

Ray Allsop and Don. B. Knock — Technical Editors.

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Wireless Weekly 3^d

INCORPORATING "RADIO IN AUSTRALIA & NEW ZEALAND"

VOL. 13. NO. 20.

FRIDAY, MAY 10, 1929.

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

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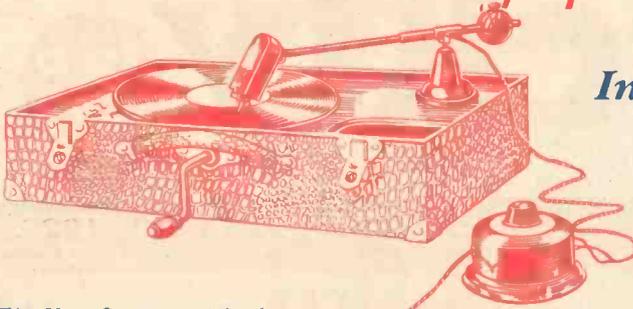
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- A Summary of the Specifications for Programme Tenders
- The Radio Exhibition in Review
- Comp' [redacted] raphs
- Faults in Audio and Radio Transformers
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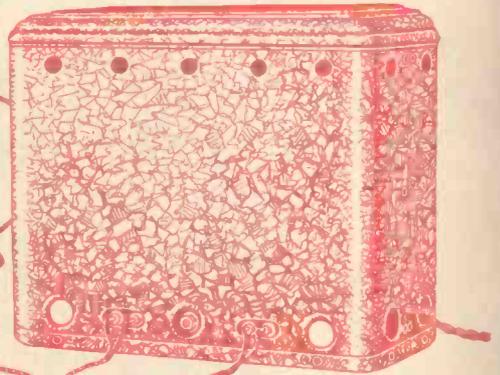
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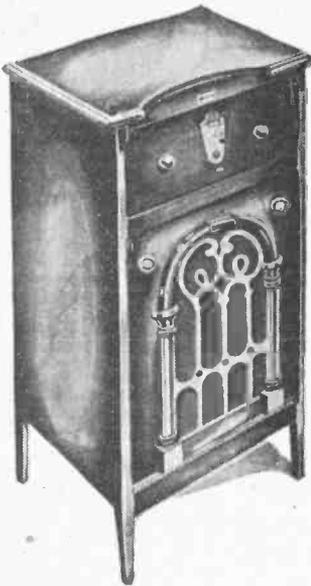
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This entirely new Receiver has met with such success that production facilities had to be considerably augmented to supply the demand.

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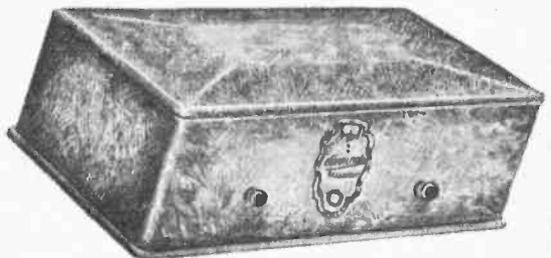
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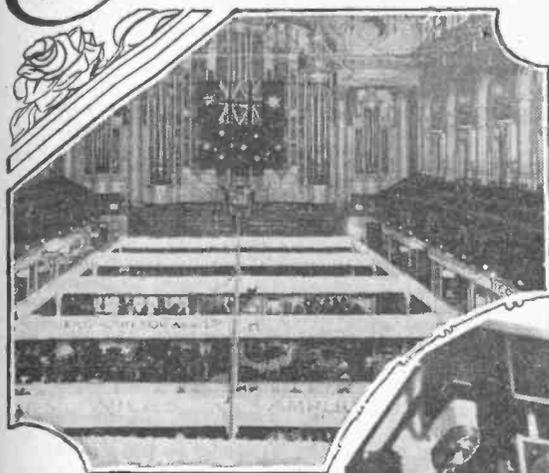
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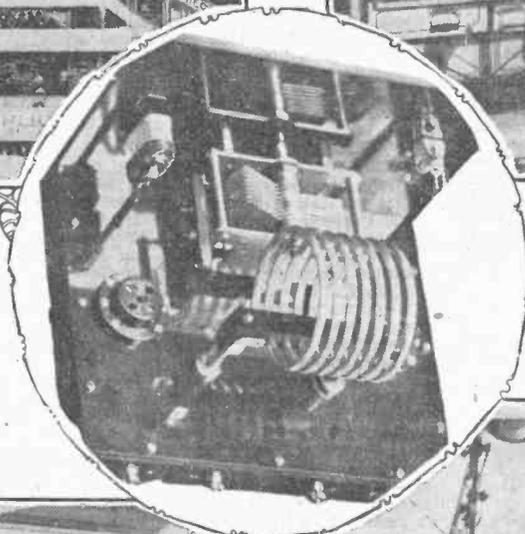
AT THE RADIO EXHIBITION



A general view of the main hall of the Exhibition from the gallery, showing stands.



A practical cooking demonstration being given at the stand of W. G. Watson. Many housewives were attracted.



One of the giant loud-speakers at the Exhibition, which amplified the voices and music of the performers on the stage in the main hall.

Below: A corner of the Amplion stand, showing the Astor A.C. receiver, which attracted considerable attention.



The prize-winning piece of home-made apparatus in the amateur section—A wavemeter.

BETWEEN YOU AND ME AND THE MICROPHONE

Mere Playfulness

WE heard sounds of a fierce quarrel in 2BL's waiting-room the other night. The noise higher and higher, and denunciations flew hither and thither, and then the woman's voice became freezingly haughty and the man's became even more freezingly haughty. It was frightful to hear two such old friends as Dorothy Manning and Harry Graham quarrelling. But we were relieved, when we gained courage to investigate, to find that they were only quarrelling on paper,



as it were, as a preliminary to their public quarrel arranged for that evening. "You're not really angry," explained Mr. Graham, "you're just haughty, you know." "Quite right," said Miss Manning, "I understand."

"Iddils or Idylls"

THE recent code framed by the select committee appointed by the B.B.C. reveals some extraordinary pronunciations, and in using them much comment and criticism, with a fair sprinkling of wrath and ridicule, has been the result. Maurice Dudley, of 3LO, however, draws the line with his true poetic instinct at the pronunciation of "Idyll." He for one refuses to pronounce it "Iddil." Imagine "The Iddils of the King"—surely Tennyson never thought such ugliness.

Song of the Skirt

IN the tiny office of Mr. Basil Kirke, at 2BL, there hangs a piece of string, from which are suspended many strands of dried grasses; and thereby hangs a tale, which Mr. Basil Kirke has not told us. All we can say is that this queer phenomenon is known as a Sulu vaka viti, which might seem highly improbable but for the fact that Mr. Basil Kirke himself gave us the information. Still, we are rather curious to know why Mr. Basil Kirke should have a woman's skirt (for such, we regret to say, it is) in his office. What use is it to Uncle Bas? We have never seen him wearing it. He has never offered it to anyone as a present. We are reduced to considering it either as a keepsake or as a souvenir.



The Time is—

AWAY back in Eureka, near Port Augusta, almost where the South Australian Government turns travellers adrift on the great desert railway to the land of the Golden West an old patriarch was listening in one night when the announcer said: "The Melbourne Observatory time is eleven o'clock." Taking out his watch, the old man said: "Quite correct, they keep fairly good time at 3LO."

The Course to Follow

MR. FERRY'S latest. He was broadcasting from Randwick when he felt someone tug at his coat. "Hey!" said the stranger, holding out his hand, "here's five shillings. I want you to broadcast a message to my girl in Wollongong." "Send her a letter-gram," answered Mr. Ferry. "I can't do it for you." But it took some time to persuade the man that Mr. Ferry was not a kind of public radio telephone.

You'd Scarcely Believe It

MR. RAY ALLSOP came up to 2BL with Mr. John Stannage, wireless operator of the Canberra, not long after its search-flight. Mr. Allsop trembled with excitement. He was to interview Mr. Stannage over the air. For the first time the man who has watched over 2BL's operations for five years was beset with mike-fright. But the interview came through very well; and Mr. Allsop is to be congratulated on his nerve in the face of the enemy.

Canbury

MESSRS. BETTERIDGE and Simpson, two A.W.A. engineers, who handled loud-speaker installations during Anzac ceremonies at Canberra, will have ample cause to remember their visit. Certain difficulties arose as to loud-speaker positions, and steel standards, which required postholes three feet deep, had to be erected. The A.W.A. men began on the postholes; but after they had dug one foot down, they encountered the hard Canberra rock. A crowd of disengaged mechanics gathered round and cheered the pair on as their crowbars rose and fell—not a very nice kind of cheering, we are afraid. When the facetious remarks were flowing thickly, Mr. Betteridge was heard to remark that he wouldn't like the job of gravedigger at Canberra. But, of course, so many people connected intimately with the place are interested in each other's grave-digging that we doubt whether Mr. Betteridge could get near the job.

Miss as Good as a Mile

THE opening of the Sydney Radio Exhibition had been completed, and the gentlemen who had occupied prominent positions on the Town Hall platform were deciding whether or not to leave, when Miss Maggie Foster, 2BL and 2FC violinist, arrived by way of the central entrance at the back of the stage, violin and bow in hand, ready to give her performance. Miss Foster, waiting for the gentlemen to descend by the usual stairway at the right, did not notice Sir Arthur Cocks as he moved to jump down the back of the platform to exit secretly by way of the same centre passage, and her violin bow moved in a direct line towards the knightly eye. The imminent catastrophe was averted only by the quickness of Miss Mabel Batchelor, who diverted the bow from its course at the last moment with a sudden sweep of her artistic hand. Sir Arthur moved onwards with becoming knightly grace and dignity, unaware of the horrors which had lurked in ambush about his path.

Upright Gentlemen

MAJOR-GENERAL SIR CHARLES ROSENTHAL, K.C.B., C.M.G., D.S.O., V.D., came up in the 2BL lift with Lady Rosenthal on Anzac Day, to talk about the Spirit of Anzac. Captain Stevens met them at the lift door. "Squarrrrrd Shun!" exclaimed the captain. Tom Innes stood up like a stick of dynamite behind the control room switches, and Mr. Upton Browne and a visitor stiffened visibly in the corridor. "Carry on, sir?" asked the captain of an amazed major-general. "Er—yes—yes; carry on," answered Sir Charles. He was shown into the studio, where he placed a pocketful of medals, with a sigh of relief, on the top of the piano, and began to talk on the Spirit of Anzac.



Bruceian Quandary

THE thoroughness of the Postmaster-General's Department was quite adequately exemplified by the staff sent down to arrange the Anzac Day transmission from the Canberra mansion of Prime Minister Bruce. Every telephone in the district was cut off, and electric power also during the transmission; and every precaution possible was taken to prevent interference. And so it was that the Prime Minister, emerging from his dining-room to go to his study, whence the speech was to be broadcast, turned to Mr. Williams, of the New South Wales Broadcasting Company Limited, and said, "Why, man, you've brought the whole darned countryside here with you. I thought I was to broadcast a speech, not address a public meeting."

Reminiscences

ON Anzac Day Uncle Bas told the tale of a donkey. It was a circus donkey, so the Anzac, who brought it into camp against regulations, said; and it would find anything you named. The Digger then explained that he had brought it into camp to find several bottles of whisky which had been confiscated some days before. When Uncle Bas came off the air a man rang up to ask what mob he'd been with on the other side. He said: "You're the first Digger I know who's told a true story. I was the orderly during the trial."



Up a Tree

NEW ZEALAND Radio Station 3YA has begun a series of lectures on "Love of Trees." This is a good idea; no one should miss it, because soon we won't know a tree when we see one; they will all have been cut down, either to make aerial masts, or because they obstructed the clear path of the aerial.

The 1929 Exhibition

REVIEWED



IN comparison to the exhibition of 1926 the remarkable advancement in every phase of radio and electrical science is at once apparent to both the skilled technician and the mildly interested layman upon visiting the Radio and Electrical Exhibition for 1929 at present in progress at the Sydney Town Hall.

Last year the trend of design in radio receivers was toward the simple and compact little single or dual control battery operated set, with variations in the form of elaborate cabinets and consoles. There was no preponderance of receivers operated solely from the home electric supply, for although the all-electric set had found its level in America and a little later in England, the Australian radio engineer quite correctly seemed a little dubious in giving the public a product which had not actually stood the test of time in this country.

In the intervening months between the last exhibition and the present much hard work and experiment have produced on the part of radio engineers of world-wide repute the compact and highly efficient all-electric set in its various forms, as may be seen in the 1929 Exhibition. It meets one wherever one turns—"All Electric," "AC Operation," "No Batteries"—these are a few of the designations of the modern receiver for the city and town dweller, and the battery-operated radio receiver we know is in the minority.

The latter faithful type of receiver must always remain for Australia, as there are so many country districts where electric power supply is either unavailable or unsuitable for light-socket operation. Al-

By DON B. KNOCK
(Associate Technical Editor)

though most of the manufacturers exhibiting are showing all-electric types of receiving apparatus in preference, an inquiry is certain to supply the information on the battery prototype, and the enthusiast must not form the opinion that this 1929 rush toward the power-operated receiver has resulted in neglect of the still important battery receiver.

This exhibition is throughout merely further proof and demonstration of the rapid progress man is making in his harnessing of the electron to serve his wishes. On the electrical side there are countless time and labor saving devices for the home which make one wonder why humanity has suffered so long the inconvenience and worry attached to the old ideas. In a casual stroll through the two exhibition halls it is well worth the visitor's time to investigate the principles of both radio and electrical apparatus thoroughly, when it will be seen that nothing has been left to chance in the most apparently insignificant item. The apparatus on view in the radio section of that mighty British Empire Exhibition at Wembley, 1924, in England, pales into the dim distance as antique compared with the Sydney, 1929, Exhibition.

Glancing through the lower hall the first stand to attract my attention was that of the Electrical Supplies and Engineering Co., Ltd., who are the agents for radio apparatus bearing the name Telefunken.

This trade name is attractive to engineers as one carrying long years of experience, and the apparatus to be seen on this stand

is worthy of the name. The Telefunken AC five valve receiver is a model of neatness, and may be likened to the inside of a delicate recording mechanism as used in the world's leading scientific laboratories. The wave-length range covered by this receiver is from 200 to 2000 metres. This latter is not of particular interest to this part of Australia, but should be useful in Western Australia, where the local station operates in a frequency covered by the higher band. The coils are uniquely screened in copper shields, and the single dial control operates ganged condensers tuning the respective RF and detector circuits. Quality in reproduction is the main consideration of the audio part of the set, resistance coupling being employed throughout. On this stand may be seen what is probably the smallest of all AC sets—the Telefunken AC3. This little instrument measures only 10in. by 8in. by 6in., and also covers from 200 to 2000 metres.

Mick Simmons, Ltd., are showing the complete range of those super reproducers bearing the name Magnavox. These pioneer dynamic speakers are produced in various attractive forms, one of the most interesting for home use being the fireplace screen model. A great deal of attention has been paid by the technical staff of this company, under the able leadership of Mr. Botton, to electrical gramophone reproduction, and the Magnum amplifier used with the Bosch pickup and a Magnavox Dynamic speaker constitutes the best in reproduction it is yet possible to attain.

At the stand held by the Australian General Electric Co., Ltd., will be found one of the most interesting and efficient all-electric receivers yet designed. This is the RCA Model 60 3-valve super-het. Single dial con-

S. W. SETS RECEIVE MAKERS' ATTENTION



A very handsome new A.O. Three-valve Receiver put out by A.W.A.

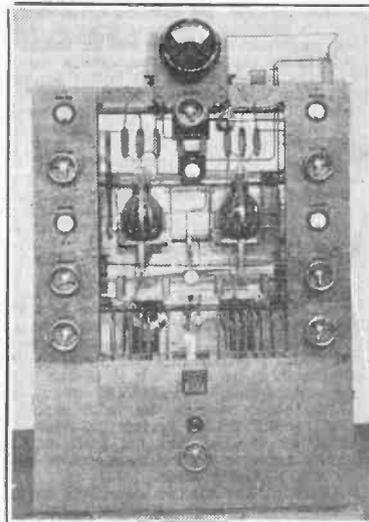
control is provided, and, considering the neat appearance and the remarkable performance with regard to long-distance reception, it is evident that the fertile brains of the engineers of RCA have evolved a most unusual receiver of a type which would have been considered impossible a short time ago.

The amateur exhibits are always interesting, for the reason that the majority of visitors to the exhibition are amateurs or potentially so themselves. On this stand the short-wave enthusiast may find ideas which will be of help to him. The prize-winning short-wave receiver was a replica of the Air King receiver as described in "Wireless Weekly," and this will give intending constructors an idea of how the efficiency of the original may still be retained by substituting good components instead of rubbish, as so many do. The original Air King is to be seen with the 1929 Neutrodyne on our own "Wireless Weekly" stand. A most interesting short-wave receiver, designed expressly for the amateur telegraphist under 1929 conditions is to be seen with the amateur exhibits. This was designed by Mr. Ian Dye, and is a faithful replica of Mr. Ross Hull's original in a recent issue of QST. A special peaked audio amplifier is included in the design, and this plays its part in separating amateur telegraphy signals in the frequency approximate to one metre, which is the entire scale of the tuning dial for each amateur wave-band.

Up the main exhibition hall one of the most interesting stands is that of the well-known Philips Company, who need little or no introduction through the pages of "Wireless Weekly." Probably the first item to claim attention is a neat little 3-valve all-electric receiver, designed by the technical staff of the company as an example of how easy it is for the home constructor to make his own power-operated set entirely from local components. This set is known as the Philips' AC 3'33. The new wonder valves are used; the first being the E442 (AC screen grid), E415 (AC detector), and B443. The coils used are of a standard local manufacture, being made by the well-known Radokes Company, who are also exhibiting their products nearby. Included in the design is a band pass filter and Philips' filament transformer and B supply unit. An extraordinary degree of selectivity is claimed for this set,

it being possible to entirely eliminate 2BL in favor of 3LO at a two miles air line distance from the local station.

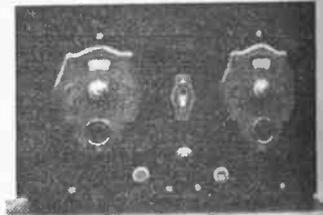
A unique Philips' reproducer makes its appearance with this year's exhibition. This is the Permagentic speaker, which is in the Dynamic class, but employs a very powerful permanent magnetic field. This is an advantage to many, as no separate field exciting voltage is required. For those who are medically inclined the Philips portable X-ray outfit will appeal. This is precisely the same type as was used recently for treatment for H.M. the King, and contributed in no small measure to his Majesty's restoration to good health. Examples of the well-known Metallux tubes are shown, with one of a



Front view of the No. 1 Magnifier unit of a 5kw. short-wave transmitter, with front panel removed to show plate tuning condenser. This apparatus was on view in the A.W.A. stand.

very powerful nature, capable of handling 220 KV. It is unusual to drive a DC motor from any but a DC source supplied by the usual generator, but the Philips Company show a most interesting application on the stand. A 2HP DC motor is driven from phase AC mains, with conversion taking place through a special rectifier, using one tube, rectifying all three phases at 90 per cent. efficiency.

Other exhibits are the new Peter Pan speaker, Philips' gramophone amplifier, the PPP power pack for the small manufacturer or home constructor, the Philips' Pickup, and two historical receivers. The first of these receivers is the 600-metre receiver carried by the monoplane Southern Cross on the Sydney-Perth and Trans-Tasman flights, and the second is the actual shortwave receiver, covering from 10 to 2000 metres, used by Captain Holden in the rescue aeroplane Canberra. The operator, Mr. Stannage, reports that using only 10 feet of wire for an aerial when in Wyndham he was able to listen comfortably to the programmes from 2BL with this receiver. A special service bureau, attended by a competent technical staff, completes the exhibit of one of the world's most enterprising radio organisations, and the visitor to this stand is assured of an absorbing half-hour.



Prize-winning best crystal set in the amateur section.

Across the way I found the exhibit of Colville Moore Wireless Supplies, Ltd., also decked out with all-electric receivers. A centre of attraction on this stand was a replica of the "Wireless Weekly" All Empire receiver, built by Mr. S. V. Colville. Mr. Colville claims this to be the most efficient combination short and long wave receiver he has handled, guaranteeing his inquirers loud speaker reception of 5SW, thus endorsing the claim in the original.

Looking over the Stromberg Carlson exhibit the visitor will find a striking advancement in these excellent products. This company, although bearing an American name, is wholly Australian. All the apparatus is manufactured in Sydney, and particular attention has been paid to the development of the home all-electric receiver. Every type will be found here, both in power and battery supply, and one outstanding feature is a handsome cabinet carrying a very efficient AC receiver, electrical gramophone, and dynamic speaker, the complete outfit selling at the comparatively low price of £98.

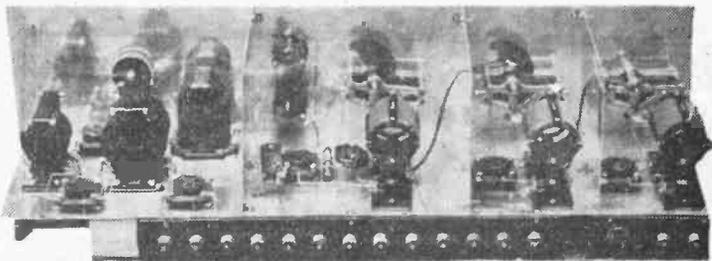
Amalgamated Wireless have their usual excellent display, and are showing this year additions to their many Radiola receivers, a complete transmitting panel, as used in their short-wave telegraphy and telephony stations is on view, and the writer has at no time seen better design in any part of the world in connection with transmitting equipment.

On the Amplion stand are to be found the complete range of the world-famous Amplion loud-speakers, including the new Amplion Lion model. This is a special reed-driven cone, which the makers claim is far ahead of any of the usual moving coil speakers. Astor receivers are featured here, and Astor AC5 and AC6 receivers are worth inspection.

A.C. SETS PREDOMINATE THIS YEAR

The Astor Duo-Symphonic radio-gramo combination used with the Igranic pickup is very attractive. One point which interested the writer was that the carbon cells are now supplied entirely with glass containers. These cells are the Ideal A and B supply for the country user who is far from any charging plant, and may be relied upon for a year at one charge.

Manufacturers' Products are showing a new dynamic speaker, which is made under Magnavox patents. This is the new Stirling, and must not be confused with the British Stirling trade mark. This speaker is like the Magnavox models provided with dry recti-

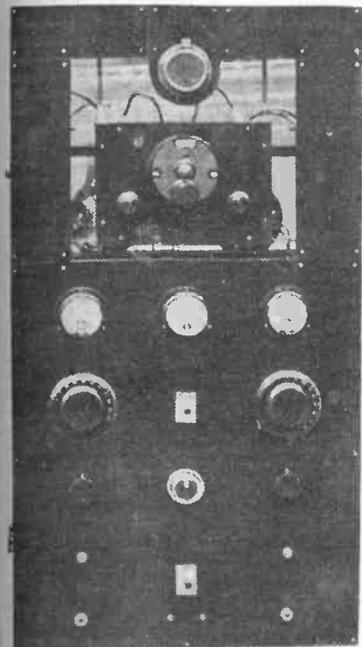


The prize-winning short-wave receiver—a replica of the Air King.

Best novel valve set — Grandfather Clock. The set, a three-valver, is tuned by means of the clock hands. The "seconds" hand is the reaction control. The pendulum actually continues motion by means of an electro-magnet, and the pendulum weight is the "C" battery. The prize-winner was T. Cleverly, who last year won first prize for the same section.



fier for AC filed supply. Emmco products in profusion are to be seen on this stand, and not the least interesting is the Emmco power pack in kit form for the home constructor. A really portable AC receiver by Airzone is



The prize-winning short-wave transmitter in the Amateur Section.

exhibited. It is compact and neat in appearance, and may be picked up and transported from one location at a moment's notice. The speaker is contained in the set as in the usual portable.

On the stand of the British General Electric Co., Ltd., will be found the most interesting range of valves of the well-known Osram variety, with numerous electrical appliances of interest to the housewife.

A. Beale Pritchett and Co., Ltd., are well to the forefront with Mullard valves, Ferranti transformers, and Jackson condensers, and the visitor to this stand will find much to interest him. A short-wave receiver, as would be made by the home constructor, is shown with Mullard valves, Ferranti transformer, and JB tuning condenser. A screen grid RF stage is included, and the coils are wound on discarded valve bases.

Mr. G. C. Beardmore, who is well known to many readers, has a stand in the main hall, and is paying particular attention to the

ter than ever, but this section seems to lose a lot of its interest this year, because there are fewer novelties. Yet the workmanship displayed in most of the receivers and amateur components is a great improvement on any yet shown at the exhibition, many entries seriously rivalling commercial work. There were fewer entries this year, but they were all good. The novelty crystal and novelty valve sections were very disappointing, though the prize-winning sets were well worthy of the distinction conferred upon them.

At previous exhibitions interest has been drawn to the novelty sets, which have usually been scattered all over the stand.

Prizes were awarded as follow:—

Short-wave Transmitters.—1st, A. W. Dye (2AW), low-power transmitter, 250 watts, for Morse and telephony; 2nd, Waverley Radio Club, tuned plate, tuned grid, 50 watt transmitter.

Short-wave Receivers.—1st, N. A. Stewart (Air King), as published in "Wireless Weekly"; 2nd, C. R. M'Clay (Weagant).

Best Piece of Home-made Apparatus.—1st, C. R. M'Clay, wave-meter; 2nd, W. Nicholls, wave-meter and tube-checker (as published in "Wireless Weekly"). Highly commended, R. Addison, gramophone pick-up, made from ear-piece.

Novel Crystal Sets.—1st, T. Cleverly, model automatic telephone, dial used to pick up stations; 2nd, C. Snelling, gum tree branch. Highly commended, A. Keogh, model house; W. Hawkins, navy's boot.

Best Crystal Set.—1st, C. Snelling. (No other entries.)

Novel Valve Sets.—1st, T. Cleverly, grandfather clock, three valves. The hands of the clock were used for tuning stations. The pendulum actually worked by electricity, and the pendulum weight was a "C" battery. This set is all-electric. (This entrant last year won first prize for the Browning Drake, made up in a model train.) 2nd, M. Binder. Highly commended, A. C. Lilston.

Multi-valve Sets.—A. W. Dye, eight-valve superheterodyne; 2nd, M. Binder, three-valve set.

Silver Cup.—This cup must be won for three years by any one club or member, when it becomes the property of that club or member. It has been won (three years first prize) by Leichhardt Radio Club, with an audibility meter.

Talks About Books

LOVERS of literature should make a note of the fact that the book talks hitherto given by Mr. A. Firman on Monday nights from 8AR will now be given on Wednesdays until further notice. These talks are most popular with country listeners, who subscribe to a town library, and have no other means of hearing about the latest fiction, but the pithy, condensed versions of recent publications by Mr. Firman enables them to prepare their library lists with a certain degree of confidence.

Best novel crystal set. The stations are "dialed" in much the same way as by a telephone subscriber. The earphone is an actual headpiece. Prize-winner, T. Cleverly.



requirements of the home constructor in converting existing sets to socket power operation. Those who are contemplating this will be well advised to have a word with Mr Beardmore.

My brief run over what I consider to be the outstanding features of the exhibition as I passed quickly through the halls would not be complete without reference to the Cossor Screen Grid Melody Maker receiver. This is one of the most unique propositions ever placed before the public, consisting of a kit with valves that a child could assemble. The claims made for the finished job are in no way exaggerated. I had the pleasure of building one myself, and can heartily endorse the maker's claims. Distance, volume, and selectivity with three valves.

The 1929 Radio and Electrical Exhibition has revealed a most remarkable advance in the allied sciences, and as I glance around at the many indications of unretarded progress I can only mildly wonder what we shall arrive at two years hence.

Amateur Exhibits

LAST year we were able to say that the exhibits in the amateur section were bet-

How Does Your Garden Grow? Ask Mr. Cooper.

PROGRAMME PERSONALITIES

Mr. Alfred Wilmore

WHEN he was very young, Mr. Alfred Wilmore, who is of Scottish-English parentage, came out to Australia. But he soon returned to the Continent, where he studied the German school of composers who then, as now, appealed to him above all others.



Alfred Wilmore.

Having saturated his mind in German Lieder and Wagner's turgid fountains, he returned to Australia, and began farming operations. But he was still interested in music, a fact which was not unnoticed by Mr. Slapovsky, the great Wagnerian authority, who gave

him a first prize in the Eisteddfod at Kurri, and invited him to come down to Sydney. He came down to Sydney, and went through a series of Wagner studies with Mr. and Madame Slapovsky.

Mr. Wilmore has been broadcasting in Sydney for about two years. He has confined himself chiefly to operatic compositions, and has achieved some notable successes with Miss Lenore Gotsch, another Wagner worshipper. They have broadcast, among others, the duets from "Tristan und Isolde" and "Tannhauser."

Mr. Wilmore is a very quiet man. He has the artist's faith in his voice and his art; and leaves it at that. Broadcasting seemed unreal to him at first, as it does to everyone; but the newness wore off as the criticism of friends brought him realisation of his audience. And, true to the German traditions, he calls his radio audience his "metaphysical audience."

Mr. G. W. Cooper

SPEAK the word "gardener." He is the man who goes home on Saturday afternoons with a pot plant balanced on his shoulder, a parcel of seedlings in his left hand, to-morrow's meat in his right, a stag-horn under his arm, and a far-away look in his eye—he sees Spring, when all his plans come to floweration. You may see him on Sunday mornings perspiring over two-by-four plots of carefully fertilised soil. Mr. Cooper is not of him.

Speak the word "gardener." He is the man whom lazy-very-busy-very-tired men get to till their soil, mow their lawns, trim their hedges, and grow their flowers. He is hired, found out, cursed, and fired. Did you ever hear a true suburbanite praise his gardener? The reason is probably jealousy. His is a sorry plight. Mr. Cooper is not of him.

Mr. Cooper is the kingpin among gardeners. He is the pillar of flame to enlighten the efforts of dilettantes. Anybody can plant seedlings, anybody can water them, anybody

can pick the flowers. But Mr. Cooper knows the why and wherefore of gardening. Mr. Allsop and Mr. Don B. Knock know the tiny points and intricacies in volts and amps and milliamps and etceteras of their circuits; Mr. Meadows proves wireless, weekly, to the ever-increasing delight of his ever-increasing body of readers; and Mr. G. W. Cooper—Mr. Cooper is the grand prover of gardening and answerer of gardening queries. He knows all the insects which destroy our plants and those insects fear him; he knows why flowers flower and why they don't; he knows all the tricks and coaxings by which we may grow better onions and parsnips and dahlias; in fact, we have it from an authentic source that once, for a wager (six rare rhododendrum seedlings), he made Thomas Moore's "Last Rose of Summer" the second last.

His father, a Melbourne man, began gardening at the age of twelve, and attended night school to learn the gardening science. For 58 years he has been engaged at horticulture, 18 of which in the second highest position in the Melbourne Botanic Gardens, and at the age of 72 he is still going strong. Mr. Cooper followed in his father's footsteps—at the age of 12 he was gardening and studying botany at night school. On the recommendation of the late W. R. Gilfill, Director of the Botanic Gardens in Melbourne, in 1899 he was appointed assistant gardener in the Public Works Department of Victoria, under the late Mr. C. Catani, engineer-in-chief. Mr. Catani designed the well-known Alexandra Avenue and gardens on the south bank of the River Yarra. Mr. Cooper became his right-hand man in all horticultural matters, and in 1900 swamps, ditches, and bush were transformed into the aforesaid avenue and gardens (we can quite believe it of Melbourne) under Mr. Cooper's directing forefinger. That avenue and those gardens are Mr. Cooper's pride. They were his first loves, and if Mr. Cooper occasionally smiles in the middle of a busy discourse you can bet your socks his mind has been wafted back to Alexandra Avenue, to hover among the flowers there.

In 1915 he joined the Sydney City Council as landscape gardener; and he is now known officially as Parks Superintendent. He designed and carried out the Hyde Park transformation—one of the biggest things done in Sydney recently. He is superintendent over more than twenty city parks, flowerbeds, and playgrounds. He is in charge of Town Hall floral decorations when the Town Hall decides to hit the high spots.

Dame Nellie Melba congratulated him on Alexandra Gardens; and at various times he met Sir Arthur, now Lord, Stanley, Governor of Victoria, and Sir Ronald Munro Ferguson, now Lord Novar, the ex-Governor-General, who both had a keen knowledge of gardening affairs. Sir Ronald Munro Ferguson, especially, asked the most difficult-to-answer questions about rhododendrons—we spelt it wrongly before—and Mr. Cooper doesn't think any worse of the Governor-General for that.

In fact, he likes difficult questions. That is why he likes his Saturday morning session from 2BL, whence he has been lecturing over the air for several years. During his first radio year he received 2000 odd letters. Some



MR. G. W. COOPER.

have arrived from Northern Queensland, some from Victoria, and one came all the way from Hawkes Bay, in New Zealand. The question was how to keep weeds from the lawn; and several weeks after he had broadcast his answer Mr. Cooper received a letter saying, thank you, the weeds have all disappeared. Queries come from everyone—golf clubs, tennisers, cricketers, farmers, orchardists, and from ordinary common or garden lawn mowers. Us. And a young man named King, of Strathfield, became so interested in Mr. Cooper's lectures—they were night lectures at the time, that he refused to have his bath at 7.30 if he could not hear the gardening session. Peace was only restored when his mother brought the loud speaker into the bathroom.

Mr. Cooper has been induced to name his favorite flowers. For a buttonhole, he said, and although most landscape gardeners refuse to wear buttonholes, I generally wear one (whether buttonholes are regarded as scarcely large enough marks of their profession by landscape gardeners we don't know). For a buttonhole, he said, fingering two galmptious rosebuds in his buttonhole, I like a Brunner rose. He paused and thought deeply. Although, of course, a carnation—yes, a carnation, of course, they're always twitting me about carnations—yes, a carnation I like also for a buttonhole. Then in the gardens I like Japanese iris (Alexandra Gardens are Japanese irised), gladioli, dahlias, and—er—chry, yes, chrysanthemums—of course, C H R Y S A N T H E M U M s, and, yes, of course, carnations and orchids—they're my favorite flowers. Then Mr. Cooper hurried away. It was Saturday afternoon, and he had a special ticket to Rosehill races. If he backed Tressilian, as he said he would, he is sure to have recovered his natural joyfulness by now.

FAMOUS ENGLISH COLORATURA AT 3AR

MUSICAL listeners will have a rare treat in store on May 13, when Dawn Assheton, described as England's most famed coloratura soprano, and a fascinating singer of folk and character songs from every musical land, makes her debut before the microphone at 3AR. Her wonderful voice has a range of three octaves, and is heard to great advantage in the colorful arias from "Traviata," "Barber of Seville," and "Mignon," together with folk songs and ballads culled from all sources and from all ages.

Under These Conditions How would You Tender for THE BROADCAST PROGRAMMES?

And in three weeks, too! The specifications issued by the Government, summarised below, will have a widespread effect on the quality of broadcast services. Every listener is hoping that the effect will be a good one, but—

IF the majority of us ever reach Heaven it will be on the wings of experience. A job to be done properly must be undertaken and brought to a successful conclusion by an experienced and responsible hand.

Such thoughts possibly ran through the minds of the minions of the Government of the Commonwealth of Australia when they took up their pens and drafted the forms of which enterprising, but unknown, gentlemen are to tender for radio broadcasting rights throughout the whole of Australia, this fair land of ours. They said to themselves, "We shall consult experience." And they said to the enterprising, but unknown, tenderers, "In this column or in a supporting statement the tenderer should supply full details of:—

1. The experience the tenderer has had in the rendering of broadcasting programme services, including the selection of artists and the compilation of programmes suitable for broadcasting purposes.
2. The experience the tenderer has had in the provision of like services if he has not previously engaged in the provision of broadcasting programme services.
3. The organisation the tenderer proposes to establish in each of the various States in the event of his tender being accepted.
4. The guaranteed resources at the tenderer's disposal from which items of entertainment for broadcasting purposes can be commanded.
5. Any other particulars which will assist in determining the character and quality of the programme service offered.
6. The rate per annum per listener's license fee collected, at which the tenderer is prepared to render the service in full compliance with the terms and requirements of this tender and contract.

And when they had said those six things they had said a great deal. On their answers to those six pertinent questions do the fates of the enterprising, but unknown, tenderers depend.

