battery "Standard" £42 10 0 10/9 "
Battery "De Luxe" £44 0 0 11/- "

OPEN UNTIL 9 P.M. FRIDAYS
388 GEORGE STREET, SYDNEY (opp. Beard Watson's)
The existence of an electric current in any circuit means that energy is being liberated at the generating source, and the continuance of this current depends upon the expenditure of energy.

In the case of a dynamo driven by steam engine, the source of supply is the coal, and the place where the energy is liberated is the furnace. Coal fumes and water vapor then pass to the boiler, and the steam thus formed is used to heat water and steam in the boiler and then to drive the engine. It has been shown that this method of driving a dynamo has an efficiency of about 47%, meaning that for every 100 units of energy delivered by the boiler, 53 units have been consumed in the process, and 47 units have been delivered by the dynamo.

A frequent question given A.O.P.C. aspirants is “How can you tell when an accumulator, before recharging is necessary? Sometimes carbon or platinum, remains un-altered, and the hydrogen is stomped from settling on the glass, celluloid, etc. are kept apart by separators of wood, glass, celluloid, etc.

The capacity of an accumulator is usually reckoned by the “Ampere-Hour.” This term, which was adopted for the dynamo, means that energy is liberated continuously so long as the current is maintained. An accumulator having a capacity of 80 ampere hours would be capable of supplying one ampere for 80 hours, or half an ampere for 160 hours, or quarter ampere for 320 hours.

On the other hand, the battery was used for 40 hours straight or one-third of which, 80 hours was used for the accumulator, and 160 hours for the battery. It is clear that the accumulator has this “90 hour intermittent ampere-hour” capacity.

The plates of the accumulator are manufactured in the following manner: Spongy lead or lead peroxide in the form of a pressed paste is pressed into the interstices of a special grid (a kind of honeycombed frame). The positive and negative plates are arranged alternately, the whole being connected at the top by lugs into a lead bar. The negative group consists of one more plate than the positive group, except in two-plate cells. The plates are kept close together in order to ensure small internal resistance, and are kept apart by separators of wood, glass, celluloid, etc.

Distilled water should always be used with the sulphuric acid. If pure water is not available, rain water or mineral water, which is a mixture of solutions of salt and other constituents, can be used. Sulphuric acid in a fully charged cell should have a specific gravity of 1.22 (sometimes written 1.220), which means that the sulphuric acid should be 1.22 heavier than an equal bulk of water.

A frequent question given A.O.P.C. aspirants is “How can you tell when an accumulator requires charging?” If the voltage suddenly drops a radio set may be functioning perfectly one moment, and not in working order the next.

In all ordinary calculations, the resistance of a cell may be taken as 2 ohms.

An accumulator does not actually store energy; its capacity is the sum of its separate resistances. This latter is dependant upon the area of the plates immersed.

An ex-act chemical action is going on in the accumulator, and not in use, as well as the time it is in use. This is due mainly to the fact that the electrolyte is a conductor to a certain extent. Owing to this fact, a fully charged accumulator will lose its charge if left idle for any appreciable length of time.

Chemical action also takes place in another manner. When we say an accumulator has a capacity of 80 ampere hours, this term is only an approximate calculation. If the accumulator is used intermittently the total use of the accumulator for one period of charging will exceed 80 hours at one ampere consumption, and may give 50 hours service. We thus say a “90 hour intermittent ampere-hour” capacity.

On the other hand, the battery was used for 40 hours straight or one-third of which, 80 hours was used for the accumulator, and 160 hours for the battery. It is clear that the accumulator has this “90 hour intermittent ampere-hour” capacity.

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DISTANCE comes in just as clear and strong as ever when you replace a Radiotron with a Radiotron.

Radiotrons are closely matched—they undergo 41 different inspections and tests, to ensure that every valve of the same type number is absolutely uniform in characteristics.

Tone, Volume, and all round quality are as dependable in one Radiotron as in another.

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RADIOTRON UX226
is an amplifier Valve, the A.C. Element of which can be operated by alternating current direct from a power transformer.

OTHER A.C. RADIOTRONS
UX227
A.C. Heater.
UX171 A
Power Amplifier, Last Audio Stage Only.
Pulse Wave Rectifier.

RCA Radiotron
Load Speaker Developments

Listening to the reproduction provided by a moving-coil speaker and a good amplifier one is tempted to think of it as being highly realistic and capable of little improvement. One has only to listen for an hour or so to the reproduction of, say, a group of orchestral records and it is then possible to sit back and visualise satisfactorily the orchestra itself in the room. Of course, in making this possible our ears are just fooling us, since even the best reproductions are far from being truly realistic.

On one occasion the writer had the opportunity of listening to some records made by the Philadelphia Symphony Orchestra on a very special amplifier and speaker immediately prior to attending a recital by the same orchestra in person. The tremendous contrast between the reproduction and the real thing was enough to dampen his enthusiasm for the modern electrostatic speaker appearing to be commercially successful. Yet another important departure from normal speaker practice is found in the "inductor dynamic" loud speaker at present being developed in America. The driving unit of this speaker is essentially an induction motor in which the armature and the pole faces, instead of being in the form of permanent magnet pole faces, are divided into two pairs of iron bars connected by tie rods and each working between a pair of permanent magnet pole faces. Unlike the ordinary magnetic speaker the distance between the armature and the pole faces is constant, the area between them being varied during the operation. It is claimed that the inductor speaker is not only more efficient than the moving-coil type on account of the use of a permanent magnet field, but that it also has an improved frequency characteristic, particularly on the low frequencies.

From technical descriptions of the electrostatic speaker appearing in a number of the magazines from overseas, it would appear that relatively high efficiencies and quite satisfactory frequency characteristics have already been obtained. One of the chief difficulties, it would seem, is in the provision of a diaphragm not definitely resonant to some frequency within the limits of the musical scale.

The tremendous contrast between the reproduction and the real thing was enough to dampen his enthusiasm for the modern electrostatic speaker appearing to be commercially successful. Yet another important departure from normal speaker practice is found in the "inductor dynamic" loud speaker at present being developed in America. The driving unit of this speaker is essentially an induction motor in which the armature and the pole faces, instead of being in the form of permanent magnet pole faces, are divided into two pairs of iron bars connected by tie rods and each working between a pair of permanent magnet pole faces. Unlike the ordinary magnetic speaker the distance between the armature and the pole faces is constant, the area between them being varied during the operation. It is claimed that the inductor speaker is not only more efficient than the moving-coil type on account of the use of a permanent magnet field, but that it also has an improved frequency characteristic, particularly on the low frequencies. It would seem highly probable that it is yet another instrument which will find a place in the reception equipment of the future.

The following table of constants of a variety of moving-coil speakers, as present in the market, presented on this page, could possibly be of particular interest to those individuals, and of general interest to others. It was abstracted from a paper by Mr. Joseph Morgan, of the International Resistance Company, in which the modern dynamic speakers were given consideration.
A SINGLE A.C. DETECTOR UNIT

Improved Grid Biasing

For Screen Grid Valve

With the advent of the screen-grid valve, several new problems have been brought to the set manufacturer or set builder. Chief among these, and perhaps the most neglected, is that of biasing the grid control at 11 volts negative potential, a factor that assumes greater importance with the employment of the screen-grid valve in short-wave sets and adaptors.

Many manufacturers and constructors have disregarded this feature entirely, having found that the valve will function without a grid bias. However, the characteristic charts of the valve show that the plate current is considerably higher when a bias is applied.

There are several ways of securing the necessary potential, most of which are too costly or impractical in short-wave reception where a storage battery filament current is essential for good results. The potentiometer system, while satisfactory, generally causes too much drain on the battery, while the insertion of a flash light cell in the ground lead, shunted by a condenser, results in unstable operation. The ideal solution is to secure the bias from the storage battery without creating any additional drain. This may be done with the aid of a very small variable resistance of the center tap type. This device is a compact wire-wound resistor with variable centre tap covering half the total length. In the 20-ohm rating, it may be inserted in the negative filament lead of the screen-grid valve in such a way that it acts as a filament limiting resistance and a variable grid bias at the same time, by connecting one end to the negative of the storage battery, the other end to the filament lead of the valve, and the centre contact arm to the ground side of the antenna tuning unit, as shown in the accompanying diagram. A smooth variation of grid bias is obtained, the filament operated at proper temperature, and maximum results are obtained from the valve.

Clever Imitator at 3LO

THE children are well catered for at 3LO, and many interesting novelties will be introduced. A pleasing combination is the ever-popular "Little Miss Kookaburra" and Roy Ryan, who is one of the best whistlers in Australia. Apart from the excellent whistling medleys of the curly-locked Roy, is a true-to-life mimic of animals and birds, and has a real kookaburra to assist in his impersonations.

Compton Coutts

"THE 'Fun Devil' was one of the many titles bestowed upon Compton Coutts by the natives of Fiji. He played the part of a local chief in the "Adorable Outcast," and, during his stay, he was perpetually attended by huge hordes of natives who took a keen delight in watching every movement, shrugging with laughter. He often wonders what attracted the natives. Mr. Coutts is an Englishman, and has been in Australia some time. He has played leading roles in comedies, staged in Sydney and Melbourne, appearing as the subscription complex parson in "New Brooms," and with Gregan M'Mahon in "Dear Brutus." "Getting Married," and "Anna Christie." He will be heard from 2BL on August 9.

The Happiness Girls

POPULAR numbers, harmonizing, and instrumental novelties, is the business of the "The Happiness Girls." Mist Anne Henderson, Miss May Sharpe, Miss Poppy Fields, and Miss Alisa Lewis comprise the quartette. They were the only item on the programme which held their audience for the full hour at the Radio Exhibition of 1928. They were "wonderful," said Miss Sharpe, and we were very proud at the time."
Gliders

How to make various kinds of heavier-than-air craft, which will fly without propulsion. An interesting article for the model aviation enthusiast.

By NORMAN LYONS

A HEAVIER-THAN-AIR craft, which has no contained power plant, but derives its lift from the reaction of wind on the wings as it coasts through the air, is known as a glider. But it must be understood that a glider flying in still air must lose altitude, as it depends on upward air currents, and must be manoeuvred to obtain height continually in these currents.

Model Gliders are of various kinds, the simplest being folded paper. No doubt many will, at first, ridicule the idea that gliders must be constructed with the same care as Model Aeroplanes. Yet this is so. Most of the elaborately-folded gliders do not give the satisfactory flight that can be obtained from a simple glider (Fig. 1), folded on the correct lines.

The paper should be 11in. x 7in., or same proportion. First, fold paper in half as at "A;" then fold in the two front corners to the centre line. Fold inwards again, as shown at "C." At "D" is shown how the paper is folded on the centre line, and the dotted line indicates how the last fold is made. "E" is the end view of the completed glider; a pin may be put in at "A" to hold it together.