The tender forms are dated April 24; were received in Sydney, April 27; and the tenders close in Melbourne "by or before the 20th day of May, 1929."

"The service required is the provision and rendering of programmes of broadcast matter for transmission from the stations of the National Broadcasting Service, and such other stations as the Postmaster-General may deem desirable from time to time, and the services shall commence at the various broadcasting stations as mentioned hereinafter, and shall continue until the 30th day of June, 1932."

That is, for about three years.

Broadcasting hours, and the times when the various stations may be taken over by the proposed successful tenderers, are as follows:—

"The successful tenderer will be required to undertake the provision of independent comprehensive programmes, as indicated hereafter, for transmission daily during the hours which shall be approved by the Postmaster-General, and which shall in the aggregate be not less than three thousand six hundred and fifty hours per annum in respect of each programme, with the exception that in the case of New South Wales and Victoria the hours of transmission of the second programme shall be not less in the aggregate than two thousand one hundred and ninety hours per annum.—
New South Wales.—Two programmes, the first commencing on 17/7/1929, and the second on 22/7/1929.
Victoria.—Two programmes, the first commencing on 27/7/1929, and the second on 8/8/1929.
Queensland.—One programme, commencing on 30/1/1930.
South Australia.—One programme, commencing on 14/1/1929.

West Australia.—One programme, commencing on 1/9/1929.
Tasmania.—One programme, commencing on 14/12/1930.
These programmes shall be rendered at the studios to be provided by the Postmaster-General in each of the capital cities, or shall be transmitted thereto from outside pick-up points, as the case may be.

"In addition to the main programmes referred to in the foregoing, the successful tenderer will be required to arrange for independent local programmes at the subsidiary stations as and when established by the Postmaster-General. These local programmes shall be provided during hours to be approved by the Postmaster-General, and the aggregate programme hours per annum for all subsidiary stations taken together shall be not less than the percentage of (a) fifty-two and (b) the number of subsidiary stations in operation. Where any one or more of the subsidiary stations shall not have been available during the full period of the year under consideration, the aggregate reduction in the required aggregate hours will be made."

Which means that, in New South Wales, Victoria, Queensland, South Australia, West Australia, and Tasmania "A" class stations will broadcast programmes averaging ten hours daily. In both New South Wales and Victoria an additional "A" class station will broadcast programmes averaging six hours daily—a less number of hours per day than are at present known to New South Wales and Victorian stations, although West Australia and others will doubtless congratulate themselves on the new arrangements, and find in them some excuse for a Commonwealth Government. We mean that the eastern States will pay for a great deal of the entertainment of the western and very southern ones. The most that West Australia can muster, under the new allowances, is £44 for a week's programmes averaging ten hours a day. New South Wales programmes cost something like £10 per hour.

The subsidiary stations referred to are probably relay stations, as the local programmes required of them are to average only one hour per week. And here the following information is interesting:—

"It is impracticable at this juncture to give precise information, but the tentative construction programme contemplates the provision of about sixteen subsidiary stations, which may be brought into service during the currency of this contract, and from each of which the successful tenderer may be required to provide a certain extent of local programme service, as defined in the conditions of tender. The tentative construction programme, if realised, will make available approximately three stations in the first year, six more stations in the second year, and seven further stations in the third year. In each instance it is anticipated that the inauguration of the service of the respective stations for each year will occur towards the end of the relevant year."

"It is recognised that certain difficulties are imposed on the tenderer in realising the extent of his obligations, because of the uncertainty concerning the date of the inauguration of the service of each subsidiary station, but, bearing in mind the limited extent of the individual local programmes specified in conditions of tender, the matter is not one of serious financial concern."

The department's plans for a national relay system are indicated thus:—

"It may be desirable for any portion or the whole of any programme to be relayed and re-broadcast from any one or more of the stations of the National Broadcasting Service or such other stations as the Postmaster-General may desire, and such re-broadcast shall be undertaken in accordance with the requirements, or under the approval of, the Postmaster-General.

"The Postmaster-General reserves the right to use, at such times and in such manner as he thinks fit, any station or stations of the National Broadcasting Service for the transmission of any portion or the whole of any programme provided otherwise than under the terms of the contract."

Although it is doubtful if there is a reliable land-line to Perth, and although there is not yet a submarine cable or beam to Tasmania, and although land-line broadcasting over very great distances has not yet proved very extremely efficient. It is what one might call a far-sighted, optimistic policy. Still, Australia's National Radio Heart may yet throb as one. You never know. Short-wave broadcasting doesn't seem to find much favor with the department. There is no provision for it in the forms; but it has often been tested and proved by the various companies.

Of programmes, and the composition of programmes, the department has a great deal to say. Firstly, the proposed successful tenderers make their obeisances to the Postmaster-General:—

"The programmes, both in their compilation and rendition, shall be to the satisfaction of the Postmaster-General."

Then they study carefully the following recommendation:—

"The programmes shall be of such a character as to be of general interest, and shall be of sufficient diversity to cater for the reasonable tastes of the community as a whole."

Then they study still more carefully another recommendation:—

"The successful tenderer shall do all in his power to cultivate a public desire for transmissions of educational items, musical items of merit, and generally for all items and subjects which tend to elevate the mind."

They must "elevate the mind" and "cater for the reasonable tastes of the community as a whole," at the same time. This will make good light reading for weary programme directors, who must also

"Avoid monotony, tedious repetition of items, and unduly prolonged use of an artist in a particular unduly prolonged use of an artist in a particular."

Thus instructed the proposed successful tenderer will

"exercise his expert knowledge to the full, and make the maximum use of all the facilities available for securing the greatest possible variety of items and subjects of merit and interest, and will take into consideration any representations made by local committees which the Postmaster-General may appoint for the purpose of securing co-operation towards the development and maintenance of broadcasting services of the highest attainable order."

Local committees are a new idea. Possibly, they may dislike boxing contests. Possibly they may be strongly against the broadcasting of races. Possibly they may be prohibitionists, and speak against the broadcasting of comedians who caricature drunkards. But certainly they will be the sharpest thorns ever invented for the aching sides of programme directors, who, having taken their advice, which includes

"utilising the services of persons recommended by local committees, and who may possess attributes rendering them suitable for providing broadcast items";

shall "make all reasonable arrangements for the rendering of items provided by orchestras, bands, choral societies, and other organisations of high standing in the various localities from which the programmes are distributed, and shall pursue a reasonable policy in inducing the establishment and maintenance of organisations devoting their talent to the rendering of high-class compositions";

and see that

"programmes shall contain news items and market reports suitable for their relevant localities."

There will be a new understanding as regards news services:—

"No monopoly or exclusive publicity shall be given to any newspaper or news organisation, but the opportunity shall be afforded to suitable newspapers or organisations to participate in the supply of the news service, either by mutual agreement for a joint service, or by the allocation of portions of the programme time to separate newspapers or organisations. All such arrangements, agreements, or allocations shall be subject to the approval of the Postmaster-General."

This, of course, is a matter for the newspapers.

Also, the Postmaster-General

"may require the successful tenderer as his (the successful tenderer's) own expense, to broadcast such items as the Postmaster-General deems desirable in the public interest."

This is an advance on the Postmaster-General's original powers, which gave him thirty minutes in every twelve hours; but he never abused his privileges; so absolute power is scarcely a danger to broadcasting.

Announcers and their announcements are graciously remembered:—

"The general terms in which announcements are made, whether complete in themselves or referring to items to be transmitted, shall be to the satisfaction of the Postmaster-General."

And—

"The successful tenderer shall employ to the satisfaction of the Postmaster-General, announcers of good education, style and personality, possessed of clear enunciation, as far as possible free from any characteristic dialect."

This is another innovation in Government broadcasting requirements.

Having thus indicated what a programme should be, the forms talk of censorship, in this fashion:—

"The successful tenderer shall ensure that no matter is broadcast which might be repugnant to good taste. The successful tenderer will be expected to exercise reasonable discretion in directing the attention of the Postmaster-General to proposed transmission of items concerning which there is a doubt regarding their desirability, and, in particular, this course shall be followed when there is intention to transmit matter of a controversial nature to the transmission of which objection might reasonably be taken."

"The Postmaster-General may exercise censorship of the programmes in such a manner as he considers desirable."

Advance particulars of programmes, also, must go to the Postmaster-General:—

"The successful tenderer shall supply to the Postmaster-General, two weeks in advance of the date of broadcasting, complete particulars of programmes so far as that may be practicable. Any substantial and serious alteration shall not be made without the prior approval of the Postmaster-General."

And—

"The successful tenderer shall supply on equal terms as approved by the Postmaster-General from time to time advance particulars of programmes to the proprietors of all newspapers and periodicals who desire to publish the information."

Advertising is to be carried on under the following terms:—

"The successful tenderer will not be permitted to broadcast advertisements in general, but, with the approval of the Postmaster-General, and in conformity with any stipulations contained in that approval, announcements having some definite relation to a particular item being broadcast may be allowed."

In other words, there will be no advertising.

The proposed successful tenderer shall

"make his own arrangements in regard to copyright charges, and he shall indemnify and keep indemnified the Commonwealth of Australia and the Postmaster-General against allocations or claims for infringement of copyright."

Three weeks is hardly sufficient time in which to make arrangements with copyright people. There are several ways of paying copyright—the biggest slug is that of the Australian Performing Rights Association. Then there is literary copyright; and one must remember the Musicians' Union, on whom the judge has conferred hopes of added fees for broadcasting. But negotiations with the Performing Rights Association must necessarily be long and painstaking—in fact three weeks is scarcely enough time for anyone to make his own arrangements and indemnify the Commonwealth of Australia and her Postmaster-General against claims for infringement. However,

Having thus outlined the department's expectations of the proposed successful tenderer, the Postmaster-General commits himself

to the supply of all transmitting apparatus, excluding nothing; also "the necessary personnel"—that is, operators and mechanical staff. This means divided control, especially with outside, land-line broadcasts, and will probably lead to a clogging of wheels which should run smoothly. Apparatus used for the broadcasting of certain regular or permanent transmissions, such as time signals, the services of operators on outside certain circuit work, and certain outside circuits will be provided at the expense of the proposed successful tenderer; the rest is free.

The proposed successful tenderer is to provide fittings and furnishings for the given studios; and must maintain them, and pay for their cleaning and heating and lighting.

Finally, comes the question of the reward of the proposed successful tenderer for the services it is proposed he shall perform. He is asked to state it himself:—

"The payment which shall be made for the performance of the programme services shall be at a rate per annum per listener's license fee collected. The tenderer shall state at what rate he is prepared to render a service in full compliance with the terms and requirements of this tender and contract. Such rate shall not exceed twelve shillings per annum per listener's license fee collected. The payment shall be made quarterly in arrears on dates to be determined by the Postmaster-General, and of an amount proportional to the average number of broadcast listener's licenses current during that quarter, provided that the Postmaster-General may, if he considers desirable, make monthly advances of such amount as he determines."

Instead of £1, the tenderer shall receive 12/ from each listener's license fee of 24/. Of course, he will have less to pay for, in the way of plant, etc., although it is questionable whether the proportion of programme to plant expenditure is such as the figures would seem to indicate.

Arrangements for payment are dull, but they follow:—

"The initial payments to the successful tenderer shall date from the time he becomes responsible for the rendering of the relevant service in each State, vide Clause 5, and shall be adjusted proportionately to the quarterly dates fixed for all payments in common. Until the whole of the existing stations are transferred to the National Broadcasting Service, the moneys available for distribution to the successful tenderer will be the portion, as stipulated in the contract of the license fees collected in the State concerned, subject to the provisions of the following clause regarding New South Wales and Victoria:—

"Pending the expiration of the two existing Class A broadcasting station licenses in New South Wales and Victoria, the payment in New South Wales shall be based on the assumption that 60 per cent. of the current licenses are proper to 2FC and 40 per cent. to 2BL; and the payment in Victoria on the assumption that 70 per cent. of the current licenses are proper to 3LO, and 30 per cent. to 3AR. After the two stations in New South Wales and the two stations in Victoria have been transferred to the National Broadcasting Service there will be no further need for the purpose of revenue allocation to take cognisance of these percentage figures."

The Postmaster-General must be able to look, if he wishes, into the proposed successful tenderer's affairs:—

- (a) Complete and maintain in a recognised business or commercial form, separate accounts in respect of his broadcasting activities.
- (b) Make such accounts available for inspection by the Postmaster-General whenever required so to do.
- (c) Supply to the Postmaster-General on request duly audited annual balance-sheets in detail of his broadcasting activities.
- (d) Keep such records relating to the broadcasting service as the Postmaster-General may direct from time to time, and supply copies thereof, as may be desired, to the Postmaster-General.

A clause begins: "The contractor shall assign or part with his contract . . . or assign any part of the moneys payable on it to become payable under the contract; and it ends, "except with the special license and consent in writing of the Postmaster-General first being obtained."

A guarantee is demanded as follows:—

"The contractor shall execute a formal agreement to comply with each and every condition of the contract throughout the period of contract, and shall deposit with the Postmaster-General a bond or bank guarantee for the sum of £200, which amount may be forfeited absolutely or in part to the Postmaster-General as may be determined by him in the event of non-compliance by the contractor with any condition of the contract."

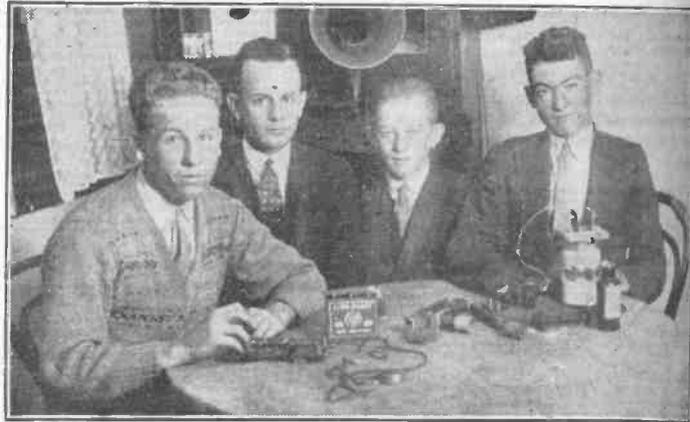
CLEVER ENTERTAINER

DOROTHY STEPHENS, the dainty and vivacious entertainer, has quickly established herself as a favorite at 3LO, where, with her novelty songs and winsome personality, she is a distinct asset to the programmes. She is most popular at 2FC, especially with the young people, and her song, "Little Red Schoolhouse," has been the means of establishing quite a correspondence club, with Miss Stephens as the guiding star, and, though she is a very busy person these days, she never omits to answer all letters received from her young listeners.

Fuller "Sparta" Accumulators

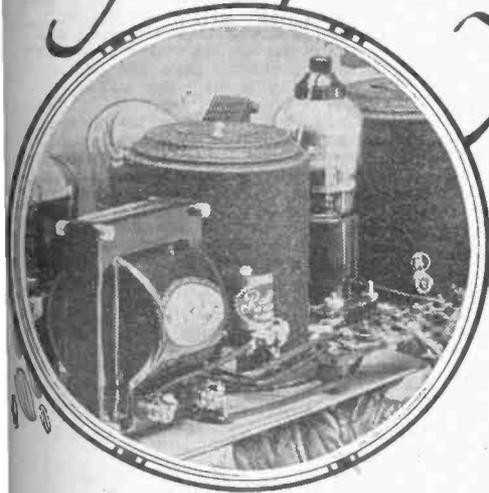
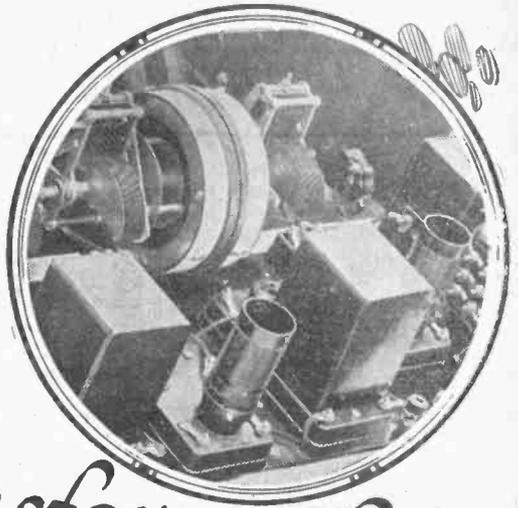
STAND 39 at the Radio Exhibition should appeal to those who are interested in radio accumulators. A special display of the famous "Sparta" Fuller batteries, so well and favorably known that their name is a guarantee of sterling merit.

They are to be had in glass and ebonite cases and capacities to suit all radio requirements. There is a very popular demand for these accumulators, both in the Commonwealth and Great Britain, and are well worth inspection.



Four members of the Concord West Group at Morse practice.

Faults in AUDIO & RADIO Frequency Transformers



Audio transformers and condensers and other delicate precision radio instruments are often turned out cheaply by unknown and unreliable manufacturers. Sold as bargains, the products appear excellent, but it is not until afterwards that trouble develops, when the manufacturers has conveniently disappeared. Moral: Buy from reliable and old-established firms.

By DON B. KNOCK

(Associate Technical Editor)

LOOKING over a multi-valve receiver one is greeted by a complex appearance, but the experienced radioman knows that at least two of the valves with their associated components form the whole or most of the audio amplifier.

In theory and in actual practice, this is the easiest part of the receiver to deal with and understand, but it must not be assumed that trouble is not likely to be met with in the audio amplifier. In the majority of instances the cause of poor reproduction in the average receiver is due to faults in that part of the circuit following the detector valve.

The symptoms indicating trouble may range from a complete absence of signals or distortion and howling down to less serious things, these less serious things being such trouble as distortion only during a particularly heavy passage of music.

This brief article deals with the most common complaints, so that the experimenter will know where to seek for the cause if the audio amplifier goes on strike. Reference is also made to the most simple sources of trouble with radio frequency amplifiers. As the most common form of coupling is by means of the familiar inter-valve transformer for audio amplification, and this is the form of coupling the experimenter usually tries first, I will deal with the first portion of this article in explaining faults peculiar to audio transformers.

Before doing this I consider it essential to emphasise that trouble with audio amplifiers on the scale we knew about three years ago is rapidly disappearing, and that it is only very rarely that one strikes a snag with a transformer of reputable manufacture. Yet, there are a great number of audio transformers sold on the Australian radio market

which should be carefully avoided by the man who is looking for the best in quality reproduction.

I refer to the little known "cheapjack" variety, of which many may be picked up for a mere song. As transformers, they may amplify, after a fashion, but an examination of the frequency curve would probably show something like a dog's hind leg. Breakdown of the primary winding is fairly sure to arrive on the scene before long, also.

Often with a wireless receiver the initial cost is far from being the last, solely because the cheapest of rubbishy components have been called into use and adequately camouflaged behind an impressive looking panel. Frequent replacements become necessary, and the harassed purchaser realises that he has spent a lot of good money, formed a poor opinion of wireless broadcasting, and that it would have been better to have consulted a reliable authority before buying such unsatisfactory apparatus.

Interval transformer coupling is the most popular for the reason that it gives the highest step up in signal strength for a minimum of valves used. The circuit of the diagram (Figure 1) shows two valves coupled in this manner. An output transformer to protect the loud-speaker windings is also included, but it will be seen at a glance which are the interval coupling transformers. They are marked AFT1 and AFT2. The circuit is drawn as if it represents an independent audio amplifier for connection to any preceding detecting circuit, and for this reason the filament supply leads are continued along as terminals Nos. 3 and 4 underneath the grid circuit input terminals 1 and 2.

Many times in the Information Service Correspondence we are asked if

another stage of transformed coupled amplification may be added to an existing receiver which already has two audio amplifiers using transformer coupling. Such practice can be indulged in, but is never on good behaviour in the hands of the tyro, and the only satisfactory way to use more than two audio transformers is by large size power transformers of a low ratio, preferably 1 to 1. Great care in the choice of transformers is necessary, even when the usual two are employed, and if a further one is added the problem at once becomes very difficult.

The outcome of attempting to hitch on an extra stage in this way is audio frequency oscillation. The sound produced in the loud-speaker by this is totally different to the sound produced by violent radio frequency oscillation, and perhaps the best description I have heard came from a "Wireless Weekly" reader from the country who described "a noise right round the dials like a bull calf bellowing."

Audio frequency oscillation occurs of course, in amplifiers using only two stages of transformer coupling, and this brings us at once to the most common trouble with such amplifiers. Often the quality of reproduction is good when using only one stage, but the switching into circuit of another may result in a high-pitched whistle, or the "bellow" mentioned before. Perhaps the frequency of the audio oscillation is too high to be normally audible to the human ear, and while there is no indication of the sounds described, the quality seems to be ruined and harsh. The trained ear can usually detect that almost inaudible whistle, which shows that the audio amplifier is not stable, thus producing oscillation at audio frequency.

HOW TO IDENTIFY AND CORRECT THE FAULTS WHICH DEVELOP

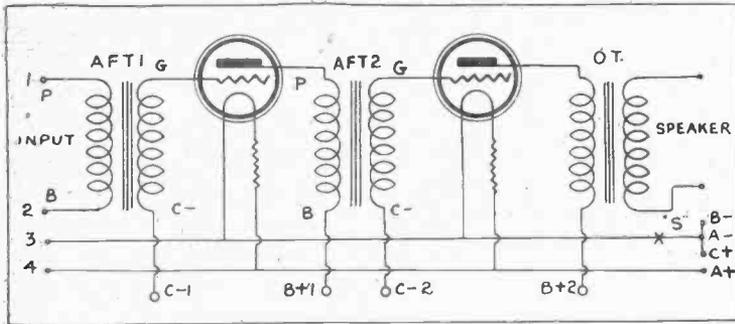


FIG. 1.

Nowadays this fault is much more minimized than was the case a year or two, for every reliable transformer is enclosed in a metal shield and the presence of the shielding is often sufficient to prevent magnetic interaction of the windings of one transformer on another. Yet, owing to certain reasons, it sometimes still occurs.

The first remedy to try in a case like this is to reverse the primary leads to the second audio transformer. In other words, change over the connections to the terminals marked P and B. If the howl is not too pronounced this operation will cure it, but in many cases more drastic treatment is required, and a resistance should be connected in shunt with the secondary of the second transformer. This will be across the terminals G and C- of AFT2. Use a grid leak clip mounting with two short pieces of flex wire, and try various values of grid leaks in this holder until the trouble disappears. A ½ megohm leak is usually suitable, but if howling still persists one of lower resistance should be substituted. About 50,000 ohms may do the trick. Sometimes a ½ megohm leak across the secondary of the first audio transformer will improve quality and the slight amount of sacrifice in volume is often compensated for by the improvement in the reproduction.

Another experiment to try in connection with overcoming audio oscillation is the earthing of the transformer cores. In receivers using a metal chassis this is usually

done automatically when the transformer is bolted down, and even if the set is not directly earthed it is nevertheless a very good capacity to earth. If all else fails, after having tried different values with suitable biasing, then the only thing to do is to try a transformer replacement. Very often the way in which the wiring is carried out, and the layout of the transformers, has a lot to do with poor functioning of an audio amplifier, and it will be an immediate advantage to rewire the whole thing, keeping the grid and plate leads short and spaced well away from each other. Remember that audio transformers should always, where possible, be mounted with their axes at right-angles, whether the transformers are shielded or not.

Many people are fond of using an audio amplifier behind a crystal receiver, and if the amplifier is a true reproduction job, the quality obtained from the combination on the local station leaves little to be desired. Sometimes, though, an unaccountable howling makes its presence known, and it is noticed that this ceases when the crystal detector contact is broken.

An ordinary crystal receiver is shown in the diagram in Figure 2. This may be used with the audio amplifier of Figure 1 by connecting the output terminals of the crystal set marked "Output 1 and 2" to the input terminals of the amplifier marked "Input 1 and 2." If howling occurs it may be checked by connecting the A negative of the ampli-

fier A battery to the earth terminal of the crystal set. This will be done by joining together terminals 2 and 3 at the amplifier input, and stability nearly always results by doing this.

The diagram in Figure 3 shows a suitable RF amplifier and detector to be used in conjunction with the audio amplifier of Figure 1. The two combinations together form a sensitive long-distance loud-speaker receiver.

Sometimes a peculiar form of distortion takes place in audio amplifiers, and the bad quality of speech or music only occurs when very strong signals are received. The normal good reproduction is only preserved by detuning the set slightly, which is poor practice. The distortion occurring in a case like this is mostly due to unsuitable valves and a low plate voltage, and the remedy is only a matter of using the correct plate and grid voltages specified with the valve maker's instructions.

Until recently it has been by no means an uncommon fault with audio transformers for a break to occur in one of the windings. This is often wrongly referred to as a "burn out," as in no case in actual practice does an audio transformer ever have to carry enough current through the windings to cause the wire to fuse. One cause of such a breakdown is due to the fluctuating current

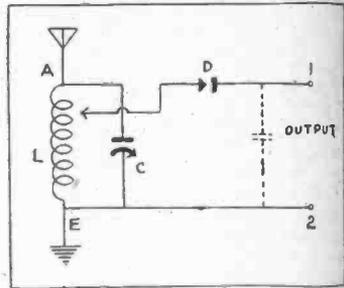


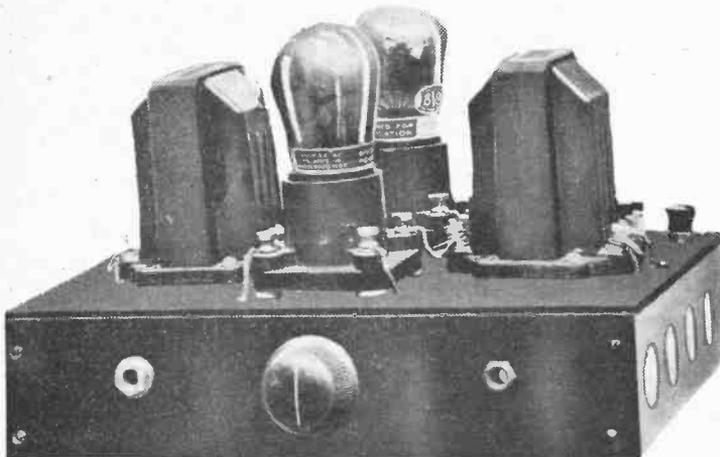
FIG. 2.

in the primary setting up a corresponding fluctuation in the magnetic field around the windings themselves. This reaction is often sufficient to break the winding owing to the vibration.

The earlier designs of transformers with small and poorly assembled cores suffered from this trouble, but one cause of breakdown, which may happen to a really good transformer, is illustrated in the sketch in Figure 4. A few years ago I remember how the engineers of a large radio factory were considerably worried by the constant flow of returns in the form of transformers with the primary windings broken down. These transformers were recognised as the best it was possible to design (at this period), and it was very baffling to the engineers responsible at not being able to hit the trouble.

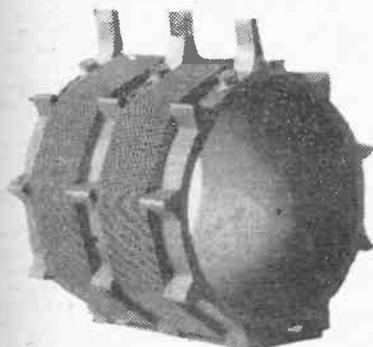
One source was found to be moisture on the wire. The operator winding the coils found it necessary to run the fine insulated wire through the fingers during the process, and the slight moisture from the fingers was sufficient early in the transformer's life to set up corrosion and a break in the wire. This trouble was obviated, but still the breakdowns occurred.

At last one of the staff located the snag in the former carrying the windings. The primary had been wound on a former of insulating material, but of soft composition. The result of this had been that the composite material had absorbed moisture from the air, and had consequently expanded and con-



A good example of neat lay-out for a two-stage transformer-coupled audio amplifier. Such an amplifier may be used after a crystal set, RF valve and detector, or a gramophone pickup.

TRANSFORMERS ARE VITAL TO GOOD RECEPTION—USE THE BEST



A Radio Frequency Transformer of the Astatic Coil type. The spring contact pin mounting allows easy wiring of the set, but R.F. transformer troubles as described in this article may appear if poor contact takes place.

tracted with changes of atmosphere. The primary winding was naturally laid on tightly over this former, and sooner or later the wire broke. Upon replacing the unsuitable composition with a former of dry, hard insulating material, the trouble disappeared, and the rapidly vanishing reputation of a good transformer was saved.

You will often find in some of the old types of transformers of the unshielded variety that one of the wires connecting the ends of the primary or secondary to the tags, under the terminals will break. Poor soldering flux used in the final assembly of the transformer may be responsible for this by setting up corrosion. If the break is not located, the transformer may be thrown on one side as useless, when all that is required is a little attention with the soldering iron.

When trouble occurs in a set with transformers, the experienced ear can usually tell at once whether the open circuit is with the primary or secondary. It is very seldom the latter, in any case, but a comparison of the symptoms will be interesting. A break in the primary shows either a complete absence of signals or only very faint ones. Sometimes a heavy crackling will start owing to an intermittent contact between the broken ends of the wire.

A break in the secondary is indicated by much weaker signals, accompanied by distortion, but there are cases where very little difference will be noticed, depending upon where in the winding itself the break happens to be. The simplest of tests for audio transformers is one which will be familiar to

all readers who have had any experience at all in the construction of wireless receivers.

Connect one tag of a pair of headphones to one side of a pocket lamp or 4½-volt C battery. If you wish to test the primary winding of the transformer for continuity, connect the free side of the battery to either the B positive or P terminal, and tap the other terminal with the other 'phone tag. If the winding is not broken, loud "plonks" will be heard in the phones. It is useful to have a preliminary idea of the loudness of these contact noises, and this may be done by trying the test with a transformer which is known to be intact. The secondary winding should also be tested, and it will always be found that the "clicks" are much weaker here than the primary.

The trouble with this continuity test is that a winding may break in a certain position, and that, although the circuit is actually broken, slight clicks in the phones may still be heard and may be misleading to one who is not used to the test. The millimeter test is the most reliable, being a visible test, but after comparing a good transformer with the defective one by the "click" method, there should be no confusion between the good and the bad.

Another annoying source of defect in cheap

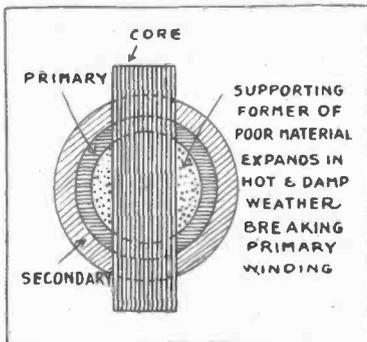


FIG. 4.

transformers lies with faulty insulation between the transformer windings. The first thing that happens here is that the B battery does not last as long as it should, and frequent crackling noises are heard. The phone and battery test should be applied BETWEEN WINDINGS when this trouble is suspected. A slight click does not show a faulty transformer, as there is naturally the capacity of the two windings to be taken into consideration. If a strong click is obtained between one of the primary terminals and

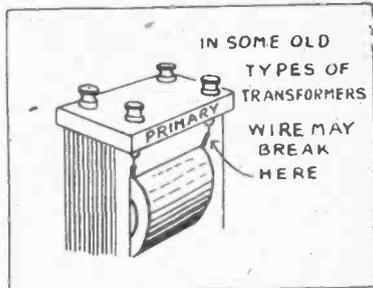


FIG. 5.

one of the secondary terminals the insulation is faulty and the transformer may be safely scrapped.

Now a few words about the other side of the set, and a side which is equally important. The radio frequency transformer, compared with almost any other wireless component, is a piece of apparatus which is relatively trouble-free. Its construction is usually very simple, and it can hardly fail to work provided it is of suitable type. Even though the construction appears to be simple, the functions carried out by the radio frequency transformer are rather complicated, and so it is possible for a small fault in one to make all the difference to the working of the set.

It is seldom that a fault in a radio frequency transformer completely stops reception, as may be the case in an audio transformer, but very often it will produce instability or flat tuning and make the set misbehave itself in a variety of ways.

Many receivers have been described in past issues of "Wireless Weekly" in which radio frequency amplifiers of the neutralised kind have been included in the design. This was before the days of the screen-grid valve, with its self neutralising properties (excluding the 1929 neutrodyne). Most readers who have used such receivers will know quite well what neutralisation means, and how to neutralise a set, but perhaps on one occasion they have struck a snag, and no amount of the usual attention would neutralise the RF valves or valve. The set sometimes appeared to be neutralised, and then would suddenly behave in a queer manner and upset the tuning to the accompaniment of howling ad lib.

Question: What is the cause?

Answer: A faulty RF transformer.

A receiver containing a stage of RF amplification will give fairly good results even if the neutralising is not properly carried out, in the general run of things; but one frequently runs across a set which simply will not neutralise properly. The moment the neutralising condenser is adjusted a series of violent howls and screams is the result. The neutralising condenser seems to have developed into a first-class reaction condenser, excepting for the fact that reaction is far too lively, and the oscillation cannot be reduced sufficiently. It is more than likely that the connections to the primary or the neutralising windings of the radio frequency transformer have been accidentally reversed. Matters can soon be put right by reversing the connections.

If a set has been made up with home-constructed RF transformers, probably one of the troubles first noticed is the extreme flatness of tuning. Instead of stations being confined to one or two degrees on the RF dial, or dials, they are spread out over a wide area. One cause of this may be due to a very high

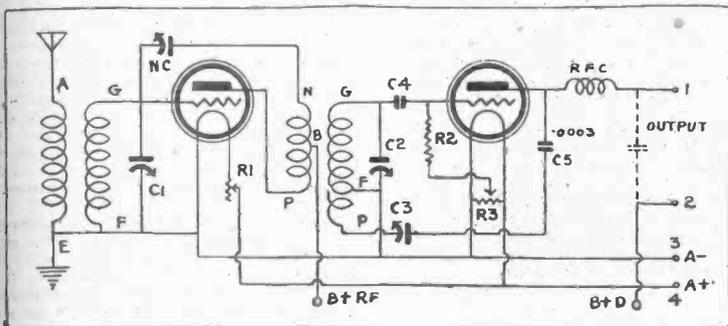


FIG. 8.

impedance valve, but it is more likely to be in the RF transformer itself.

These symptoms generally appear because of far too many turns on the primary. The impedance is unsuited to the valve in use. Take off half a dozen turns at a time until the required degree of selectivity is reached.

These are the main two faults likely to make their appearance with RF transformers, but there are other symptoms which indicate incomplete circuit in the windings. If the sharpness of tuning in the RF stage falls off with a drop in the degree of amplification. It is possible that there is a break in that portion of the primary used as the neutralising

winding. Either the wire has broken or is making poor contact to a terminal or soldering tag. This would make the set behave as if it were not neutralised at all.

Another case is where signals die away gradually, but if one of the wires joining the grid leak or condenser is touched with the finger the set comes to life momentarily, but dies away again. The cause of the trouble here will lie in the secondary of the RF transformer, and indicates a break in the wire or a very poor high resistance contact. The set returns to its normal performance when the broken circuit is made sound. Many readers will probably consider that this ar-

ticle could have been briefly explained through the information columns. So it could, but it is difficult to say all one wishes in the columns owing to lack of space, and by pointing out these troubles in this form it is felt that many who are in the throes of doubt over some similar trouble will be able to see light through the darkness and tackle the fault at its source.

The moral of this little story is: "The initial cost of a good audio transformer is the last." And if you make your own radio frequency transformers, "use a small rather than a large primary, slightly less RF amplification is preferable to flat tuning."

:-: How to Service Radio Sets :-:

III.

If you are a service man working for a salary, you absolutely cannot combine a little side line of service for yourself.

If you start any such business you will get in the category of the old-time street car conductor, who sometimes forgot which nickel belonged to him and which nickel belonged to the company; so, in his code of mathematics, he gave himself the benefit of the doubt and dropped the nickel in his left-hand pocket. Either work for yourself or give your service and loyalty to your employer.

It is possible for you to impress upon your employer the necessity of paying you a small commission on accessory and set sales, but remember you get your salary every seven days, whereas your employer, who has invested his money and time, has a problematical income, and, unless he is on edge all the time, the radio business is a precarious undertaking.

IV.

To build up a paying service business, it is only necessary to do a few strictly first-class jobs, and the mouth-to-mouth advertising will bring in jobs. Make the most of these customers, and request of them this advertising. If they have been pleased with your work they invariably will go out of their way to tell someone else.

Radio owners are ever anxious to know of someone in whom they can entrust their radio, and know it will receive a mechanical and technical attention.

One caution I cannot impress too strongly is the diligent care of the external part of a radio when servicing it. Service men are notoriously thoughtless when it comes to handling the cabinet. Some people value the external part of their radio as much as or more than the internal, and, no matter how brilliant the job of electrical service, if the man was careless with the cabinet, he counteracted all of his good work.

V.

As I said before, build up a business of customers who will recommend you. One outstanding idea of radio owners is that they are continuously ready to hand out a knock if any unforeseen something happens to their receivers.

I have forestalled this with a sticker I paste inside of the cabinet, and advise the customer to refer to it if trouble occurs. The sticker is worded as follows:—

"When this radio was serviced on it was left in first-class working condition.

"Your batteries were and should be replaced on or before

"Please, in justice to the service man, notify him if anything is wrong before notifying your neighbors.

"This is an instrument which, although practical, needs attention consistent with its nature, and a new error may have occurred.

The second article of the series on Servicing Radio by an experienced business man in radio.

"We guarantee our work, and will back it up. However, if further failure of your radio is due to natural depreciation causes, such as run-down batteries, burned-out tubes, etc., or gross negligence, you will be charged for service."

This may seem a lengthy sticker, but, when people lay out good money for service, they will read a more lengthy article than the above.

VI.

A sad mistake is made in promiscuous pricing of parts and accessories when combined with service. This only brings a comeback on the one who practices it, gives the whole radio service business a black eye, and every bill presented is a silent witness ready to open up. What I mean is this:—

You install a small by-pass condenser, a 5-wire battery cord, two valves, and a "C" battery.

You don't want your service charge to be too high, so you add the difference to the parts, and your bill reads as follows:—

Service	£1 0 0
5 battery cords	17 0
1 capacity	3 0
2 special electron emitting valves	1 5 0
1 biasing battery	5 0
	£3 10 0

Your condenser was not above 1/6, the battery cord was a 2/9 5-wire cord, the valves were common 201A, at 8/6, and the "biasing battery" was a 2/9 "C" battery.

We don't need to mention the ethical part of this, and radio men with the future in view just don't do it, but this is an appeal to the other fellows, who are kidding themselves into thinking they are smart.

You not only hurt the whole radio service business, but you keep yourself on a mental strain trying to remember how you skinned a customer when you are called again, if you are.

VII.

If you do a cash service business, which I have found to be the best policy, make out your bill as soon as you are through with your work. When your customer asks, "How much do I owe you?" hand the bill without remarks.

Sometimes it is the tone of your voice, either a self-satisfied or a scared-to-death tone, or some other intonation, rubs against the customer's grain.

If your work was good it won't be necessary to use a pulmotor on the customer when you hand over your bill. If your work was without results you should not hand out any bill whatsoever. The customer is paying for service, not for company.

For a bill-head I use a size and shape similar to a doctor's prescription blank. My

name, address, and title, "Radioician," under them. Then one line for "Service," and the balance for "Material." The type is very small and very neat, and the bill-head fits in the service kit.

VIII.

In any business an income that can be definitely assured without the element of daily problematical receipts is truly an asset.

This can be procured in the radio service business by monthly maintenance accounts.

The discriminating owner will readily see the advantage of elimination of trouble, present or future, by the payment of 10/ per month. To maintain a radio you keep the battery charged, and test the batteries and valves twice a month.

You would say that this would not pay. Read further.

When you get an account you immediately install a trickle charger and switch, which remains your property. On the regular semi-monthly inspection the service man looks at the water level of the battery and charger, and there is no other attention needed if it is of the electrolytic type of charger. If the dry type, attention is given to the battery only, to be sure it is up and O.K.

The "B" batteries are tested on each trip, and, as soon as they are down to 30 volts, a new set is sold to the customer, at the agreement stipulates these are to be paid for.

The valves are tested, and, if one needs rejuvenating, kick it up while the other work is being done. If a new valve is needed, sell it.

Every six months the whole system should be inspected.

The beauty of this work is that it takes about twenty minutes a visit, and is done when no station is on the air, and other service jobs requiring that cannot be done, except, see test No. 17, in a later instalment.

With 200 such accounts, you know where £100 a month is coming from, and one man can take care of them, with time to spare. With 200 such accounts you will sell an average of 40 sets of "B" batteries a month to them alone. You get the valve and other accessory business of these 200 accounts, limited only to your sales efforts. Your service man lists their apparatus, and you know when to sell them something better.

On every job you can make at least one of the demonstrations described further on in this book, and sell or install a piece of apparatus to make his radio better.

A radio service man must once in a while sit down at home or any other place out relax in front of a radio, forgetting shop, and allow reception to entertain him, otherwise he gets so he cannot draw distinctions between good and bad, and cannot keep up with the times.

This thing of hearing nothing but extraneous noises, with no conception of what else is going on, puts you in a rut.

Enjoy your trade object.

The MICROPHONE PRESENTS—

M'Kinlay Programme

ERNEST M'KINLAY is the principal attraction at 2BL on the evening of May 17. His programme on Friday, May 17, includes "O Vision Entrancing" (Goring Thomas), "Yesterday and To-day" (Spross), and Massenet's "Elexie."

Classical Programme

THE usual Wednesday classical programme which 2FC is featuring will be undertaken by Madame Goossens-Viceroy on the evening of May 22. The artists assisting are Beryl Howard, H. Hoogstoel, Gwladys Whybrow, Phyllis Edwards, and Mignon Foy. At the conclusion of the first half of the programme, C. Price Conigrave will give one of his Australian travelogues.

James' Duo

WILL and Barbara James, who are spending a week in Sydney from May 13 to 18, conclude their series of broadcasting appearances at 2BL on the latter date. They are entertainers who have travelled much, and their work bespeaks more than a nodding acquaintance with the autocrat of the studio—the redoubtable "mike." Their act includes a number of items on various instruments, and Barbara sings cheerful little songs in a singularly captivating manner.

Merry Monarch

CHARLES LAWRENCE had rather a neat title conferred on him the other day—"the merry monarch of the air." King indeed of entertainers, he is in constant demand, and it is fortunate he has a soft spot in his heart for the microphone, for there are many calls on his time. We would like to be able to tell you of the humorous situations he proposes to relate on the evening of May 17 at 2FC, but alas, the genial Charles is always in disgrace with the Programme Department. His repertoire is probably the most comprehensive of any of Sydney's comedians, and yet he never knows what he is going to do. "Don't ask me what I am going to do," and he waves his engagement form with as near an attempt at belligerence as it is possible for him to assume. "I'll have to dig something up."

A Message from Mars

A MESSAGE FROM MARS, which is the next production by the H. W. Varna Company, to be given at 2BL on Wednesday, May 22, proved to be one of the most successful domestic comedies in the history of the modern stage, with its moral: the correction of human selfishness.

Horace Parker, a well-to-do Londoner enjoying almost every comfort in life, regardless of the many who are merely struggling along, falls asleep, and dreams he is visited by an inhabitant of the planet Mars, who takes him from his comfortable home, to mingle with suffering humanity in the squalid districts of London. All that he goes through so impresses Parker that he completely changes his mode of life, and habits, to the extent of becoming a kind, generous and unselfish member of the community.

The principal part is played by H. W. Varna, who is the Messenger from Mars. William Hume takes the character of Horace Parker.

Afternoon Music

DAISY SIGGS, the contralto who is singing with the Goulburn Liedertafel on June 5, is appearing at 2BL on Saturday afternoon, May 18. Here is a real treat for the listener who tolerates sport, but asks music, too.

Children's Choir

THE anniversary services of St. Thomas' Church of England Sunday School will be held on Sunday, May 19, and the afternoon service, which commences at 3 o'clock, will be broadcast by 2BL. The special feature is the music by the children's choir, of 150 voices.

Police Band

IT is hoped arrangements will be completed for the broadcasting by 2FC of the big charity concert to be held on Sunday night, May 19, at one of Sydney's leading theatres, when listeners will have an opportunity of hearing the Police Band—the finest instrumental combination of its kind in Sydney to-day.

NEXT WEEK

In our next issue will appear an article by Mr. Stannage, wireless operator of the "Canberra," during the flight when the "Southern Cross" was found. Mr. Stannage has many important statements to make regarding the improved installation of radio in aeroplanes.

Readers should not omit to see what Mr. Stannage has to say.

'Varsity Revels

COMMEN WEEK is near at hand, and the University students are busy preparing for quite a new departure. A select company, who are confident their voices are eminently suited for broadcasting, are going along to 2BL Studios, armed with the new 'Varsity songs, and a host of new tales to tell. They intend to make the most of the hour which has been set aside for them, and promise 2BL listeners a first-class entertainment. As arrangements now stand, Monday, May 20, is their radio revel night, but it may be found necessary to make an alteration in the date. Listeners will do well to watch for the definite announcement regarding this unique feature.

Mutiny Drama

APART from its dramatic appeal, "The Mutiny of the Bounty," specially adapted for broadcasting by Mr. C. C. Faulkner, which was produced at 2BL Studios last Monday, provided one of the most vividly interesting historical plays ever attempted in radio. The effects provided an atmosphere which emphasised the dramatic light and shade of the production, and in the capable hands of Scott Alexander, Wilfred Thomas, and Joe Cahill the material provided by Mr. Faulkner received excellent treatment.

Rose Bay Club

THE monthly concert of the Rose Bay Music Club, under the direction of Olyver King, will be broadcast through 2BL on the evening of May 21. The artists contributing to the programme are the Conservatorium String Quartet, Mollie de Gunst, Rex de Cairns Rego, and Stanley Clarkson. A short address by Mr. Oswald Anderson, "What Have Our Musicians Done for Broadcasting," should prove of considerable interest.



OLIVER KING.

SESSIONAL NEWS

Mr. Norman's Session

MORE THAN 600 are enrolled on the 2BL Radio Club books, and Mr. Norman expresses himself highly delighted.

Members are reminded that the next visit of the club will be to Leyland Motor assembly works, Australia Street, Camperdown, on May 11. The meeting place is the park opposite Leyland's works, at 9.30 a.m. Essays will be invited from visitors, and prizes given. After the inspection of the works, Mr. Norman will take a party over the Radio Exhibition. That is, on the afternoon of May 11, the closing day of the exhibition.

Mr. Norman is receiving an average of seventy queries a week, and, although the answers are sometimes hard to find, he relishes the opportunity of being useful to his bigger boy friends. Questions range from "How to hatch silkworm eggs," or "Why is it that accidents to Royalty affect the Stock Exchange markets?"

Postcards of photographs taken during the Garden Island trip are available for all who write to Mr. Norman, at 2BL, Bligh Street, Sydney. The girls of the Greenwich Public School have lodged a complaint with Mr. Norman against his taking boys only to see the sights. Why, they ask, may not girls go, too?

Racing Sessions

ON Saturday, Mr. Ferry, New South Wales Broadcasting Company's Racing Commissioner, will broadcast a brand new race from Randwick, during the Tattersall's meeting. This race is for the James Barnes Stakes. Mr. James Barnes is the retiring chairman of Tattersall's; and the race has been named in his honor.

Mr. Cooper's Session

ON Saturday morning Mr. G. W. Cooper, Parks Superintendent of the City Council, will talk from 2BL on "The Importance and Value of Lime in Soil." There are a few plants which require no lime in the soil, but the great majority of plants require lime in the soil in various quantities. Whether fruit, flowers, vegetables, trees, shrubs, pot-plants, hanging baskets, tennis courts (grass), croquet and bowling greens, golf courses, cricket pitches, or general farming are the subjects of the listener's solicitude; lime has its uses; and Mr. Cooper will explain these in full detail.

Wireless Weekly

Incorporating "Radio in Australia and New Zealand."

FRIDAY, MAY 10, 1929.

RADIO, 1929

THE 1929 Radio Exhibition is an outstanding success.

From the first day hundreds of radio fans, amateurs, interested listeners, and listeners-to-be crowded the main hall and basement of the Town Hall. Traders, though restricted from doing cash business by mutual agreement, did a very brisk business in orders, especially from the country. Their stalls, most attractively arranged than in any previous exhibition, presented a brilliant array of handsome apparatus and furniture.

Gone are the old many-dialed broad-panelled sets, gone the angled wires of battery connections; gone the old-fashioned horn speakers. Instead the visitor saw handsome pieces of furniture, polished oak, blackwood, beech, mahogany, and dials to match, and decorative and unobtrusive loud-speakers.

This year's exhibition far out-rivalled any previous exhibition for neatness and efficiency. Previous years have shown visitors all too well that the radio set was in a stage of transition. Just as it was thought stabilisation had been reached, the dynamic and magnetic speakers arrived, the battery eliminator appeared, and the screen-grid valve came to revolutionise design. That was in 1928. This year the feature of the Exhibition is that all these innovations have been perfected and incorporated in receivers. There are very few radical developments such as there were last year. The A.C. set rightly takes pride of place. On all sides we see "All-electric" receiver for two, three, four, and five valves.

As a result we find the traders more confident. No longer is fear of later developments preventing them from manufacturing on a large scale and selling cheaply. They present fine quality sets at reasonable prices.

The listener, too, has less timidity about investing a sum in a good radio set, and hundreds of high-grade receivers were sold during the Exhibition. Without the stimulation of publicity the attitude this year seems to be, "I think I'll invest in a radio this winter."

What has Happened to Television?

TELEVISION is the term usually applied to the transmission of visual objects by wireless broadcasting, and is the subject of world-wide discussion to-day. Removed as we are in Australia far from the centres of important discoveries and developments in this, the latest phase of radio progress, experimenters and the public generally are eager to ascertain how far tests have proceeded, and how near we are to the realisation of the dreams of many experimenters with whom the new science has been attended with many disappointments. It behoves us, therefore, to be wary in the acceptance or rejection of reported successes, and particularly in purchasing or installing apparatus upon the data and information now available.

The reasoned conclusions of the world's foremost radio experts are well worth considering in this regard, and accordingly we publish the following statements:—

JUDGE ROBINSON SCEPTICAL.

According to the "New York Times," Judge Ira E. Robinson, chairman of the Radio Commission of U.S.A., states:—"Television has not yet reached the stage of public utility. Other than for experimental purposes the broadcasting band cannot be spared to it without detriment to the public. This is the testimony of the leading radio engineers of the country."

DE FOREST VISUALISES TELEVISION IN 1938.

"By 1938 it is reasonable to hope, although we have to-day no real grounds for justifying such a hope, that real and satisfactory television in the home will be 'flat-accomplish.'" (The "New York Times.")

"BALLYHOO."

"Since broadcasting began there has always been considerable ballyhoo relative to revolutionary inventions. Television is now being used by the ballyhoos, and in some cases to sell premature apparatus." ("New York Times.")

ENGLISH OPINION."

The following opinions have just been received by cable from authoritative sources in England:—

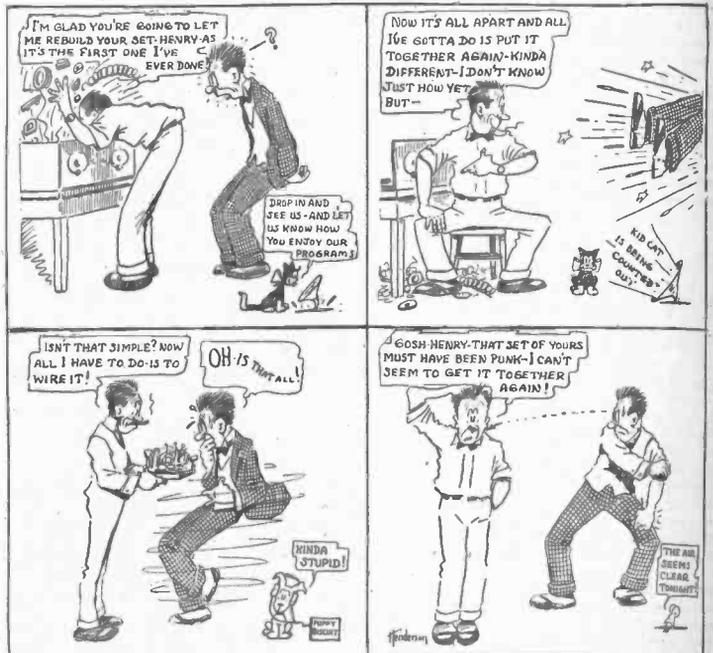
"Television is not a commercial proposition. The B.B.C. tested the best system, and gave an adverse report, as they do not consider it is sufficiently developed. I agree it is still in the laboratory experimental stage."

"I am very definitely of opinion that television is not yet a commercial proposition, as no public demonstration has yet been given of a successful radio transmission. Fairly good 1000-point images have been transmitted, showing a very considerable improvement during the last two years. The synchronisation problem appears to have been practically solved without undue complexity for land line, but probably radio will be more difficult. Technical press are practically unanimously of above opinion, and the larger electrical companies and the B.B.C. are keeping clear."

POSITION IN AUSTRALIA.

The position here, as in other parts of the world, indicates a state of suspended interest and enthusiasm. Even the most enterprising experimenters are not rushing into installing apparatus which may be little more than an expensive toy when the big development in television takes place, and which may embrace an entirely different system to that now in use.

Remaking the Old Set - - - - 1



Henry, failing to sell his old receiver, decides to allow a friend to rebuild it for him.



"Cronk, Crook, Chronic!"

Dear Sir,—A happy religious chap, Cabramatta, attempts to lash me, but his flail is blanc-mange. I would prefer a Wilkins Mincawber to a Uriah Heep. He claims to be happy and religious. What humbug and how impossible. His religion is evidently founded on fear, the basic characteristic so vividly apparent in the science of human psychology. Even the savage fears and worships the "debil debil" wind. It is apparently quite decent and moral and religious to attack your opponent by nom-de-plume. These religious happy chaps cannot claim to give us anything happy on a Sunday. Tripe would not describe it, neither would gloom, as the present broadcast programmes on that day are cronk, cryptic, chronic, crying, and catty.

Some of these parsons are inarticulate impossibilities. A programme of light music from one station should be possible—something one can tune into and enjoy oneself. One should not need his Kruschen on a Sunday to stomach the present wishy-washy, whining, worm-worm wriggling. An agnostic or an atheist has as much right to be catered for as these other mental derelicts. I should feel ashamed to belong to any denomination which posed and assumed the right of laying down a code or system which says to all men, "you are good," or "you are no good," according to man's belief, either in a church or any other dogma, and who, like a happy religious chap claims, to dictate what we should be compelled to listen to on a Sunday.

He says I have a tick. I could not get any tick at all by giving his name to my tradesmen. They would become suspicious immediately, and stop my tick. After a day at a funeral our friend would probably say: "I've had a very happy and splendid time to-day." You can't put that bunk over "Happy Religious Chap" getting off the earth to suit sundry Sunday happy Sams, and dismal Desmonds desiring dirges would be my last thought, as I would like to leave the world a happier place than I find it on a Sunday. Of course, if the parsons are right I am wrong (according to "Happy Religious Chap"), and if I can oblige I will cheerfully take their messages to old Nick as I pass down that way.—Yours for a decent Sunday programme, Sans Souci. GEORGE O'KELL.

Banish Gloom

Dear Sir,—Surely the weakness of "1929 Naremburn's" cause is seen in the first few words of his letter. Why did he listen at all to that part of the programme if it made him and others feel like suicide? The remedy for his trouble lies within his own reach. Tune in to something else or tune out until 8.30. Does he really mean to inform listeners that he spent an hour and a half listening to what was, in his opinion, a gloomy programme, when, by a turn of the dial, he could have got at least one of the three local stations who broadcast lighter fare? I am certain he must have got real enjoyment listening to that dreadful programme and thinking what a nice letter he would be able to pen in condemnation thereof.

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

The particular item complained of was a high-class rendering of a fine musical work suited to that time of the year by one of Sydney's best church choirs, and must have been enjoyed by many. I quite realise that this type of music does not appeal to the majority, who, however, are exceedingly well catered for during the week, including part of Sunday. Cheer-up, "1929 Naremburn," and all who are like you!—Yours, etc., Petersham. G. VERNON.

Not Considered

Dear Sir,—While reading "Wireless Weekly" to-night (19/4/29), I noticed a letter signed "One Interested." Is it thought that a person without a listener's licence is going to write to a paper whereby he is likely to be detected? In my opinion, no! I have a set which cost me £26. I may state that I am not a lover of church services, but I am not considered. It is the majority that rule.

If "One Interested" share in the misfortune—as he considers it—of being a cheap set owner, his suggestion of the "A" class stations broadcast church services alternate Sundays to give him a varied programme would be also appreciated by the more expensive set owners.—Yours, etc., Lakemba. "DISGUSTED."

Nearer, My God, to Thee

Dear Sir,—While reading both praises and complaints in the Safety Valve Page I want to relieve my feeling of enthusiasm by writing what I think of the radio as managed in Sydney.

With S. A. Greene I agree that hardly anything is so conducive to the establishment of the brotherhood of men than radio. Men of the past and the present, men of all occupations, of different talents and ideas, the rich and the poor, all are brought together to a better understanding. And no wonder, for even immense distance is bridged in a common sympathy in sorrow, in interests, and amusements.

What is more touching for us mothers to hear than those dear uncles of little children, who, be they ill or well, are made the brighter, the happier, by the sincere devotion of those men, who thus become our brothers!

At last, thanks to the chivalry of those men who by the means of radio help mothers, to develop the hearts and brains of their little ones, they also put parenthood on the pedestal of which the world and, alas, often religion (wrongly understood) have knocked it off.

Though one correspondent complains of religion not getting a fair share, I can see, or rather as yet hear, Christ rising, in the broad-minded, charitable, and happy spirit the radio possesses. Ritualistic faith appeals to many, and so it did at times to the Nazarene Himself, but in a general way does He not call to humanity at large, be it faithful of atheistic, rich or poor, of every age, of every nation and color? "It is My delight to be amongst the children of men!" I am reminded of Him continually when I listen in. "Neither eye has seen nor ear has heard what the Heavenly Father has prepared for those who love Him!" Those words the music reminds me of.

"Suffer little children to come unto Me." Well, the children's hour gives Him a chance to pour some of His great love and joy through the lips of the uncles.

Even during the evening 2BL spoke to the Samoans in their own beautiful language. It seemed to me that Christ's loving influence is bridging the difference of color through brotherly kindness.

This good nature radio promotes, this fire of love is what will burn up the worldly spirit and eventually make of earth a Kingdom of God, a Paradise.

A Mother in the Crowd,
ZANINA MAGRIN.

Chatswood.

Moisten Before Use

Dear Sir,—To what a low ebb must your Safety Valve basket have got if you have to publish such insults to your other correspondents as the effusion of one signing himself "Mustard" in the issue dated April 26. This person is so tangled up with his efforts to make your readers believe that the senile wranglership of both Oxford and Cambridge Universities are still open to him that he has overlooked the fact that he can't even read intelligently. This combination of "conscientious and intelligent humbugging semi-imbeciles," to use his own phraseology, is a new one to me, and is a good boomerang. In that anyone who cares to read my letter again, which is nothing but a bouquet for the 4CG bedtime story people, and in no way detracts or strikes any dissenting note from the excellence of the programmes at present supplied by the A class stations. My letter was prompted from reading one by "Disillusioned" in March 1 of "Wireless Weekly," which was quite the opposite. For Mr. "Mustard's" further education I add that I am frequently requested by listeners around here to put over some bedtime story stuff and tell the kiddies where to find their birthday presents, when the static prevents the A class stations being heard, and, of course, I do so.—Yours, etc.,

M. J. OLIVER (VK2MO).
Gunnedah.

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3in. ...	1/	1/6	2/	2/6

RENOVN

COIL KITS

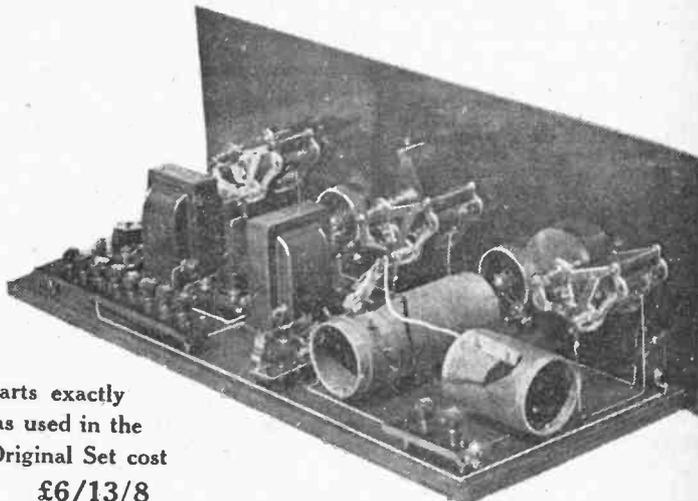
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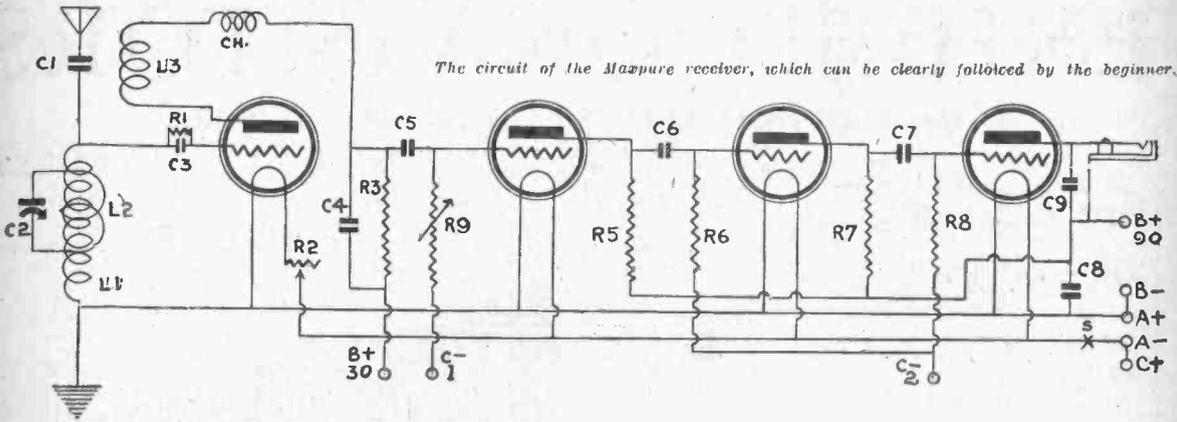
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Four Valve Receiver

A straightforward modern circuit, which the constructor will find easy to make.

TREMENDOUS volume, beautiful clarity, selectivity, and ease of construction will make the Maxpure Four one of the best receivers ever turned out by "WIRELESS WEEKLY." The original receiver was built by the writer originally for use in dance halls, hospitals, and the like, and it proved very satisfactory owing to the tremendous volume which can be obtained. This volume can be brought down to a mere whisper by means of the volume control R9.

The coil arrangement is original. Instead of coil L1 (aerial coil), consisting of fifteen turns, this coil consists of 50 turns, and performs duty for the aerial and also the secondary coil. The coil L2 (which is tuned by condenser C2—.0005 mfd.—is used for tuning by the absorption method. This coil consists of fifteen turns. L3 is the reaction coil.

The volume is obtained firstly by coupling the aerial coil direct to the grid of the valve instead of by induction, which is the usual method employed. Generally, when direct coupling is employed, selectivity suffers, but the absorption method of tuning removes this bugbear entirely.

Secondly, three stages of amplification are used. This assures ample volume on all "A" and "B" stations.

In order to improve selectivity to an even greater extent a .0001 fixed condenser is included in the aerial lead. Extreme clarity is made possible by the use of resistance coupling, the use of a cone speaker, and the condenser C9, placed across the speaker. Economy on "B" batteries is assured by the use of "C" batteries and the fixed condenser C8.

What more can one want in an ideal receiver?

CONSTRUCTION.

DISSOLVE some shellac flakes in a little methylated spirit. This makes a good shellac varnish, which will dry in a few minutes. Cover the baseboard with this, moving the brush in the same direction as the grain of the wood.

Whilst this is drying drill your panel. Use a centre punch to mark the places first, then drill your holes according to the diagram.

The hole for the spindle of the condenser should be made slightly larger than the spindle, so that there will be plenty of free play. When mounting the condensers do not make the mounting screws too tight. Many constructors in doing this cause their condenser plates to touch. The condenser spindle hole should be made 4 1/2 inches from the bottom of the panel and 9 inches from the side. A hole is then drilled 2 1/2 inches from the left and 3 1/2 inches from the bottom of the panel for the rheostat. Next drill a similar hole on the right side of the panel (2 1/2 inches

from the side and 3 1/2 inches from the bottom) for the volume control. When this has been done a hole should be drilled for the battery switch, 2 inches from the bottom of the panel and 6 inches from the left-hand side of the panel, then finally make the hole for the jack 2 inches from the bottom and 6 inches from the right of the panel.

WINDING THE COILS.

ON a three-inch bakelite or cardboard former tightly wind 50 turns of 24 D.C.C., leaving about a foot of wire at each end. In the very centre of this wind another coil (L2) of fifteen turns. Now, on a 2 1/2-inch former wind 40 turns of 28 gauge D.C.C. Place this coil just inside the larger coil, making sure it is at the end of the former, i.e., where the last turn of the 50-turn coil finishes. Do not cut off the spare end of the former, as the reaction coil will be fastened to this when the best position has been found.

WIRING.

MOUNT the components on the baseboard and panel. The lay-out of the baseboard will be seen in Fig. 3. The coil is mounted in an upright position, with the reaction coil suspended just inside the larger coil. See that the grid-condenser is near to the aerial terminal.

Commence by taking a lead from the aerial terminal to one side of the fixed condenser C1 (.0001 mfd.), and from the other side of this condenser to the first turn of L1 (50 turns), and also to one side of the grid leak and condenser (R1 and C2). The grid condenser should have a capacity of .00025 mfd., and the grid condenser a resistance of 1 megohms.

From the other side of the grid condenser connect a wire to the grid of the detector valve. Now connect the earth terminal to the last turn of L1, and thence to one filament terminal of each valve socket, to A plus and to B minus, then to one side of C8 (1 mfd.), and from the other side of this condenser to the B plus 90 terminal. This lead follows on to the positive terminal of the speaker, to one side of the condenser C9

List of Parts for the Maxpure Four

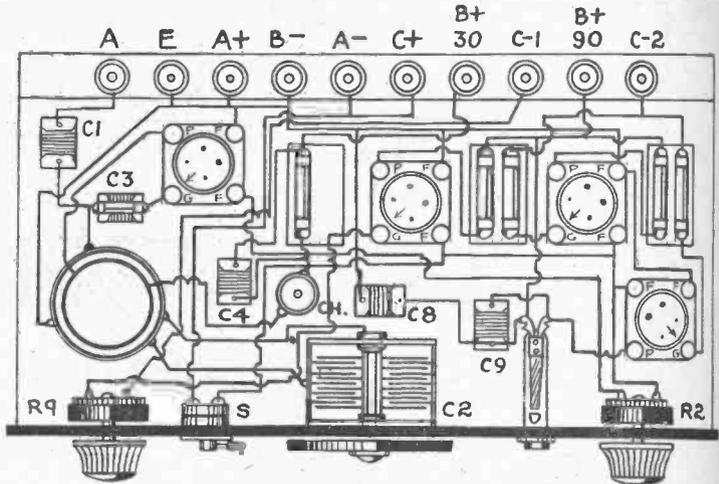
- One grid-leak, 2 megohms, R1.
- One grid-leak, 1/2 megohm, R6.
- One grid-leak, 1/2 megohm, R8.
- Three fixed resistances, 100,000 ohms, R3, R5, R7.
- Three fixed condensers, .006 mfd. (C5, C6, and C7).
- Three resistance unit holders.
- Note.—In lieu of above three resistance coupling units complete may be procured.
- 1lb. 2 1/2-gauge D.C.C. wire.
- 1lb. 28-gauge D.C.C. wire.
- Four valve sockets.
- One choke.
- One 1-inch former (cardboard or bakelite).
- One 2 1/2-inch former.
- Eighteen lengths bus-bar.
- One volume control or variable resistance, 0-500,000 ohms (R9).
- One 30 ohm rheostat, 30 ohms, R2.
- One fixed condenser, .002 (C9).
- One fixed condenser, 1 mfd. (C8).
- One battery switch.
- One S.O. jack.
- One fixed condenser, C1 (.0001).
- One fixed condenser (C4), .001.

Three Stages of Amplification Assure Ample Volume for All A and B Stations

(002), and to the B plus terminal on the last resistance stage, i.e., the 100,000 ohm resistance. Next connect the remaining filament terminal of the detector valve socket to one side of the rheostat, R2, and from the other side of this component to the remaining filament terminals of each valve socket, to one side of the switch.

Next, take a lead from the other side of the switch to A minus and to C plus. Connect the first turn of L2 to the fixed plates of the condenser, C2, and the moving plates of the condenser to the remaining side of the coil L2. From the plate of the detector valve take a lead to one side of the reaction coil L3. The other end of this coil should be connected to one side of the choke, and from the other side of this component to the P connection of the first resistance stage, and also to one side of C4, .001 mfd. condenser. The other side of this condenser connects to the B plus terminal of the first resistance unit (i.e., a 100,000 ohm resistance), and thence to the B plus 30-volt terminal on the battery strip.

With the exception of the first audio stage connect the grid of each resistance coupling audio unit to the grid terminal of the following valve socket. Keep these leads as short as possible. Connect the grid terminal of the second valve socket (first audio stage) to one side of the volume control R9, the remaining terminal of this component being connected to the first C minus terminal on the battery strip. If special resistance coupling units are used, the 1 megohm leak (the secondary) should be removed, and the volume control (R9) connected in its place.



Connect the plate of the second valve to the plate terminal of the second unit, and the plate terminal of the third socket (i.e., second audio) to the third unit terminal (i.e., 100,000 ohms). The plate terminal of the last valve socket (third audio) should be con-

nected to the remaining side of the jack and to the remaining side of C9.

Note that the condensers C5, C6, and C7 should be connected between the plate and grid terminals of each resistance unit. In the case of the first resistance unit the volume control R9 forms the secondary.

Carry a wire from the filament terminal of the first resistance unit to the grid bias (C minus) terminal on the battery strip (marked 1), then connect the C minus No. 2 terminal to the filament terminal of the second and third resistance units. Now take a lead from the B plus terminal of the second resistance unit to B plus 90.

OPERATION.

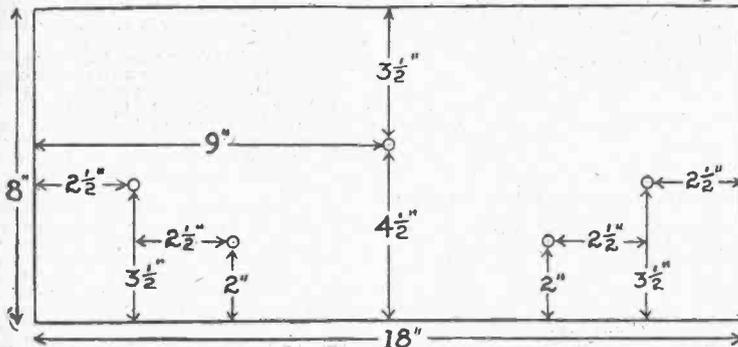
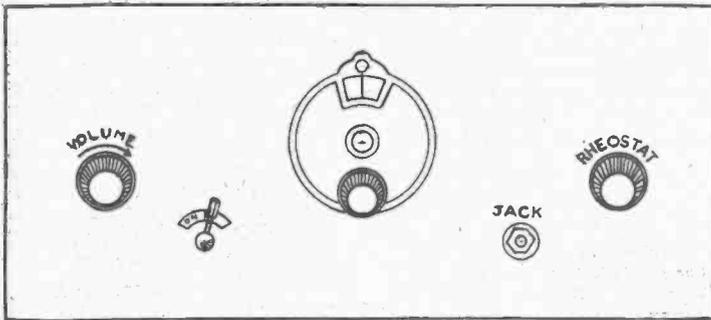
CONNECT up aerial, earth, batteries, and speaker, pull on the battery switch and turn on the rheostat. Tune the variable condenser slowly until a station is brought in at full volume. If results are not as they should be see that the volume control is turned full on; then, if this is O.K., turn your attention to the reaction coil, which is just suspended.

Try moving this coil up and down. If results are poor, reverse the connections of this coil.

When everything is O.K. adjust the volume to that desired. When the best position has been found for L3 it should be fastened to the overlap of the 3-inch former by means of metal thread screws and nuts.