The Aero paper glider, as illustrated in Fig. 2, gives a very graceful flight, and can be made to do stunts by bending its tail and wing rear edges. Again, in this case, sizes must be adhered to if a satisfactory flight is expected. Take a piece of paper 8in. square, and fold down the centre, as shown at "A." Now start the fold as shown, half an inch away from front edge, folding six times. Mark out wings and tail as shown, "B." and cut out with scissors. A spot of gum on the outside edge of the wing folds will keep them in position.

Fig. 3 illustrates one type of hand-launched glider that is used in glider contests. The fuselage is carved from a piece of clear pine or spruce, 30in. x 3in. x 2in. The wing is pine or spruce, 30in. x 4in. x 3in., shaped as shown in Fig. 4. The tail is made from a piece 12in. x 3in. x 1in., and not having a lifting section, is shaped as shown in Fig. 3. The rudder, having the same section, is made from a piece 4in. x 4in. x 1in., and is to be glued into a slot which must be cut in the tail end of the fuselage. The tail is to be glued and fastened with two small brads to the fuselage, as shown in Fig. 5. The wings are held in position by a rubber band, as shown, and the front edge of the wing is to be elevated by a piece of wood about 3in square and 2 inches long.

As shown in detail, about 1oz. of lead is necessary to weight the nose down. The correct weight can only be determined by experiment, and it is rather a good plan to use lead shot, placing a cork in the hole, when you have arrived at a definite amount.

To launch this glider, choose the side of a hill or a position that faces the wind, and at the same time gives an open space for the course of the glide. Hold it about level with your shoulder, and throw it forward, aiming just a little below the horizontal. If it dives too abruptly, lessen the weight by taking out a few shot, move the wing forward, or increase the wing elevation. If it rises and stalls, thus falling back on its tail, increase the weight, or move the wing back, or lessen the wing angle by cutting down the elevating stick. It may be found necessary to make any of all of these alterations before the glider performs satisfactorily, but when you
A MODEL Aeroplane Club is a success, if it has four features: Organisation, membership, operation, and incentive. Clubs that are famous to-day and in a healthy condition include all four features. To the Playground and Recreation Association of America, Inc. and the Kite and Model Aeroplane Association of Great Britain grateful acknowledgment is made for valuable data.

ORGANISATION: The backbone of the club is its officers and the rules that are agreed upon. The officers for a model aeroplane club might be a President, Secretary, Treasurer, Recorder, and a Committee of, say, five. The President should arrange for and preside at meetings, but in the event of his absence the chair to be taken by the Squadron Commander. The Secretary is responsible for all correspondence, minutes and roll. The Treasurer is responsible for all funds, making note and reporting of all disbursements. The Recorder has charge of posting the Club's Bulletin board up to date, tabulating all records of flights, etc. The Committee to meet as required to arrange all competitions and be responsible for their success and smooth running.

Membership: First, the organizers should decide upon age limits. If there are to be any. The Playground and Recreation Association of America recognises no minimum age but fixes the maximum at 20. The best clubs, however, have many members who are adults and because of long experience they are wonderful helpers for the juniors just joining. However, on account of competition, it is best to divide the members into three groups: Junior, which comprises all from the minimum age limit to 15 inclusive; Senior, which includes those from 16 to 20 years inclusive, and Adult or Graduate which includes those over 21 years. These can be further subdivided into categories according to the diameters of the indoor Endurance Tractor that will be published next week in WIRELESS WEEKLY. The only difference is that the power plant (that is, the propeller, rubber, bearings, etc.) is eliminated, and a slight weight added to the front. Needless to say, such gliders are made as light as possible, and since no power is used the motor stick can be considerably reduced.

Astonishingly long gliders can be made with either model, as sometimes it may encounter a rising air current and be carried aloft, whence it may make a long return glide, or if upset by a gust, it may nose over and dive until its speed reaches a balance with the wing and raises the glider into normal position.

Gliders, as shown in Figs. 3 and 5, may be converted from "hand launched" to "cata-
pult" by the addition of a wire hook, as shown in Fig. 5.

To make a catapult, all you require is an old bicycle inner tube and two stakes. Cut the tube into a long strip about 1 inch wide and 3 feet long. Tie each end of the rubber to a stake, and drive them into the ground about 2 feet apart. The glider then may be drawn back about 5 feet before releasing. The glider will fly at a very fast, and give almost the same pleasure as a power driven model.

Thus we come to the end of elementary aircraft, and if the readers have constructed the various types described so far, be sure he has made all the essential parts of a model glider. The only thing remaining to improve them is by alterations, which increase their flying power, and a tangible beginning is made in model aviation.

Next week you will see the Indoor Endurance Tractor, a model that holds the world's indoor record of 173 seconds.

A MODEL AEROPLANE CLUB

Now that model plane building and flying has become popular as a result of the Aero Club Sessions broadcast from 2BL in conjunction with the WIRELESS WEEKLY articles, it has been decided to form a Model Aeroplane Club of Australia. The objects and suggested rules of the club are published below.

INCENTIVE: Upon the feature of incentive hangs the success of the others, for without desire to do, nothing will be done. One of the best ways to maintain members' interest is by obtaining and maintaining an attractive club room. Before anything else, the feeling of possession and if they are made to feel a part of an organisation that has an inviting meeting place, they will be inspired to attend meetings and assist in preserving their club room.

Competitions, as they are wonderful sources of incentive, should be held frequently. Awards and trophies should be given for leading performances. Local jewelers, newspapers, organisations, etc., should be asked to sponsor prizes for which the members could strive. Cloth wings in different colors, to be worn in the coat lapel, will be given by Headquarters for flights of 200, 1000, 3000 feet, or durations of 30, 60, 100, 300 seconds, etc.

All clubs are to have a progressive system of advancement, and when a member has passed the stipulated study and achievements he assumes a new rank in the club. (Next week will deal with how model construction could be developed which would include agreement to abide by the club's constitution and rules, eagerness to learn model-making, intention to build a model within a specified time, etc.

OPERATION: Meetings should be held every week or every two weeks, and at such times events should follow a prearranged order of business such as: Roll call, reading and correction of minutes; committee reports, unfurled, new announcements, news business, plans, elections, features, and adjournment. The meetings should be short and snappy, interest should not lag, and the business part of the meeting should be included promptly so that model-making, flying, and discussions can be taken up. In regard to features, the Capitol Model Aeroplane Club has a popular feature called "ground school." On that occasion the members sit in rows and answer questions on model flying and aeronautics in general, put to them by the Squadron Commander. Those who miss a question must move their seat down the order of sitting, giving way to the one who answered the question correctly. At the conclusion of several rounds of questions the leaders in the sitting order are awarded some little prize, usually a piece of model-making equipment. Other features might be lectures by visiting notables or talks from one of the members on a newly discovered improvement in model construction.

In holding its contests, the club should train various members to certain tasks, such as timers, recorders, flagmen, etc. Others should be responsible for bringing the contest equipment, such as repair kits, odometers, flags, stop-watches, ground spikes, with rope, etc.

The club should be alive to municipal projects and participate in them. In that way new members will learn of the club and desire to join it, and the community in general will appreciate and approve the advancement organisation. Remember, "nothing succeeds like success."
**Remarkable Valves—**

that operate from the Power Socket

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**Philips 4 volt A.C. Valve Characteristics**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>F1</th>
<th>Amp/Sec</th>
<th>Slope</th>
<th>Price</th>
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<tr>
<td>E442 Screen Grid, H.F.</td>
<td>.9</td>
<td>1.0</td>
<td>40/-</td>
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<td>E424 Det. 1st Audio</td>
<td>.9</td>
<td>24</td>
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<td>35</td>
<td>27.4</td>
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<td>E430 H.F. 1st Audio</td>
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<td>E415 Det. 1st Audio</td>
<td>.9</td>
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<td>E408 Power</td>
<td>.9</td>
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* D.C. Tubes which are suitable for A.C. Operation.

**PENTHEODS**

**A.C. VALVES**

Advt. of Philips Lamps (Australia) Ltd. (Radio Dept.) Head Office & Showroom: Clarence and Margaret Sts. Sydney. N.S.W 9R45
Local Programmes, Fridays, August 9

INDEX

To Local Programmes

FRIDAY, AUGUST 9.
10.0: The National Broadcasting Orchestra.
10.15: Compton Coute, comedian.
10.30: Favorite Duo. Sydney Husk. Rain bacterial. 10.30: Late weather report and late news service.

2GB


2UW


MIDDAY SESSION.
12.30: Music and request numbers. 1.00: Clock and chimes. 1.45: Talk on "Homecra. by Pandora. 1.45: Music. 1.45: Close down. 4.30: Music and request numbers.

2KY

Trades and Labor Council, George St., Sydney. (Waveleth 380 metres).

9.00 a.m. Tune in to the ticking of the clock. 9.30: Music and request numbers. 10.15: Hawaiian steel guitar selections. 10.15: Music. 10.45: Clock and chimes. 10.45: Music and request numbers. 11.00: Popular orchestral re-

2UE

Broadcasting Station RUE, Stoney Street, Mornahua. 9.10 a.m. (Waveleth 980 metres).

EARLY MORNING SESSION.
9.15 a.m. Broadcast of the new musical morning music. 9.15: Music. 9.15: Clock and chimes. 10.10: Music. 10.10: Clock and chimes.

EARLY MORNING SESSION.
7.30 a.m. Broadcast of the new musical morning music. 7.30: M. G. teri. 7.30: Clock and chimes.

EARLY MORNING SESSION.
8.15 a.m. Broadcast of the new musical morning music. 8.15: M. G. teri. 8.15: Clock and chimes.

EARLY MORNING SESSION.
9.15 a.m. Broadcast of the new musical morning music. 9.15: M. G. teri. 9.15: Clock and chimes.

EARLY MORNING SESSION.
10.15 a.m. Broadcast of the new musical morning music. 10.15: M. G. teri. 10.15: Clock and chimes.

EARLY MORNING SESSION.
11.00 a.m. Broadcast of the new musical morning music. 11.00: M. G. teri. 11.00: Clock and chimes.

EARLY MORNING SESSION.
12.00 a.m. Broadcast of the new musical morning music. 12.00: M. G. teri. 12.00: Clock and chimes.

EARLY MORNING SESSION.
1.00 a.m. Broadcast of the new musical morning music. 1.00: M. G. teri. 1.00: Clock and chimes.

EARLY MORNING SESSION.
2.00 a.m. Broadcast of the new musical morning music. 2.00: M. G. teri. 2.00: Clock and chimes.

EARLY MORNING SESSION.
3.00 a.m. Broadcast of the new musical morning music. 3.00: M. G. teri. 3.00: Clock and chimes.

EARLY MORNING SESSION.
4.00 a.m. Broadcast of the new musical morning music. 4.00: M. G. teri. 4.00: Clock and chimes.

EARLY MORNING SESSION.
5.00 a.m. Broadcast of the new musical morning music. 5.00: M. G. teri. 5.00: Clock and chimes.

EARLY MORNING SESSION.
6.00 a.m. Broadcast of the new musical morning music. 6.00: M. G. teri. 6.00: Clock and chimes.

EARLY MORNING SESSION.
7.00 a.m. Broadcast of the new musical morning music. 7.00: M. G. teri. 7.00: Clock and chimes.

EARLY MORNING SESSION.
8.00 a.m. Broadcast of the new musical morning music. 8.00: M. G. teri. 8.00: Clock and chimes.

EARLY MORNING SESSION.
9.00 a.m. Broadcast of the new musical morning music. 9.00: M. G. teri. 9.00: Clock and chimes.

EARLY MORNING SESSION.
10.00 a.m. Broadcast of the new musical morning music. 10.00: M. G. teri. 10.00: Clock and chimes.

EARLY MORNING SESSION.
11.00 a.m. Broadcast of the new musical morning music. 11.00: M. G. teri. 11.00: Clock and chimes.

EARLY MORNING SESSION.
12.00 a.m. Broadcast of the new musical morning music. 12.00: M. G. teri. 12.00: Clock and chimes.

EARLY MORNING SESSION.
1.00 a.m. Broadcast of the new musical morning music. 1.00: M. G. teri. 1.00: Clock and chimes.

EARLY MORNING SESSION.
2.00 a.m. Broadcast of the new musical morning music. 2.00: M. G. teri. 2.00: Clock and chimes.

EARLY MORNING SESSION.
3.00 a.m. Broadcast of the new musical morning music. 3.00: M. G. teri. 3.00: Clock and chimes.
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3LO

Australasian Broadcasting Co. Ltd. Russell St., Melbourne.

WIRELESS WEEKLY
Friday, 9th August, 1939

3LO

EARLY MORNING SESSION
7.6: Theme of "The Soo Line," from "Body of Evidence," sung and arranged by the "North Star Orchestra.
Weather forecast. 7.15: Early rising music. 7.44: Mail and shipping. 7.45: "That's my 26th. 7.48: Market reports. 7.55: Breakfast news. 8.00: Melbourne Observations.
Weather forecast. 8.10: Close down.

MORNING SESSION
10.30: Eric Welh-current events in the racing world. 11.00: Regional music. 11.45: Mr. Morris - "The Football Field."

MORNING MUSICALE
11.15: A.B.C. Studio Orchestra, with Madame Byres, conductor. "Operettas."
10.5: Orchestra: 9.35. 3.20: Adrian Mitchell, C.T. - "Gavotte."
8.0: "Farewell March" (Schubert).
8.35: Mr. R. W. Maclaren, conductor. "Overture from "The Devil's Violin."
8.55: Mr. W. J. James. "Overture from "Guinea Pig."
9.00: National Broadcasting Orchestra, under direction of Wm. O. James; conductor, Percy Code.
9.45: Mrs. Samuels, contralto; also "Wotan's Shroud" (Wagner). 3.15: "Dream Daddy" (Keefer). 3.30: "The Spirit Flower" (Tippett).
10.0: Reproduced music. 10.45: Mrs. Goring; tenor; also "The Spirit Flower" (Tippett). 11.0: Mr. Merridew, treble. 11.25: Reproduced music.
11.45: Mr. A. C. James; conductor, Percy Code.
Recital No. 40: "Berceuse" by Saint-Saens. 4.30: Close down.

MIDDAY SESSION
1.0: To 2.0: Sydney Symphony Orchestra. "Seasons," by Haydn; "March" by Verdi; "Eurydice, Act IV" (Overture) by Gluck.
1.20: Reproduced music. 2.0: Sydney Symphony Orchestra. "Allegro K. 545" by Mozart.
2.20: Reproduced music. 3.0: Sydney Symphony Orchestra. "Carefree Waltz" by Beethoven.
3.20: Reproduced music. 4.0: Sydney Symphony Orchestra. "Concerto," by K. 545; "Carefree Waltz" by Beethoven.
4.20: Reproduced music. 5.0: Sydney Symphony Orchestra. "March" by Verdi; "Eurydice, Act IV" (Overture) by Gluck.
5.20: Reproduced music. 6.0: Sydney Symphony Orchestra. "Allegro K. 545" by Mozart.
6.20: Reproduced music. 7.0: Reproduced music. 8.0: "Sweet Dreams." 8.30: Reproduced music. 9.0: Reproduced music. 9.30: Reproduced music. 10.0: Reproduced music. 10.30: Reproduced music.

EVENING SESSION

3BB

The "Herald" Broadcast Station, Flinders Street. Melbourne. (253 metres)

MORNING SESSION
11.0: Time signals. 11.15: "The Soo Line," sung by the "North Star Orchestra."
11.30: "La Vanga."
11.40: "Operatic concert."
11.50: Winners of "Fun." 12.0: Close down.

AFTERNOON SESSION
3.0: A light program. 3.15: Brass bands and ballets. 3.40: "Aberdeen Radio Hour."

4OQ

Queensland Government Radio Service, Brisbane. (Wave-length, 380 metres)

EARTHY MORNING SESSION
7.45: "Breakfast."
7.50: "Radio Hour." 8.00: "Radio Hour."
8.15: "Radio Hour."
8.30: "Radio Hour."
8.45: "Radio Hour."
9.00: "Radio Hour."
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11.00: "Radio Hour."
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11.45: "Radio Hour."
12.00: "Radio Hour."

AFTERNOON SESSION
3.30: "Radio Hour." 3.45: "Radio Hour."
4.00: "Radio Hour."
4.15: "Radio Hour."
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10.30: "Radio Hour."
10.45: "Radio Hour."
11.00: "Radio Hour."
11.15: "Radio Hour."
11.30: "Radio Hour."
11.45: "Radio Hour."
12.00: "Radio Hour."

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2FC
Australian Broadcasting Company, Ltd., Market St.,
Sydney (Wavelength, 1020 metres).

EARLY MORNING SESSION—7 to 8.15.
7.50. 'Big Ben' and Meteorological infor-
mation for the day on the Land.
7.3. This morning's news, from the
"Guardian." No. 1.
5.45. Early rising music.
7.48. What's on to-day.
7.50. Children's birthday calls.
8.5. Music from the Studio.
9.15. Close.

MORNING SESSION—10.20 to 13.30.
10.30. Announcements.
10.32. The A.B.C. Racing Observer.
10.45. Studio organ recital, by C. Barnett.
11.0. Household Helps—Week-end sug-
suggestions.
11.15. The 2FC Studio Orchestra.
12.0. "Big Ben" and Stock Exchange in-
formation.
12.20. Midday weather forecast.
12.30. From Moree—Description of the races in the running. During intervals, from the Studio, items by the A.B.C. Orchestra and Norman Francis, tenor. Race results from Rosebery.
4.45. Close.

EARLY EVENING—5.45 to 7.55.
5.45. Kiddies' "Goodnight" stories, told by the
"Hello Man," assisted by Aunt Willy.
6.45. The Studio Dinner Orchestra.
8.40. Late news service.
5.4. From the State Theatre—Mr. Price
Dunlavy at the Grand Organ.

EVENING PRESENTATION—7 to 11.20.
8.0. From the Sydney Town Hall—A classical
concert arranged by the Australian
Broadcasting Company, Limited, featuring the Conservatorium Orchestra and leading Sydney artists.
9.0. From the Studio—Official weather forecast and musical news.
9.15. From the Sydney Town Hall—Second half of the classical concert arranged by the Australian Broadcasting Company, Limited.
10.15. Late weather forecast and an-
ouncements.
10.30. Romanos' Cafe Dance Orchestra,
conducted by Bennie Abrahams.
11.30 Close.

2BL
Australian Broadcasting Company, Ltd., Market St.,
Sydney (Wavelength, 2855 metres).

OPENING SESSION—4.15 to 11 a.m.
4.15. Music for every mood.
4.45. Meteorological data.
5.0. A musical pot pourri.
5.30. British official wireless news.
10.5. News from the "Guardian.
10.30. The Studio Orchestra—Mr. Rodda.
11.0. Close.

MIDAY SESSION—12 noon to 2.30 p.m.
12.0. Announcements.
12.2. The A.B.C. Orchestra.
12.45. "The Dinner Hour.
1.5. Studio music.
1.15. "The Dinner Hour.
1.30. Records.
2.0. At the console of the Wurlitzer organ
at the Capitol Theatre, J. Knight Barnett.
2.20. From the Sydney Sports Ground: De-
scription of the football match. During in-
tervals, from the studio, music.
5.0. The A.B.C. sporting review.
5.15. Close.

THE DINNER HOUR.
12.45. The Studio Dinner Orchestra.

THE NIGHT PROGRAMME—8 to 12 midnight.
8.0. A radio review, arranged by Charles
Lawrence and Ed. Warrington.
9.0. The A.B.C. Dance Band.
9.42. Rae Foster, popular vocalist.
10.1. Deraine and Dixie, plantation melo-
dies.
10.10. The A.B.C. Dance Band.
10.25. Late weather report and news.
10.30. The A.B.C. Dance Band.
11.0. Deraine and Dixie, plantation melo-
dies.
11.30. Romanos' Cafe Dance Orchestra,
conducted by Bennie Abrahams.
12.0. Close.

2GB
Telesopic Broadcasting Station, 29 Bligh St.,
Sydney (Wavelength, 312 metres).

3.0: Musical session, by Uncle George.
7.0: Request Hour.
8.0: Dance programme, by Sessions' Dance
Orchestra. 10.30. Close down.

2UW
Radio Broadcasting, Ltd., Piers Building, Aich St.,
sydney (Wavelength, 977 metres).
3.15: Midsummer bulletin, by Aunt George.
5.30: Children's Hour, conducted by Uncle
Jack. 6.30: Close down. 7.0: Request items.
10.30: Close down.

2KY
Trades and Labour Council, Goulburn St.,
Sydney (Wavelength 268 metres).

CHILDREN'S SESSION.
6 p.m. to Midnight: Numbers and kiddies' entertainment, Aunt Jemima and Uncle Geo.

EVENING SESSION.
7.0: Musical interlude. 7.15: Birthday calls.
10.0: Sporting features, "Purfurred," a way they ran to-day, Mr. Geo. A. Davis. 7.50: Request night. 10.5. Closing announcements.

2UE
Broadcasting Station 2UE, Storer Street, Macquarie
Junction, Sydney (Wavelength, 253 metres).

EARLY MORNING SESSION.

EVENING SESSION.
7.15: Orchestral dinner music. 8.0: Over-
tune: "Zampa." 9.10: Orchestral and vocal
concert. 10.15. Announcements. Close down.