The following is a reference to the symbols used on the circuit diagram:—Condensers: C1, .0001; C2, .0005; C3, .00025; C4, .001; C5, .006; C6, .006; C7, .006; C8, 1 mfd.; C9, .002. Resistances: R1, 2 megs; R2, 30 ohms; R3, 100,000 ohms; R5, 100,000 ohms; R6, 1 meg.; R7, 100,000 ohms; R8, 1 meg; R9, 0-500,000 ohms. Coils: L1, absorption coil—15 turns wound over centre of L2—50 turns on 3-inch former. L3, reaction coil, 40 turns.

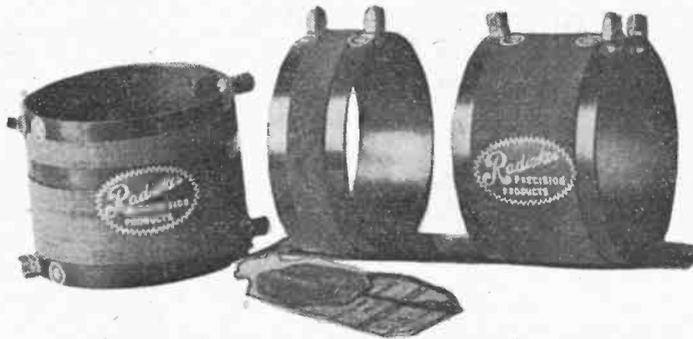
Listeners living in the vicinity of a broadcasting station's stock area may find it advisable to vary the inductance L2 with an additional .0005 mfd. variable condenser.



RADIOKES PRODUCTS

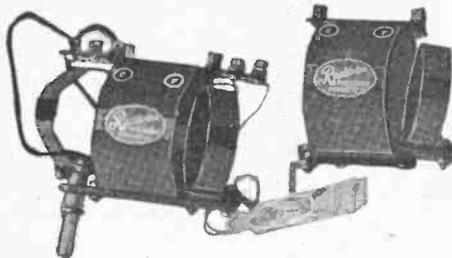
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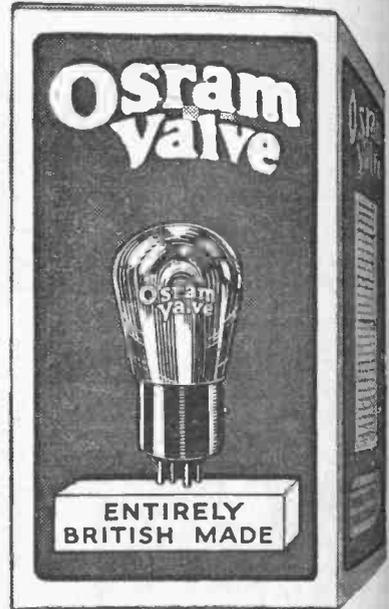
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IN THE AIR AT 3LO AND 3AR

The Jedal Trio

THE JEDAL TRIO, a gifted combination of young musicians, will commence their season from 3LO on May 13, when they will submit some fine programmes from the works of the masters. The Jedal Trio claim to be the youngest trio appearing before the public, the youngest member being just 17, and the eldest 22 years of age. The individual members, Edna Hattenbach (cello), Aiva Hattenbach (violin), and John Simons (piano), are all earnest and enthusiastic musicians, and their ensemble work reaches a very high standard.

The Strad Quartette

THE STRAD QUARTETTE, who still maintain their popularity at 3LO, have arranged a programme for May 12 that will delight all music-lovers. Excerpts from the works of Haydn and Schubert will be given. The String Trio, Op. 53 No. 1 in G major, by Haydn, being specially worthy of mention. The members of the "Strad" are all soloists of standing, and their instrumental selections always meet with the warm approval of their audiences.

Jedal Trio Pianist

JOHN SIMONS, the clever pianist of the Jedal Trio, will be heard from 3AR on May 13 in the familiar "Hark, Hark the Lark" (Schubert-Lizst), arranged for the piano. Mr. Simons, who has barely turned 17, is a scholarship holder of the Conservatorium, and is at present studying under Mr. S. H. Homewood.

Shakespeare at Seymour

THE ceremony in connection with the opening of the new Town Hall, Seymour, will be broadcast by 3AR on May 15. An excellent programme has been arranged, and will include a presentation of the Trial Scene, with incident surrounding it, from Shakespeare's "Merchant of Venice." Principal characters include Mr. Rupert Scott as "Shylock," Mr. Reginald Hilton as "Antonio," and Mrs. E. A. Scott as "Portia." The programme will



Herold Kyng, English Operatic Baritone, at 3LO.



Madoline Knight, of the Hucham Serenaders, at 3LO.

be interspersed with vocal and instrumental numbers from leading local artists; the official opening of the Town Hall will be performed by the president of the shire, and there will be speeches from visiting Parliamentarians.

What's Wrong With 3LO?

Recent criticism indicates that—
 There is too much classical music.
 There is too much jazz.
 There are too many talks.
 Practically everything broadcast is an insult to someone's intelligence.
 There is too much broadcasting.
 There are too many church services.
 There are not enough talks.
 3LO only broadcasts classical music for spite.
 Nobody wants to hear the news that's all in the next day's papers.
 Broadcasting is responsible for the bad weather and the Tasmanian floods.
 There is too much sport.
 3LO only broadcasts news to fill in the time.
 There is not enough jazz.
 There is not enough sport.
 The Announcer has an Oxford drawl.
 The Announcer has a "brogue."
 The Announcer has an "Australian" accent.
 So there you are—where are we!

Hawaiian Entertainers

NEW listeners are able to withstand the fascination and charm of Hawaiian melody, and The Kanals, instrumental duetists and soloists, are certain to receive a warm welcome from 3LO when they open their season on May 13. Fresh from their successful tour with the Hawaiian Serenaders, they have added considerably to their repertoire, which includes some solos for the Spanish guitar that will be performed over the air for the first time.

Jack Stocks Popular

JACK STOCKS, whose particular brand of humor would be hard to beat, will be on the air from 3LO on May 13, where, with his banjoline, he will introduce some fresh parodies on up-to-date songs. Billed as "The Woman Hater," Mr. Stocks has starred throughout Africa three times during the past five years, and it is a definite proof of his popularity that he has appeared 18 times at the Holborn Empire, London, where the audience is most critical, and demands a very high standard.

The Sunbeam Singers

THOSE delightful and clever little people "The Sunbeam Singers" will be making an appearance at 3LO during the children's hour on May 15. Under the direction of Miss Eileen Pascoe-Webb, they will give a series of songs and recitations that should mightily please their young listeners. Apart from the recognition Miss Pascoe-Webb has gained as a contralto soloist, and entertainer, she is well known in connection with the training of children, and her juvenile concert parties have been most successful in competitions throughout Victoria, in addition to which they have raised a considerable sum for various charities.

Hungarian Violinist

LASZLO SCHARTZ, who, in connection with the world-famous coloratura soprano Dawn Assheton, will make his debut before the microphone at 3AR on May 13, is a Hungarian violinist of international distinction. Like his talented countrymen, Ernst Joachim and Rubenstein, he is greatly gifted as an interpreter, and his talents as a composer have placed him in the front rank of song writers, and have won him much recognition both in America and on the Continent.

"This Year of Grace"—Act II

THE second act of the successful revue, "This Year of Grace," will be transmitted from the Theatre Royal by 3AR on Monday, May 14, commencing at 9.30 p.m. Many bright numbers are included in this act—"Little Women," "Mother's Complaints," and "Britannia Rules the Waves." To add to the hilarity, Miss Malsie Gay will give an impression of the type of society entertainer seen at charity performances in London. The broadcasting of this second act will enable listeners to hear the whole of this entertainment the same night, as the first act is being broadcast by 3LO, and a most enjoyable time is promised.

Distinguished Cellist

A 'CELLO recital will be given from 3LO on May 13 by Ivan Berzinsky, of the Russian Trio, who is leaving Melbourne shortly to take up an appointment with the orchestra at the Opera House, Paris. This fine musician has become a great favorite during the time he has been broadcasting from the studio, and received his musical education at the Conservatorium Moscow, afterwards going to Leipzig, Germany. He is recognised in many European capitals as a soloist of great ability, and has been associated in duets and trios with some of the master musicians of the world. It is interesting to learn that Mons. Berzinsky is a thoroughly qualified chemist, and during the war was engaged in the manufacture of tear gas and high explosives.



Ivan Berzinsky.

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"Vagabond King" Singer at 3AR

MORAN HILFORD, the bass baritone from "The Vagabond King" Company, is enjoying continued success at 3AR, where his well-rendered songs are greatly appreciated. It is interesting to learn that critics who have heard Mr. Hilford's voice declare it is a "freak" voice, of such phenomenal range that he is able to portray a baritone role, or a high tenor part, with equal facility. Needless to say, he has a very extensive repertoire, and is always able to select something that will give pleasure to the majority of his listeners. He is no stranger to the microphone, being a particular favorite from 4QG.

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Comfortable Loud-
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bring in Japan



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IN THE AIR AT 3LO AND 3AR

(Continued from Page 23)

(By Our Melbourne Correspondent)

Popular Tenor at 3LO

MARTIN LA MATT, the young Melbourne tenor who will be heard from 3LO on May 15 is rapidly becoming favorably known in the radio and concert world. He has a most extensive repertoire, which includes operatic selections and modern ballads, together with some early English melodies of the seventeenth century.

For Poultry Fanciers

A TALK of interest to many will be given from 3LO on May 17 by Mr. W. G. Rugg, Poultry Expert to the Department of Agriculture, who will speak on "Poultry Feeding for Eggs." In view of the fact that so many people rear poultry as a profitable side line, and much of the success in egg-laying depends upon the feeding, a few seasonable hints from a poultry expert should be more than welcome.

Bert Sutcliffe Returns

AFTER an absence of some months from the studio, Bert Sutcliffe, the well-known concert baritone, will be broadcasting from 3LO on May 13. Mr. Sutcliffe commenced his musical career at the tender age of seven, when he entered the choir at Peterborough Cathedral, and remained there for many years, afterwards taking up the study of voice production seriously. His early experiences as a chorister have colored his whole musical career, and he has taken the leading parts in oratorios, "The Messiah," "Elijah," "Crucifixion," and many sacred cantatas. He was one of the leading members of the Peterborough Choral Society, and



Miss E. Yeberry, who has had many years of missionary experience in Central Africa, is giving a series of talks on her experiences from 3LO Melbourne, commencing during the first week in May.

was with them when they went to London, and proved the victors for two years running, and carried off the silver shield for choral work, at the Crystal Palace, when choral societies from all over England competed. At present, Mr. Sutcliffe is tremendously interested in the psychology of songs, and has given many lectures on this subject. In addition to his various concert activities, he is the choir-master of one of the leading churches in Richmond, and a most popular figure in social circles.



The Smith Girls, entertainers, now at 3LO, Melbourne.

Charles Nuttall at 3AR

CHARLES NUTTALL, the popular journalist, artist and raconteur, will give a further talk from 3AR, and give his experiences of being "Up Against It." Mr. Nuttall often recalls the time when he had his New York studio, and a seedy-looking individual came looking for work as a model. Just as Mr. Nuttall was about to close the door, his visitor said, "Sir, I perceive from your accent that you are not an American. Would it be a liberty to inquire the name of your home town?" Upon hearing it was Melbourne, the stranger became moved, and said, "Dear old Melbourne. Dear old Collins Street," which so stirred Mr. Nuttall that he entertained the stranger right royally, and give him a few dollars. He called rather frequently after that, and his passport was always "Dear old Collins Street," never by any chance did he stray into Bourke or Swanston Streets. A little while after, Mr. Nuttall was at an artists' social, when someone enquired "Any of you seen Henderson lately?" Immediately one of the guests remarked "Dear old Market Street. Dear old San Francisco," and another chimed in with "Dear old London. Good old Piccadilly," and, as Mr. Nuttall says, "I could not help adding, 'Dear old Melbourne. Dear old Collins Street,' for it dawned upon me that my late visitor was a clever impostor, who had the names of the principal cities and streets of the world at his finger-tips, but who had never been out of New York in his life."

Anne Middleton Broadcasts

ANNE MIDDLETON, whose delightful soprano voice has won many laurels, will be broadcasting from 3LO on May 11. Miss Middleton is a past graduate of the Albert Street Conservatorium, and, during her student days, Dame Nellie Melba prophesied great things for the young vocalist. She has had much experience in all branches of vocal art, operatic, oratorio, and concert work, and is contemplating adding the role of entertainer to her list.

Gifted Young 'Cellist

EDNA HATTENBACH, the gifted little 'cellist of the Jedal Trio, has been well known as a soloist for some years, in spite of her youth, and owes her success to the training received from her father, Professor Louis Hattenbach. Her 'cello, which possesses a wonderfully mellow tone, is of historical interest and belonged to the poet Shelley, and, needless to say, is one of her most cherished possessions.

Stop Watch Wizard

MR. FERRY, the New South Wales Broadcasting Company's racing commissioner, and probably the best man with a stop-watch in Australia, timed the G.P.S. Régatta events. He stood at the finishing post, and watched the two miles down Parramatta River for the wisp of smoke which would betray the starting pistol. Using this as a guide to starting times, he made the times as follow:—

1st Heat: 3rd Crews	6.9 4-5
2nd Heat: 3rd Crews	6.0
1st Heat: Eights	8.15
2nd Heat: Eights	8.24 3-5
1st Heat: 2nd Crews	6.13 4-5
2nd Heat: 2nd Crews	6.26

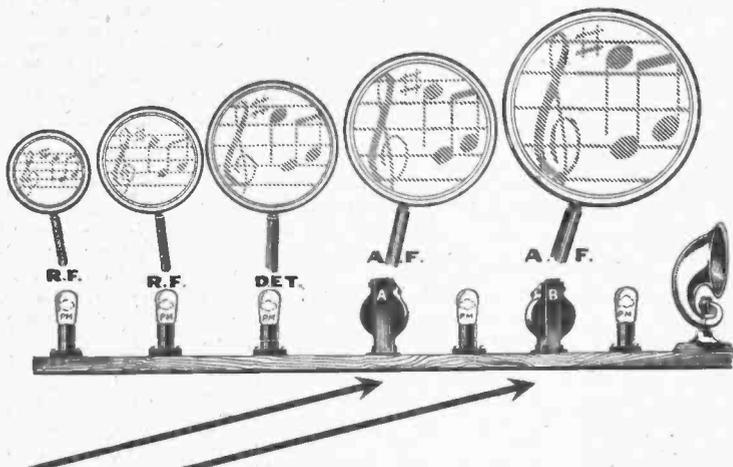
The official of the course made the times respectively as follow:—6.9, 6.3, 8.15, 8.3, 6.14, 6.27. A naval officer who noticed Mr. Ferry's timekeeping checked it up with the velocity of light over the distance, and pronounced Mr. Ferry's timekeeping correct. Whereupon Mr. Ferry was exceedingly jubilant.

IMPORTANT

The price reduction appearing on the back page of this journal inadvertently shown as the RCO and RCO should apply to the Amplion Model AR111. The models shown have NOT been reduced.

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**EXPONENTIAL
 SPEAKER**
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Fit Ferranti Transformers at points "A" and "B" and you will get purity and life-like reproduction of a quality that will delight you.

DRAWING RADIO!

No. 20 "Proving Radio" has progressed so far as to demand an explanation of the various signs and symbols used in circuits. Constant reference to circuits and various radio apparatus has been made from time to time, and this article will be appreciated by those who desire to build receivers from the schematic diagram.

BEFORE we can consider ourselves efficient enough to build a receiver or transmitter, we must fully understand a circuit diagram. Now that constant reference is being made to circuits, and it becomes necessary for the writer to give various symbols and circuit diagrams, it is time that we discussed these symbols in detail.

How often querists request a back of panel diagram because they cannot follow a circuit diagram. Most radio books to-day, particularly those of the more advanced type, publish only a circuit diagram. One seldom sees (for instance) a back of panel wiring diagram of a transmitter, the reason being that if the constructor is not efficient enough to follow a circuit diagram, he is not sufficiently "wised" enough to build a transmitter, or to operate that transmitter.

Quite a number of my readers (I am sure), will know the conventional symbols, and a goodly number are also advanced far enough to build a receiver from the schematic diagram. But how many readers could give a just reason why these special symbols are used? Further, these articles are (in the main) written for the man willing to commence from the bottom rung of the ladder to knowledge.

Few readers will be aware that the symbols used in radio are made to "graphically" represent "pictorial" diagrams of the components they represent. Let us take each in turn, and we shall soon be able to see at a glance what component is referred to, whether we happen to know the schematic symbol or not.

First comes the rheostat. This is an instrument used to vary the resistance in an electrical circuit. The rheostat itself is generally used to introduce a resistance in the filament circuit of a valve. You will know by now that resistance will break down the current. Therefore, if we wish to vary the filament voltage, i.e., the voltage that causes the filament to heat up and emit electrons, we use a variable resistance.

Looking at a resistance one sees mainly a length of wire, coiled up on some support. A contact arm rests on this wire (which is coiled generally in a circle), and this arm is made variable, so that it can run over the resistance wire and cause the whole or any part of that wire to be in circuit. In the schematic diagram, we make use of the wire

(shown by wavy line) and of the contact arm (a contact arm is usually shown by an arrow). This then, is the simplest possible drawing of a radio component. Remember, too, that a rheostat is nothing more than a variable resistance, though the latter term usually applies to variable resistances over 100 ohms. Rheostats usually have a maximum of 30 ohms, though various types can be procured for special work.

The next symbol shown is the condenser. We all know this one (or should do), because it has been treated in a previous article in connection with fixed condensers in series and parallel. A condenser of the fixed type usually consists of a number of tinfoil or metal plates insulated from each other by mica, air, or some other insulating substance. A condenser is a piece of apparatus which will allow radio frequency impulses only to pass. Direct current will not pass through a condenser unless the plates touch (i.e., shorted), when current from a battery will flow through the plates. In our schematic diagram, the plates are shown by two straight lines, whilst the insulating matter between the plates (known as the dielectric), is represented by an air gap.

The third and fourth symbols are used to show variable condensers. A condenser is said to be variable when half the plates are moveable in respect to the other half, thus altering the capacity. The dielectric of variable condensers is usually air. The moving plates are generally termed the "rotor" and the fixed plates the "stator." A variable condenser is more efficient than a fixed condenser, because the dielectric (air) is the most efficient and practical known. In the schematic diagram, variable condensers are shown in exactly the same way as fixed condensers, only the lower bar is curved. Sometimes a variable condenser is shown by an arrow which runs diagonally through the symbol.

Next come transformers. These have been treated previously too. We know that a transformer consists of a primary and a secondary winding, i.e., two separate coils of wire, and also an iron core. As explained in a previous article, transformers are used to step up or step down alternating current or oscillating currents. D.C. cannot be stepped up or down. The symbol shows the prim-

ary winding of the transformer, followed by the iron core (which is made from an alloy), then the secondary coil. The windings are shown as coils, and the sheets of alloy as straight lines.

Following on this, we have telephones. These are merely two pieces of apparatus connected together by a band which fits over the head. The construction and theory of operation of headphones was discussed a few issues ago. Our symbol shows two discs (representing the earpieces) connected by an arc, which represents the headband.

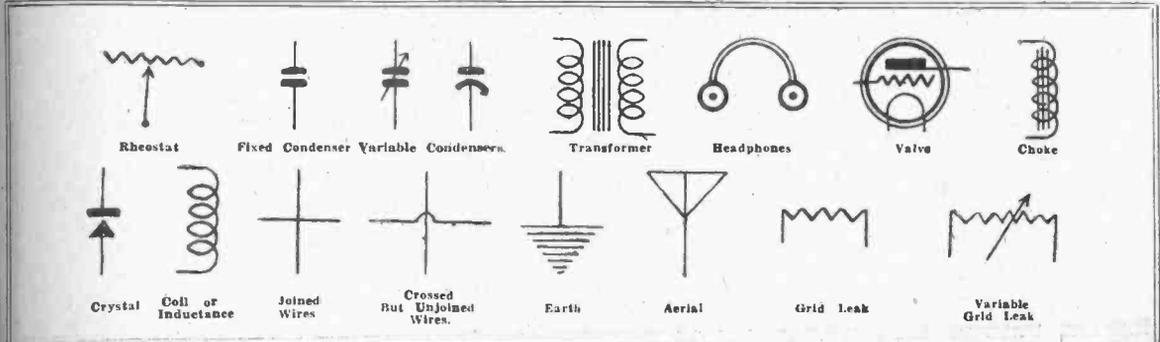
Valves have been treated, too. We know that a valve is a glass bulb containing a plate, a filament, and a grid. Our schematic symbol shows all this. The glass bulb is shown by the circle. Inside the circle we see (at the top) the flat bar, representing the plate, the wavy line representing the grid, and the semicircle representing the filament.

At the bottom of the valve we see two connections. These are for the filament supply, and they connect to the filament battery (generally termed the "A" battery). At the left centre of the valve is the grid connection, whilst the plate connection is that remaining.

A choke, which, as the name implies, is used to choke back unnecessary surges of current, consists of a coil of wire around an iron core. In our schematic diagram we show the coil of wire, and inside it the core (which is represented in exactly the same manner as was the core of the transformer, i.e., by two or three straight lines).

A crystal detector, as most will know, consists of the crystal itself and a variable contact, which in the older type of detector is of platinum wire, the reason being that platinum does not corrode very easily. Looking at the next in line, in the list of symbols, you will see that the crystal is represented by a black oblong mass, and the contact arm, which is called the "cat's whisker," in exactly the same manner as the contact arm on a rheostat, i.e., by an arrow.

Inductance coils are extremely simple. They are shown by a series of loops, representing the loops of wire. Before we go further it is advisable to mention that in a receiver using R.F. stages (radio frequency stages, i.e., stages which amplify the radio frequency impulse before it is rectified) the coils that go to make up this stage are actu-



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*Ask your Dealer for Technical Description
of this Epoch-making Development.*

ally step-up transformers. Yet you will notice that no iron core is shown, as is the case with the other transformer. This is because the transformers are of entirely different types. R.F. transformers have no core as is the case with audio transformers (i.e., transformers that step up audible frequency oscillations). Therefore, the former's are merely shown as coils of wire.

Some writers refer to the R.F. transformers as H.F. (high frequency transformers) and to audio transformers as L.F. (low frequency transformers).

The R.F. stages receive currents which have a very high frequency, and which are too high to become audible to the human ear. The highest signal the human ear will respond to is about 30,000 cycles per second (something like the high pitched note made by a mosquito, and even this cannot be heard until the mosquito gets near to one's ear) whilst the lowest audible pitch is about 16 cycles per second. The lowest bass note on an organ has usually a frequency of 16 cycles per second. Since the R.F. impulse received is fluctuating at the rate of 1,200,000 cycles or more as it passes through the receiver it cannot be heard until it is rectified. The action of rectification by the detector valve was explained recently.

Where you see wires cross at right angles (symbolically, I mean) connection must be made at that point. If one of the wires, however loops at the spot where it crosses the other wire no connection must be made.

The earth symbol is also very simple. We know that the earth under our feet consists of various layers of such material as sand, gravel, rock, stone, and so on—and each of these layers are represented by straight parallel lines which gradually die away until the last line is but a dot, representing, perhaps the fact that our knowledge of strata beyond a certain depth is nil.

For the aerial our symbol shows one end of the aerial system. The straight line on top of the symbol represents the spreader, whilst the other three lines represent the lead in and two spreader supports.

A grid leak is a fixed resistance. If you remember, it was said that resistances are shown by a wavy line. In the case of the rheostat this resistance was variable, and the distinction made between a fixed and variable resistance is the fact that the latter have the variable arm either just below or running right through the symbol. (See last symbol.) A variable grid leak, then, is only a variable resistance and is shown as such.

Other symbols will be treated later.

Proving Radio Club News

INTENDING members of the "Proving Radio Club" will be able to obtain particulars from the "WIRELESS WEEKLY" stand at the Radio Exhibition.

EXECUTIVE REPORT.—Three new groups are being formed. These are at Haberfield, Punchbowl, and Auburn. Will those interested please get in touch with the Hon. Organising Secretary, Mr. Hook, 29 Blairgowrie Street, Dulwich Hill. 'Phone, Pet. 3272.

VISIT TO LA PEROUSE.—The forthcoming visit to La Perouse Wireless Station is dated to take place on Sunday, May 12. Members intending to participate in the above trip must inform their group representative at once, or ring the Hon. Organising Secretary.

ARNCLIFFE GROUP.—"It takes more than a public holiday to stop this group holding its regular meeting, and so we had the usual roll up, and also gained one member, Mr. A. W. Cleverly, of Kogarah, who is going to attend this group until enough members are forthcoming to start a Kogarah Group. The evening was spent dealing with primary cells, and including such interesting subjects as chemical action, atoms, molecules, elements, compounds, polarity, cathode, anode, polarisation (and how to prevent same). Leclanche cells, dry cells, two fluid cells, Daniell cells, and, finally, local action in cells, and how to prevent it by amalgamation."

COFF'S HARBOR GROUP.—"The certificates arrived safely. We were unable to

hold our meeting last week, as the lights of the town were out through a burnt-out dynamo." REMARKS: I am indeed sorry and not a little surprised to find the material has not reached you. As advised previously, letters in connection with purchase of material have been passed on to the Hon. Organising Secretary, who is authorised by the executive to obtain this matter. I have marked this letter urgent, and forwarded it to him with a covering letter.

DULWICH HILL GROUP.—This group spent an interesting and instructive evening discussing the Atomic Theory.

CONCORD WEST GROUP.—This group also spent a night on the Atomic Theory. The group is still short of members. Are there any enthusiasts in this suburb who wish to join? If so, please get in touch with the Hon. Organising Secretary, whose address is given elsewhere.

EASTERN SUBURBS GROUP.—This group spent the night in reviewing previous work.

BONDI GROUP.—This group is without a meeting place. Has any resident in Bondi sufficient room to house eight club members one evening per week for their meetings, or loan a spare room for this purpose? Please ring the Group Leader, Mr. L. R. Barker (M661).

MR. F. G. JOHNSTONE, of Batlow, writes: "I note with pleasure the progress your 'Proving Radio' series is making. I have been reading up the articles since you started, and I would like to step up into line. This is quite a small town, and I doubt if one could get a club going here. I spoke to a few listeners, but met with little response. Could you make any special arrangements in my case? I want to get the A.O.P.C., and get into the game, if possible. Please let me have any particulars."

You will be treated (Mr. Johnstone) as a Country Member. Your letter has been forwarded to the Organising Secretary, who will let you have full particulars.

"The CAPTAIN" to HIS "COMRADIOS"

FRIDAY and Saturday, May 10 and 11—G.P.S. of Victoria, Head of the River, heats and final.

Saturday, June 1.—Australian University Champlon Eights, on the Yarra.

Tuesday, June 18.—School Clubs, Ltd., dance at the Ambassadors.

Wednesday, June 26.—The Scots College O.B.U. dance, at the Ambassadors.

Wednesday, June 26.—Old Sydneians' dinner, at Usher's.

Wednesday, August 7.—Old Sydneians' dance, at the Ambassadors.

Dates should be sent to "The Captain" at least a month ahead.

These Longer Evenings

Football is well settled into its winter stride. Training is keeping teams, grounds, rooms, and shower baths busy as can be. And there is a nip in the air as the afternoon wears on that calls for action, for bulky shoulders to push down "the wall," for the surging rush of forwards, and the thrill of the touchdown.

Prompt Start

Make sure of being prompt to begin the practice games after school. All that hanging around while you kick the ball aimlessly about the field or fool about in the dressing-room ragging each new-comer not merely wastes good daylight, but often leaves you cold when the game opens. That is a risk no boy should take, entering a game cold. It is just then that nasty little accidents happen, when your very bones feel cold and

(Being notes from the happy personal chats to past and present schoolboys and schoolgirls and their parents all over Australia and New Zealand.—Conducted by "The Captain" every Sunday morning from station 2FC, Sydney.)

stiff. Go on the field warm, and get into the game as soon as possible. You will play at your top right from the first kick-off, and enjoy every minute of it, instead of wasting precious moments working up "steam" both inside and out!

Warming Up

Warming-up is so important a point in all athletics that it is surprising to note how often it is overlooked. The American athletes, who specialise in single events more than their British opponents do in the world championships, never leave any small point to chance. And while many of us may consider that they make rather too much of a business of amateur sport, we have to admit their will to win and the thoroughness of their training in camp and on the track. And one of the main points is that the Yanks never allow a man to get set, even for a short sprint, unless he is so warm all over that his skin is gently moist from head to toe. That is plain common sense when you come to think of it. For warm muscles are pliant muscles, ready for any strain they may be suddenly called on to withstand.

Willing Helpers

I always used to make it a strict rule that every boy in the team should feel warm as toast at the jump-off. A brisk rub down, and then, if necessary, a smart turn with the skipping rope did the trick. The emergency

men and those not quite good enough to be in the team will provide the massage, and there will be more than enough willing "trainers" in any school striving for the premiership. For unless you are after the big honors with heart and soul the game is not worth playing. Whether you win or lose, the desire to win has to be in every fellow's mind, or the joy of the battle disappears. Losing doesn't matter a jot unless you deserve to lose.

The Captain's Book List

"The Captain" has pleasure this week in asking every boy and girl, every old boy and parent, too, to inspect "The Bush Boy's Book," by Donald Macdonald. The title is misleading. If you can call both a man of five or fifty-five a "boy," then this book is well named. Famous bush and camp man all his life, Donald Macdonald has compressed thousands of hints for all into the third edition of this entrancing book. Every page bristles with interest covering some aspect of outdoor life and sport in which everyone is at some time engaged.

An Australian Poem

The Australian poem I would draw your attention to this week is "In the Drowsing Days," by A. B. Paterson. It is in his book, "The Man from Snowy River."

Greeting

And now take my usual greeting until I speak to you from 2FC next Sunday morning at 10.15, "Good wishes to you all, comrades, Cheerio!"

"THE CAPTAIN"

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A new Trickle Charger, using the dry plate system of rectification. Charge rate varies from 2-amp. down to 1/2-amp.

Guaranteed 2000 hours Price, £3/10/-
2 1/2 amp. Charger. Price, £4/10/-

A.C. Transformer

An A.C. or Power Pack Transformer, in attractive metal case.

- Type F325, for Radiotron Valve, 3 pair Tappings. PRICE 35/-
- Type FA15, for Arcturus Valves. 15 volt Tappings. PRICE 30/-
- Type FP4, for Philips Valve, 2 pair Tappings. PRICE 30/-
- Type FO538, for Osram Valves. PRICE 35/-



Puratone Transformer

A moderately-priced Transformer, which gives the maximum amplification without distortion.

Solidly impregnated against moisture. Made up in a one-piece all-metal case. Ratios, 5, 3 1/2, and 2-1.

Price 15/6

Maxum "B" Eliminator

The new "B" Eliminator, designed to operate sets up to and including seven valves.

Knob control on top allows 20 volts variation for all tappings.

Price £8/15/-



Bakelite Rheostat

A very compact size Bakelite Rheostat, 1 1/2 inches in diameter. It is moisture-proof, and made with special resistance wire. Remarkably smooth action; 6, 10, 20, and 30 ohms.

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Superstratlyne Condenser

Solidly constructed Condenser, with minimum and maximum capacities. Brass Plates, Pig-tailed connection for clockwise and anti-clockwise movement.

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A perfect push type Balanced Valve Socket. The construction ensures positive contact.

Natural balance absorbs any jarring, and microphone noises are eliminated.

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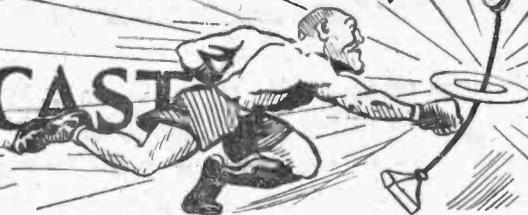
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HITTING BELOW THE BROADCAST BELT



Short-wave and Amateur Notes by
VK2NO

A FEW SWBCL'S have been inquiring for the wave-length of the pioneer station, KDKA. This station will be found regularly around 63 metres, and quite frequently his transmissions have ample punch behind them. There is something of a tender memory about KDKA. It was, I think, in 1923 when that station started up as the world's pioneer short-wave telephony station on 63 metres. Relays were carried out in 1924 in England by the BBC, and some of them were very successful, considering the difference in receiving and transmitting apparatus then and now.

The first time I heard KDKA on his short-wave was in 1923, and it was just a fluke. I had constructed a basket weave coil just to see how far "down" I could make the receiver oscillate, and in the course of swishing the tuning condenser around the transmission was tuned in. The station is still going strong at that frequency, but with vastly improved transmitting apparatus. The idea of keeping the transmission at 63 metres is probably to provide a reliable service for the whole American continent, as the "skip" effect and high speed fading is not so noticeable around this frequency within a certain range.

In reply to an inquiry regarding call-signs in Bangkok, Mr. Russell Crane kindly volunteers the following information:—"I was in Siam recently, and corresponded with the only man outside the Post Office officials who has a right to use a receiving set in Siam. They are very strict there, and wireless is kept for Government matters. The principal stations were then AEA and AEP, also a station which had just started, with call-sign AEPJ, on 31. something metres."

(Note:—It is interesting to recall that the transmitting apparatus for AEA was made by Prince Purachatra of Siam in Sydney by Mr. S. V. Colville, of VK2FA.)

Berlin and Bangkok were working together in February, probably with AEPJ. The only stations I have heard from Germany gave their call-signs as DHP and AGB2. Berlin Dohertz is supposed to be on 37.56 metres, with call-sign AFK, and Berlin on 17.2 metres, with call-sign AGC. I notice it is quite difficult sometimes to get call-signs correctly when given in a foreign language. For instance, PHI spoken in one of the languages sounds like PRI. There are now a lot of Dutch stations transmitting, and many of them have lately changed their call-signs. ANE is now PLE. Sourabaya uses the word SOURABAYA as the call, and Bandoeng (pronounced BONDO). Kootwijk, in Holland, usually call their location by the name of the place. PCJ is now excellent on Saturday afternoons, except when static is around, and W2XG is still at that test word business he had been busy with for three years that gets monotonous."

NOW I am going to say a few words to the SWBCL, pointing out why DX stations are unreliable. It was noticed a few years ago in long-distance receiving experiments that when the receiver was situated in a position at which the transmitter was approximately one-third of the distance round the earth away in the one direction, and two-thirds in the other, a curious effect was

noticed over a period of daylight. These stations, which were high power, transmitted clean-cut Morse signals, yet at this period the Morse became almost unreadable. In a little while it was proved that two sets of signals were being heard at the same time, one coming the shorter way round the earth from the transmitter and the other the longer.

Knowing the difference it takes in time for the wave travelling the one way to the other is so very slight it does not seem that this fact should produce any noticeable results. It was suggested at first that the atmosphere or an unknown factor was continuously varying the speed of the travelling waves, thus opposing and then aiding one. Experiments indicated a much simpler solution to the problem. This was that these big stations were very slightly varying their wave-lengths.

Most of these big stations are fed from an alternator, and signalling is done by throwing a load off and on to the alternator. It becomes a very difficult proposition to maintain a definitely constant frequency in this way. Supposing the station sends a short dash. At the beginning of the dash the speed of the alternator will be at its highest, while at the end of the dash the speed will have dropped. If the dash is very long the speed of the alternator will get quite steady after a certain period of load, but in the first place as the speed is varying so the key, is depressed; it means that the frequency of the wave-length is also varying slightly. Consider this with the fact that the wave has to go two-thirds of the way round the globe, and only one-third in the other direction, it is easy to see that the receiver is really receiving two different wave-lengths at the same time. This produces a beat note—hence the confusion.

In telephony transmission the same effect occurs, although the wave variation or wobble is not caused by keying. It is fairly certain that at medium distances from a telephony

transmitter part of the transmission arrives at the receiver directly and part arrives due to the unknown quantity of the reflection of the upper layers of atmosphere. Thus we have two sets of signals coming in at the same time. If these signals always arrived by the same length of path and the transmitter was always constant there is no reason why the two waves should fail to add continuously.

Supposing we can vary the length of one of these wave paths, the result would be a varying strength of signal, which would sometimes add and sometimes subtract. That seems to be a fairly reliable explanation of fading in one sense. In a telephone transmitter the modulation really produces three wave-lengths, one of which is the carrier wave and the other two the side bands. If the transmitter is modulated with two musical notes at the same time these notes may be received with their original purity via the double-wave path, but may not be at the same strength ratio as when they were transmitted. If the act of modulating the transmitter causes the carrier wave to wobble in frequency the frequency of the modulation by the time it reaches the receiver is somewhat complicated, even though the frequency wobble at the carrier is hardly perceptible. Taking this into consideration, then it is easy to understand how quite unintelligible speech and music can arrive at a receiver.