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The dining room
James Erie Welch.
Comments on direction Wm. G. James. Conductor. Percy Code. "Petite Intermezzo, "March ad the Overture, "Don Giovanni" by Verdi. Tenor: Nell McDowell, and Mrs. Stoddart.--Vocal duet - "Valse, "The Vanished Army." 2.0: Time signal. 2.5: Close down. 3.10: Close down. 4.3: Desperation of the V.A.T.C. races held at Flemington race-course. 12.3' 12.15: News service; British official wire-line messages. 1.30: Close down. 1.15: Close down. 5.0: Close down. 6.0: Tea-time. 6.48: News service. 7.0: "When You Played the Organ" (Elgar). 7.45: Market reports. 8.0: Programmes from metropolitan weather stations. 8.10: The "Radio Dandies" present "Carlotta other Foreign Broadcasts. 8.3: Desperation of the V.A.T.C. races held at Flemington race-course. 9.0: Metropolitan weather forecast. 9.5: "The Moorish Maid" (Elgar). 10.0: G.P.O. chimes and resume of the Melbourne race. crumbs. 10.2: Musical selections. 10.4: "The Vanished Army." 10.50: "The Rex" Dance Band. 11.0: Resume of the V.A.T.C. races held at Flemington race-course. 11.35: Musical selections. 12.0: Music and songs. 12.15: - "Serenade" (Elgar). 12.30: Chimes. 12.45: Close down. Our love the King. 40Q Queensland Government Radio Service, Brisbane. EARLY MORNING SESSION 7.45 to 8.30. EARLY EVENING SESSION 7.45 to 8.30. MID-DAY SESSION 12.0: The official opening ceremony of the Mt. Remarkable National Park will be performed by the Hon. the Governor. Public instruction, will be relaxed. 1.0: Close down. 1.30: Close down. 11.0: Close down. 11.30: An octet programme of popular records specially arranged by Professor Shorter. 12.30: "Haydn Beck" - violin, - "The Moonlight." 7.0: Chimes. 8.10: Aloha. 8.1: A request programme (continued). 8.4: Time signal. 9.0: "When You Played the Organ" (Elgar). 9.5: "The Moorish Maid" (Elgar). 10.0: G.P.O. chimes and resume of the Melbourne race. crumbs. 10.2: Musical selections. 10.4: "The Vanished Army." 10.50: "The Rex" Dance Band. 11.0: Resume of the V.A.T.C. races held at Flemington race-course. 11.35: Musical selections. 12.0: Music and songs. 12.15: - "Serenade" (Elgar). 12.30: Chimes. 12.45: Close down. Our love the King. 7ZL Tasmanian Broadcasters Ltd., 35 Elizabeth St. Hobart (Wavelength, 810 metres.) 11.20 a.m.: Musical selections. 11.30: Melbourne weather forecast. 11.45: Musical selections. 12.00: The "Radio Dandies" present "Carlotta other Foreign Broadcasts. 1.0: Metropolitan weather forecast. 1.15: Desperation of the V.A.T.C. races held at Flemington race-course. crumbs. 1.30: Close down. 1.45: All sporting results to hand. 2.0: Close down. 2.15: Desperation of the V.A.T.C. races held at Flemington race-course. crumbs. 2.30: "Radio Dandies" present "Carlotta other Foreign Broadcasts. 3.0: Metropolitan weather forecast. 3.15: Desperation of the V.A.T.C. races held at Flemington race-course. crumbs. 3.30: Close down. 4.0: Desperation of League football. 4.5: G.P.O. chimes and results of race held at Flemington race-course. crumbs. 5.0: Metropolitan weather forecast. 5.15: Desperation of the V.A.T.C. races held at Flemington race-course. crumbs. 5.30: Close down. 6.0: G.P.O. chimes and results of race held at Flemington race-course. crumbs. 6.15: Desperation of the V.A.T.C. races held at Flemington race-course. crumbs. 6.30: Close down. 7.0: G.P.O. chimes and results of race held at Flemington race-course. crumbs. 7.15: Desperation of the V.A.T.C. races held at Flemington race-course. crumbs. 7.30: Close down.
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Local Programmes, Sun., August II

2FC

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 316 metres).

THE CHURCH HOUR—10 a.m. to 12.30 p.m.

10.0: Announcements.
10.0: Studio music.
10.10: This morning's news.
10.55: Rugby news.
11.0: Music.
11.0: From Petersham Baptist Church—Morning Service, conducted by Rev. O. A. Craike—Organ Prelude—"Mornin's", from Mendelssohn's 'Summer's Night's Dream'.
11.10: Prayer—with Lord's Prayer chanted.
11.15: Responsive Reading from Psalm 119.
11.20: Hymn, How Pleased and Blazed Was the Arrival of the Light.
11.25: Lesson, from 2nd Timothy, 2nd Chapter.
11.30: Hymn, 'We're a Story to Tell to the Nations' (1932).
11.35: Offering.
11.40: "Overtone in C" (Lesebreeveyly).
11.45: Anthem, by the Choir.
11.50: Prayer.
11.55: Hymn, 'Break Thou the Bread of Life' (120).
12.00: Solo, Mr. Cyril Hurgett, 'Hold Thou My Hand, Dear Lord'.
12.05: Sermon, Psalm 18, verses 7 and 8. Rev. G. A. Craike.
12.15: Benediction.
12.20: Recessional.
12.25: 11.30: Close.

AFTERNOON CONCERT—3 to 4.30.

3.0: From the Lyceum Hall. Pitt Street.
3.10: From the Weymouth Arms. Parramatta.
3.20: From the Military Club, Lae.
3.30: From the West Australian Hotel, Melbourne.
3.40: From the Grand Hotel, Sydney.
3.50: From the West Australian Hotel, Melbourne.
4.00: From the Lyceum Hall. Pitt Street.
4.10: From the Weymouth Arms. Parramatta.
4.20: From the Military Club, Lae.
4.30: From the West Australian Hotel, Melbourne.
4.40: From the Grand Hotel, Sydney.
4.50: From the Lyceum Hall. Pitt Street.

EVENING PROGRAMME—6 to 10.30.

6.0: A programme of Jewish music.
6.15: An address by Rear-Admiral Evans.
7.0: An hour with the great composers. arranged by Madame Evelyn Grice.
8.0: Ted Henkel's Canitolians and Fred Scholl at the Wurlitzer Organ.
8.15: Meditation music.
9.0: Address, by Miss Mary Rivett, 'Wisdoms of the Nations'.
9.10: Close down.
9.30: Close down.
9.45: Morning service, from St. Alphon's Church.
10.0: Music from Radio House.
10.15: Announcements. Close down.
10.30: Music and request items.

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 316 metres).

MIDDAY SESSION—10.55 a.m. to 1 p.m.

10.55: Announcements.
11.0: From St. Andrew's Cathedral: Morning service, conducted by the Rev. the Dean of Sydney.
11.15: From the Studio: Musical items.
12.0: Weso Rejoic.
12.30: From the Studio: presentation of a specially arranged programme of music.
12.35: The "Cheer-up" Society, conducted by Mr. Frank Grose.
2.30: Half an hour's music with the great masters.
3.0: Close.

LATE AFTERNOON—4.30 to 6.

4.20: The Marrickville Silver Band.
4.25: Irene Burkitt, violinist.
4.30: The Marrickville Silver Band.
4.35: Marjory Allomes, contralto.
4.40: Irene Burkitt, violinist.
4.45: George F. Manuel, tenor.
4.50: The Marrickville Silver Band.
4.55: Marjory Allomes, contralto.
5.0: Close.

EVENING SESSION—6 to 10.

6.0: A session for children in hospital.

SUNDAY WIRELESS TALKS

In speaking of "spiritual" power, has the religious consciousness of the ages been concerned with a reality capable of being scientifically investigated, or with a mere nebulous nothing, which it was fateful to attempt to analyse?

Should such a line of thought interest you, listen in to WIRELESS TALKS from STATION 2GB on SUNDAY MORNINGS, from 9 to 10 o'clock, and on SUNDAY EVENINGS from 9.30 to 9.45 o'clock.

PUBLIC LECTURES

SUNDAY EVENINGS,

The Vestibule, The Sydney Town Hall. commencing at 7 o'clock.

TUESDAY EVENINGS,

The King's Hall, 69 Hunter St.,

Sydney, commencing at 7.45 o'clock.
**Intermediate Programmes, Sun., Aug. II**

**3LO**
Australian Broadcasting Co., 130 Russell St., Melbourne (Wavelength: 290 metres).

**MORNING SESSION**
10.00: Birthday music (1931). 15.00: Reproduced music.
10.45: News of the week-end. 11.15: Morning service from St. Paul's Cathedral, sermon by Canon Shadegger. 12.30: Close down.

**EVENING SESSION**
3.0: Pleasant Sunday afternoon from Wesley Church, speech by Mr. E. K. C. Smith, chairman of the British Commonwealth Union of the U.S.A. 4.30: Close down.

**CHILDREN'S HOUR**
6.0 to 7.0: A broadcast in rhyme with John the Piper's Son and Brother Bill.

**40G**

**MORNING SESSION**
11.45: The complete morning service will be relayed from St. John's Cathedral. 11.30 p.m.: Conclusion.

**EVENING SESSION**
4.30: Children's Hour, 5.00: No sports. "The Market-Monger" (Wagner). 6.00: "Ode to Joy" (Beethoven).

**5CL**
Central Broadcasting Co., Ltd., 111 Hindmarsh Square, Adelaide (Wavelength: 700 metres).

**MORNING SESSION**
10.45: Call-to-arms from Adelaide Town Hall.
11.15: Service from Flinders Street Baptist Church.
12.15: Religious official service area. 12.15: Close down.

**EVENING SESSION**
7.30: Children's Hour. "Handle" Afternoon Service.
8.45: Close down.

**7ZL**

10.30: Special half-hour for the comprehensive listener.
11.00: Morning service from St. Andrew's Church, Perth. 11.30: Time No. 12.30: Music programme.
12.45: Close down.

**H. HECHT & CO., Pty. Ltd., 181 Clarence Street, SYDNEY**

**THE FAMOUS "BLUE SPOT"**

**SPEAKERS, CHASSIS, UNITS**

Reproduce the broadcast speech and music with those musical nuances which are so appreciated by musical critics.

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**WIRELESS WEEKLY**

Page Thirty-Six
Local Programmes, Monday, August 12

2FC

EARLY MORNING SESSION—7 to 8.15 a.m.
7.01: "Big Ben" and Meteorological information.
7.02: This morning's news, from the "Guardian.
7.03: Early rising music.
7.05: Mails and shipping.
7.08: What's on to-day.
7.09: Children's birthday calls.
7.10: From the Studio.
7.15: Close.