IN a recent issue we stated in this section that these notes were primarily for the experimental transmitter, and that reference was made where and when ever possible to current news for the short wave BCL. The position seems to be reversed, and in fairness to the BCL let it be said that he is the one who is keeping us supplied with notes of any interest, while the "ham" seems to have gone back to his apathetical attitude of "let George do it!"

NG OM's if you won't give us the dope. In the days of "Radio" the gang used to keep us well supplied with information, and now if very little appears in these pages in their behalf, the fault is not the writer's.



The 2BL Radio Club at Garden Island.

PHILIPS 4-VOLT SERIES

"THE most remarkable valves—A.C. or D.C.—the world has ever seen"—is how the Philips new 4-volt A.C. Series is perhaps best described.

ALL (except three Power Tubes) are INDIRECTLY HEATED, and have five prong (Cap "N") bases.

Using these valves the three and four tube receiver of today, equals, if not better, the five and six valve set of yesterday.

The characteristics are given in the opposite column. Particularly note the E442 Screen Grid Valve with the tremendous amplification factor of 1,000, the C443, a Penthode with a permissible plate voltage of 300 etc.

YOU CANNOT HAVE A REALLY MODERN
A.C. SET AND NOT USE THE
PHILIPS 4-VOLT SERIES.

THE MOST REMARKABLE TUBE

D.C. Tubes which are suitable for A.C. Operation. d.h.—Directly Heated.



PHILIPS

ANNOUNCEMENT EVER MADE

Philips 4 volt A.C. Valve Characteristics.

	Purpose	Fil. Amps.	Amp. Factor	Slope	Price
E442	Screen Grid, H.F.	.9	1,000	1.2	40/-
E435	Low Cap, H.F.	.9	35	.6	30/-
E430	H.F. 1st Audio	.9	30	1.5	30/-
E415	Det. 1st Audio (A.C. "Four-fifteen")	.9	15	2	30/-
C443	Super Power Penthode	.25 d.h.	60	1.5	40/-
B443	Normal Penthode	.15 d.h.	100	1.5	37/6
E409	Super Power	.9	9	3	35/-
B405	Power	.15 d.h.	5	2.4	15/-

List of World's Broadcasting Stations Which can be Received in Australia on Long and Short Waves

AUSTRALIA		Metres. Watts		Metres. Watts		Metres. Watts	
New South Wales		Metres. Watts		Metres. Watts		Metres. Watts	
2FC—N.S.W. Broadcasting Co., Ltd. Market St. Sydney, 0700-2230	442	5000	4YA—Radio Broadcasting Co. of New Zealand, Dunedin, 1700-2200. Silent days Mon. and Thurs.	463	750	JAPAN	
2BL—N.S.W. Broadcasting Co., Ltd. Market St., Sydney, 0800-2330	353	5000	QUEENSLAND		JOAK—Tokio Central B'casting Co., Tokio, Japan. Jap. stations received best about midnight on Sunday		375 1500
2CB—Theosophical B'casting Station, 29 Bligh St., Sydney, 1000-2200	316	3000	4QG—Queensland Govt. Radio Service, Brisbane, 0800-2200	385	5000	JOBK—Osaka Central B'casting Co., Osaka	385 1000
2KY—Trades and Labour Council, Goulburn St., Sydney, 0900-2200	280	1500	4GR—Gold Radio Service, Margaret St., Toowoomba	294	100	JOCK—Nagoya Central B'casting Co., Nagoya	350 1000
2UW—Radio B'casting Ltd., Falgout Building, Ash St., Sydney, 1230-2230	267	500	5CL—Central B'casters, Ltd., 59 Franklin St., Adelaide, 1100-2310	409	5000	JODK—Keijo B'casting Co., Keijo, Japan	345 1000
2UE—Electrical Utilites, Ltd., 119 George St., Sydney, 0730-2330	293	250	8DN—SDN Pty. Ltd., 2-4 Montpelier St., Parkside	313	500	DUTCH EAST INDIES	
2MK—Mockler Bros., Ltd., Hawick St., Bathurst	275	250	5KA—Sport Radio, Ltd., 51 Kintore Av., Prospect	250	1000	JPC—Bataviasche Radio Jereeninging, Batavia	220 40
2HD—H. Douglas, King St., Newcastle	238	100	WEST AUSTRALIA		PHILIPPINE ISLANDS		
2UE—Burgin Electric Co., 320 Kent St., Sydney. At present off the air	316	100	6WP—Commonwealth Government Broadcasting Station, Perth, 1230-2230	1250	5000	KZRM—Radio Corp. of the Philippines, Manila	413 1000
Victoria		Tasmania		NEW ZEALAND		KZKZ—Radio Corp. of the Philippines, Manila	270 500
3LO—Dominions B'casting Co., 120A Russell St., Melbourne, 0715-2340	371	5000	72L—Tasmanian B'casters Pty., 95 Elizabeth St., Hobart, 1130-2240	535	3000	KZLB—Radio Corp. of the Philippines, Manila	260 400
3AR—Dominions B'casting Co., 120A Russell St., Melbourne, 1000-2200	484	5000	NEW ZEALAND		WEAF—National B'casting Co., 1950 Broadway, New York	491.5 50,000	
3UZ—O. J. Nilson and Co., Bourke St., Melbourne	319	100	1YA—Radio B'casting Co. of New Zealand, 419 Queen St., Auckland, 1800-2203. Silent day Wed.	333	500	WGY—General Electric Co., So., Schenectady, N.Y.	378.5 50,000
3DB—Drueligh B'cast-			2YA—Radio B'casting Co. of New Zealand, Wellington, 1500-2200. Silent day Wed.	420	5000	WJZ—National B'casting Co., 125 Broadway, New York	454.3 30,000
			3YA—Radio B'casting Co. of New Zealand, Christchurch, 1500-2103. Silent day Tues.	306	500	EUROPE	
					FL—Eiffel Tower, Paris, France	2650	5000

International Short Wave Stations : Times Stated are S.M.T.

AUSTRALIA		Metres.		Metres.		Metres.	
3ME—A.W.A. (Syd.), relays 2FC, times irregular, usually Mon., from 0430-0600	31.28	from 0930	65.04	Sat.: 0100-0400 Sun. 21	Wed.: 0900-0930, Sun. Picture transmissions, 0900-1100 Tues. and Sat.	42.12	
2YC—Ray Allsop (Syd.), relays 2BL, times various	32.5			0900-2400; Sun. 0100-0400	AUSTRIA		
3ME—A.W.A. (Melb.), relays 3LO, times various, usually heard about 0430-0630	32			PCU—The Hague, 0309-0600, Wed. and Fri.; 0900-2400 Sat., 0100-0400 Sun.	42	ORK2—Vienna, 0400-1100	70
3AC—W. E. Coxon (Perth), relays 6WF, Times various, usually 2130-0200 daily	32.9			UNION OF SOVIET SOCIALIST REPUBLICS.		SPAIN	
GREAT BRITAIN.				RFN—U.S.S.R., Moscow	29, 60, 50	Casablanca	
4SW—Marconi Co. (London), relays 2LO, 0400-0800, daily, except Sun. and Mon. From 0830 on alternate Saturdays, and 2100-2230 daily	28			RFM—U.S.S.R., Siberia	60, 30	FRANCE	
2YT—Marconi Radio, Poland, Times various 25, 32, 92, 94				ITALY		GC—Paris, 61	
2NM—Gerard Marouze, Catherham, Surrey, 1700-0400-0600 (Sun.), 1000, Thurs. and Sat.	32.5, 28			IMI—Milan	45	GR—Lyon, daily, 0230-0330	40, 30
GLW—Beam Station, all times (Dorchester)	15.7			IDO—Paris	33.5	IDO—Paris	1756-0556
GLQ—Beam Station, all times throughout day (Ongar)	24.5			IAX—Rome	45	FW—Ste. Assise, At odd times throughout day	14.23
QBH—Beam Station, Grimsby (Beam Station), all times	25.9			IMA—Rome, 0700 Sun.; 0300-0530 Mon.	34.5	Radio Vitis, Paris	47
UNITED STATES.				SOUTH AFRICA.		Radio Agen. France	37.5
2XAD—G.E.C., Schenectady, relays WG, 0630-1300 Mon., 0400-0600 Tues. and Fri., 0800-1300 Thurs. and Sat.	21.96			JB—Johannesburg	20, 25	Wed. and Sat., 0800-0915	39.75
6XZAR—San Francisco, 1000 daily	33			JAPAN		SWITZERLAND.	
3XL—Boundbrook, relays WJZ	59.96			JHBB—Ibaraki, n'ghtly	37.5	EHSXD—Zurich, relays work, Tues., Thurs. and Sun.	32
9XT—Council Bluffs, relays Columbian B'casting stations	81.00			JJAA—Iwatsuki	79	EH90C—Berne, 0500-0600	32
2XPA—Newark, N.J., relays WAAM, 1000-1500 Wed., Fri. and Sun.	65.18			JKZB—Tokio	20	MALAY STRAITS.	
6XP—Cleveland, daily from 1500	66.04			GERMANY.		8XW—Singapore, 1200-1400	26.5
8XAL—Ingleswood, daily				AQJ—Nauen, daily, 0500	58.7	JAVA.	
				POX—Nauen	70	ANE—Bandung, 31.30	16.93
				POZ—Nauen, Press and news reports to ships	26.4	AN—Malabar, 2340-2440 Sat.	17
				AGA—Nauen, Press and news, daily	25.3	INDIA.	
				AGC—Nauen, throughout day	17.2	VWZ—Poona, Beam station	16.3
				AFK—Doberitz, Tues., Thurs., Sat., 0500-0600 (Call sounds like "Ar-En-Car")	37.63, 67.65	FINLAND.	
				NORWAY.		SPM—Helsingfors, 1930-0630	47, 31.5
				LGN—Bergen, 0900, irregular	30, 31.25	BELGIUM.	
				Stavanger, News bulletins, 0400	12.14	4GG—Brussels, Almost daily, 0800-0900	34.7
				DENMARK.		4OU—Brussels, Almost nightly, 0800-0900	43.3
				7MK—Copenhagen, irregular	39.2, 42.12	TUNIS.	
				7RL—Copenhagen, irregularly after midnight	41	3KR—Constantinople, Sun. only, 0800-1000	42.3
				EDTR—Copenhagen, 2130-2300, Mon., 0620-0700.		MOROCCO.	
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Local Programmes, Friday, May 10

2FC

EARLY MORNING SESSION.

Announcer: A. S. Cochrane.
 7.0: "Big Ben" and announcements 7.2: Official weather forecast, rainfall, river reports, temperatures, astronomical memorandum. 7.7: "Sydney Morning Herald" summary. 7.12: Shipping Intelligence: mail services. 7.15: Studio music. 7.25: Investment market: mining share markets: metal quotations: wool sales: breadstuffs markets: Interstate markets: produce markets. 7.40: Studio music. 8.0: "Big Ben" close.

MORNING SESSION.

Announcer: A. S. Cochrane.
 10.0: "Big Ben" and announcements. 10.2: Pianoforte reproduction. 10.10: "Sydney Morning Herald" news service. 10.25: Studio music. 10.45: A talk on Home Cooking and Recipes by Miss Ruth Furst. 11.0: "Big Ben," A.P.A. and Reuter's cable services. 11.5: Close.

MIDDAY SESSION.

Announcer: A. S. Cochrane.
 12.0: "Big Ben" and announcements. 12.1: Stock Exchange, first call. 12.3: Official weather forecast, rainfall. 12.5: Summary of news. "Sydney Morning Herald." 12.10: Rugby wireless news. 12.13: A reading. 12.30: Studio music. 1.0: "Big Ben," weather intelligence. 1.3: "Evening News" midday news service; Producers' Distributing Society's report. 1.20: Studio music. 1.28: Stock Exchange, second call. 1.30: Popular studio music. 2.0: "Big Ben," close.

AFTERNOON SESSION.

Announcer: Laurence Halbert. Accompanist: Ewart Chapple.
 2.30: Programme announcements. 2.32: The Book Lovers' Corner. 3.0: "Big Ben." The Book Lovers' Corner. 3.0: "Big Ben." From Palling's Concert Hall, a programme by the students of Rex de Cairos Rego. 4.0: "Big Ben"; a reading. 4.25: Studio music. 4.32: The Rev. Father T. A. Walsh, S.J., will speak on "Rings." 4.45: Stock Exchange, third call. 4.47: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams. 5.0: "Big Ben" close.

EARLY EVENING SESSION.

Announcer: A. S. Cochrane.
 5.40: The chimes of 2FC. 5.45: The Children's Session, conducted by the "Hello Man." Letters and Stories, Music and Entertainment. 6.0: The Farmyard Five from Kookaburra Gully. 6.30: Dalgety's market reports (wool, wheat, and stock). 6.40: Fruit and vegetable markets. 6.43: Stock Exchange information. 6.48: Weather and shipping news. 6.50: Late sporting news by the 2FC Racing Commissioner. 7.0: "Big Ben"; late news service. 7.10: Special dinner music recital.

EVENING SESSION.

Announcer: Laurence Halbert. Accompanist: Horace Keats.
 7.40: Popular music.
 7.45: Programme announcements.
 7.48: Record recital.
 8.0: "Big Ben," from the Sydney Town Hall: Radio and Electrical Exhibition, 1929.

2FC Studio Orchestra, conducted by Horace Keats—
 "The Vagabond King" (Friml).
 8.14: Graham Burgin and Ruby Dunstan, vocal duets.—Mr. Burgin is conductor of the Southern Choral Society, which has many successes to its credit.
 (a) "The Voyagers" (Sanderson).
 (b) "In Springtime" (Newton).
 (c) "In the Garden of my Heart" (Ball).
 8.22: Foster and Finlay, radio instrumentalists.
 8.32: 2FC Studio Orchestra, conducted by Horace Keats—
 Selection, "To-night's the Night" (Ruben)
 8.42: Sergeant and Wally Baynes.

8.52: 2FC Studio Orchestra, conducted by Horace Keats—
 "Norwegian Scenes" (Matt).
 9.0: "Big Ben," from the Studio. Weather report.
 9.1: Ernest M'Kinlay, tenor—
 (a) "The Prayer" (Le Cid, Massenet).
 (b) "Serenade" (Schubert).
 (c) "Sometimes in Summer" (Bennett).
 9.11: Foster and Finlay, radio instrumentalists.
 9.21: Graham Burgin and Ruby Dunstan, vocal duets—
 (a) "Maying" (Smith).
 (b) "Golden Bird" (Wood).
 9.31: 2FC Studio Orchestra, conducted by Horace Keats.
 9.45: Ernest M'Kinlay, tenor—
 (a) "Kamate, Kamate" (Hikaroa).
 (b) "Pokarekare" (Traditional).
 (c) "E Pari Ra" (arr. Rowe).
 9.55: Wally Baynes and Seg. Sergeant.
 10.5: 2FC Studio Orchestra, conducted by Horace Keats.
 10.25: To-morrow's programme. Late weather.
 10.30: National Anthem; close.

10.30: National Anthem; close.
 Mother's Eyes" (Abe Baer). (b) "Smilin' Through" (Arthur Penn). 4.30: From the Studio. popular music. 4.40: Captain A. C. Stevens will speak on "Safari in Nigeria." 4.55: Studio items. 5.10: Pianoforte reproduction. 5.20: Popular items. 5.33: Producers' Distributing Society's Poultry Report. 5.37: Features of the evening's programme.

EARLY EVENING SESSION.

Announcer: Basil Kirke.
 5.40: Children's Session, conducted by Uncle Bas: music and entertainment; letters and stories. 6.30: "Sun" news and late sporting. 6.40: Special Dinner Music Recital. 7.7: Australian Mercantile Land and Finance Co's report; weather report and forecast by courtesy of Govt. Meteorologist; Producers' Distributing Society's Fruit and Vegetable Market report; grain and fodder report ("Sun"), dairy produce report ("Sun"). 7.25: Mr. Pim and Miss Pam in Advertising tricks, handy hints, and nonsense. 7.53: An Ad Special. 7.55: Programme and other announcements.

EVENING SESSION.

Announcer: Basil Kirke. Accompanist: G. Vern Barnett.
 8 p.m.: G.P.O. chimes 2BL Topical Chorus. 8.2: May Sharpe, Songs at the Piano—
 (a) "Who did you fool" (Van Schenck and Johnny Black).
 (b) "Tenderley" (Classic Jazz Novelty), (Lyman and Dale).
 8.10: From the Arcadia Theatre, Chatswood; Nicholas Robins at the Wuriltzer Organ.
 8.30: From the Studio. The Blue and Gold Dandies Revue.
 9.0: G.P.O. chimes; weather report.
 9.1: C. R. Dexter will give last minute sporting information.
 9.16: The Blue and Gold Dandies Revue.
 9.46: Late "Sun" news service.
 9.54: May Sharpe, Songs at the Piano—
 (a) "Lord Luv' Im" (Elan).
 (b) "My Blue Heaven" (Novelty piano number, with vocal chorus).
 10.1: From the Arcadia Theatre, Chatswood, Nicholas Robins at the Wuriltzer Organ.
 10.28: From the Studio, late weather report.
 10.30: Romano's Dance Orchestra, conducted by Bennie Abrahams.
 10.57: From the Studio, to-morrow's programme.
 10.59: Romano's Dance Orchestra, conducted by Bennie Abrahams.
 11.30: National Anthem; close.

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2BL

MORNING SESSION.

Announcer: A. C. C. Stevens.
 8 a.m.: G.P.O. chimes; State weather report; metropolitan weather report. 8.3: Studio music. 8.30: News service from the "Daily Telegraph Pictorial." 9.0: G.P.O. chimes; studio music. 9.30: Half an hour with silent friends. 10.0: G.P.O. chimes; close.

MIDDAY SESSION.

Announcer: A. C. C. Stevens.
 11.0: G.P.O. chimes; 2BL Women's Sports Association session, conducted by Miss Gwen Varley; a talk on "Needlecraft," by "Priscilla." 11.30: Advertising hints. 11.40: Women's session, conducted by Mrs. Cranfield. 12.0: G.P.O. chimes; special ocean forecast and weather report. 12.3: Studio music. 12.30: Shipping and mails. 12.35: Market reports. 12.48: "Sun" midday news service. 1.0: Studio music. 1.30: Talk to children and special entertainment for children in hospital. 2.0: G.P.O. chimes; close.

AFTERNOON SESSION.

Announcer at Town Hall: Basil Kirke. Accompanist at Town Hall: Kathleen Roe. Announcer at Studio: A. C. C. Stevens.
 3.30: G.P.O. chimes. From the Sydney Town Hall, Radio and Electrical Exhibition, 1929. The Melody Trio, instrumentalists. 3.45: Violet Hunt, contralto—(a) "A Night in May" (Brahms), (b) "Till I Wake" (Woodforde-Finden). 3.52: The Melody Trio, instrumentalists. 4.2: Ina Thornton, popular vocalist—(a) "Mignonette" (Peir), (b) "The Rose of Flanders" (O'Hagan). 4.9: The Melody Trio, instrumentalists. 4.15: Violet Hunt, contralto—(a) "Love Came Calling" (Zamecuk), (b) "Ship o' Dreams" (Francis). 4.23: Ina Thornton, popular vocalist—(a) "My

2GB

10.0: Music. 10.10: Happiness talk, by A. E. Bennett. 10.20: Music. 10.30: Women's session, by Miss Helen J. Beegling. 11.30: Close down. 2.0: Music. 2.5: Women's radio service, by Mrs. Dorothy Jordan. 2.50: Music. 3.15: Close down. 5.30: Children's session, by Uncle George. 7.0: Music. 8.0: Mr. Reginald Duncan, violinist. 8.8: Mr. Cecil Houghton, tenor. 8.15: Instrumental music. 8.23: Miss Mary Neal, contralto. 8.30: Humorous interlude, by Mr. Jack Win and Mr. Heath Burdock. 8.35: Miss Ada Brook, pianiste. 8.45: Address. 9.0: Weather report. 9.3: Mr. Clifford Lathlean, baritone. 9.20: Instrumental music. 9.30: Humorous interlude. 9.35: Mr. Cecil Houghton, tenor. 9.45: Mr. Reginald Duncan, violinist. 9.55: Miss Mary Neal, contralto. 10.5: Dance music. 10.30: Close down.

2UW

MIDDAY SESSION.

12.30: Request numbers. 1.0: G.P.O. clock and chimes; music. 1.15: Talk on "Home-craft," by Pandora. 1.40: Request numbers. 2.30: Close down. 4.30: Musical programme.

EVENING SESSION.

5.30: Children's Hour, conducted by Uncle Jack. 6.30: Close down. 7.0: G.P.O. clock and chimes; music. 9.0: G.P.O. clock and chimes; comments on foreign affairs, by Mr. bers. 10.30: Close down.

Interstate Programmes, Friday, May 10

3LO

EARLY MORNING SESSION.

7.15: Early morning melodies; exercises to music.
 7.30: Stock reports; Stock Exchange information; general news; shipping and sporting information.
 8.0: Melbourne Observatory time signal. 8.15: Close down.

MORNING SESSION.

11.0: To-day's radio recipe, anchovy sandwiches.
 11.35: Miss Bennett will speak on "Sports for Women."
 11.25: "Au Fait" will speak on "Fashions." 11.45: under the auspices of the Department of Health, Dr. Festonby will speak on "Influenza."

MIDDAY SESSION.

12.0: Melbourne Observatory time signal. 12.1: Metal prices received this day by the Australian Mines and Metals Association from the London Stock Exchange; British official wireless news from Rugby; Reuter's and the Australian Press Association cables; "Argus" news service. 12.15: Newmarket stock sales; special report by the Associated Stock and Station Agents, Bourke Street, Melbourne. 12.20: The Station Orchestra. 12.30: Oliver Peacock, baritone. 12.37: Stock Exchange information. 12.40: The Station Orchestra. 12.48: Dorothy Stephen, entertainer. 12.55: The Station Orchestra. 1.0: Meteorological information; weather forecast for Victoria, New South Wales, South Australia, and Tasmania; ocean forecasts; river reports; rainfall. 1.7: Oliver Peacock, baritone. 1.14: Instrumental Trio—the Imperial Russian Trio. 1.34: Dorothy Stephen, entertainer. 1.40: The Station Orchestra. 1.50: Close down.

AFTERNOON SESSION.

Announcer: Renn Millar. Accompanist: Agnes Fortune. 2.15: The Station Orchestra. 2.25: Description of the first heat of the "Head of the River" Public Schools' Boat Race, rowed on the Henley course. 2.40: Julia Russell, soprano. 2.47: The Station Orchestra. 2.53: Description of the second heat of the "Head of the River" Public Schools' Boat Race at Henley course. 3.10: The Station Orchestra. 3.18: Bert Merrick, tenor. 3.28: Description of the third heat of the "Head of the River" Public Schools' Boat Race. 3.40: The Station Orchestra. 3.48: Miss Frances Fraser. 4.0: The Movement, piano. 4.30: The Station Orchestra. 4.35: Julia Russell, soprano. 4.42: The Station Orchestra. 4.50: Bert Merrick, tenor. 4.57: "Herald" news service; Stock Exchange information; results of the "Head of the River" Public Schools' Boat Race heats.

EARLY EVENING SESSION.

8.0: Answers to letters and birthday greetings by "Billy Bunny." 8.30: Captain Donald Maclean, "Jolly Roger, Gentlemen."

EVENING SESSION.

8.50: Madame Soward, "French Without Tears." 7.5: Stock Exchange information. 7.15: Official report of the Newmarket stock sales by the Associated Stock and Station Agents, Bourke Street, Melbourne; latest truck orderings for next week's markets; fish market reports by E. Borrett, Ltd.; rabbit prices; river reports; rainfall; weather synopsis; market reports by the Victorian Producers' Co-operative Company, Ltd.; farm and dairy produce and carcass meat reports. 7.40: News service. 7.45: Birthday greetings. 7.45: Out of the past. 7.46: Under the auspices of the Department of Agriculture, Miss Knight, fruit preserving expert, will speak on "Citrus Preserves." 8.0: A maker of history.

NIGHT SESSION.

(Announcer: Frank Hatherley. Accompanist: Agnes Fortune.)
 8.1: Programme announcements.
 8.1: H. K. Love speaks on "Technicalities."
 8.15: Collingwood Citizens' Band—March, "Joyous 71st."
 Overture, "Diamond Star."
 8.25: Victor Harding, bass-baritone—
 "The Florio" (Beyers).
 "When Thy Blue Eyes" (Lassen).
 Piano Recital:
 8.32: Lindsay Biggins, piano—
 "Scenes from Chopin, Op. 15" (Schumann).
 "Romance in F Sharp."
 "Prophet Bird."
 "Solitary Flowers."
 "Fughetta."
 In a Good Cause.
 9.0: Mrs. Herbert Brookes will speak on "The Women's Hospital and Its Work."
 9.10: Collingwood Citizens' Band—
 Cornet solo, "The Rosary."
 Hymn, "Rock of Ages."
 9.15: Mary Hotham, mezzo-soprano—
 "Now Sleeps the Crimson Petal" (Quilter).
 "An Enigma" (Beyers).
 9.22: Collingwood Citizens' Band—
 Selection, "Echoes of Grand Opera."
 9.32: Jack Hocking, "The Singing Serenader."
 "Lolita" (Schubert).
 "After My Laughter Came Tears" (Turk).
 9.40: Collingwood Citizens' Band—
 Waltz, "Casino Tango."
 9.45: Eric Welch will speak on to-morrow's races at Sandown Park.
 9.50: Mary Hotham, mezzo-soprano—
 "Believe Me if All Those Endearing Young Charms" (Goldsmith).
 "Full Moon" (Woolmer).
 10.2: Collingwood Citizens' Band—
 March, "Light Cavalry."
 News Session.

10.7: "Argus" news service; British official wireless news from Rugby; meteorological information; non notes, supplied by the Royal Automobile Club of Victoria; announcements.
 10.17: Victor Harding, bass-baritone—
 "Old Barty" (Grant).
 Selected.
 10.24: Collingwood Citizens' Band—
 March, "Allendale."
 Fox trot, "Mother of Mine."
 10.30: Jack Hocking, "The Singing Serenader."
 "My Dream Sweetheart" (Hall).
 Selected.
 10.38: Ern. Hall's Radio Revelers, with Hugh Hutcham—
 "What a Girl" (Sanders).
 "Dynamite" (Henderson).
 "The Dance of the Blue Danube" (Fisher).
 "Rosetime" (Hall).
 "Forever More" (Burnett).
 "Me and the Man in the Moon" (Monaco).
 "Nebraska" (Sissell).
 "When You Said Good-night" (Donaldson).
 Selected.
 11.30: God Save the King.

Standard time signals; to-morrow's sporting fixtures viewed.

NIGHT SESSION.

A Scottish programme, arranged by Mr. W. Donald. 8.0: From the studio—
 The Studio Orchestra (conductor, A. R. Fraithstone).
 Highland Wreath."
 Miss Oswald (soprano)—
 "Loch Lomond and You."
 W. Donald, jun. (tenor)—
 "Harding Song."
 J. Morrison (clouctonist).
 "Domestic Improvements."
 Misses Oswald and Henderson—
 Vocal duet, "Keel Row."
 The Studio Orchestra—
 "Strathspey and Reel."
 D. Dunnett (bass)—
 "Scotland's Coast."
 Pipe Major M'Corckindale—
 Bagpipe selections.
 Miss Henderson (contralto)—
 "My Land."
 W. Donald, sen., Scotch comic,
 "The Sunshine of a Bonnie Lassie's Smile."
 The Scottish Four—
 Quartette, "Cuddle Doon."
 The Studio Orchestra—
 Scotch novelty, "The Only Tune the Band Can Play."
 W. Donald, jun. (tenor)—
 "Deirdre Farewell."
 J. Morrison (clouctonist)—
 "The Predicament."
 9.0: Metropolitan weather forecast.
 9.1: Week-end road information for motorists, specially supplied by the R.A.C.Q.
 9.10: The Studio Orchestra—
 Vocal trio, "Wee Hoes."
 Miss Henderson (contralto)—
 "The Two Humes."
 Pipe Major M'Corckindale—
 Bagpipe selections.
 Miss Henderson and W. Donald, jun.—
 Vocal duet, "I Loe Na Laddie but One."
 The Studio Orchestra—
 Witz, "Queen of the North."
 D. Duncan (bass)—
 "Peat Fire Flame."
 W. Donald, sen.—
 Scotch selection, "Las o' Ardintenny."
 The Scottish Four—
 Quartette, "Wert Thou in the Cauld Blast."
 Pipe Major M'Corckindale—
 Pipe selections.
 Miss Oswald (soprano)—
 "Friends Across the Sea."
 The Studio Orchestra—
 Scotch selections.
 W. Donald, sen.—
 Scotch comic, "Susie M'Lean."
 The Company—
 Solo and chorus, "A Parting Toast."
 The Studio Orchestra—
 "Harry Lauder Selections."
 10.0: News; weather. Close down.

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3AR

MORNING NEWS SESSION.

Announcer: John Stuart. 10.0: G.P.O. clock. 10.1: Market reports; farm and station produce—fruit, fish and vegetables. 10.25: Shipping reports; ocean forecast. 10.30: Mail notices; express train information. 10.35: News service. 10.59: Weather forecast.

MORNING MUSICAL SESSION.

11.0: The Radio Revelers. 11.30: The Radio Revelers. 12.0: The Radio Revelers. 12.20: British official wireless news; announcements. 12.30: Close down.

AFTERNOON SESSION.

Announcer: John Stuart. 3.0: Melodious Memories. 3.15: The Strad Trio. 3.45: Cecil Parkes, violin. 3.52: Beautiful Ballads. 4.2: Myra Montague, piano. 4.7: Captain Donald Maclean. 4.22: Trios. 4.30: Close down.

EVENING SESSION.

Announcer: John Stuart. 6.0: Ballads. 6.30: The Imperial Russian Trio. 7.10: News service; announcements. 7.30: Selections from "The Barber of Seville."

NIGHT SESSION.

Announcer: John Stuart.
 8.30: Community singing, under the auspices of the Collingwood Tree Kindergarten Association; transmission from Collingwood Town Hall.
 10.30: News session.
 News service; announcements.
 "God Save the King."

4QG

EARLY MORNING SESSION.

7.43: Time signals. 7.45: News service. 8.0: Records. 8.10: News service. 8.30: Close down.

MORNING SESSION.

11.0: Music; social news; lecturette. 11.45: Wurlitzer organ. 12.0 (noon): Close down.

MIDDAY SESSION.

1.0: Market reports and weather information. 1.15: Lunch-hour music. 2.0: Close down.

AFTERNOON SESSION.

3.0: From the Tivoli Theatre, orchestral music. 3.30: Mail train running times. 3.35: Orchestral music. 4.15: Afternoon news services. 4.30: Close down.

EARLY EVENING SESSION.

6.0: Mail train running times; mail information; shipping news. 6.5: Dinner music. 6.25: Commercial announcements. 6.30: Bedtime stories conducted by "The Sandman." 7.0: News in brief; Stock Exchange; metal quotations; market reports; Fenwick's stock report; weather information; announcements; stan-

5CL

MORNING SESSION.

Announcer: J. L. Norris. 11.0: Chimes. 11.1: Morning melodies. 11.15: Kitchen Craft and Menu Talk. 11.45: Mr. L. G. Cant will speak on "The Work of the St. John Ambulance Association." 11.55: Musical numbers. 12.15: General news service; Emma Official Wireless news. 12.52: Railway information. Stock Exchange information; meteorological information. 1.1: From the Adelaide Town Hall, community singing, including 15 minutes with last Stocks, the woman-hater. 2.0: Chimes and meteorological information. Close down.

AFTERNOON SESSION.

Announcer: J. L. Norris. 3.0: Chimes. General programme, including: The Solomon Sisters, instrumentalists; Mrs. Leslie Matthews, contralto; The Cottontail Pickers, vocalists; the woman-hater; The Solomon Sisters, instrumentalists. A short lecturette on Wagner, with illustrative recordings, by Horace Perkins, Mus.Bac., A.M.D., "Parsifal" Overture, "Singing Chorus of The Flying Dutchman," "Senta's Ballad" ("The Flying Dutchman"), "Lohengrin," "Prelude, Act III" and "Duel, Act I." "Siegfried's Journey to the Rhine," "Brunnhilde, Kindes the Fyre" ("Götterdämmerung"). 4.55: Stock Exchange information. 5.1: Close down.

EVENING SESSION.

Announcer: C. J. O'Connor. 6.0: Chimes. 6.1: Birthday greetings, correspondence, songs and stories, by "Miss Wireless." 6.30: An interlude of instrumental music. 6.50: A review of to-morrow races at Morphettville and Sandown Park. 7.1: Chimes. 7.1: Stock Exchange information. 7.6: General market reports. 7.10: Mr. Albert Keeling, secretary of the Band of Hope Union, will speak on "The State's Greatest Asset." 7.25: "Mo' Manning on 'Football.'" 7.40: A Grenfell Price will speak on "Peenars of South Australia—Sir John Hindmarsh."

NIGHT SESSION.

Announcer: C. J. O'Connor. 8.0: Boke Smith's Palais Royal Band, "That's Her Now" (Vielles "Glad Rag Doll" (Vielles). "There's a Rainbow Round My Shoulder" (Dreyer). 9.10: Neta Rodney, soprano. "The Lily of Laguna" (Leslie Stuart). "Bed in Your Own Backyard" (Al Jolson, Billie Rose, and Dave Dreyer). "Boke-Smith's Palais Royal Band, "Me and the Man in the Moon" (Leslie). "Glad Like a Melody Out of the Sky" (Donaldson). "Ave-

ton Town" (Brown). 8.27: Jack Stocks, the woman-hater, will entertain you with "Matrimonial Muddies." 8.33: Boake-Smith's Palais Royal Band. "I'm Sorry, Sally" (Kahn). "Old-fashioned Locket" (Wimbrow). "Alabama Stomp" (Johnson). 8.43: Mr. C. T. Madigan, M.A., B.Sc., F.G.S., will continue his series of talks on "Life in the Antarctic." 9.0: Chimes. 9.1: Meteorological information, including sea-shore tides. 9.2: Overseas grid report. 9.3: Boake-Smith's Palais Royal Band. "That Saxophone Waltz" (Sisk). "Someday, Somewhere" (Rapee). "Together" (De Sylva). 9.12: Harold Wenzel, baritone, selections from his repertoire. 9.18: Boake-Smith's Palais Royal Band. "Sally of My Dreams" (Kernell). "Sonny Boy" (Akst). "Old Man Sunshine" (Dixon). 9.29: Jack Stocks, the woman-hater, will entertain you again. 9.30: Boake-Smith's Palais Royal Band. "Out of the Dawn" (Donaldson). "Mother, I Still Have You" (Jolson). "Promise Me" (Van Cootsh). 9.45: Netia Rodney, soubrette. "Beautiful" (Hoven). Gillespie and Larry Sha's. "My Long-lost Man" (B. G. de Sylva, Lew Brown, and Ray Henderson). 9.52: Boake-Smith's Palais Royal Band. "Mississippi Mud" (Barns). "Ricketty Racketty Shack" (Tobias). "High Upon" (Baer). 10.2: Harold Wenzel, baritone, selections from his repertoire. 10.9: Boake-Smith's Palais Royal Band. "I Just Roll Along" (Trent). "Mine, All Mine" (Doucet). "Bouquet of Memories" (Akst). 10.15: General news service; meteorological information; announcements. 10.20: 5CL's sporting service, supplied by "Sylvius," including selections for Morphetville and Sandown Park. 10.30: Boake-Smith's Palais Royal's Band. "Dream House" (Davis). "Cock-a-Dodie" (Tobias). "Chloe" (Moret). "I Don't Care" (Davis). "Because My Baby Don't Mean Maybe Now" (Donaldson). "You've Got to Learn to Smile" (O'Hagan). "My Blackbirds Are Bluebirds Now" (Friend). "It Goes Like This" (Friend). "Shy Violets" (Kahn). 11.0: Close down.