MORNING SESSION—10.30 to 12.30 p.m.
10.30: A.B.C. Racing Observer.
10.35: From the State Theatre—Recital at the Grand Organ, by Edgar Stone.
10.40: Trade Talks on cooking, by Miss Ruth Purat.
10.45: Australia P.A. and "Sun"—Herald news service.
11.00: Studio Orchestra.
11.05: "Big Ben": Stock Exchange, and metal quotations.
12.00: Fiction talk.
12.30: Midday market and weather reports, supplied by the N.S.W. State Marketing Board.
12.35: Close.

THE LUNCH HOUR—1 to 2.30 p.m.
1.00: Lunch to music with the A.B.C. Orchestra.
1.15: Stock Exchange, second call.
1.20: A glance at the afternoon papers.
1.25: Announcements.

EARLY EVENING—5.45 to 7.55
5.50: Stock Exchange, final call.
5.57: Late weather forecast, for the man on the land.
6.00: "Hello Man," happiness talk, by Mr. H. Morton.
6.30: Closing announcements.

MIDNIGHT SESSION

2UG

MIDNIGHT SESSION.
12.30: Music and request numbers. 1.00: Clock and chimes. 1.15: Talk on "Home-craft," by Pandora. 4.20: Music. 6.30: Close down.

2KY

MORNING SESSION.
7.00: Tune in to the ticking of the clock. 7.10: Popular fox-trots. 7.20: Hawaiian steel guitar selections.
7.30: Request numbers. 7.35: Vocal items. 7.50: A few laughs. 8.10: Planformote selections. 8.15: Calls and announcements. 8.30: Musical Interlude. 8.50: Request numbers. 9.10: Where to go to-night. 12.00: Closing announcements.

EVENING SESSION.
5.00: Birthday calls, request numbers, and "Hello Man" entertainment. Aunt Jenny and Uncle Bert.

For any Service Calls or Information, Ring.

PETERSHAM 1630

Note our New Address:-

The Resco Radio Supply Co.,
235 LIVINGSTONE RD.,
WEST MARRICKVILLE

Petersham 1630
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Curve 2.—A well-known transformer made in Australia.

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Write for a copy of the Ferranti Painting Book for Children
Interstate Programmes, Monday, August 12

3LO
Australian Broadcasting Co., 12BA Ranelagh St., Melbourne (Wavemix 301 metres.)
10.50 Hot Air Balloon. 11:00: Morning Session. 11:15 to 12:00: Afternoon Session. 12:15 to 13:00: News. 13:15 to 14:00: Air Circus. 14:15 to 15:00: Afternoon Session. 15:15 to 16:00: News. 16:15 to 17:00: Afternoon Session. 17:15 to 18:00: News. 18:15 to 19:00: Afternoon Session. 19:15 to 20:00: News. 20:15 to 21:00: Afternoon Session. 21:15 to 22:00: News. 22:15 to 23:00: Afternoon Session. 23:15 to 24:00: News.

3DB
3AR
WIRELESS WEEKLY Friday, 9th August, 1929

5CL
Central Broadcasts, Ltd., 111 Hindmarsh Square, Adelaide. General news, music, and commercial news.
MORNING SESSION
11.15 to 12:00: General programme, see Friday.
3.00 to 4.30: General programme, see Friday.

SOUTH Pacific
ASL

7ZL
Transoceanic Broadcasts Pty. Ltd., 95 Elizabeth St., Melbourne 11.10 a.m.: Record recital. 11:34: Midday weather forecast. 11:45: Midday news. 11:55: Weather forecast. 12:00: Midday news. 12:15: Special news. 12:30: Midday news. 12:45: Midday news. 13:00: Midday news. 13:15: Special news. 13:30: Midday news. 13:45: Midday news. 14:00: Midday news. 14:15: Special news. 14:30: Midday news. 14:45: Midday news. 15:00: Midday news. 15:15: Special news. 15:30: Midday news. 15:45: Midday news. 16:00: Midday news. 16:15: Special news. 16:30: Midday news. 16:45: Midday news. 17:00: Midday news. 17:15: Special news. 17:30: Midday news. 17:45: Midday news. 18:00: Midday news. 18:15: Special news. 18:30: Midday news. 18:45: Midday news. 19:00: Midday news. 19:15: Special news. 19:30: Midday news. 19:45: Midday news. 20:00: Midday news. 20:15: Special news. 20:30: Midday news. 20:45: Midday news. 21:00: Midday news. 21:15: Special news. 21:30: Midday news. 21:45: Midday news. 22:00: Midday news. 22:15: Special news. 22:30: Midday news. 22:45: Midday news. 23:00: Midday news. 23:15: Special news. 23:30: Midday news. 23:45: Midday news. 00:00: Midday news. 00:15: Special news. 00:30: Midday news. 00:45: Midday news. 01:00: Midday news. 01:15: Special news. 01:30: Midday news. 01:45: Midday news. 02:00: Midday news. 02:15: Special news. 02:30: Midday news. 02:45: Midday news. 03:00: Midday news. 03:15: Special news. 03:30: Midday news. 03:45: Midday news. 04:00: Midday news. 04:15: Special news. 04:30: Midday news. 04:45: Midday news. 05:00: Midday news. 05:15: Special news. 05:30: Midday news. 05:45: Midday news. 06:00: Midday news. 06:15: Special news. 06:30: Midday news. 06:45: Midday news. 07:00: Midday news. 07:15: Special news. 07:30: Midday news. 07:45: Midday news. 08:00: Midday news. 08:15: Special news. 08:30: Midday news. 08:45: Midday news. 09:00: Midday news. 09:15: Special news. 09:30: Midday news. 09:45: Midday news. 10:00: Midday news. 10:15: Special news. 10:30: Midday news. 10:45: Midday news. 11:00: Midday news. 11:15: Special news. 11:30: Midday news. 11:45: Midday news. 12:00: Midday news.

6WF
MORNING SESSION
11:15 to 12:00: Special programme, see Friday.
3.00 to 4.30: General programme, see Friday.

SOUTH PACIFIC
3LO
Maynard organised a band of entertainers, interesting to know that, during the war, Mr. Maynard established a home of vaudeville. It is said that at that time, the famous Dan Leno, at the London Pavilion, which was, at that time, the home of vaudeville, appeared several times on the same programme as the famous Dan Leno, at the London Pavilion, which was, at that time, the world's recognised home of vaudeville. It is also interesting to know that, during the war, Mr. Maynard organised a band of entertainers, "The Girls Who Stayed at Home," and, through this medium, was successful in raising about £14,000 for war charities.

Radio Crossword Competition

PRICE'S Radio Service announce a novel competition—to construct a Radio Crossword Puzzle incorporating not less than 50 per cent Radio terms and the name "Price's." First prize is an open order for £3:3, second prize open order for £1:1. Closing date is fixed for August 20, and winners will be announced in WIRELESS WEEKLY issue August 30.

Dramatic Baritone

ERIC JONES Melbourne bass-baritone, is included in the programme from 3LO on August 15. In some dramatic numbers. Apart from his previous broadcasting and concert work, Mr. Jones will be remembered as the winner of last year's Sun Aria Competition. When the judges predicted a most promising future for this young artist.

Successful Young Singer

MISS KATHLEEN SIMMS will be heard from 3AR, commencing on August 12, by Old English songs, interspersed with some string quartet "period" music. Miss Kathleen Simms will be remembered as a successful entrant in the ILO voice competition, and among her Melbourne appearances may be mentioned "Elijah," in which John Brownlee sustained the title role.

Negro Spirituals From 3AR

A MONG the many new quartettes that have been heard over the air lately, mention must be made of the Victory Quartette, who are giving a programme of Negro Spirituals from 3AR on August 11. Each individual member is a soloist of repute, and their ensemble work reaches a high standard.

A Glove-rotter at 3AR

A DIVERTING series of talks will be given from 3AR, commencing on August 12, by Mrs. Maurice Posner, who has just returned from a two years' trip round the world. Mrs. Posner will endeavor to give some intimate glimpses of home life in other countries, as seen through a woman's eyes.

Maynard Dakin Broadcasts

MR. DAKIN has been before the public for many years, and when he first embarked upon his professional career, appeared several times on the same programme as the famous Dan Leno, at the London Pavilion, which was, at that time, the world's recognised home of vaudeville. It is also interesting to know that, during the war, Mr. Maynard organised a band of entertainers, "The Girls Who Stayed at Home," and, through this medium, was successful in raising about £14,000 for war charities.
Local Programmes, Tuesday, August 13

2FC

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavemeter 683 meters).

EARLY MORNING SESSION—7 to 8.15 a.m.
1.1: Open.
1.2: "The Guardian".
1.3: This morning's news, from the "Guardian".
1.4: Easy rising music.
1.5: Mails and shipping.
1.6: "There's What's on Today.
1.7: Children's birthday calls.
1.8: Music from the Studio.
8.15: Close.

MIDNIGHT SESSION—10.30 to 12.30 a.m.
2.39: Announcements.
2.40: A.B.C. Racing Observer.
2.45: From the State Theatre—Recital at the Grand Organ by J. H. Stone.
3.00: Housewife's Helps—Hints to housewives, arranged by Miss Ruth Furst.
3.10: Cables, A.P.A. and "Sun"—Herald news service.
3.15: Studio Orchestra.
3.20: Big Ben, Stock Exchange and metal quotations.
3.25: Literary talk.
3.30: Morning market and weather reports, supplied by the N.S.W. State Marketine Board.
8.30: Close.

THE LUNCH HOUR—I.p.m. to 2.30 p.m.
1.10: Lunch to music with the A.B.C. Orchestra.
1.20: Stock Exchange, second call.
1.25: Advice at the Australian newspaper.
1.30: Popular education.
1.35: Literary talk.

THE NIGHT PROGRAMME—8 p.m. to 11.30 p.m.
5.15: From the Studio—the Lifeboat Hour—À musical evening, arranged by Charles Lawrence, assisted by Allan Lawrence and Nell Crane. 
5.30: Children's session, conducted by Miss Molly Long.
5.45: From the Studio—The Trade Hour—demonstration music.
6.00: Close.

THE DINNER HOUR—7.30 to 11.30 p.m.
7.15: The Studio Dinner Orchestra.
7.30: The Studio Dinner Orchestra.
7.45: What's on the Air Tonight? THE NIGHT PROGRAMME—8 p.m. to 11.30 p.m.
8.00: From the Conservatorium—A concert arranged by the Sydney Musical Society. 
8.15: From the Studio—Official weather reports.
8.16: Radio Review—A musical evening, arranged by Charles Lawrence, assisted by Allan Lawrence and Nell Crane. Lionel, Larry, and Simon Philpot.
8.25: Late weather report and news service.
10.30: Close—National Anthem.

2GB

Thomson's Broadcasting Station, 78 Bath St., Sydney (Wavemeter 683 meters).