6WF

12.30: Tune in. 12.35: Markets, news, etc. 1.0: Time signals. 1.1: Weather bulletin, supplied by the Meteorological Bureau of West Australia. 1.3: Music from the studio, including items by the Studio Trio, comprising: Miss Audrey Dean (pianist), Miss Edna Thornton (cellist), and T. Newton (violinist). 2.0: Close down. 3.30: Tune in. 3.35: Musical programme from the Primrose Cafe, including items by the Misses Chapman and Marshall; vocal items from the studio. 4.30: Close down. 6.45: Tune in. 6.48: Bedtime stories by Uncle Duffy. 7.5: Light music by the Station Trio, comprising: Pianist, Miss A. Dean; violinist, Mr. N. Newton; cellist, Miss E. Waterman. 7.50: Commercial and general information. 7.45: Sporting talk by the sporting editor of the "Truth" Newspaper Co., Ltd. 8.0: Time signals. 8.1: First weather bulletin. 8.3: Musical programme from the studio. 8.50: Late news items by courtesy of the "Daily News" Newspaper Co., Ltd., station announcements, ships within range announcements; late weather bulletin. 9.5: Programme continued from the studio. 10.30: Close down. 10.45: Metre Transmission.—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres, commencing at 6.45 p.m.

7ZL

MIDDAY SESSION.

11.30: Selections. 11.34: Midlands weather forecast. 11.55: Weather report. 12.0: Chimes. 12.1: Shipping information; ships within wireless range; mail notices; housewives' guide; commercial news. 12.11: British Official Wireless news. 12.29: Announcements. 12.35: News service; Railway Auction Produce Sales, held at Railway. 1.30: Close down.

AFTERNOON SESSION.

3.0: Chimes. 3.4: Weather information. 3.15: A Popular and Classical Programme—John Strauss and Symphony Orchestra; Edna Thornton, contralto; Robert Radford, bass; Royal Philharmonic Orchestra; John McCormack, tenor; Edna Thornton, contralto; Kirby Dunn, contralto; Ketybel's Concert Orchestra; Cecil Sherwood. 4.30: Close down.

EARLY EVENING SESSION.

6.15: Selections. 6.30: "The Story Lady." 7.00: Answers to letters and birthday greetings by "Uncle David" and "The Story Lady." 7.10: News service; Railway Auction Produce Sales held at Railway; weather information; ships within wireless range.

EVENING SESSION.

7.15: Sid Jones will speak on—"Football: This Season's Combinations." 7.30: A Studio concert.—Peter Dawson, bass—"Up from Somerset" (Sanderson). "I'm My Delight" (Auber). 7.37: Patti Pianola—"Favorite" (Donizetti). 7.42: Sydney Coltham, tenor—"O Vision Entrancing" (Thomas). "Ah, Moon of My Delight" (Lehmann). 7.49: Patti Pianola—"Fra Diavolo" (Auber). 7.58: Cecil Sherwood, tenor—"Speak" (Tosti). "I'll Forget You" (Ball). 8.5: Patti Pianola—"Prescica Overture" (Weber). 8.10: Thomas, tenor—"The Message" (Blumenfeld). 8.13: Patti Pianola—"Die Leier Von Killarney." 8.18: Peter Dawson, baritone—"The Deathless Army" (Tretere). 8.21: Patti Pianola—"Flying Dutchman" (Wagner). 8.28—John McCormack—"Drink to Me Only" (Calcott). 8.29: Patti Pianola—"Favorite Strains from "Rigoletto" (Verdi). 8.34: Duet—Emma Destinnova, Dinah Gilly, "My Homeland" (Wagner). 8.37: Patti Pianola—"Islands" (Wagner). 8.42: Robert Radford, bass—"Rocked in the Cradle of the Deep." 8.45: J. M. Counsel—"An Hour with the Old Masters—The History and Development of Music." 9.45: News service; British Official Wireless news; Railway Auction Produce Sales held at Railway; British Official Wireless news; weather information; market reports from Messrs. Roberts and Co., Wise and Stirling and W. P. Thorpe and Co.; Railway week-end information. 10.0: Chimes. 10.1: Close down.

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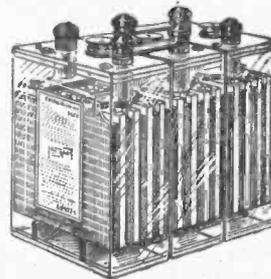
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Local Programmes, Saturday, May 11

2FC

EARLY MORNING SESSION.

Announcer: A. S. Cochrane.

7.9: "Big Ben" and announcements. 7.2: Official weather forecast, rainfall, river reports, temperatures, astronomical memoranda. 7.7: "Sydney Morning Herald" summary. 7.12: Shipping intelligence; mail services. 7.15: Studio music. 7.25: Investment market; mining share markets; metal quotations; wool sales; breadstuffs markets; inter-State markets; produce markets. 7.40: Studio music. 8.0: "Big Ben;" close.

MORNING SESSION.

Announcer: Eric Bessemer.

10.0: "Big Ben" and announcements. 10.2: Pianoforte reproduction. 10.10: "Sydney Morning Herald" news service. 10.25: Studio music. 10.30: Last-minute sporting information by the 2FC Racing Commissioner. 10.40: Studio music. 10.45: A talk on "Gardening," by J. G. Lockley ("Redgum"). 11.0: "Big Ben;" A.P.A. and Reuter's cable services. 11.5: Close down.

MIDDAY AND AFTERNOON SESSIONS.

Announcers:

Laurence Halbert, Ewart Chapple.

12.0: "Big Ben" and announcements. 12.2: Stock Exchange information. 12.4: Studio music. 12.10: "Sydney Morning Herald" news service. 12.15: Rugby Wireless news. 12.20: Studio music. 12.50: From Randwick, description of Tattersall's meeting. During intervals from the studio popular music by the Popular Trio. 4.45: Complete sporting and racing resume. 5.0: "Big Ben;" close.

EARLY EVENING SESSION.

Announcer: A. S. Cochrane.

5.40: The chimes of 2FC. 5.45: The Children's Session, conducted by the "Hello Man." Letters and Stories, Music and Entertainment. 6.40: Stock Exchange information. 6.45: Weather and shipping news. 6.47: Rugby wireless news. 6.52: Late sporting news. 7.0: "Big Ben," late news service. 7.10: The 2FC Dinner Quartette, conducted by Horace Keals—(a) "Brown Eyes I Love" (Coate), (b) "Vision des Etolles" (Mehden), (c) "The Desert Song" (Romberg), (d) "A Dream Garden." (e) "Avalon" (Brown).

EVENING SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

7.40: Popular music.
7.45: Programme announcements.
7.48: Record recital.
8.0: "Big Ben," from Kurri Kurri King's Theatre. The final concert of the Kurri Kurri Elsteddfod.
9.0: "Big Ben," from the studio, Weather report.
Results of the Queensland elections.
Musical items.
9.10: From the Kurri Kurri King's Theatre the second half of the Kurri Kurri Elsteddfod final concert.
10.28: From the studio; late weather.
10.30: Studio Dance Band, conducted by Cec. Morrison.
10.57: To-morrow's programme.
10.59: Studio Dance Band, conducted by Cec. Morrison.
11.30: National Anthem; close down.

2BL

MORNING SESSION.

Announcer: A. C. C. Stevens.

8 a.m.: G.P.O. chimes; weather report. State and metropolitan. 8.3: Studio music. 8.30: G.P.O. chimes; news and information service from the "Daily Telegraph Pictorial." 9.0: G.P.O. chimes; studio music. 9.30: G.P.O. chimes; half an hour with silent friends. 10.0: G.P.O. chimes; close.

MIDDAY SESSION.

Announcer: A. C. C. Stevens.

Note.—Results from Moorefield and Victoria Park, by arrangement with "Sun" Newspapers, Ltd. 11.0: G.P.O. chimes; women's session, conducted by Mrs. Cranfield; What's on at the Pictures and Theatres. 11.30: Advertising hints. 11.40: Talk on "Gardening," by Mr. Cooper, Park Superintendent, City

Council. 12.0: G.P.O. chimes; special ocean forecast and weather report. 12.3: Studio music. 12.30: "Sun" news service. 12.40: Studio music. 1.0: "Sun" news service. 1.10: Studio music. 1.40: "Sun" news service. 1.50: Studio music. 2.0: G.P.O. chimes; close.

AFTERNOON SESSION.

Announcer at Town Hall: A. C. C. Stevens. Accompanist at Town Hall: Kathleen Roe. Announcer at Studio: Eric Bessemer. 2.50: Foreword. 3.0: G.P.O. chimes. Official Opening of the George's River Bridge. 3.30: From the Sydney Town Hall, Radio and Electrical Exhibition, 1929. The Gleeful Three instrumentalists. (a) "The Desert Song" (Romberg), (b) "Lebestrum" (Liszt), 3.45: Len Maurice, popular vocalist. 3.52: The Gleeful Three, instrumentalists—(a) "Second Romance" (Tours), (b) "Serenata" (Toselli), 4.0: Peggy Bell, soprano. 4.7: The Gleeful Three, instrumentalists—(a) "Vagabond King" 4.17: Peggy Bell, soprano. 4.24: Len Maurice, popular vocalist. 4.30: From Romano's, Romano's Dance Orchestra, conducted by Bennie Abrahams. 4.40: From the Studio, Studio music. 4.50: Romano's Dance Orchestra, conducted by Bennie Abrahams. 5.0: From the Studio, G.P.O. chimes; pianoforte reproduction. 5.20: Popular music. 5.30: Sporting and racing resume. 5.37: Features of the evening programme.

EARLY EVENING SESSION.

Announcer: Basil Kirke.

5.40: Children's Session, conducted by Uncle Bas; music and entertainment; letters and stories. 6.30: "Sun" news service. 6.40: 2BL Dinner Quartet—(a) "A Song Remembered" (Coates), (b) "Valse" (Levitaki), (c) "You Lovely Thing" (Anderson), (d) "I'm Sorry, Sally" (Florito), (e) "The Student Prince" (Romberg), (g) "Full Moon" (Woolmer). 7.7: Complete sporting and racing resume. 7.30: Mr. Plm and Miss Pam in advertising talks, handy hints, and nonsense. 7.53: An Ad Special. 7.55: Programme and other announcements.

EVENING SESSION.

Announcer at Town Hall: Basil Kirke. Accompanist at Town Hall: J. Knight Barnett.

Announcer at Studio: J. Knight Barnett. 8.0: G.P.O. chimes; 2BL Topical chorus. 8.2: From the Sydney Town Hall: Radio and Electrical Exhibition, 1929.

Heyes Banjo Troupe—
(a) "Picket Guard" (Merz).
(b) "Fleurlette" (Merz).
8.10: "The Troubadours."
8.18: Norman Hestelow, Basso—
(a) "The Windmill" (Nelson).
(b) "Prince Ivan's Vocalist" (Allitzen).
8.24: Dulcic Blair, Vocalist.
8.34: Popular programme.
9.30: From the Studio; weather report.
9.31: Romano's Dance Orchestra, conducted by Bennie Abrahams.
From the Studio:
9.40: Norman Hestelow, Basso—
(a) "The Song of the Hybras the Cre-tan" (Elliot).
(b) "The Tramp" (Trotter).
9.47: Phil Smith, Comedian.
"Bring Back those Good Old Days"
9.57: "The Troubadours."
10.12: Romano's Dance Orchestra, conducted by Bennie Abrahams.
From the Studio:
10.22: Nea Hallett, popular vocalist.
10.29: Late weather report.
10.31: Romano's Dance Orchestra, conducted by Bennie Abrahams.
10.57: From the Studio: To-morrow's programme.
10.59: Romano's Dance Orchestra, conducted by Bennie Abrahams.
11.30: National Anthem; close.

2GB

3.0: Musical session. 5.30: Children's session, by Uncle George. 7.0: Request evening. 8.0: Instrumental and dance music. 10.30: Close down.

2UW

5.30 p.m.: Children's Hour, conducted by Uncle Jack. 6.30: Close down. 7.0: Request numbers. 10.30: Close down.

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WATCH FOR OUR LIST OF BARGAINS NEXT WEEK

Interstate Programmes, Saturday, May 11

3LO

EARLY MORNING SESSION.

7.15 to 8.15: See Friday.

MORNING SESSION.

Announcer: Renn Millar. Accompanist: Rene Fortune. 11.0: The Radio Revelers. 11.10: J. Alexander Browne, baritone. 11.17: The Radio Revelers. 11.27: Eric Welch will speak on to-day's races at Sandown Park. 11.37: The Radio Revelers. 11.47: Ann Middleton, soprano.

MIDDAY SESSION.

Announcer: Renn Millar. Accompanist: Agnes Fortune. 12.0: Melbourne Observatory time signal. 12.1: Metal prices received by the Australian Mines and Metals Association will be the London Stock Exchange this day; British official wireless news from Rugby; Reuters and the Australian Press Association cables; "Argus" news service. 12.20: The Radio Revelers. 12.30: J. Alexander Browne, baritone. 12.37: Stock Exchange information. 12.40: The Radio Revelers. 12.50: Ann Middleton, soprano. 12.58: The Radio Revelers. 1.5: Meteorological information; weather forecast for Victoria, New South Wales, South Australia, and Tasmania; ocean forecast; river reports; rainfall. 1.12: The Radio Revelers. 1.22: Dorothy Stephen, entertainer, will sing some up-to-date ditties. 1.32: The Radio Revelers. 1.45: Description of baseball match, Melbourne v. Fitzroy, at M.O.C., by Percy Steele.

AFTERNOON SESSION.

Announcer: Renn Millar. 2.13: Description by Eric Welch of Sandown Park Plate, six furlongs, Sandown Park races. 2.20: Description of baseball match, Melbourne v. Fitzroy, at M.O.C. 2.45: Description of Sandown Purse, one mile. 2.50: Description of football match, Melbourne v. Fitzroy, at M.O.C., Red M'Gregor. 3.0: Description of the final of the Head of the River Public Schools Boat Race on the Henley course. 3.13: Description of Brush Steeplechase, about two miles and a quarter, Sandown Park races. 3.20: Description of football match, Melbourne v. Fitzroy. 3.30: Description of football match, Footscray v. North Melbourne. 3.43: Description of Sandown Park Handicap, one mile and a quarter. 3.50: Description of football match, Melbourne v. Fitzroy. 4.0: Half-time scores. 4.13: Description of "Trial Welter Handicap, six furlongs. 4.20: Description of football match, Footscray v. North Melbourne. 4.30: Description of football match, Melbourne v. Fitzroy. 4.40: Three-quarter time scores. 4.43: Description of "Jumpers' Flat Race, one mile and a quarter, Sandown Park. 4.50: Description of football match, Footscray v. North Melbourne. 5.0: "Herald" news service. During the afternoon results of the Campedown races will be broadcast as they come to hand. 5.10: Football descriptions, continued. 5.30: Final scores. 5.35: Close down.

EARLY EVENING SESSION.

5.50: All sporting results. 6.0: "Little Miss Kookaburra." 6.25: Then we'll have a little music. 8.30: And then we'll have another instalment of "The Guide Camp at Heron's Bay."

EVENING SESSION.

8.50: Stock Exchange information. 7.0: Market reports. 7.15: News session; final scores of football matches. 7.25: Birthday greetings. 7.29: Out of the past. 7.30: Edward E. Pescott will speak on "Grasses, Part 2." 7.45: A maker of history. 7.48: Dr. J. A. Leach will speak on "Field Wrens and Field Larks."

NIGHT SESSION.

Announcer: Frank Hatherley. Accompanist: Agnes Fortune. 8.0: Programme announcements. 3LO's weekly Tasmanian letter from the "Courier," Launceston. 8.1: Transmission from His Majesty's Theatre, Melbourne (by permission J. C. Williamson Ltd.). "Part I of the romantic story play, "The Vagabond King." Music by Rudolf Friml. Books and lyrics by W. H. Post and Brain Hooker. The Cast: Rene de Montigny, Lou Verno, Casin Cholet, Oscar Lansbury, Margaret, Eileen Ogden, Jehannont, Lois Evans, Isabeau, Alma Hart, Jehan de Lou, Joe Finn, Huguette Du Hamel, Mabel Gibson, Guy Tabarie, Arthur Stigant, Tristan L'Hermite, Gerald K. Souper, Louis Kirk, Arthur Nelson, Francis Wilson, James Liddy, Katherine de Vaucelles, Stella Wilson, Thibaut d'Aussigny, George Conyngham, Captain of Scotch Archers, Arthur Mayes. An astrologer, Conrad Hartman, Lady Mary, Beatrice Kendrick, Noel de Joys, Russell Scott, Oliver is Dain, Cecil Kellaway. First Hunt Lady, Vera Dearless, Second Hunt Lady, Vera Dearless, Toison d'Or (Burgundian Herald), Conrad Charlot. The Queen, Jessica Kendrick, The Dancer, Edna Moncrieff, The Bishop, Edward Davies, The Hangman, Hal Wilson, Master of the Hunt, David Graham. Ballet and dance arranged by Minnie Everett. Musical director, Willy Redstone. Scene: The entire action takes place in Old Paris during the reign of Louis XI.

Musical Numbers.

Part I.

1. Opening Overture, Ensemble.

2. "Love for Sale," Huguette and Chorus. 3. "Drinking Song," Isabeau and Male Chorus. 4. "Drinking Song," Tabarie and Male Chorus. 5. Comedy, Katherine. 6. "Only a Knot," Katherine and Vilton. 7. Folk music and maquette, entire company. 8.48: The Station Orchestra—Overture, "Le Carnaval" (Dvorak). 9.0: The "Sundowners"—Quarante, "O Suaninah" (Foster). Robert Allan, solo. 9.3: "The Day of the Passionate Day" (Lohr). 9.37: Eric Welch will describe to-night events at the Stadium. 9.18: The song feature of the week. 9.21: The Station Orchestra—Suite, "In Fairy Realm" (Ketyby). 9.29: "The Sundowners"—"The Birth of the Blues" (Henderson). "Mississippi Mud" (Barris). 9.33: The Station Orchestra—"In a Fog" (Britten). "Dream Melody" (Herbert). 9.40: Percy Joze, cornet—"Macushia" (M'Murrough). 9.46: Eric Welch will continue his descriptions of the night's events. 9.50: The Station Orchestra—Selection, "Rose Marie" (Friml). 10.10: Dorothy Steven, entertainer, in a few novelty numbers. 10.20: The Station Orchestra—Selection, "Moszkowskiana." 10.30: "The Sundowners"—Duet, Tom Sempie, tenor, and Herbert Sanderson, baritone. "O Lovely Night" (Ronald). The Quartette—"Unico" (Moret). 10.37: Late sporting. 10.47: Ern. Hall's Radio Revelers, with Hugh Huxham—"Toy Town Artillery" (Carlton). "Promise Me" (Van Booth). "Ready for the River" (Moret). "My Stormy Mother Pal" (Plantados). "D-Wing" (Silver). "What'll You Do" (Cohn). "Do You" (Plantados). "Pa's Old Hat" (Guy). "Golomb" (Nichols). Selected and request numbers. 11.30: God Save the King.

3AR

MORNING NEWS SESSION.

Announcer: John Stuart. 10.0 to 10.59: See Friday.

MORNING MUSICAL SESSION.

11.0: Ditties. 11.30: "The Casse Nolsette Suite" (Tschalkowsky). 11.50: British Official Wireless news; announcements; rates of exchange, as supplied by Messrs. Thos. Cook and Son. 12.0: Close down.

AFTERNOON SESSION.

Announcer: John Stuart. 3.0: The Station Orchestra. 4.30: Close down.

EVENING SESSION.

Announcer: John Stuart. 6.0: Orchestral chefs d'oeuvre, Felix Weingartner and the London Symphony Orchestra. 6.15: British Official Wireless news; announcements; rates of exchange, as supplied by Messrs. Thos. Cook and Son. 7.0: Delightful ditties. 7.30: The Imperial Russian Trio (Arved Norit violin, Ivan Berzinsky cello, and Vassili Hlatser), trios, "Slow Waltz" by "Meditation" (Bach-Gounod), "Spanish Dance, No. 5" (Moszkowski); request items.

NIGHT SESSION.

Announcer: John Stuart. 8.0: All sporting results. 8.30: Ina Mornement. "Waldstein Sonata" (Beethoven). "Album in G" (Korsyioff). "Troika" (Tschalkowsky). "Pette Valse" (Wraggell). 9.0: Second act of "The Vagabond King." 9.52: Captain Douglas Maclean. "Fests of the Nightingale." 10.7: Organ recital by C. E. Montech, F.R.C.O. Transmission from St. Peter's Church, Eastern Hill, Melbourne. "A Solemn Festival" (Rheiberger). "Three Preludes—in B Minor, C Minor and A Major" (Chopin). "La Capella Rossini). "Fantasia in E Flat" (Saint-Saens). 10.30: From the Studio. News service. Announcements.

4QG

EARLY MORNING SESSION.

7.43 to 8.30: See Friday.

AFTERNOON SESSION.

3.0: A programme of electrically reproduced records. 3.30: Mail train running times. 4.15: This afternoon's news. 4.30: Close down.

EARLY EVENING SESSION.

8.15: Bi-weekly news service for distant listeners. 8.30: Bedtime stories conducted by "Uncle Ben." 7.15: To-day's race results in brief. 7.30: General sporting

notes. 7.30: Sailing notes by Mr. Fred. Smith.

NIGHT SESSION.

8.0: The whole of the night session will be devoted to the announcing of the State election results. The station will remain open until midnight, and the figures from the various electorates will be broadcast as they come to hand. Between election figures a few musical items will be broadcast, including—Laurie and Rae, entertainers. The Aloha Novelty Trio. Jill Manners (soprano)—"The Fairy in the Chimney" (Elliott). "Little Brown Owl" (Sanderson). 12.0 (midnight): Close down.

5CL

MORNING SESSION.

Announcer: C. J. O'Connor. 12.0: Chimes. 11.1: Late selections for Sandown Park races, supplied by Mr. Eric Welch, of 3LO. 12.3: Probable starters and selections for Morphettville races, supplied by "Silvius." 12.15: General news service. 12.00: Railway information; Stock Exchange information, meteorological information. 12.48: Musical interlude. 12.55: From Morphettville, riders and positions for Clarence Park Hurdle Race, two miles and 36 yards. 1.10: From Morphettville, running description of the Clarence Park Hurdle Race, by Mr. Arnold Treloar. 1.35: From Morphettville, riders and positions for Hawthorn Welter (First Division), one mile. 1.50: From Morphettville, description of Hawthorn Welter. 1.55: Result Sandown Plate. 2.1: Resume of previous race results. 2.15: From Morphettville, riders and positions for Second Division of Hawthorn Welter. 2.20: Result of Sandown Purse. 2.30: (Morphettville) Description of the Second Division of Hawthorn Welter. 2.50: Result, Brush Steeplechase (Sandown). 2.55: (Morphettville), Riders and positions for Millwood Steeplechase, about two miles and 26 yards. 3.0: Chimes, and resume of previous race results. 3.2: From oval 3.10- (Morphettville) description of Millwood Steeplechase. 3.15: From oval; result, Sandown Park Handicap. 3.21: From oval 3.35- (Morphettville), Riders and positions for Kuraita Handicap, six furlongs. 3.40: From oval 3.50- (Morphettville), Description of Kuraita Handicap. 3.55: Sandown Trial Welter. 4.1: Resume of previous race results. 4.3: From oval 4.15- (Morphettville), Riders and positions for Sandown Handicap, one mile and a half. 4.20: Sandown Park Jumpers' Flat Race. 4.21: From oval 4.30- (Morphettville), description of S.A.C. Handicap by Mr. Arnold Treloar. 4.40: 4.55: (Morphettville), Riders and positions for Totalisator Handicap, six furlongs. 5.0: From oval 5.10- (Morphettville) Running description of Totalisator Handicap, six furlongs. 5.15: Final race results. Close down.

EVENING SESSION.

Announcer: C. J. O'Connor. 6.0: Chimes. 6.1: Resume of final football results and the results of birthday greetings, correspondence, songs, and stories by "The Watte Lady." 6.30: An interlude of dinner music. 7.1: Stock Exchange information. 7.10: Rev. G. E. Hale, B.A., will give "A Psychology Talk—The Cause and Cure of Laziness." 7.25: Mr. C. O. Riley will talk on "Items of Interest." 7.45: 5CL's sporting service, supplied by "Silvius," including race results at Morphettville and Sandown Park.

NIGHT SESSION.

8.0: Chimes. 8.1: Holden's Silver Band, conducted by Oswald Summerton (Sons of Australia), overture, "Caliph of Bagdad" (Bolidie), march, and "Bridge" (Ord Hume). 8.10: Joy Watson, soprano. 8.17: Jack Stocks, the woman-hater, in "Matrimonial Muddles" (Hickley), music by the band, conducted by Oswald Summerton, intermezzo, "Madrigal" (Wihlesby), solo "Your Eyes Have Told Me So" (Hardy), valse "Monastery Bells" (Greenwood). 8.35: Arnold Treloar, baritone, in "A man leaving shortly for England," "The Rat" and "Fever" (Ireland). 8.42: A violin recital by Norman Sellick, accompanied by Lillian Keen. 9.0: Chimes. 9.3: Holden's Silver Band, dance "Jazzma" (Wood), song number "Mary Ann" (B. Davis). 9.8: Joy Watson, soprano, selections from her repertoire, 8.15: Jack Stocks, the woman-hater, in "Matrimonial Muddles," 9.24: Holden's Silver Band, selection, "Salor Songs" (Rimmer). 9.32: Arnold Treloar, baritone, "The Rolling English Road" (Besley). "Cavalier" (Hickley). 9.39: A one-act comedy, entitled, "Let's Waltz" (produced by Jack Burgess Characters: Florence, Beryl Alford; Roland, Jack Burgess. Scene: An ante-room in the house of Lady Brabant. A ball is being given, and the ante-room adjoins the ballroom. Florence enters the ante-room. 9.54: Holden's Silver Band, duet, "Home to Old Mountain" (Herd), quick-step "Vachin" (Phillimore). 10.0: Chimes. 10.1: Mr. P. E. Nichols and Bessie Francis, in a Shakespearean interlude, "The Taming of the Shrew." 10.15: 5CL's sporting service, supplied by "Silvius," including race results at Morphettville and Sandown Park; also football scores. 10.30: Modern dance records. 11.0: Close down.

6WF

12.0: Tune in. 12.5: Racing anticipations repeated for the benefit of our country listeners. 12.7: Musical programme from the studio, including pianoforte solos by Miss Audrey Dean. 12.44: Markets, news, etc. 1.0: Time signal. 1.1: Weather bulletin, supplied by the Meteorological Bureau of West Australia. 1.3: Close down. 2.30: Tune in. Sporting session, including race results and quarter-time scores of the football matches. 3.30: (approx.): Close down. 6.45: Tune in. 6.48: Bedtime stories by Auntie Amy. 7.12: Sports results. 7.30: Commercial and general information. 7.45: Music. 8.0: Time signal. 8.1: First weather bulletin. 8.3: A relay of the programme of the Humberby Fashion Musical Comedy from Theatre Royal. 8.50: Late news items by courtesy of the "Daily News Newspaper Co. Ltd., station announcements, ships within range announcement, late weather bulletin. 9.5: Programme continued from the Theatre Royal. 10.30: Close down. 104.5 Metre Transmission.—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres, commencing at 6.45 p.m.

7ZL

MIDDAY SESSION.

11.30 to 1.30: See Friday. 2.15: Description of Sandown Plate, 6 furlongs, Melbourne. 2.45: Description of Sandown Purse, 1 mile, Melbourne. 2.50: Close down.

AFTERNOON SESSION.

3.0: Chimes. 3.1: Transmission from football match—North Hobart v. Lefroy, described by Sid Jones. 3.15: Description of Brush Steeplechase, 2.4 miles, Sandown, Melbourne. 3.20: North Hobart v. Lefroy. 3.45: Description of Sandown Park Handicap, 1.1-4 miles, Melbourne. 3.50: North Hobart v. Lefroy. 4.15: Description of Trial Welter, 6 furlongs, Sandown, Melbourne. 4.20: North Hobart v. Lefroy. 4.30: Close down. 4.45: Description of Jumpers' Flat Race, 1.1-4 miles, Sandown, Melbourne. 4.50: All sporting results to hand. 5.0: Close down.

EARLY EVENING SESSION.

6.0: All sporting results to hand. 6.30: "Uncle David" will entertain the wee folk. 7.0: Answers to letters and birthday greetings. 7.15: News session.

EVENING SESSION.

7.30: Alderman H. H. Pacy will speak on—"Rat Extermination." 7.45: J. M. Counsel will speak on "European Affairs." 8.0: Chimes. 8.5: Transmission from the Prince of Wales Theatre, Hobart—Ted McEann and his orchestra. 10.20: News session. Close down.

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Empire Broadcasting Lags

ARADIO listener at Roorkee, India, writing in a letter which has been received in Sydney, makes comparisons between the British short-wave station 5SW and some of the foreign stations to which he listens, particularly PCJ. He complains that the suggestion has been made that listeners throughout the Empire should pay towards the maintenance of 5SW, but no such suggestion has been made in the case of PCJ. By means of foreign stations, he goes to church sometimes as far off as Nairobi (Africa), and sometimes at Sydney, but never does he hear a London service. On the occasions when 5SW is on the air he never receives any intimation in advance, but PCJ always lets listeners know in the press days before of any change in programme hours. When PCJ is on the air the writer says he receives a perfect gramophone concert on full loud-speaker strength. He thinks that 5SW, as representing the British Broadcasting Corporation, should make some effort to keep pace with other broadcasting companies.



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TELEFUNKEN RECEIVING SET STAND 43

Of absorbing interest at the Radio Exhibition are the new "Telefunken" receiving sets, for the fact that they are the last word in construction, having been taken from the overseas ship direct to the show. It is safe to say that nothing newer will be found on view. Another fact worth noting is the quarter of a century's reputation behind each set.

Twenty-five years ago Professor Braun, Professor Slaby, and Count von Arco, the eminent scientists, united to carry on their fundamental experiments on wireless telegraphy and laid the technical foundation of the powerful company later known as "Telefunken." The history of wireless engineering has, since these first beginnings, been identical with the history of Telefunken. Every step of progress made in this branch of science was worked out, or applied to practical engineering, in Telefunken Laboratories. At the present day, the highest-powered wireless stations in the world are built by Telefunken. Telefunken disposes of the vastest manufacturing plants on the Continent of Europe. Millions of valves and accessories, hundreds of thousands of wireless sets have made the words "Genuine Telefunken" synonymous throughout the world with "highest quality."

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In addition to the Arcolette 3 described in detail, there are also many others, including the latest in A.C. receivers; also loud-speakers of a unique type; so that this exhibit is well worth a visit.

The Electric Supplies and Engineering Co. Ltd. are the sole agents for the Telefunken lines.

Local Programmes, Sunday, May 12

2FC

MORNING SESSION.

- Announcer: A. S. Cochrane.
10.0: "Big Ben" and announcements.
10.2: News service.
10.20: The Captain to his Comrades.
10.40: Studio music.
11.0: "Big Ben" from St. Andrew's Cathedral: Morning service, conducted by the Very Rev. the Dean of Sydney.
12.15 (approx.): Close.

AFTERNOON SESSION.

- Announcer: C. R. Hall.
2.30: Programme announcements.
2.32: Children's Session, conducted by the "Hello Man."
3.0: "Big Ben" from the Lyceum Hall, Pitt Street, Pleasant Sunday Afternoon Service, Mother's Day.
Hurlstone Park Choir.
Address by Miss Preston Stanley.
4.30: Studio music.
4.45: From the Studio: C. S. Yarwood will speak on "Henry Kendall."
5.0: "Big Ben" close.

EVENING SESSION.

- Announcer: Laurence Halbert
6.0: G.P.O. chimes and announcements.
6.2: C. R. Hall, Tales of a Traveller.
6.20: From Pitt Street Congregational Church: Organ recital by Lillian Frost.
7.0: Divine services, conducted by Rev. T. E. Ruth.
8.15: From the Studio, weather report.
8.16: From the Palace Theatre, concert in aid of United Charities Fund, featuring the Liozart Trio from the Pavlova Orchestra; Norman Wright, tenor; Muriel O'Malley, contralto.
9.45: Studio Record Recital.
10.28: Late weather.
10.30: National Anthem.

2BL

MORNING SESSION.

- Announcer: A. C. C. Stevens.
11.0: G.P.O. chimes.
From Randwick Presbyterian Church.
Morning Service, conducted by Rev. W. J. Grant.
Choirmaster, Geo. W. Sherring.
Organ Voluntary.
Doxology.
Invocatory Prayer.
Hymn.
1st Scripture Lesson.
Prayer.
Hymn.
2nd Scripture Lesson.
Solo or Duet.
Address to Children.
Children's Hymn.
Announcements and Offertory.
Anthem by Choir.
Prayer.
Psalm.
Sermon.
Brief Prayer.
Hymn.
Benediction.
12.15 Approx.: From the Studio, "Sun" news service.
12.30: Studio music.
2.0: G.P.O. chimes; close.

AFTERNOON SESSION.

- Announcer: Basil Kirke.
3.0: G.P.O. chimes; special record recital.
3.30: From the Manly Band Rotunda, a programme by the Manly Municipal Military Band, conducted by James Pheloug.
4.0: From the Studio: Musical items.
4.10: From the Manly Band Rotunda, a programme by the Manly Municipal Military Band, conducted by James Pheloug.
4.40: From the Studio: Musical items.
5.0: "Big Ben"; close.

EVENING SESSION.

- Announcer: Basil Kirke.
Accompanist: G. Vern Barnett.
6.0: A programme supplied by the Ober Up Society.
6.50: From Petersham Baptist Church, Evening Service, conducted by Rev. G. A. Cralke.
8.30: From King's Theatre, Kurri Kurri Choral Section of Elstidedford.
9.53: From the Studio: To-morrow's programme.

2GB

- 10.0: Organ music from St. Alban's Church, Redfern.
10.30: Morning service from St. Alban's Church.
12.0: Close down.
3.0: Musical session.
5.30: Children's session, by Uncle George.
7.0: Lecture from Adyar Hall, S.S.
Music from studio.
8.15: Sacred concert from Adyar Hall, by courtesy of Winkworth and Sons, Uebel-Lechleiter piano solo.
8.20: Miss Florence Gordon, contralto.
8.30: Miss Lella Waddell, violiniste.
8.40: Mr. Victor Earle, baritone.
8.45: Miss Elsie Brown, soprano.
8.52: Uebel-Lechleiter piano solo.
9.0: Miss Lella Waddell, violiniste.
9.15: Mr. Victor Earle, baritone.
9.22: Uebel-Lechleiter piano solo.
9.28: Miss Elsie Brown, soprano.
9.35: Close down.

2UW

- 10.30 a.m.: Music and request numbers.
1.0 p.m.: Close down.
5.30: Children's Hour, conducted by Uncle Jack.
6.30: Close down.
7.0: Musical programme.
10.30: Close down.

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Interstate Programmes, Sunday, May 12

3LO

MORNING SESSION.

Announcer: Renn Millar. 10.30: Bells from St. Paul's Cathedral, Melbourne. 10.45: Express train information. British Official Wireless news from Rugby. News from yesterday's papers. 11.0: Morning service from Wesley Church, Central Mission, Lonsdale Street, Melbourne.

AFTERNOON SESSION.

Announcer: Renn Millar. 2.0: Sonora recital of the world's most famous records. 3.0: Pleasant Sunday afternoon service, transmitted from Central Mission, Wesley Church, Lonsdale Street, Melbourne.—Hymn No. 113, "All People That on Earth do Dwell"; prayer; orchestral selection, G. M. Williams, conductor; Hymn No. 100, "Have You Had a Kindness Shown?"; selection, Highbury Quartette Party; orchestra; selection, Highbury Quartette Party; notices, offering, and orchestra; address, National Anthem; Benediction; orchestra.

CHILDREN'S HOUR.

8.45: Shipping Information. 8.47: Answers to letters and birthday greetings by "Billy Bunny." 8.52: "Brother Bill's" talk this week is entitled "A stitch in Time." 8.45: Adult birthday greetings and programme announcements. 8.47: Bells from St. Paul's Cathedral, Melbourne.

EVENING SESSION.

Evening service from Independent Church, Collins Street, Melbourne.

NIGHT SESSION.

Announcer: Renn Millar. Accompanist: Mabel Nelson. 8.30: The Strad Quartette (Cecil Parkes, violin; Myra Montague, piano; Kingsley Parkes, viola; Frank Johnstone, cello)—"Piano Quartette: Adagio and Allegro Vivace (Schubert)."

8.40: Mary Hotham, mezzo-soprano—"The Young Nun" (Schubert). "Serenade" (Schubert).

8.47: The Strad Quartette—"Spring Trio for Violin, Viola, and Cello: "Op. 53 No. 1 in G Major," Allegretto Innocente. Presto (Haydn).

8.54: Wesley Church Choir. 9.4: Ivan Berzinsky, cello—"Andante con moto" (Tschaiakowsky). "Andante" (Tschaiakowsky). "Allegretto" (Giazounov). "Melodie Arabe" (Giazounov). "Serenade Espagnola" (Giazounov). "Tarantella" (Fopper).

9.24: Mary Hotham, mezzo-soprano—"Like as the Hart Desireth" (Allitsen). "Ave Maria" (Schubert).

9.31: The Strad Trio—"Op. 100 in E Flat," Andante, Scherzo (Schubert).

9.44: Wesley Church Choir. 9.51: The Strad Trio—"Prayer" (Schubert).

9.55: News service; announcements. 10.0: God Save the King.

3AR

MORNING SESSION.

Announcer: John Stuart.—10.45: Morning service from St. Paul's Cathedral, Melbourne, Sunday after Ascension Day (Mission Sunday). 12.15: British official wireless news; announcements. 12.20: Close down.

AFTERNOON SESSION.

Announcer: John Stuart.—3.0: Sir Henry J. Wood and the New Queen's Hall Orchestra. Recorded in the Scala Theatre, London. "Symphony No. 3 in E Flat." "Eroica" (Beethoven). 4.30: Close down.

EVENING SESSION.

Announcer: John Stuart.—5.0: "Erer Rabbit," stories for the Children. 5.30: Close down. Close down.

NIGHT SESSION.

Announcer: John Stuart. Accompanist: Vera Ewe. 7.0: The Discus Ensemble in Vocal and Orchestral Chefs d'Oeuvre.

Frederick Lamond, the Royal Albert Hall Orchestra, conducted by Eugene Goossens—"Concerto, No. 5, for Piano and Orchestra" (Beethoven), in six parts.

Gems from the Operas by the Master Vocalists.

8.0: Malvern Tramways Band—Overture, "Poet and Peasant" (Round). March, "Northumbrian" (Rimmer).

8.12: Moran Hilford, Bass—"Ave Maria" (Cooper). "The Willow Copse" (Watson).

8.19: Malvern Tramways Band—Gavotte, "The Bells of Ruabon" (Greenwood). March, "The Vedette" (Alford).

8.29: Violet Jackson, soprano—"God Remembers when the World Forgets" (Jacobs-Bond). "Beyond the Veil" (Russell).

8.36: Malvern Tramways Band—Selection, "Rigoletto" (Verdi).

8.40: Piano Recital, Lindsay Biggins.

8.46: Piano Recital—"Moonlight Sonata," first and second movements (Beethoven). "Two Pastels" (Gretchaninoff). "Passepied" (Debussy).

"Cradle Song" (Macdowell). "Moment Musicae" (Rachmaninoff). "Etude in E Minor" (Giazounov). "Zephyr" (Moszkowski).

9.16: Moran Hilford, bass—"The Wanderer" (Schubert). "I Will Not Grieve" (Schumann).

9.23: Malvern Tramways Band—Selection, "Golden Grain" (Trussell). March, "Distant Greetings" (Doring).

9.33: Violet Jackson, soprano—"Madonna Lilies" (Clarke). "The Holy Child" (Martin).

9.40: Malvern Tramways Band—Selection, "Gipsy Love" (Lehar). 9.53: News service; announcements. God Save the King.

4QG

MORNING SESSION.

11.0: The complete morning service will be relayed from St. Barnabas' Church of England, Red Hill. Holy Eucharist, Book of Common Prayer. Introit—hymn 147, "Hail the Day That Sees Him Rise." Gradual—hymn 146, "O Saviour, Who for Man Hast Trod." Offertory—hymn 565, "Up in Heaven." Communion—hymn 316, "Alleluia, Sing to Jesus." Abutions—hymn 148, "See the Conqueror Mounts in Triumph." Sermon by Canon Garland. 12.15: Close down.

AFTERNOON SESSION.

3.15: The band concert will be relayed from the Botanic Gardens. 4.30: Close down.

EARLY EVENING SESSION.

8.30: Greetings to little listeners and replies to letters.

NIGHT SESSION.

7.0: The complete evening service will be relayed from St. Barnabas' Church of England, Red Hill Children's session.

Hymns: "Advent Tells Us Christ is Near." 147: "Hail the Day That Sees Him Rise." 656: "Up in Heaven." Children's catechising by Canon Garland.

7.30: Evensong session. Evening service. Hymn 147: "Hail the Day That Sees Him Rise." Hymn 146: "O Saviour, Who for Man Hast Trod." Hymn 201: "Where High the Heavenly Temple Stands." Hymn 148: "See the Conqueror Mounts in Triumph." Sermon by Canon Garland.

Hymn Book, ancient and modern. At the conclusion of the church service the concert by the Brisbane Municipal Concert Band will be relayed from Wickham Park.

9.30: Close down.

5CL

MORNING SESSION.

10.45: Carillon of bells from Adelaide Town Hall. 11.1: Divine service from Stow Memorial Church. 12.10: British Official wireless news. 12.15: Close down.

AFTERNOON SESSION.

3.0: Chimes. 3.1: A pleasant Sunday afternoon service from Maughan Church, Franklin Street. 4.0: Close down.

EVENING SESSION.

Announcer: J. L. Norris. 6.0: Chimes. 6.1: Birthday greetings; correspondence; songs and stories by "Miss Wireless." 6.30: "The Bird Lady" and "The Sunshine Songsters." 7.1: A religious service from Rose Park Congregational Church. Minister, Rev. H. Watts Orimmet. Organist, Mr. Stanley Brand.

NIGHT SESSION.

Announcer: J. L. Norris. 8.20: Sylvia Whittington, violinist, selected violin solos. 8.27: Phyllis Webb, soprano—"There is a Land" (Allitsen), "A Song of Thanksgiving" (Allitsen). 8.34: Guido Giacchino, cellist—"Ave Maria" (Gounod-Bach), "Serenata" (Braga). 8.41: S. Mills Rogers, bass-baritone, selections from his repertoire. 8.48: A pianoforte recital by Tom King. "Spring, Beautiful Spring" (Paul Lincke), "Nocturne for Left Hand" (Scriabine), "Friedium from the Holberg Suite" (Grieg), "Night in May" (Palmgren), "Noel" (Gardiner), "A Shanghai Tragedy" (Abram Chassins). 9.8: Phyllis Webb, soprano—"O Divine Redeemer," "A Heart That's Free" (A. Robyn). 9.15: Guido Giacchino, cellist—"Largo in G" (Handel), "A Prayer" (Beethoven). 9.22: S. Mills Rogers, bass-baritone, selections from his repertoire. 9.29: Sylvia Whittington, violinist, selected violin solos. 9.36: Mr. P. H. Nicholls will tell you about "A Woman Who Must Not Die." 10.0: Close down.

6WF

10.25: Tune in. 10.30: Special half-hour for the enthusiastic listener. 11.0: Morning service relayed from Trinity Congregational Church. 12.15: Close down. 3.30: Tune in. 3.35: Musical programme from the studio. 4.30: Close down. 7.0: Tune in. 7.5: Bedtime stories for the kiddies. 7.30: Evening service relayed from Wesley Church, Perth. 8.45: Band concert by the Perth City Band, conducted by Mr. Les Price. 10.5: Close down. 104.5 Metre Transmission.—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres, commencing at 7 p.m.

7ZL

MORNING SESSION.

11.0: Transmission from Memorial Congregational Church, Brisbane Street. 12.30: Close down.

AFTERNOON SESSION.

3.30: A Concert Programme arranged by the P.S.A. Association. 4.30: Close down.

EARLY EVENING SESSION.

6.15: Chorus Singing (Conductor, Trevor M. Morris, of the Children's Special Service Mission). 6.45: Bertha Southey Brammall will read "Fairly Horses."

EVENING SESSION.

7.0: Transmission from the Chalmers Presbyterian Church, Bathurst Street. 8.25: From the Studio—A programme of Sacred and Classical Music, arranged by James Council. 9.45: News session. 9.50: Close down.

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Local Programmes, Monday, May 13

2FC

EARLY MORNING SESSION.

Announcer: A. S. Cochrane.

7.0: "Big Ben" and announcements. 7.2: Official weather forecast; rainfall; river reports; temperatures; astronomical memorandum. 7.7: "Sydney Morning Herald" summary. 7.12: Shipping intelligence; mail services. 7.15: Studio music. 7.25: Investment market; mining sharemarkets; metal quotations; wool sales; breadstuffs markets; Inter-State markets; produce markets. 7.40: Studio music. 8.0: "Big Ben." Close.

MORNING SESSION.

Announcer: A. S. Cochrane.

10.0: "Big Ben" and announcements. 10.3: Pianoforte reproduction. 10.10: "Sydney Morning Herald" news service. 10.25: Studio music. 10.30: The 2FC Racing Commissioner; late sporting news. 10.45: A talk on "Home Cooking and Recipes," by Miss Ruth Furst. 11.0: "Big Ben"; A.P.A. and Reuter's cable services. 11.5: Close down.

MIDDAY SESSION.

Announcer: A. S. Cochrane.

12.0: "Big Ben" and announcements. 12.2: Stock Exchange, first call. 12.3: Official weather forecast; rainfall. 12.5: Summary of news, "Sydney Morning Herald." 12.10: Rugby wireless news. 12.13: A reading. 12.30: Studio music. 1.0: "Big Ben"; weather intelligence. 1.3: "Evening News" midday news service; Producers' Distributing Society's market report. 1.20: From the Aeolian Hall, Luncheon-hour Chamber Music, rendered by the Sverjensky Quartet. 1.45: Stock Exchange, second call. 1.47: Studio music. 2.0: "Big Ben." Close.

AFTERNOON SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

2.30: Programme announcements. 2.32: The Book Lovers' Corner. 3.0: "Big Ben"; pianoforte reproduction. 3.15: A talk on "Empire Shipping Week." 3.25: Dorothy Charleston, contralto—(a) "Salaam" (Lane). (b) "Inter Nos" (MacFayden). 3.32: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams. 3.42: From the Studio—A musical item. 3.45: A reading. 4.10: Gladys Seward, pianist. 4.20: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams. 4.30: Dorothy Charleston, contralto—(a) "Sapphic Ode" (Brahms). (b) "The Forge" (Brahms). 4.37: Studio music. 4.45: Stock Exchange, third call. 4.47: Popular items. 5.0: "Big Ben." Close.

EARLY EVENING SESSION.

Announcer: A. S. Cochrane.

5.40: The chimes of 2FC. 5.45: The children's session, conducted by the "Hello Mau" letters and stories; music and entertainment by the Juvenile Orchestra. 6.30: Dalgety's market reports (wool, wheat, and stock). 6.40: Fruit and vegetable markets. 6.43: Stock Exchange information. 6.48: Weather and shipping news. 6.50: Rugby wireless news. 6.55: Late sporting news. 7.0: "Big Ben"; late news service. 7.10: The 2FC Dinner Quartette, conducted by Horace Keats—(a) "When Beauty Commands" (Lehar). (b) "Come to the Dance" (Barbrolini). (c) "Gavotte Moderne" (Severne). (d) "Der Rosenkavalier" (Strauss). (e) "The Herd Girl's Dream" (Lubitsky). (f) "Glad Rag Doll" (Ager).

EVENING SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

7.40: Popular music. 7.45: Programme announcements. 7.48: A record recital. 7.8: "Big Ben." Studio production of "Peter Pan" under the direction of Gertrude Boswell. Musical numbers by the 2FC Orchestra, under the direction of Horace Keats. 10.0: To-morrow's programme. 10.0: National Anthem. Close.

2BL

MORNING SESSION.

Announcer: A. C. Stevens.

8.0: G.P.O. chimes. Weather reports, metropolitan and State. 8.3: Studio music. 8.30: G.P.O. chimes; news and information service



Horace Keats, who will supervise the musical numbers in the studio presentation of "Peter Pan" at 2FC to-night.

from the "Daily Telegraph Pictorial." 9.0: G.P.O. chimes; studio music. 9.30: Half an hour with silent friends. 10.0: G.P.O. chimes. Close.

MIDDAY SESSION.

Announcer: A. C. Stevens.

11.0: G.P.O. chimes. 2BL Women's Sports Association session, conducted by Miss Gwen Varley. 11.30: Advertising hints. 11.40: Women's session, conducted by Mrs. Cranfield. 12.0: G.P.O. chimes; special ocean forecast and weather report. 12.3: Studio music. 12.30: Shipping and mails. 12.35: Market reports. 12.48: "Sun" midday news service. 1.0: Studio music. 1.30: Talk to children, and special entertainment for children in hospital. 2.0: G.P.O. chimes. Close. Note.—Race results will be broadcast by arrangement with "Sun" Newspapers.

AFTERNOON SESSION.

Announcer: A. C. Stevens.

Accompanist: Kathleen Roe.

3.45: G.P.O. chimes. The Melody Trio, instrumentalists. 4.0: Thelma Houston, contralto. 4.7: Christopher Faulkner, cornet solos—(a) "Besses of the Barn" (Clement). (b) "The Challenge" (Round). 4.14: The Melody Trio, instrumentalists. 4.24: "Sun" news service. 4.30: Thelma Houston, contralto. 4.37: The Melody Trio, instrumentalists. 4.47: "Sun" news service. 4.52: Christopher Faulkner, cornet solos—(a) "Off in the Stilly Night" (Wright). (b) "The Conquering Hero" (Hentmann). 5.0: G.P.O. chimes. The Melody Trio, instrumentalists. 5.15: Studio music. 5.35: Racing resume. 5.37: Features of the evening's programme.

EARLY EVENING SESSION.

Announcer: Basil Kirke.

5.40: Children's session, conducted by Uncle Bas; music and entertainment; letters and stories. 6.30: "Sun" news and late sporting. 6.40: 2BL Dinner Quartette—(a) "Wild Rose of Santa Fe" (Stolz). (b) "Mavourneen" (Noble). (c) "Flower of the Desert" (Lohr). (d) "Cairo" (Fletcher). (e) "First Love" (Lehar). (f) "A Dream Garden" (Phillips). 7.7: Australian Mercantile Land and Finance Co.'s report; weather report and forecast, by courtesy of Government Meteorologist; Producers' Distributing Society's Fruit and Vegetable market report; grain and fodder report ("Sun"); dairy produce report ("Sun"). 7.25: Mr. Pim and Miss Pam in advertising talks, handy hints, and nonsense. 7.53: An address. 7.55: Programme and other announcements.

EVENING SESSION.

Announcer: Basil Kirke.

Accompanist: G. Vern Barnett.

8.0: G.P.O. chimes. Camille Alder and Alfred Wilmore, vocal duets—(a) "A Night in Venice" (Lucaconti). (b) "Maying" (Smith).

8.20: Vernon Sellars, entertainer. 8.32: Will and Barbara James, instrumental and vocal—(a) "Song of India" (Dvorak). (b) "Poor Little Me." (c) "William Tell" (Rossini). 8.42: C. N. Baeyertz— "Great Writers I Have Met"—"O. Henry." 8.57: Weather report. 8.58: Camille Alder and Alfred Wilmore, vocal duets—(a) "Nadeshda"—"Dear Love of Mine" (Goring Thomas). (b) "Weep Ye No More" (Waddington Smith). 9.18: Will and Barbara James, instrumental and vocal—(a) "Peter Glink" (Grieg). (b) "Church Service" (James). (c) "Sonny Boy" (Joison). 9.28: Vernon Sellars, entertainer. 9.40: Barbara James. 9.47: Romano's Dance Orchestra, conducted by Bennie Abrahams. 10.0: G.P.O. chimes. From the Studio: G. J. Hill will speak on the "Idiosyncrasies of the Motor Car." 10.15: Barbara James. 10.22: Late "Sun" news service. 10.28: Late weather report. 10.30: Romano's Dance Orchestra, conducted by Bennie Abrahams. 10.57: From the Studio—To-morrow's programme. 10.59: Romano's Dance Orchestra, conducted by Bennie Abrahams. 11.30: National Anthem. Close down.

2GB

10.0: Music. 10.10: Happiness talk by A. E. Bennett. 10.20: Music. 10.30: Women's session, by Miss Helen J. Beeging. 11.30: Close down. 2.0: Music. 2.5: Women's radio service, by Mrs. Dorothy Jordan. 2.50: Music. 3.15: Close down. 5.30: Children's session, by Uncle George. 7.0: Music. 8.0: Miss Elsie Condon, contralto. 8.7: Miss Mollie Jones, pianist. 8.15: Mr. Austin Punch, baritone. 8.22: Instrumental music. 8.30: Humorous interlude by Mr. Jack Win and Mr. Heath Burdock. 8.35: Miss Gladys Vercoe, soprano. 8.45: Address. 9.0: Weather report. 9.3: Instrumental music. 9.10: Miss Elsie Condon, contralto. 9.20: Miss Mollie Jones, pianist. 9.30: Humorous interlude, by Mr. Jack Win and Mr. Heath Burdock. 9.35: Mr. Austin Punch, baritone. 9.45: Instrumental music. 9.55: Miss Marjorie Cole, soprano. 10.5: Dance music. 10.30: Close down.

2UW

MIDDAY SESSION.

12.30: Request numbers. 1.0: G.P.O. clock and chimes; music. 1.15: Talk on "Homecraft," by Pandora. 1.40: Music and request numbers. 2.30: Close down. 4.30: Musical programme.

EVENING SESSION.

5.30: Children's Hour, conducted by Uncle Jack. 6.30: Close down. 7.0: G.P.O. clock and chimes; request numbers. 7.45: Radio talk, hints and advice, by Mr. E. Homfray. 8.0: Music and request numbers. 9.0: G.P.O. clock and chimes; comments on foreign af-

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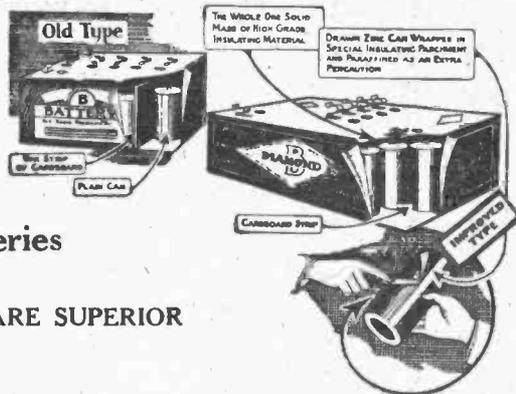
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Interstate Programmes, Monday, May 13

3LO

EARLY MORNING SESSION.

7.15 to 8.15: See Friday.

MORNING SESSION.

11.0: To-day's Radio Recipe—Veal croquettes. 11.5: Olga Parker will speak on—"Stories to Tell the Children." "The Little Blue Man." Musical Interlude. 11.20: Miss I. V. Crawford will speak on—"Practical Psychology." 11.45: Under the auspices of the Boy Scouts' Association, E. V. Neill will speak on—"Scouting."

MIDDAY NEWS SESSION.

12.0: Melbourne Observatory time signal. 12.1: British Official Wireless news from Rugby. Reuter's and the Australian Press Association cables. "Argus" news service. 12.15: Newmarket stock sales; entries for the market for Tuesday. 12.20: Wednesday and Thursday, by the Associated Stock and Station Agents, Bourke Street, Melbourne. 12.20: Community singing, transmitted from the King's Theatre, Russell Street, Melbourne; conductor, G. J. Mackay. Etn. Hall's Radio Raveliers, with Hugh Huxham; Jack Stocks, "The Woman Hair," by permission Twon Theatres, Ltd., and K. A. Hawaiian instrumentalists. 12.43: Stock Exchange information. 11.0: Community singing resumed. 1.45: Meteorological information; weather forecast for Victoria, New South Wales, South Australia, and Tasmania; ocean forecasts; river reports; rainfall. 2.0: Close down.

AFTERNOON SESSION.

A Classical Concert. 2.15: The Strad Trio (Cecil Parkes, violin; Frank Johnstone, 'cello; Myra Montague, piano). 2.43: Clelia Genoni McNeill, soprano. 2.40: Cecil Parkes, violin. 2.53: Clelia Genoni McNeill, soprano. 3.0: The Strad Trio. 3.50: 3LO has pleasure in presenting Dawn Assheton, England's premier coloratura soprano and Lazzio Schwartz, eminent Hungarian violinist-composer. 4.0: The Station Orchestra. 4.12: Bert Sutcliffe, baritone. 4.19: The Station Orchestra. 4.21: Dorothy Stephen will interpolate a few modern numbers. 4.37: The Station Orchestra. 4.40: Bert Sutcliffe. 4.47: The Station Orchestra. 4.55: News service; Stock Exchange information. 5.5: Close down.

CHILDREN'S HOUR.

6.0: Answers to letters and birthday greetings by "Billy Bunny." 6.30: William C. Groves will tell the children some more about "The Peter Pan of the Pacific." 6.45: "Billy Bunny" has some more stories for the children.

EVENING SESSION.

7.5: Stock Exchange information. 7.15: Market reports. 7.30: News session. 7.43: Birthday greetings. 7.45: Out of the Past. 7.48: Under the auspices of the Department of Agriculture, Mr. R. J. de C. Talbot, Veterinary Officer, will speak on—"Foot-rot in Sheep." 8.0: A Maker of History.

NIGHT SESSION.

Announcer: Renn Millar. Accompanist: Agnes Fortune. 8.1: Programme announcements. 8.2: Studio presentation of "Gipsy Love," under the direction of William G. James; music by Franz Lehár—Joni (a Gipsy musician) Dr. W. Bossene Andor (an inn keeper) A. Bossene Jonel (betrotted to Ilona) John D. Sullivan Kajetan (a shy young man) Sydney Stubbs Dmistrano (Kajetan's father) Ernest Inch Rudolph, Rollo, Richard, attendants to Lady Babby. Dragotin (a Rumanian noble) A. Chapman Ilona (Dragotin's daughter) Mile Sava Julesa (Ilona's nurse) Ivy Carlisle Jolan (Dragotin's niece) Zorka (a Gipsy girl) Maritscka (Andor's daughter) Merle Griffin Rumanian Guests, Gipsies, Musicians, Officers, etc. 8.3: Final appearance of Ivan Berzinsky, 'cellist (of the Imperial Russian Trio)—"Andante" (Haydn). "Allegretto" (Beethoven). "Cavotte" (Lully). "Hungarian Rhapsodie" (Popper). "Favillon" (Foster).

9.22: 3LO introduces to Australian audiences Dawn Assheton, coloratura soprano, and Lazzio Schwartz, violin, in interpretations of Folk and Character Songs, for a number of unique vocal and instrumental music. 10.2: News service. Meteorological information. British Official Wireless news from Rugby. Announcements. 10.12: First appearance of the Jedral Trio (Alva Hattenbach, violin; Edna Hattenbach, 'cello; John Simons, piano)—"The Trio" "Trio in D Minor." Moto allegro ed argitato (Mendelssohn). John Simons, piano, "Humoreske" (Rachmaninoff). The Trio: (a) "Tango in D" (Albeniz). (b) "La Ginkana" (Glinka). (c) "The Hosary" (Nevin). (d) "Valse" (Tschonakowsky). 10.40: Jean Gibson, soprano—"The Daily Question" (Reimund). "Song of Florian" (Godard). Musical Monologue—"His First Love Trousers." 10.50: The Trio: "Next to Me I Like Me Next to You" (Bito). "Anywhere is Heaven" (Brady). "Down Where the Sun Goes Down" (Jones). "Can You Blame Me" (Goodwin). "I Want to be Alone with Mary Brown" (Leslie). "Ya Comin' Up To-night, Hub?" (Lewis).

"Forty-seven Ginger Headed Sailors" (Barony). "Tension" (Bea). "A Singalong, a Singalong, and You" (Dempey). "Back in Your Own Backyard" (Jolson). Selected. 11.30: God Save the King.

3AR

MORNING SESSION.

Announcer: John Stuart.—10.0 to 10.55: See Friday.

MORNING MUSICAL SESSION.

11.0: The Jedral Trio—Alva Hattenbach, violin; Edna Hattenbach, 'cello; and John Simons, piano. 12.20: British official wireless news; announcements. 12.30: Close down.

AFTERNOON SESSION.

Announcer: John Stuart.—3.0: Ballads. 3.10: The Strad Trio. 3.27: Ballads. 3.37: Cecil Parkes and Myra Montague, violin and piano. 3.53: Ballads. 4.10: The Strad Trio. 4.20: Ballads. 4.30: Close down.

EVENING SESSION.

6.0: A few fox trots. 7.0: Vocal. 7.20: News service; announcements. 7.30: Minstrelsy.

NIGHT SESSION.

Accompanist: Reg. Brown. 8.0: E. O. H. Taylor will speak on—"School Life and School Sport." 8.10: Under the auspices of the League of Nations Association Sir James Barret will speak on—"The Empire Marketing Board: a study in economic co-operation on an international scale." 8.30: All. Firman will speak on—"Books of Yesterday, To-day, and To-morrow." 8.40: The Radio Revelers—"Toy Town Artillery" (Carlton). "Promise Me" (Van Couth). "Ready for the River" (Moret). 8.49: The "Kaulas," Hawaiian instrumentalists—"Olatau." "Staccato Waltz." 8.52: The Radio Revelers—"My Story of the Fall" (Plantadosi). "Dawning" (Silver). "What'll You Do" (Cohn). 9.1: Dorothy Stephen, entertainer—"Entertaining You." 9.4: The Radio Revelers—"Do You?" (Plantadosi). "Pa's Old Hat" (Guy). 9.13: Jack Stocks, the Woman Hair, in "My Latest Grouch." 9.16: The Radio Revelers—"I Fell Head over Heels in Love" (Thayer). "Under the Burma Moon" (Davis). "Sunny Boy" (Brown). 9.25: The Kaulas, Hawaiian instrumentalists—"Hawaiian Sunset." "Honolulu Hula Girl." 9.28: The Radio Revelers—"Bally of my Dreams" (Kernell). "You're a Real Sweetheart" (Friend). "Tokio" (Conder). 9.37: Dorothy Stephen, entertainer—"Securing the Smiles." 9.40: The Radio Revelers—"When the Cot, Cot, Cotton Grows" (Kilren). "Cinnamon Cake" (Berhard). "My Flureto" (Kimbrogh). 9.49: Jack Stocks, the Woman Hair—"Another Hymn of Hate." 9.52: The Radio Revelers—"Avalon Town" (Brown). "Shake that Thing" (Jackson). "Glad Rag Doll" (Ager). 10.1: The Kaulas, Hawaiian entertainers—"Aloha." "Mahina." 10.4: The Radio Revelers—"You are a Songster" (Ash). "Honey-moon Waltz" (Renault). "There Ought to be a Law against That" (Friend). 10.13: Dorothy Stephen, entertainer—"Smiles from Smiles." 10.15: The Radio Revelers—"Selected." 10.20: News service; announcements. God Save the King.

4QG

EARLY MORNING SESSION.

7.43 to 8.30: See Friday.

MORNING SESSION.

Announcer: Rita McAuliffe.—11.0 to 12.0: See Friday.

MID-DAY SESSION.

1.0 p.m. to 2.0 p.m.: See Friday.

AFTERNOON SESSION.

3.0 to 4.30: See Friday.

EARLY EVENING SESSION.

6.0 to 6.30: See Friday.

THE CHILDREN'S HOUR.

6.30: Bedtime stories conducted by "The Sandman." 7.0: News in brief. 7.5: Stock Exchange news, etc.

7.45: Lectureette—"A Talk for Pig Club Members by Mr. E. J. Shelton (Senior Instructor in Pig Raising).

NIGHT SESSION.

8.0: Studio Orchestra—(conductor, A. R. H. Stone). "Operatic Fantasia" (arr. Scholopfer). 8.7: Harry Humphreys—"A recital of poems by Jack Mathew (including blind poets), including—"The Headless Horseman." "That Day at Boiling Downs." "Which Star is Mother." 8.25: The Kao Maori Duo—Hawaiian instrumentalists. 8.30: W. Crisp Tenant—"The Lamp of Night" (Gould). "Mattinata" (Tosti). 8.32: Latest election figures. 8.42: Studio Orchestra—"Valse." "Foam Fountain" (Beethoven). 8.50: "A thought for to-night (Will E. Lester)—"Follow Me." 9.0: Jill Manners (soprano)—"Pale Moon" (Logan). 9.20: Metropolitan weather forecast. 9.1: Harry Collins and the orchestra—"Ten minutes' entertainment." 9.11: The Kao Maori Duo—Hawaiian instrumentalists. 9.16: Tom Muller (scloutinist)—Selected. 9.20: Mabel Malouf (soprano)—"Blackbird and Rose" (Clarke). 9.20: Studio Orchestra—"Entr'acte." "Water Sprites" (Knight-Logan). 9.32: A recital of selected electrically reproduced records. 10.0: Weather, news. Close down.

5CL

MORNING SESSION.

Announcer: C. J. O'Connor. 11.0: Chimes. 11. Morning melodies. 1.15: Kitchen craft and music. 1.45: Miss Laurie McLeod, of Weber, Strathmore and Rice, will speak on—"Physical Culture for Women." 12.1: Midday music. 12.15: General news service. 12.52: Railway information; Stock Exchange information. 1.15: Lunch-hour news. 1.59: Meteorological information. 2.0: Close down.

AFTERNOON SESSION.

Accompanist: Jean Finlay. Announcer: C. J. O'Connor. 3.0: General programme, including: "The Quartette; Audrey Sanderson, soprano; Cecil Goldsworthy, 'cellist; Bert Woolley, baritone; Jean Sinclair, contralto; Miss Wilshire, whistler; Stanley Tovey, tenor; Lizzie Foglia, violoncello." 5.0: Close down.

EVENING SESSION.

Announcer: J. L. Norris. 6.0: Chimes. 6.1: Birthday greetings; correspondence; songs and stories by "Auntie Peggy." 6.30: An interlude of dinner music. 7.1: Stock Exchange information. 7.6: General market reports. 7.10: Talk by an officer of the South Australian Agricultural Department. 7.30: The "K. Twinkler Boys" Club.

NIGHT SESSION.

Announcer: J. L. Norris. 8.0: Chimes. 8.1: Railways Band. Conductor, Mr. J. Radcliffe. "Cure Zampa" (Berlioz). 8.10: Mrs. Keith Soprano—"Christina" (L. Molloy). 8.17: Guido Giachino, "The Ruisseau" (Gourdon). "Air on G String" (Bach). 8.23: Victor Innes-Morecam, baritone (holder of Winslow-Hall singing scholarship)—"The Frog Dance" (Katie Moss). "Love Sends a Little Girl Roses" (Openshaw). 8.30: S.A. Railways Band-selection, "Semiramide" (Rossini). 8.40: A change entitled—"The House Across the Way" (Chambers). Kitty Wheston, a suburbanite, Bert Alford, a Crothers, the burglar, Frank Johnstone, some A room on the second floor in the suburban town of Mrs. Nellie Smith. At rise of curtain the stage is only dimly lighted; there is a door to the right and one on the left; a window in the center. The room is well furnished; there is also a telephone. Enters from Wheston, carrying a lamp and candle, groping her way until she strikes her head against a rocking chair. 8.52: S.A. Railways Band-waltz, "Fascination" (Rimmer), fox-trot, "You're a Real Sweetheart" (Coke). 9.1: Meteorological information, including Semaphores idea. 9.2: Overseas grain report. 9.3: The Cotton Pickers, instrumentalists—"Moonlit Waters" (Brown). "Honolulu Mo" (Laurence). 9.8: Una Andrew, contralto—"Sink and Swim" (George Del Eleys). 9.11: Meteorological information. 9.16: S.A. Railways Band-selection, "General Sullivan's Opera"; march, "Brilliant" (Rime). 9.18: Victor Innes-Morecam, baritone (holder of Winslow-Hall singing scholarship)—"The Blue Dragoon" (Kennedy Russell). "The Trumpeter" (J. Arlie Cox). 9.35: Guido Giachino, 'cellist—"Melody in F" (Rubinstein). "Adagio" (Beethoven). 8.41: Mrs. Etn. Stewart, soprano—"Love Me, Love Me Not" (Cody Re. German). "Sing Birds on the Wing" (Cody Nutting). 9.48: S.A. Railways Band—tombola solo, "The Tyrolene" (Santon). 9.54: Una Andrew, contralto—"Sing, Joyous Bird" (Montague Phillip). "The Arrow and the Song" (Baker). 10.1: Cotton Pickers, instrumentalists—"Aloha." "Rose Mary" (Primm). 10.7: S.A. Railways Band-waltz, "The Blue Danube" (Strauss); march, "B.B. and C.C. (Bert). 10.15: General news service; weather; wireless news; meteorological information. 10.20: Modern dance records. 11.0: Close down.

6WF

12.30: Tune in. 12.35: Markets, news, etc. 1.0: Time signal. 1.1: Weather bulletin supplied by the Meteorological Bureau of West Australia. 1.3: Panatropes hour, relayed from Messrs. Kinggrove's, Ltd., Lyric House, Perth. 2.0: Close down. 3.30: Tune in. 3.35: Musical programme relayed from the Carlton Cafe; vocal items from the studio. 4.30: Close down. 6.45: Tune in. 8.48: Bedtime stories by Uncle Duffy. 7.5: Light music by the Perth Piano Trio. 7.30: Commercial and general information. 7.45: Talk by Lieut.-Colonel Le Souef, director Zoological Gardens, South Perth. 8.0: Time signals. 8.15: First weather bulletin. 8.3: Vocal and instrumental artists from the studio; dance music relayed from the Y.A.L. Ballroom, Ron Moyle and his orchestra. 8.50: Late news items by courtesy of the "Daily News" Newspaper Co., Ltd., station announcements. 9: Ships within range announcement, late weather bulletin. 9.5: Programme continued from the studio and Y.A.L. Ballroom. 10.30: Close down. 104.5 Metre Transmission.—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres, commencing at 6.45 p.m.

7ZL

MORNING SESSION.
11.30: to 1.30: See Friday.

AFTERNOON SESSION.
1.0: Chimes. 1.45: Weather information. 3.15: A Popular Programme by The Discus Ensemble, and Paul Whittion and his Orchestra; Guitar Novelty Trio; Jeanne Gerrard, piano accordion; Jack Corry, organ solo; Pianola. 4.15: "Aunt Edna" will speak on—"Knitted Underwear." 4.30: Close down.

EARLY EVENING SESSION.
6.15: Selections. 6.30: Lloyd Broady will play the piano for the wee folk—"Evensong" (Easthope). "Les Museandins" (Wachs). 7.0: Answers to letters and birthday greetings by "Uncle David." 7.5: B. R. Reynolds will give a talk on—"Tasmanian Birds." 7.15: News session.

EVENING SESSION.
7.30: Under the auspices of the Tasmanian University, W. H. Schneider will speak on—"The Future of Australia's Fuel Supply." 7.45: Oeo. Collis, Tasmania's champion wrestler, will speak on—"Physical Culture." 8.0: G.P.O. Clock chimes the hour. 8.15: A Concert Programme arranged by Madame Helen George, and Arthur Lowe's Male Singers—"Male Singers, "Drink to Me Only" (Anon). 8.15: Madame Helen George, piano solo—"March of the Troils" (Greig). 8.23: Raymond Newell, baritone—"Leann" (Wright), "Gipsy Dan" (Thorpe). 8.30: Male Singers—"The Long Day Closes" (Sullivan). 8.33: Evelyn Rickman, tenor—"Roadway" (Loch). 8.36: Belle Catter, soprano—"Mighty Lak' a Rose" (Nevin), "Bonnie Sweet Beattie" (Gilbert). 8.43: Madame Helen George, piano solo—"Autumn" (Chaminade). 8.48: Male Singers—"The Bull Frog" (Pitt). 8.51: Keith Lunn, tenor—"One Alone" (Romberg). 8.54: Kirby Lunn, contralto—"Love is a Dream" (Pitt). 9.1: Madame Helen George, piano solo—"Boat Song" (B. Goddard). 9.6: Peter Dawson, bass—"Land of Delight" (Sanderson), "Up from Somerset" (Sanderson). 9.13: Male Singers—"Calm is the Sea" (Pfeil). 9.16: International Concert Orchestra—"The Skaters" (Waldteufel), "Estudantina" (Waldteufel). 9.23: Les Keech, humorous song—"On the Pom Parade" (Lee). 9.26: Madame Helen George, piano solo—"Scherzo in B Minor" (Chopin). 9.31: Sydney Colham, tenor—"Lolita" (Pecci), "Nirvana" (Adam). 9.38: Male Singers—"Jerusalem Morn" (O'Hara). 9.41: Missahe, violin solo—"Hungarian Dance" No. 7.—A Minor (Brahms). 9.45: News session. 10.0: Close down. 10.1: Close down.