10.0: Music—10.10: Happiness talk, by E. Bennett. 10.20: Music. 10.30: Women's session, by Miss Helen J. Heeling. 11.30: Women's session, by Miss Helen J. Heeling. 11.45: Close down. 12.00: Music. 12.30: Women's session, by Miss Helen J. Heeling. 1.00: Women's session, by Miss Helen J. Heeling. 1.15: Talk on "Home Quest items." 2.00: Women's session, by Miss Helen J. Heeling. 2.15: A dance night—The A.B.C. Dance Band.
3.00: Music and request numbers.
3.30: Close.

2KY

Monday Session—10.00 a.m. Tune in to the ticking of the clock 10.05: Popular fox-trots. 10.10: News. 10.15: Musical numbers. 10.30: Request numbers. 10.45: Music and local items. 10.55: Where to go to-morrow.
10.60: Closing announcements.

CHILDREN'S SESSION.
11.05: Birthday calls, request numbers, and "Little entertainments.

2UE

Thursday, 9th August, 1929

2UE

Broadcasting Station 2UE, Henry Street, Macquarie Avenue, Sydney. (Wavemeter 683 meters).

AFTERNOON SESSION.
1.0: Children's session, conducted by Miss Lynn. 1.15: A musical lecture. 1.30: Organ solos. 2.00: Vocal and instrumental music. 2.30: Announcements. 3.00: Over.-ture—"Plume Dame." 3.10: Close down.

EVENING SESSION.
7.15: Orchestral music. 7.30: A popular event. 8.00: Musical entertainment, "The Good and Evil." 8.30: Musicians. 9.00: Late weather report. 9.30: Music, from the Studio. 10.00: Closing announcements.

2UL

Radio Broadcasting Station, 2UL, Shop, Little Collins St., Melbourne. (Wavemeter 683 meters).

MIDDAY SESSION.
12.30: Music and request numbers. 1.00: Clock and chimes. 1.15: Talk on "Home craft." by Pandonia. 1.40: Music. 2.30: Close down. 4.30: Music and request numbers.

EVENING SESSION.
5.30: Children's Hour, conducted by Uncle Jack. 6.30: Close down. 7.00: Music and guest items. 8.00: A Carnival of Animals. 9.00: Comments on the day's affairs, by Mr. M. Prentice. 9.10: Request numbers. 10.30: Close down.

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"HYDRA CONDENSER"

Gladys Verona, soprano.

Dorothy Fitness, contralto.

Gladys Bowling, contralto.

O'Connor's Cafe Dance Orchestra, conducted by Bennie Abraham.

Lionel Hickey, violinist.

Peggy Dunbar, contralto.

Ragtime 5:25.

Romano's Cafe Dance Orchestra, conducted by Bennie Abraham.

A.B.C. Racing Observer.

United Wireless News.

Bennie Abraham, conductor.

"Pique Dame." 7 p.m.: Musical interlude. 9.10: Instrumental quartette. 9.15: From the Studio—Gwladys Bowling. 11.0: Dance music, from the Studio.

2UL

Radio Broadcasting Station, 2UL, Shop, Little Collins St., Melbourne. (Wavemeter 683 meters).

MIDDAY SESSION.
12.30: Music and request numbers. 1.00: Clock and chimes. 1.15: Talk on "Home craft." by Pandonia. 1.40: Music. 2.30: Close down. 4.30: Music and request numbers.

EVENING SESSION.
5.30: Children's Hour, conducted by Uncle Jack. 6.30: Close down. 7.00: Music and guest items. 8.00: A Carnival of Animals. 9.00: Comments on the day's affairs, by Mr. M. Prentice. 9.10: Request numbers. 10.30: Close down.
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Impedance 9,000 ohms
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mA/- volts. Fil. Current
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Four Volts.
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A12-29
Interstate Programmes, Tuesday, August 13

3LO
Australian Broadcasting Co., Ltd, Russell St, Melbourne (Wavell St, 1151 metres.)

3AR
Australian Broadcasting Co., Ltd, Russell St, Melbourne (Wavell St, 1151 metres.)

3DB
The "Herald" Broadcast Station, Flinders Street, Melbourne (225 metres.)

4QG
Queensland Government Radio Service, Brisbane (Wavell St, 353 metres.)

3LO
Australian Broadcasting Co., Ltd, Russell St, Melbourne (Wavell St, 1151 metres.)

3AR
Australian Broadcasting Co., Ltd, Russell St, Melbourne (Wavell St, 1151 metres.)

3DB
The "Herald" Broadcast Station, Flinders Street, Melbourne (225 metres.)

4QG
Queensland Government Radio Service, Brisbane (Wavell St, 353 metres.)

3LO
Australian Broadcasting Co., Ltd, Russell St, Melbourne (Wavell St, 1151 metres.)

3AR
Australian Broadcasting Co., Ltd, Russell St, Melbourne (Wavell St, 1151 metres.)

3DB
The "Herald" Broadcast Station, Flinders Street, Melbourne (225 metres.)

4QG
Queensland Government Radio Service, Brisbane (Wavell St, 353 metres.)

3LO
Australian Broadcasting Co., Ltd, Russell St, Melbourne (Wavell St, 1151 metres.)

3AR
Australian Broadcasting Co., Ltd, Russell St, Melbourne (Wavell St, 1151 metres.)

3DB
The "Herald" Broadcast Station, Flinders Street, Melbourne (225 metres.)

4QG
Queensland Government Radio Service, Brisbane (Wavell St, 353 metres.)

3LO
Australian Broadcasting Co., Ltd, Russell St, Melbourne (Wavell St, 1151 metres.)

3AR
Australian Broadcasting Co., Ltd, Russell St, Melbourne (Wavell St, 1151 metres.)

3DB
The "Herald" Broadcast Station, Flinders Street, Melbourne (225 metres.)

4QG
Queensland Government Radio Service, Brisbane (Wavell St, 353 metres.)

3LO
Australian Broadcasting Co., Ltd, Russell St, Melbourne (Wavell St, 1151 metres.)

3AR
Australian Broadcasting Co., Ltd, Russell St, Melbourne (Wavell St, 1151 metres.)

3DB
The "Herald" Broadcast Station, Flinders Street, Melbourne (225 metres.)

4QG
Queensland Government Radio Service, Brisbane (Wavell St, 353 metres.)

3LO
Australian Broadcasting Co., Ltd, Russell St, Melbourne (Wavell St, 1151 metres.)

3AR
Australian Broadcasting Co., Ltd, Russell St, Melbourne (Wavell St, 1151 metres.)

3DB
The "Herald" Broadcast Station, Flinders Street, Melbourne (225 metres.)

4QG
Queensland Government Radio Service, Brisbane (Wavell St, 353 metres.)
St. John's Church, Balmain
REV. ARTHUR GEORGE RIX. of St. John's Church, Balmain, began church life as a choir boy. But his thoughts turned first to a musical career; he served his apprenticeship in church and social work, particularly in teaching in his spare time in the Chinese Mission in Sydney. He served as a lay reader in the Parish of Bramarina, which extends into the heart of Australia and across the Queensland border, and which has an area as large as England. After ordination, Mr. Rix worked in the parishes of Grenfell, Adaminaby (which included Koscusko, and Kiandra), also the parishes of Moruya, Yass, South Coogee, and Tamworth, and he was also on the staff of Goulburn Cathedral. He came to Sydney and was assistant to Canon Lea at St. Mark's Darling Point, and was Acting-Rector of that parish when Canon Lea went to England. It was in this parish that he was associated with Canon Lea in the broadcasting of the Sunday church services broadcast in the Southern Hemisphere, through 2FC; he introduced the service while Canon Lea was the preacher. Afterwards for a year Mr. Rix was acting-rector of St. Thomas', North Sydney, the Mother Church of the North Shore. He was appointed Rector of the old parish of St. John's, Birkenhead, Balmain, eighteen months ago, and in this large industrial parish finds great scope in work amongst men and boys and the young people of that suburb.

The morning service at St. John's, Balmain, will be broadcast through 2FC on August 16. It was in this parish that he was assistant to Canon Lea at St. Mark's Darling Point, and was Acting-Rector of that parish when Canon Lea went to England. It was in this parish that he was associated with Canon Lea in the broadcasting of the Sunday church services broadcast in the Southern Hemisphere, through 2FC; he introduced the service while Canon Lea was the preacher. Afterwards for a year Mr. Rix was acting-rector of St. Thomas', North Sydney, the Mother Church of the North Shore. He was appointed Rector of the old parish of St. John's, Birkenhead, Balmain, eighteen months ago, and in this large industrial parish finds great scope in work amongst men and boys and the young people of that suburb.

The morning service at St. John's. Balmain, will be broadcast through 2FC on August 16.
Local Programmes, Wednesday, August 14

2FC
Australian Broadcasting Company, Ltd., Market St., Sydney; (Wavelength, 211 metres). EARLY MORNING SESSION—7 to 8.15 a.m.

1. Opening and Meteorological Information.
2. "Guardian."
3. Radio news.
5. "Guardian."
7. "Guardian."
9. "Guardian."
11. "Guardian."
13. "Guardian."
15. "Guardian."
17. "Guardian."
19. "Guardian."
23. "Guardian."
25. "Guardian."
27. "Guardian."
29. "Guardian."
31. "Guardian."
33. "Guardian."
35. "Guardian."
37. "Guardian."
39. "Guardian."
41. "Guardian."
42. "Herald." News readings.
43. "Guardian."
44. "Herald." News readings.
45. "Guardian."
47. "Guardian."
49. "Guardian."
51. "Guardian."
53. "Guardian."
55. "Guardian."
57. "Guardian."
59. "Guardian."
60. "Herald." News readings.
61. "Guardian."
63. "Guardian."
64. "Herald." News readings.
65. "Guardian."
67. "Guardian."
69. "Guardian."
70. "Herald." News readings.
71. "Guardian."
73. "Guardian."
75. "Guardian."
77. "Guardian."
79. "Guardian."
81. "Guardian."
83. "Guardian."
85. "Guardian."
87. "Guardian."
89. "Guardian."
91. "Guardian."
93. "Guardian."
95. "Guardian."
97. "Guardian."
99. "Guardian."
100. "Herald." News readings.

OPENING SESSION—8.15 to 11 a.m.

8:15 Music.
8:45 Meteorological data.
8:50 An old folks' programme.
8:55 British Broadcasting Wireless news.
8:59 New music.
10:10 The "Guardian."
10:10 The "Herald." News.
10:10 The "Studio" Orchestra—Mr. Rodda.
11:00 Close.

MORNING SESSION—10.30 to 12.30 p.m.

10:40 Opening announcements.
10:45 From the State Theatre—At the Grand Organ, conducted by Will Peter.
11:00 House-keeping Talk—on cooking, by Will Ruth Pest.
11:15 The Studio Orchestra.
12:30 Close.

THE LUNCH HOUR—1 p.m. to 2.30 p.m.

1:00 Lunch to music with the A.B.C. Orchestra.
2:00 Stock Exchange second call.
2:10 A glance at the afternoon papers.
2:30 Midday market and weather report.
2:50 Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.

2:30 The A.B.C. Orchestra.
2:45 Aida Bulinsa, soprano.
2:52 David M'Kissik, cellist.
3:00 The A.B.C. Orchestra.
3:15 Rozina Madell, soprano.
3:40 Hilda Grace, mezzo-soprano.
3:50 Popular dance pianist.
4:30 Harry Croft, basso.
4:40 Rosina Madell, soprano.
5:00 Hilda Grace, mezzo-soprano.
5:15 Hilda Grace, mezzo-soprano.
5:30 Dance numbers.
5:45 "The Trade Hour"—Demonstration music.

DINNER HOUR—5:45 to 7:55 p.m.

5:45 The N.S.W. Tramways Band.
6:30 "A.B.C. Younger Set Club—Boys.
Radio Club—Mr. Norman Lyon.
7:00 Studio music.
7:30 Late market reports.
7:45 The Studio Dinner Orchestra.
7:55 What's on the Air this Evening?

THE NIGHT PROGRAMME—8 p.m. to 10:30 p.m.

8:00 Our Hour of Comic Opera—The Studio Orchestra.
8:15 "Good Old Days." by George White and Others.
8:30 "The Magic Carpet." a story of tra-...

2UE
Broadcasting Station 2UE, Stirling Street, Marrickville, Sydney; (Wavelength 220 metres). MORNING SESSION.

4.30: Greetings from the clock. 10.15: Popular fox-trot. 10.45: Australian Women's A.B.C. Association, conducted by Miss E. Bennett.
10.30: The Studio Orchestra—Mr. Rodda.
11:00 Close.

EVENING SESSION.

5.30: Children's Hour, conducted by Uncle Jack.
6:30 "Studio" Close. 7:00: Music and request items. 8:00: Band recital. 9:00 Comments on foreign affairs, by Mr. J. M. Prentice.
8:10 Request numbers. 10:30: "Studio" Close.

2KY
Trade and Labour Council, Geulph St., Sydney; (Wavelength 230 metres).

2KY Radio Broadcasting Station, 2KY, Sydney; (Wavelength, 230 metres).

MORNING SESSION.

10 a.m.: Tune in to the beeping of the clock. 10.30: Popular fox-trot. 10:45: "Herald." News readings. 10:50: Vocal items. 11:00: A few musical items. 11:15: Calls and announcements. 11:20: Musical interludes. 11:30: Midday market and weather report.

CHILDREN'S SESSION.


EVENING SESSION.

7 p.m.: Musical "Interlude." 7:15: Sporting feature. 7:45: "Studio" Close. 8:00: "Studio" Close.
10.0: Request numbers. 11.0: Musical news. 11:30: "Studio" Close.

2UE
Broadcasting Station 2UE, Stirling Street, Marrickville, Sydney; (Wavelength 220 metres).

MORNING SESSION.

4.30: Greetings from the clock. 10.15: Popular fox-trot. 10.45: A.B.C. Orchestra. 10.50: Vocal items. 11:00: A few musical items. 11:15: Calls and announcements. 11:20: Musical interludes. 11:30: Midday market and weather report.

EVENING SESSION.

7.15: A.B.C. Orchestra dinner music.
7.45: "A.B.C. Orchestra dinner music.
8.15: "A.B.C. Orchestra dinner music.
8.45: "A.B.C. Orchestra dinner music.
10.15: "A.B.C. Orchestra dinner music.
10.45: "A.B.C. Orchestra dinner music.
11.15: "A.B.C. Orchestra dinner music.

THE RADIOAUTIC
Postcard Projecting Lantern
A Great Home Entertainer—No expense for slides. Just slip in the back of your picture postcard, color or plain, a snapshot, a cutting from a comic paper or one of your own drawings, and it will throw an enlarged picture on to a screen.

PRICE, 40/- and 60/- each.
Model Aeroplane Materials
Spruce, Wire, Elastic, Propellers, etc.
Walther & Stevenson Ltd.,
395 GEORGE ST. (opp. Dymock's),
SYDNEY.
Low Power Consumption

Here is a general purpose valve which consumes only one-tenth of an ampere. It is ideal for strong reception of weak signals and better reception of good ones.

Osram D.E.L. 410 is equally useful for R.F. amplification, sensitive detection, and first stage audio.

Put it in your set for better results.

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Head Office and Public Showrooms: 104-114 Clarence Street, Sydney.
Sole Agents at Brisbane and Hobart.
Interstate Programmes, Wed., Aug. 14

3LO
Australian Broadcasting Co., 13BA Russell St., Melbourne (944 metres). E.I.

EARLY MORNING SESSION
7:0 to 7:15. See Friday.

SPORTING

MORNING MUSIQUE
11:0. A.B.C. Studio Orchestra, assisted by Gracie Kingstorne at the piano.

NEWS SESSION

MID-DAY SESSION
1:0 to 1:20. Luncheon music provided by the National Broadcasting Orchestra, under direction Wm. G. James (conductor), Percy Cole.

THE RADIO NATIVE

CHILDREN'S CORNER
4:55. Little Miss Koskewih shows' waves some sort. Little kitten, and a little dog named "Miss Millie," and she is going to tell us the tiny talk. The Moon Dough will tell us some pretty stories. 5:45. Close down to the older boys and girls. 6:30. Market report.

SCHOOL SESSION

NIGHT SESSION

3DB
The "Sirlo" Broadcasting Station, Flinders, Street. 944 metres.

MORNING SESSION

AFTERNOON SESSION

EARLY EVENING SESSION

NIGHT SESSION
9:10. A trip to the moon. 9:30. Famous actors and singers. 9:40. Chamber music. 9:50. Songs of other countries. 10:00. Chamber music. 10:45. News. 11:00. "God Save the King.

40G

SLOW MOTION CONDENSERS
True Tuning Straight Line Frequency

TO avoid the difficulty which may be experienced in fitting Verner dials, we recommend the use of this con- denser, on which the slow movement is incorporated in one harmonious unit.

This model is provided with our well-known wave form, which has been se- lected by us to secure the widest possible separation of stations through- out the scale without the tendency to crowd higher wave lengths found in ordinary N.P.C. Condensers. This is, therefore, the best condenser for selec- tivity and ease of tuning. Mechanical details the same as Logarithmic Con- denser.

PRICES, complete with 4in. Bakelite Dial and 2in. Knob for Slow Motion Device -

A. BEAL PRITCHETT ( Aust.), LTD., SYDNEY AND MELBOURNE. EDGAR V. HUDSON ... BRISBANE. GIBBS, BRIGHT, AND CO. W. G. GENDERS PTY, LTD., LAUNCESTON AND HOBART.
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Because more electrical energy is packed into BOND Batteries, they contain more power. Their exceptional recuperative qualities during rest periods restore that electrical energy—and make BOND Batteries cost less per Radio Hour.

301 - 45 volts B Upright, extra large cells
304 - 45
B Flat, large cells
305 - 45
B Flat
1512 - 224
B Flat
312 - 44
B Flat

For clear, steady volume; for even, uniform reception month in and month out; for enjoyable, less costly radio hours—demand BOND Batteries!

THERE'S A BOND BATTERY FOR EVERY BATTERY NEED

General Australian Agents:

ATKINS, MACLEAN, Ltd., 119 York Street, BOND ELECTRIC CORPORATION, Jersey City, N.J., U.S.A.

OBTAINABLE AT ALL DEALERS
Local Programmes, Thursday, August 15

2FC
Australian Broadcasting Company, Ltd., Market St., Sydney (Wave length, 425 metres).

EARLY MORNING SESSION—7 to 8.15.
7.0: Australian Radiograms by Dr. W. J. MacKenzie, M.D., President of the Royal College of Physicians and Surgeons of Canada.
7.15: Wake-up music.
7.45: News from the "Guardian.
8.0: Australian Radiograms by Dr. W. J. MacKenzie, M.D., President of the Royal College of Physicians and Surgeons of Canada.
8.15: Close.

MORNING SESSION—8.15 to 12.30 p.m.
8.15: News from the "Guardian.
8.16: The A.B.C. Orchestra.
8.25: Mr. Jack Win and Miss Nora Wildnkle, in a dramatic sketch.
8.30: The Studio Orchestra—Mr. Rodda
8.35: Close down.

LUNCH HOUR—1 p.m. to 2.30 p.m.
1.00: Food news from the "Guardian.
1.15: Mrs. Dorothy Jordan. 2.51 "A Sound of Music."
1.30: The A.B.C. Orchestra.
1.45: Miss Gwen Varley. 2.50 "A Sound of Music."
1.45: Close down.

EVENING SESSION—4 p.m. to 10.30 p.m.
4.00: "Road Shows"—Mr. G. Mason.
4.30: "Popcorn and Pellets," by Lord Mayor's Fund committee. 5.30: Miss Green.
5.30: Close down.

2KY
Trades and Labor Council, Goulburn St., Sydney (Wave length, 360 metres).

MORNING SESSION—8.15 to 12.30 p.m.
8.15: "Road Shows"—Mr. G. Mason.
8.30: Popular fox-trots.
8.35: Close down.

EARLY MORNING SESSION—7 to 8.15.
7.00: Reading time. 8.00: Popular music.
7.30: Close down.

MID-MORNING SESSION—8.15 to 9.30 a.m.
8.15: "Road Shows"—Mr. G. Mason.
8.25: "At Home," with Mr. Jack Win and Miss Nora Wildnkle.
8.45: "Road Shows"—Mr. G. Mason.
9.00: Close down.

MIDDAY SESSION—9.30 to 11 a.m.
9.30: "Road Shows"—Mr. G. Mason.
9.45: Close down.

AFTERNOON SESSION—1.30 to 3.30 p.m.
1.30: "Road Shows"—Mr. G. Mason.
1.45: Close down.

EVENING SESSION—5.30 to 6.30 p.m.
5.30: "Road Shows"—Mr. G. Mason.
5.45: Close down.

2UE
Sydney Broadcasting Station, 29 Bligh St., Sydney (Wave length, 290 metres).

MORNING SESSION—8.15 to 10.30 a.m.
8.15: "Road Shows"—Mr. G. Mason.
8.30: Vocal numbers.
8.35: Close down.

EVENING SESSION—5.30 to 7.30 p.m.
5.30: "Road Shows"—Mr. G. Mason.
5.45: Close down.

2GB
Sydney Broadcasting Station, 28 Nott St., Sydney (Wave length, 550 metres).

OPENING SESSION—8.15 to 11 a.m.
8.15: Music for every mood.
8.30: "Road Shows"—Mr. G. Mason.
8.45: Popular music.
9.00: "Road Shows"—Mr. G. Mason.
9.15: Close down.

MIDDAY SESSION—12.30 to 1.00 p.m.
12.30: "Road Shows"—Mr. G. Mason.
1.00: Close down.

AFTERNOON SESSION—3.30 to 4.15 p.m.
3.30: "Road Shows"—Mr. G. Mason.
3.45: Close down.

EVENING SESSION—6.30 to 7.15 p.m.
6.30: "Road Shows"—Mr. G. Mason.
6.45: Close down.
**Vitreous Enamel Wire-wound Tapped Resistors,**
14/6.
For B Eliminators.
1132 ohms.

<table>
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<tr>
<th>Kit for Making Three-valve Set, without accessories</th>
<th>£3/16/-.</th>
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<tr>
<td>Wallace Constructional Booklets, One, Two, and Four Valves</td>
<td>6d.</td>
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<td>B Batteries, double capacity, 60-volt.</td>
<td>13/6.</td>
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| Quaker Condensers | .0035, 7/6; .0055, 7/3; .0063, 7. |

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<th>Single Valve Kit.</th>
<th>£2/-./-.</th>
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<td>With Accessories.</td>
<td>£4/12.6.</td>
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**Wallace Condensers, Single-hole Mounting,**
5/11.
Three-hole Mounting,
3/6.

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<th>The Famous Reimartz Pour.</th>
<th>£5/-./-.</th>
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<td>THE KIT.</td>
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**UNEQUALLED**

**£17 BUYS OUR ALL-ELECTRIC 3-VALVE KIT**
£19/10/- with speaker

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£19/10/- with speaker

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<th>Exide 20-amp. 4-volt Accumulators.</th>
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<td>2 Volt, 1/9.</td>
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| Western Electric Headphones, 4000 ohms. | 19/6. |

**Sterling Mellovox Cone Speakers. Good as the best.**
27/6.

**Four valve All-Electric Kits, complete (excepting Speaker)**
£19/-./-.

**“Community Three” Booklet. A set for the Multitude.**
10d.

**“Electrified Radio.” How to Make your Set All-electric.**
1/-.

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THE OLDEST RADIO FIRM IN TOWN
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**A**

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Construct a Radio Crossword Puzzle incorporating not less than 50 Radio terms, and the name

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Entries close 20th August
Address efforts to
“COMPETITION,” Box 3326PP, G.P.O., Sydney.

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- .005 Low Loss SLF Condensers
- .0035 Low Loss SLF Condensers
- Dora 4in. Bakelite Vernier Dials
- Dora 3in. Bakelite Vernier Dials
- 3 Stage Resistance Coupled Units
- Resistogards
- .00915 Condensers
- Beede 0-50 Volt Meters
- Beede Accumulator Test, Meter

**PRICE’S RADIO SERVICE,**
Angel Place, Sydney. B4146
**Interstate Programmes, Thursday, August 15**

**3LO**
Australian Broadcasting Co., Ltd. (Mr. Russell St., Melbourne, W.1, W.1, W.1.)

**EARLY MORNING SESSION**
6.30 to 7.00: Personalities on the Air. The Melbourne National Orchestra - directed by Mr. Claude constituents. rebuilding after E. O. James (conductor, Percy Can.

**MIDDAY SESSION**
1.20: Lunch menu selected by the National Broadcasting Co., Ltd. (conductor, Wm. O. James (conductor, Percy Can.)

**3DB**
The "Melbourne" Broadcast Station, Flinders Street, Melbourne (255 metres)

**EVENING SESSION**
7.00: Farming 
7.15: News
7.30: Musical selections
7.45: Market reports
8.00: Selections
8.15: News
8.30: Selections
8.45: News
9.00: Selections
9.15: News
9.30: Selections
9.45: News
10.00: Selections
10.15: News
10.30: Selections
10.45: News
11.00: Selections
11.15: News
11.30: Selections
11.45: News
12.00: Selections
LEVENSON’S Real Radio SALE
THE GREATEST EVER— Positively Terminates Thursday, August 15th

All Country Orders must be in the post on or before Thursday, August 15th

A FEW PLUMS SELECTED AT RANDOM FROM THE HUGE TREE OF BARGAINS

Amplion Speakers, A.R. 88. 90/-. Now 45/- Less 4/- in the £.
Gecophone Speakers, £6/10/-. Now 30/- Less 4/- in the £.
Stromberg-Carlson Speakers, £5/15/-. Now £3 Less 4/- in the £.
Sferavox Cone Speakers, £5/5/-. Now 50/- Less 4/- in the £.
Sonochorde Cone Speakers, 84/- Now 67/- Less 4/- in the £.
Ultra Air Column Speakers, £6. Less 4/- in the £.
Theria 150-volt “B” Batteries, 35/- Now 25/- With 12-volt “C.” Less 4/- in the £.
Lissen Speaker Units, 13 9. Less 4/- in the £.
Harrie Wave Traps, 35 - Now 26-. Less 4/- in the £.
Harrie Detectors, 6 9. Less 4/- in the £.

All Less Extra 20 per cent Discount

Off EVERYTHING 20% To EVERYBODY Excepting a few proprietary lines And 15/- Heavy Duty “B” Batteries A 25/- line

English Base, 4-volt Valves. 10/6. NOW 1 6. Less 4/- in the £.
Magnus Head Sets, 35/- Now 17 6. Less 4/- in the £.
Gradeon Gramophone Pick-ups, 90/- Now 30/- Less 4/- in the £.
Thousands of Variable Condensers, all capacities, from 3/- Less 4/- in the £.
Continental Cone Speaker Units, 13 6. Less 4/- in the £.

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This is our special invitation to you to come and see us in our new home. We have got over the hustle and bustle of moving and are now ready, "all dressed up and pretty," waiting to receive visitors. To our old friends—to new friends—this is our hand-shake!

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- Philips Products
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- Columbia Batteries
- Radiotron Valves
- Mullard Valves
- Cossor Valves
- Osram Valves
- Amplion Speakers
- Burgess Batteries
- Airzone Products
- Blue Spot Speakers
- Radiokes Speakers
- Wetless Products
- Ferranti Products
- Jackson Condensers
- Emmco Products
- Essanay Products
- T.C.C. Condensers
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UDISCO ELECTRIC 3

E.L.4.—£37/10/0

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E.L.5.—£44/10/0

The Only Table-model Set With Built-in Speaker

ARRANGE FOR A DEMONSTRATION IN YOUR HOME

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THE HOME OF THE ROLA SPEAKERS.
We can use the following passage to understand the content:

"If you are in difficulty about receiver connections, or want help with anything to do with your receiver, ask Robert QUARTZ.
OPERATING FILAMENTS FROM A.C.

Unfortunately, an article published last week under the above heading was incomplete. The conclusion of the article follows below. Refer to Figs. 1, 2, and 3. Though no reader forwarded a complete experimental report, information on one Precise 4-1 audio transformer has been awarded to Mr. G. Younger, Wallend Street, Petal Main, who submitted his theory regarding grid and plate circuits.

In Fig. 1 we see the conventional detector circuit. The principle is generally known. The filament on being supplied with D.C. heats up, and emits electrons (particles of negative electricity), which, owing to the positive potential of the plate with respect to the filament are attracted. On their way to the plate, the electrons are controlled as regards their rate of flow, by the grid which is made negative to decrease the rate of flow (as liquids of electricity are repelled and positive when a greater flow is required). The coil, together with the grid condenser, grid leak, and grid element of the valve, forms the "grid-circuit."

Now it will be noticed that on Fig. 1, one half of the filament (in the diagram, the left half) will be less negative than the right half, since the pointed polarity of the filament wire will gradually become more negative as we follow it round to the right. A flow of electrons constitutes a flow of electricity, and since the direction of the flow is never negative to positive (because of a superabundance of electrons at the negative pole) it stands to reason that the emission will be from the right or negative half of the filament.

Now glance at Fig. 2. Here the "A" battery has been reversed, and as a result the filament is returned to the negative (while the plate was the positive) and the greater electron emission is from the left side of the filament. Fig. 3 closes next. Here you see the detector circuit using an A.C. valve. The additional element is the "rectifier" or "cathode." Note that the filament is now independent of any part of the circuit with the cathode placed so that it will intercept heat from the filament. In Fig. 3, the filament supply is shown as A.C. According to the rate of fluctuation the potential of the left half, and the right half of the filament will be continually changing. However, we are not much concerned with this when using the cathode because the purpose of the filament here is not to emit electrons, but to supply heat (for the cathode, in order that the latter may supply electrons. As the cathode is eventually connected to B negative (through the plate circuit), the complete electrical circuit is completed, and the fluctuating temperature of the filament itself is negligible.

Then we strike another interesting fact. Juno the ordinary D.C. valve, a field is set up around the filament, and this influences the electron stream. In the A.C. tube the current in the filament was found to be that when a current is passed through a filament, magnetic lines of force are set up. Our generator for the experiment showed that another wire placed near that carrying a current, would carry a magnetic field. Since the magnetic lines of force are fluctuating, the electron stream will be caused to fluctuate in phase. In addition to this, the A.C. supply (off course, being connected to the grid circuit) will ultimately make the grid negative and positive.

Advancing further, we see that a fluctuating grid potential will cause a fluctuation in electron flow which has, of course, an effect on the grid control circuits which flow still further, the fluctuating electronic flow will cause a fluctuating plate current.

The cathode is termed "Indirectly Heated," since it derives its heat not directly from the primary circuit, but from the secondary circuit, current through the filament.

Juno, the ordinary D.C. valve, has an A.C. on a three electrode valve, i.e., without an indirectly heated cathode, a fluctuating magnetic field is set up, and the fluctuating potential drop along the filament is zero. Temperature is a factor which must be considered.

The hymn is more pronounced when A.C. is being used on the detector owing to the fact that the audio stages following amplify all that is fed to them by the detector.

The fluctuating drop along the filament results in an output voltage ripple which may be reduced greatly by returning the grid and plate circuits to a centre tap across the filament supply. This means that the B negative return to filament (or return of the electrons to the filament) and the grid return, should be connected to the earth or "Grounding" point, and since it is A.C. when this is done, it matters little whether the left half or the right half of the filament is at negative or positive potential.
You hear them all with a MARCONI

WANG of the banjo—boom of the drum—high notes of the violin—blare of the cornet. They're all there with the Marconi Speaker. Nothing is lost; every single instrument is reproduced naturally just as though the orchestra were actually in the room. Volume controlled to any pitch by a simple adjustment—tone that satisfies the most critical ear.

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45 ADELAIDE STREET, BRISBANE.
THIS speaker, with its “16 inch” non hygroscopic bronze cone, its superlative “one-piece” mahogany bakelite moulding, and polished rim, is a most beautiful model, and well worthy of the name of Amplion. Its beautiful reproduction is well in keeping with its beautiful appearance.

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