Radio Education

"ONE thing I've noticed," said the farmer; "since radio came in, the talk in the bars and round the fires of an evening is on vastly different subjects from what they used to talk about." We have no doubt of it. "Do you like sopranos?" queried the stout barmaid of the tall stranger. "No," answered the stranger, carelessly. "Do you like contraltos?" again queried the barmaid. "No," answered the stranger, nonchalantly. "Do you like brass bands, jazz bands, lecturers, singers, comedians, or sketch artists?" queried the barmaid, resignedly. "No," answered the stranger, with a weary wave of his hand. "Then what on earth DO you like?" queried the barmaid, exasperatingly. "Beer," replied the stranger, with a little more enthusiasm. "Fill it up again, please, Miss. You see, I have a radio set at home. That's why—" "That's why you display such a critical disposition," interrupted the barmaid saucily. "No," answered the stranger; "that's why I'm here." "Good night, Miss," said the stranger. "Good night, Mr.—er—er—" replied the barmaid.

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Local Programmes, Tuesday, May 14

2FC

EARLY MORNING SESSION.

Announcer: A. S. Cochrane.

7.0: "Big Ben" and announcements. 7.2: Official weather forecast; rainfall; river reports; temperatures; astronomical memoranda. 7.7: "Sydney Morning Herald" summary. 7.12: Shipping intelligence; mail services. 7.15: Studio music. 7.25: Investment market; mining sharemarkets; metal quotations; wool sales; breadstuffs markets; inter-State markets; produce markets. 7.40: Studio music. 8.0: "Big Ben." Close down.

MORNING SESSION.

Announcer: A. S. Cochrane.

10.0: "Big Ben" and announcements. 10.2: Pianoforte reproduction. 10.10: "Sydney Morning Herald" news service. 10.25: Studio music. 10.30: Last-minute sporting information, by the 2FC Racing Commissioner. 10.40: Studio music. 10.50: Pianoforte reproduction. 11.0: "Big Ben"; A.P.A. and Reuter's cable services. 11.5: Close down.

MIDDAY SESSION.

Announcer: A. S. Cochrane.

Note.—Race results from Gosford will be transmitted as received. 12.0: "Big Ben" and announcements. 12.2: Stock Exchange, first call. 12.3: Official weather forecast; rainfall. 12.5: Summary of news, "Sydney Morning Herald." 12.10: Rugby wireless news. 12.13: A reading. 12.30: Studio music. 1.0: "Big Ben"; weather intelligence. 1.3: "Evening News" midday news service. Producers' Distributing Society's market report. 1.20: Studio music. 1.28: Stock Exchange, second call. 1.30: Studio music. 2.0: "Big Ben." Close.

AFTERNOON SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

2.30: Programme announcements. 2.32: The Book Lovers' Corner. 3.0: "Big Ben"; The Popular Trio. 3.15: Dorothy Ryder, popular items. 3.30: Nancy Rouse, violinist—"Romance" (Wieniawski). 3.37: The Popular Trio. 3.45: A reading. 4.10: Nancy Rouse, violinist—(a) "Serenata" (Tosellini), (b) "Minuet" (Beethoven). 4.17: Dorothy Ryder, popular items. 4.24: The Popular Trio. 4.45: Stock Exchange, third call. 4.47: The Popular Trio. 5.0: "Big Ben." Close.

EARLY EVENING SESSION.

Announcer: A. S. Cochrane.

5.40: The chimes of 2FC. 5.45: The children's session, conducted by the "Hello Man," assisted by Aunt Elly; letters and stories; music and entertainment. 6.30: Dalgety's market reports, wool, wheat, and stock. 6.40: Fruit and vegetable markets. 6.43: Stock Exchange information. 6.48: Weather and shipping news. 6.50: Rugby wireless news. 6.55: Late sporting news. 7.0: "Big Ben"; late news service. 7.10: The 2FC Dinner Quartette, conducted by Horace Keats—(a) "You're In My Heart" (Nicholls), (b) "Beloved" (Sanders), (c) "Minuet" (Boccherini), (d) "Miss Hook of Holland" (Rubens), (e) "Siesta Love Song" (Masman), (f) "Bird Songs at Eventide" (Coates), (g) "When You Said Goodbye" (Donaldson).

EVENING SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

7.40: Popular music. 7.45: Programme announcements. 7.45: A record recital. 8.0: "Big Ben"; N.S.W. Tramway Band, under the conductorship of J. J. Herron.

8.20: Helena Stewart, soprano—

(a) "The Little Shepherd's Song"

(Watts).

(b) "Barcarole" (Watts).

(c) "Lullaby" (Brahms).

8.27: Brunton Gibb and Dorothy Vautier, a sketch—

"Pygmalion and Galatea" (Gilbert).

8.40: N.S.W. Tramway Band, under the

conductorship of J. J. Herron.

9.0: "Big Ben"; weather report.

9.1: Sydney Calland, baritone.

9.8: Vincent Aspey, violinist—

(a) "Canzonetta" (Tschaikowsky).

(b) "Humoresque" (Tschaikowsky).

(c) "From the Land of Sky Blue Water" (Cadman).

9.16: N.S.W. Tramway Band, under the

conductorship of J. J. Herron.

9.31: Helena Stewart, soprano—

(a) "Charity" (Hageman).

(b) "If There Were Dreams to Sell" (Ireland).

9.38: Brunton Gibb and Dorothea Vautier—

"Quarrel Scene, from "School for Scandal" (Sheridan).

9.50: Sydney Calland, baritone.

9.57: Vincent Aspey, violinist—

(a) "First Movement of Concerto" (Vi-

valdi).

(b) "Orientale" (D'Ambrosio).

10.4: Studio Dance Band, conducted by Cec

Morrison.

10.14: Nea Hallett, in popular items.

10.21: Studio Dance Band, conducted by

Cec Morrison.

10.31: Late weather.

10.39: Nea Hallett, popular vocalist.

10.39: Studio Dance Band, conducted by

Cec Morrison.

10.57: To-morrow's programme.

10.55: Studio Dance Band, conducted by

Cec Morrison.

11.30: National Anthem. Close.

EARLY EVENING SESSION.

Announcer: Basil Kirke.

5.40: Children's session, conducted by Uncle Bas. 6.0: Mr. Norman speaks to the bigger boys. 6.45: "Sun" news and late sporting. 6.55: 2BL Dinner Quartette—(a) "Gipsy" (Signorelli), (b) "Sometimes" (Elizalde), (c) "Mignon" (Thomas). 7.7: Australian Mercantile Land and Finance Co's report; weather report and forecast, by courtesy of Government Meteorologist; Producers' Distributing Society's fruit and vegetable market report; grain and fodder report ("Sun"); dairy produce report ("Sun"). 7.25: Mr. Plan and Miss Pam in advertising talks, handy hints, and nonsense. 7.53: An Ad special. 7.55: Programme and other announcements.

EVENING SESSION.

Announcer: Basil Kirke.

Accompanist: G. Vern Barnett.

8.0: G.P.O. chimes. The Conservatorium

String Quartet—

Gerald Walenn,

Lloyd Davies,

Alfred Hill,

Gladstone Bell.

8.15: Millie Hughes, soprano.

8.22: The Conservatorium String Quartet.

8.27: Will Clarke, basso.

8.44: The Conservatorium String Quartet.

9.0: G.P.O. chimes; weather report. S.H.

Bowden will give a talk.

9.16: Millie Hughes, soprano.

9.23: The Conservatorium String Quartet.

9.40: Will Clarke, basso.

9.47: Late "Sun" news service.

10.5: Celebrity record recital.

10.28: To-morrow's programme and late

weather report.

10.30: National Anthem. Close.

2GB

10.0: Music. 10.10: Happiness talk by A. E. Bennett. 10.20: Music. 10.30: Women's session; by Miss Helen J. Beesing. 11.00: Close down. 2.0: Music. 2.5: Women's radio service, by Mrs. Dorothy Jordan. 2.50: Music. 3.15: Close down. 5.30: Children's session by Uncle George. 7.0: Music. 7.30: Talk from the Radio Service Department by Mr. Stan Crittenden. 8.0: Mr. Gregory Valentine, violinist. 8.8: Miss Thelma Lansdowne, contralto. 8.15: Mr. Edward Barry, baritone. 8.22: Instrumental music. 8.30: Humorous interlude by Mr. Jack Win and Mr. Heath Burdock. 8.35: Miss Gladys Verona, soprano. 8.55: Miss Ada Brook, pianiste. 9.0: Weather report. 9.5: Address. 9.15: Mr. Gregory Valentine, violinist. 9.25: Miss Thelma Lansdowne, contralto. 9.35: Humorous interlude by Mr. Jack Win and Mr. Heath Burdock. 9.40: Instrumental music. 9.50: Mr. Edward Barry, baritone. 10.0: Dance music. 10.30: Close down.

2UW

MIDDAY SESSION.

12.30: Music. 1.0: G.P.O. clock and chimes; music. 1.15: Talk on "Homecraft," by Pandora. 1.40: Music and request numbers. 2.30: Close down. 4.30: Musical programme.

EVENING SESSION.

5.30: Children's Hour, conducted by Uncle Jack. 6.30: Close down. 7.0: G.P.O. clock and chimes; music. 9.0: G.P.O. clock and chimes; comments on foreign affairs, by Mr. J. M. Prentice. 9.10: Music and request numbers. 10.30: Close down.

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MORNING SESSION.

Announcer: A. C. C. Stevens.

8.0: G.P.O. chimes; weather reports, metropolitan and State. 8.3: Studio music. 8.30: G.P.O. chimes; news and information service from the "Daily Telegraph Pictorial." 9.0: G.P.O. chimes; studio music. 9.30: Half an hour with silent friends. 10.0: G.P.O. chimes. Close.

MIDDAY SESSION.

Announcer: A. C. C. Stevens.

11.0: G.P.O. chimes; 2BL Women's Sports Association session, conducted by Miss Gwen Varley. 11.30: Advertising hints. 11.40: Talk on "The Work of the St. John Ambulance Association," by Sister Pary. 12.0: G.P.O. chimes; special ocean forecast and weather report. 12.3: Studio music. 12.30: Shipping and mails. 12.35: Market reports. 12.48: "Sun" midday news service. 1.0: Studio music. 1.30: Talk to children, and special entertainment for children in hospital. 2.0: G.P.O. chimes. Close. Note.—Race results from Gosford will be broadcast by arrangement with "Sun" Newspapers, Ltd.

AFTERNOON SESSION.

Announcer: A. C. C. Stevens.

Accompanist: Kathleen Roe.

3.45: G.P.O. chimes. Popular music. 3.50: Romano's Dance Orchestra, conducted by Bennie Abrahams. 4.0: From the Studio—G.P.O. chimes. Robert McKinnon, baritone. 4.7: Frank Buckle will speak on "The Thermionic Valve." 4.22: Romano's Dance Orchestra, conducted by Bennie Abrahams. 4.32: From the Studio—Robert McKinnon, baritone. 4.40: A talk in connection with Empire Shopping Week. 4.50: Romano's Dance Orchestra, conducted by Bennie Abrahams. 5.0: G.P.O. chimes. From the Studio—Pianoforte reproduction. 5.15: Popular music. 5.30: Producers' Distributing Society's poultry report. 5.32: Racing resume. 5.37: Features of the evening's programme.

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Interstate Programmes, Tuesday, May 14

EARLY MORNING SESSION.

7.15 to 8.15: See Friday.

MORNING SESSION.

11.0: To-day's radio recipe—Soup Maigre. 11.25: Miss E. Noble will speak on "Gas Cookery." 11.45: Under the auspices of the Victorian Braille Writers' Association, Miss Minnie Crabb, assistant secretary and Brailleian, will speak on "What the Library Means to the Blind."

MIDDAY SESSION.

12.0: Melbourne Observatory time signal; express train information. 12.1: British official wireless news from Rugby; Reuter's and the Australian Press Association cables. "Argus" news service. 12.18: Newmarket stock sales; official report of the sheep market by the Associated Stock and Station Agents Bourke Street, Melbourne.

MIDDAY MUSIC.

12.20: The Station Orchestra. 12.30: Clelia Genoni McNeill, soprano. 12.35: Stock Exchange: metal prices received this day by the Australian Mines and Metals Association from the London Stock Exchange. 12.42: The Station Orchestra. 12.50: Joseph Holm, tenor. 12.57: Meteorological information; weather forecast for Victoria: South Wales, South Australia, and Tasmania; ocean forecast; river reports; rainfall. 1.7: The Station Orchestra. 1.17: Clelia Genoni McNeill, soprano. 1.22: The Station Orchestra. 1.27: Joseph Holm, tenor. 1.34: The Station Orchestra. 1.45: Close down.

AFTERNOON SESSION.

Announcer: Frank Hatherley. Accompanist: Agnes Fortune. 2.15: The Radio Revelers. 2.24: Dorothy Stephen, entertainer. 2.31: The Radio Revelers. 2.40: Jack Stocks, "The Woman Hater." 2.47: The Radio Revelers. 2.57: "The Kaulais, Hawaiian Instrumentalists." 3.4: The Radio Revelers. 3.14: Mona Nugent, soprano. 3.21: The Radio Revelers. 3.30: Dorothy Stephen, entertainer. 3.37: The Radio Revelers. 3.47: Jack Stocks, "The Woman Hater." 3.54: The Radio Revelers. 4.4: "The Kaulais, Hawaiian Instrumentalists." 4.11: The Radio Revelers. 4.21: Mona Nugent, soprano. 4.28: The Radio Revelers—latest numbers. 4.48: "Herald" news service; Stock Exchange information. 4.55: Close down.

CHILDREN'S HOUR.

6.0: Answers to letters and birthday greetings by "Bobby Bluegum." 6.25: Musical interlude. 6.30: "Little Miss Kookaburra" has another instalment about the "Guice Camp at Heron's Bay."—"The Cart! An Exciting Time!" 6.50: "Bobby Bluegum" in some further adventures with "Ector and Grace."

EVENING SESSION.

7.5: Stock Exchange information. 7.15: Market reports. 7.30: News session. 7.43: Birthday greetings. 7.45: Out of the past. 7.46: Under the auspices of the University of Melbourne Extension Board, F. R. E. Mauidon, B.A., M.Sc., Senior Lecturer in Economics at the University, will speak on "The Study of Public Administration." 8.0: A Maker of History.

NIGHT SESSION.

Announcer: Emma Millar. Accompanist: Agnes Fortune. 8.2: Programme announcements. 8.3: Transmission from the Theatre Royal, Melbourne—first act of "This Year of Grace," by Noel Coward. 9.18: Studio presentation of "Romeo and Juliet"—"The Meistersingers," under the direction of J. Sutton Crow.

PART III.

Romeo John Sullivan.
Juliet Mme. Elsie Davies.
Stephano Stella Dredge.
Capulet Charles Evans.
Mercutio Charles Evans.
Friar Lawrence Alan Eddy.
Paris Alan Eddy.
Gertrude Sybil Shaw.
Tybalt R. Grimshaw.
10.16: "The Kaulais," Hawaiian Instrumentalists—"Waikiki Mermaid" (Cunha Cuvala).
"Maui Girl" (J. Liborino).
10.23: Jack Stocks, "The Woman Hater"—"Mirthful Melancholy."
10.33: News service; meteorological information; British official wireless news from Rugby; Eric Welch's selection of the first day of Bendigo races; announcements.
10.43: "The Kaulais," Spanish and Hawaiian guitars—"Jeannine."
Spanish guitar solo—"Spanish Pandango."
10.51: Ern. Hall's Radio Revelers, with Hugh Eukham—"My Heart Stood Still" (Rodgers).
"Give Your Baby Lots of Lovin'" (Burke).
"When You Know Me" (Baden).
"I'm Sorry, Sally" (Kann).
"My Bunches are Bluebirds Now" (Friend).
"Casablanca" (Evans).
"Oh, Isabella" (Schuster).
"Sweet Forget Me Not" (Lorenzo).
"Pansies" (Nichols).
"You Ought to Hear Olaf Laz" (Baer).
Selected and request items.
11.30: God Save the King.

3AR

10.0 to 10.59: See Friday.

MORNING MUSICAL SESSION.

11.0: His Master's Voice. 11.30: Jedral Trio. 12.20: British Official Wireless news; announcements. 12.30: Close down.

AFTERNOON SESSION.

3.0: Music. 3.30: Laszlo Schwartz, Hungarian Violinist, and Dawn Assheton, coloratura soprano. 4.10: Captain Donald MacLean. 4.25: Seascapes. 4.30: Close down.

EVENING SESSION.

6.0: Tunes. 6.30: The Jedral Trio. 7.10: News service; announcements. 7.20: Melodics.

NIGHT SESSION.

Announcer: John Stuart. Accompanist: Reg. Brown. 8.0: Under the auspices of the Numismatic Society of Victoria—A. S. Kenyon will speak on "The Coins of France and Belgium."

8.15: A. G. Eason will speak on "Postage Stamps." 8.30: Laszlo Schwartz, Hungarian Violinist, and Dawn Assheton, coloratura soprano, in selections from Hungarian, Bohemian, Russian, and Oriental Art and Folk Songs.

9.10: Lindsay Higgins, piano recital—"Song Without Words" (Mendelssohn). "Scherzo in E Minor" (Mendelssohn). "Variations Serioso."

9.30: See other page.
9.30: Second Act of "This Year of Grace." Transmission from the Theatre Royal, Melbourne, by permission of J. C. Williamson Ltd. Book, lyrics, and music by Noel Coward. First appearance in Australia of Madge Aubrey, Molly O'Doherty, Edward Coventry, and Brian Buchel, Frank Fox, Pat and Terry Kendall, Kathinka Storage, and Malsie Gay.

THE LIDO BEACH (Italy).

The Countess Madie Hope
Lady Penchurch Adele Crane
Lady Saltwood Grace Emerson
Lady Verlap Donalds Warne
Sir John Verlap Frank Fox
Sir Frederick Saltwood Brian Brett
The Countess Leonard Bell
Sir Charles Penchurch Edward Coventry
Young Man Charles Hawthorne
Baroness Kurde Robert Helpman
Mr. Clark Jane Douglas
Violet Molly O'Doherty
Ruth Kathinka Storage
Jane Madge Aubrey
Ivy Jane Douglas
"Little Women"—Molly O'Doherty, Kathinka Storage, Madge Aubrey, Jane Douglas.
AN ENGLISH LIDO BEACH.
Announcer Charles Stone
Mr. Freeman Edwin Brett
Mrs. Freeman Madge Aubrey
Alice Donalds Warne
Frankie George Devlin
Official Edward Coventry
Madge Madge Aubrey
Doris Edna Luscombe
Mr. Harris Charles Stone
Mrs. Harris Madie Hope
VI.
George Tom Muller
Mrs. Clark Kathinka Storage
Phyllis Valda Myerson
Mrs. Green Jane Douglas
Daisy Kipshaw Malsie Gay
"Mother's Complaint" Madie Hope, Jane Douglas, Madge Aubrey, Kathinka Storage
"Britannia Rules the Waves" Malsie Gay and company

"WORLD WEARY"

Announcer: Charles Stone
(a) SIR JAMES HERRIE
The Wife Jane Douglas
The Lover Edward Coventry
The Husband Brian Brett
(b) FREDERICK LONSDALE
The Wife Madge Aubrey
The Lover Brian Buchel
The Husband Charles Hawthorne
The Husband Frank Fox
(c) EDGAR WALLACE
The Wife Donalds Warne
The Lover Charles Stone
The Husband Charles Hawthorne
"THE MINISTERING ANGEL"
(By Ronald Jenks).
Doctor Charles Hawthorne
The Patient Robert Helpman
His Wife Madge Aubrey
Nurse Dood Malsie Gay
"DANCE LITTLE LADY"
Singer Edward Coventry
The Little Lady Kathinka Storage
"THE RIVER"
The Manager Charles Stone
Singers Madie Hope, Edward Coventry, Charles Stone, Edwin Brett, Charles Hawthorne
"A STAINED GLASS WINDOW."
Madge Aubrey and Kathinka Storage.
Molly O'Doherty, Brian Buchel, and Ladies of the Ballet.
Miss Malsie Gay will give an impression of a type of Society Entertainment frequently seen by the Singers—SPECIALTY—Sir G. Platt and Terry Kendall.
Finale The Entire Company
The Entire Company will frequently see Dances arranged by Kathinka Storage.
Ballet Mistress for J. C. Williamson Ltd., Minnie Hooper.

10.50: News service. Announcements. Eric Welch's selections for the first day of Bendigo Races to-morrow.
God Save the King.
EARLY MORNING SESSION.
7.43 to 8.30: See Friday.

MORNING SESSION.

11.0 to 12.0: See Friday.

MID-DAY SESSION.

1.0 to 2.0: See Friday.

AFTERNOON SESSION.

3.0 to 4.30: See Friday.

EARLY EVENING SESSION.

(Announcer: H. Wright and H. Humphreys). 6.0: Dinner music. (Mail train running late) Defamation.—by a Barrister-at-law. 6.15: Records. 6.25: Commercial announcements. 6.30: Time stories conducted by "Gartic Bee." News in brief. 7.5: Stock Exchange news, etc. In Standard time signals. 7.45: Lecture: "On Wallyaby," by Mr. J. F. F. Reid (Editor, "New South Wales Agricultural Journal").

NIGHT SESSION.

(Announcer: H. Humphreys).

A Classical Programme by "The Richmond Quartet." 8.0: Jack Ellis (pianist). "Rhapsodie in E Flat" (Brahms). Mrs. W. F. Hamilton (mezzo-soprano) Selected.

Les. "The Song of the Vagabond" (Cunha Cuvala). O'Killie Cloakie ("Cellist")—"Gavotte" (Popper). Mrs. W. F. Hamilton and Les. Little-Vocal duet—Selected.

Jack Ellis (pianist)—"Etude in E" (Chopin). "Nocturne in F Sharp" (Chopin). Les. "Little baritone" ("The Wind on the Heath") (Lohr). O'Killie Cloakie ("Cellist")—"Lido" (Boccherini). Mrs. W. F. Hamilton (mezzo-soprano)—Selected.

Jack Ellis (pianist)—"Scherzo" (Mendelssohn). Mrs. W. F. Hamilton and Les. Little—Vocal Duet—Selected. Accompanist—Jack Ellis.

9.0: Metropolitan weather forecast. 9.1: The Studio Instrumental Quartet—Overture—"Sunshine and Showers" (Parks). 9.4: A Thought for To-night.—(Will H. Lister). 9.6: "Searching for Happiness." (Louie Bay) (Parks)—In popular numbers.

9.15: The Studio Instrumental Quartet—"In a Monastery Garden" (Ketelby). "Lido" (Boccherini). "Little Boy" (Parks). "Where My Caravan" (Lohr).

9.28: Mary McNeill (soprano)—"The Don't Suppose" (Trotter). 9.33: Fred C. Smith—Five minutes at the piano.

9.37: The Anglo Male Quartet—"Hush You Honey, Hush" (Parks). 9.45: The Studio Instrumental Quartet—Group of popular numbers selected.

9.50: The Anglo Male Quartet—"The Home Road" (Deis). "Far, Far Away" (Scott Gatty). 10.0: News; weather; "Queenslander" news for distant listeners. Close down.

4QG

"MORNING SESSION.

Announcer: J. L. Norris.—11.0: Chimes. 11.2: Morning melodies. 11.15: Kitchen Craft and More. 11.30: "The Wallyaby" (Newspaper "Wallyaby Whims.") 12.1: Midday music. 12.52: Railway information; Stock Exchange information; meteorological information. 1.0: Chimes. 1.1: Lunch-hour rest. 1.59: Meteorological information. 2.10: Chimes; close down.

AFTERNOON SESSION.

3.0: Chimes; general programme, including Station Quartette; Rev. G. E. Hale, B.A., will speak on "Developing Personality." Elizabeth Wyl, mezzo-soprano; Angelo Demodena, mandolinist; Syd. Moran, baritone. 4.0: Chimes; Tom O'Dea, comedian. 4.18: Stock Exchange information. 7.5: General market reports. 7.10: Miss Laurie McLeod will speak on "The Art of Dancing." 7.25: Mr. R. C. Bald, P.D. (lecturer in English at the Adelaide University) will speak on "The Wallyaby." 8.0: Close down.

EVENING SESSION.

Announcer: C. J. O'Connor.—8.0: Chimes. 8.1: Birthday greetings, correspondence, songs, and stories by the "Wallyaby." 8.30: An interlude of dance music. 6.50: SCL's sporting service, supplied by "Wallyaby." 7.40: Chimes; "Sing Merry To-day." 7.5: Stock Exchange information. 7.5: General market reports. 7.10: Miss Laurie McLeod will speak on "The Art of Dancing." 7.25: Mr. R. C. Bald, P.D. (lecturer in English at the Adelaide University) will speak on "The Wallyaby." 8.0: Close down.

NIGHT SESSION.

Announcer: Jean Finlay. Announcer: C. J. O'Connor.—8.0: Chimes. 8.1: Red Hot Peppers Dance Band (Conductor, Mr. Tom Durling). "Dream Home" (Cowan). "Jeannine" (Shikret). "Camille" (Hagan). 8.10: Les. Wallyaby soprano—"Sing Merry To-day" (M. F. Phillips). "Butterfly Wings" (M. F. Phillips). 8.17: Tom O'Dea, comedian. 8.23: Red Hot Peppers Dance Band—"My Ohio Home" (Donaldson). "Merry To-day" (Doom). "O. Lovely Right" (Reid). "The Wallyaby of Minnekonka" (M. F. Phillips). O'Dea, comedian, will entertain you again. 8.40: Red Hot Peppers Dance Band—"Side by Side" (Wood). "Cock-a-Doodle" (Tobias). 8.45: Linda Wald, soprano. "Sing Merry To-day" (M. F. Phillips). "Hark to the Mandolin" (Parks). 8.53: Red Hot Peppers Dance Band—"Stamper" (Anderson), "Glad Rag Doll" (Ager). 9.0: Chimes. 11.2: Morning melodies. 11.15: Kitchen Craft and More. 11.30: "The Wallyaby" (Newspaper "Wallyaby Whims.") 12.1: Midday music. 12.52: Railway information; Stock Exchange information; meteorological information. 1.0: Chimes. 1.1: Lunch-hour rest. 1.59: Meteorological information. 2.10: Chimes; close down.

Meteorological information, including Semaphore sides. 9.2: Overseas grain report. 9.3: From the Theatre Royal, Melbourne, the second part of Charles B. Cochran's 1928 revue, "This Year of Grace" (presented for the first time in Australia). See Melbourne programme for details. 10.30: News session. 10.45: Modern dance records. 11.0: Close down.

6WF

12.30: Tune in. 12.36: Markets, news, etc. 1.0: Time signal. 1.1: Weather bulletin, supplied by the Meteorological Bureau of West Australia. 1.3: Lunch hour music from the Primrose Cafe de Luxe. 2.0: Close down. 3.30: Tune in. 3.35: Musical programme from the Studio, including pianoforte solos by Miss Audrey Dean; violin solos by Mr. Frank Romaine. 4.30: Close down. 6.45: Tune in. 6.48: Bedtime stories by Uncle Duffy. 7.5: Light music by the Perth Piano Trio. 7.30: Commercial and general information. 7.45: Talk by Mr. J. S. Battye, B.A., LL.B. 8.0: Time signal. 8.1: First weather bulletin. 8.3: A relay from St. George's Cathedral of "Toc H" Thanksgiving service and lighting of lamps. 8.50: Late news items, by courtesy of the "Daily News" Newspaper Co. 9.0: Station announcements; ships within range announcement; late weather bulletin. 9.5: Programme continued from St. George's Cathedral and the Studio. 10.30: Close down. 10.5: Métre Transmission—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres, commencing at 6.45 p.m.

7ZL

MIDDAY SESSION.

11.30 to 1.30: See Friday. 1.30: Close down.

AFTERNOON SESSION.

3.0: Chimes. 3.4: Weather information. 3.15: Special selections, including—Aldershot Command Marchlight Tattoo; the Famous Barardi Music Boys; Gresham Singers! Paul Whiteman and his Orchestra; Gladys Cole and Barrington Hooper; Guitar Duet; Harry Lauder. 4.15: Educational talk on—"Canadian Wood Exports for 1925." 4.30: Close down.

EARLY EVENING SESSION.

6.15: Selections. 6.30: Basil Sproule will play on the piano for the wee folk. 6.40: "The Story Lady." 7.0: Answers to letters and birthday greetings by "Uncle David." 7.15: News session.

EVENING SESSION.

7.30: Vivian Webb will speak on "How to Buy a Motor Car." 7.45: W. E. Fuller will speak on—"Literary Lapses and Library Lists." 8.15: A Dance programme by Reg Jones' Orchestra, and Mile. Columbus—Reg Jones and his Orchestra—"Promise Me" (Van Cooth), "Stormy Weather Pal" (Plantadise), "Glad Rag Doll" (Ager), Jack Lumsdaine and Len Maurice—"Good Night" (Wood), "That's My Mammy" (Perez), Reg Jones and his Orchestra—"There's a Rainbow Round My Shoulder" (Jolson), "Beloved" (Kahn), "I Loved You Then" (McDonald), James Nelson, baritone—"When Love Comes Stealing" (Hayes), Reg Jones and his Orchestra—"Sally of My Dreams" (Kennell), "Sonny Boy" (Jolson), "That's Her Now" (Ager), Alex Whitson, baritone—"The Adorable Outcast" (Hayes), Reg Jones and his Orchestra—"One Alone" (Romberg), "The Desert Song" (Romberg), "I'm Sorry, Sally" (Kahn), Goodrich Silverton Quartet—"Under the Clover Moon" (Healy), "Who's Blue Now?" (Hayes), Reg Jones and his Orchestra—"Rose of Flanders" (C'Hagan), "Me and the Man in the Moon" (Monaco), "Out of the Dawn" (Donaldson), Marie Kurenko, soprano—"Ye Who Have Yearned Alone" (Tschalkowsky), "Cradle Song" (Tschalkowsky), Reg Jones and his Orchestra—"High Upon the Hill" (Baer), "Painting Pretty Pictures" (Wedell), "Jeannine" (Shilkret), Malcolm MacBachan, bass—"Time to Go" (Weatherley), "Only a Rough Old Diamond" (Trevor), 8.45: News session. 10.0: Chimes. 10.1: Close down.

Astor Sets

MR. P. J. MANLEY, manager of Ampion Australasia), Ltd., paid a flying visit to Melbourne last week to give the Radio Exhibition the "once over," in view of the forthcoming Sydney Radio Exhibition. A visit to the Astor factory was also made. Leaving Sydney on Thursday, he was back in his office on Monday morning with the newest Astor baby, an all-electric Three, the arrival of which has been awaited with interest.

John Stuart's Hair

A RUMOR got around that John Stuart, one of the popular announcers at 3LO, had auburn hair with a delightful marcel wave, the result was very disconcerting to John, who confessed that he had received three tentative proposals by letter in one week. He wishes it known that the rumor is ridiculously exaggerated.

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Local Programmes, Wednesday, May 15

2FC

EARLY MORNING SESSION

Announcer: A. S. Cochrane.

7.0: "Big Ben" and announcements. 7.2: Official weather forecast; rainfall; river reports; temperatures; astronomical memoranda. 7.7: "Sydney Morning Herald" summary. 7.12: Shipping Intelligence; mail services. 7.15: Studio music. 7.25: Investment market; mining sharemarket; metal quotations; wool sales; breadstuffs markets; interstate markets; produce markets. 7.40: Studio music. 8.0: "Big Ben"; close down.

MORNING SESSION.

Announcer: A. S. Cochrane.

10.0: "Big Ben" and announcements. 10.3: Pianoforte reproduction. 10.10: "Sydney Morning Herald" news service. 10.25: Studio music. 10.45: A talk on "Home Cooking and Recipes," by Miss Ruth Furst. 11.0: "Big Ben"; A. P.A. and Reuter's cable services. 11.5: Close down.

MIDDAY SESSION.

Announcer: A. S. Cochrane.

Note.—Race results from Kensington. 12.0: "Big Ben" and announcements. 12.1: Stock Exchange, first call. 12.3: Official weather forecast, rainfall. 12.5: Summary of news, "Sydney Morning Herald." 12.10: Rugby wireless news. 12.13: A reading. 12.30: Studio music. 1.0: "Big Ben"; weather intelligence. 1.3: "Evening News" midday news service; Producers' Distributing Society's report. 1.20: Studio music. 1.28: Stock Exchange, second call. 1.30: Studio music. 2.0: "Big Ben"; close.

AFTERNOON SESSION

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

Note.—Between 3.30 and 4 relay from KGO if reception is successful. 2.30: Programme announcements. 2.32: Record recital. 3.0: A talk on "Empire Shopping Week." 3.10: From Paling's Concert Hall. A recital by the students of Roland Foster. 4.10: From the Studio: A reading. 4.35: Popular music. 4.45: Stock Exchange, third call. 4.47: Studio items. 5.0: "Big Ben"; close.

EARLY EVENING SESSION

Announcer: A. S. Cochrane.

5.40: The chimes of 2FC. 5.45: The Children's Session, conducted by the "Hello Man," assisted by Uncle Ted and Sandy; letters and stories; music and entertainment. 6.30: Dalgely's market reports (wool, wheat, and stock). 6.40: Fruit and vegetable markets. 6.43: Stock Exchange information. 6.48: Weather and shipping news. 6.50: Rugby Wireless news. 6.55: Late sporting news. 7.0: "Big Ben"; late news service. 7.10: The 2FC Dinner Quartet, conducted by Horace Keats. (a) "Tango Melonga" (Friedmann), (b) "L'Extase" (Thorne), (c) "Humoreske" (Dvorak), (d) "L'Africaine" (Myerbeer), (e) "Londonderry Air" (arr. Kreisler), (f) "Promise Me" (Van Booth).

EVENING SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

7.40: Popular music. 7.45: Programme announcements. 7.48: A Record Recital. 8.0: "Big Ben"; from Conservatorium Hall, a concert arranged by the Sydney Madrigal Society. 9.0: "Big Ben"; from the Studio: weather report. 9.1: C. Price Conigrave, Australian Travelogue. 9.11: From the Conservatorium Hall, second half of concert arranged by the Sydney Madrigal Society. 10.20: From the Studio, musical items. 10.28: Late weather; to-morrow's programme. 10.30: National Anthem; close.

2BL

MORNING SESSION.

Announcer: A. C. C. Stevens.

8.0: G.P.O. chimes; weather reports, metropolitan and State. 8.3: Studio music. 8.30: G.P.O. chimes; news and information service

from the "Daily Telegraph Pictorial." 9.0: G.P.O. chimes; Studio music. 9.30: Half an hour with silent friends. 10.0: G.P.O. chimes; close.

MIDDAY SESSION.

Announcer: A. C. C. Stevens.

11.0: G.P.O. chimes; 2BL Women's Sports Association session, conducted by Miss Gwen Varley. 11.30: Advertising hints. 11.40: Women's session, conducted by Mrs. Cranfield. 12.0: G.P.O. chimes; special ocean forecast and weather report. 12.3: Studio music. 12.30: Shipping and mails. 12.35: Market reports. 12.48: "Sun" midday news service. 1.0: Studio music. 1.30: Talk to children and special entertainment for children in hospital. 2.0: G.P.O. chimes; close. Note.—Race results from Kensington will be broadcast by arrangement with "Sun" Newspapers, Limited.

AFTERNOON SESSION.

Announcer: A. C. C. Stevens.

Accompanist: Kathleen Roe. 3.45: G.P.O. chimes. 4.0: G.P.O. chimes; The Melody Trio, instrumentalists. 4.15: Florence Bentley, mezzo—(a) "I Hid My Love" (D'Hardelot), (b) "A Request" (Woodford-Flinden). 4.22: The Melody Trio, instrumentalists. 4.32: "Sun" news service. 4.37: Florence Bentley, mezzo—(a) "The String of Pearls" (Lyall Phillips), (b) "Until" (Wilfrid Sanderson). 4.44: The Melody Trio, instrumentalists. 4.54: "Sun" news service. 5.0: G.P.O. chimes. The Melody Trio, instrumentalists. 5.15: Popular music. 5.33: Racing resume. 5.37: Features of the evening's programme.

EARLY EVENING SESSION.

Announcer: Basil Kirke.

5.40: Children's session, conducted by Uncle Bas; music and entertainment; letters and stories. 6.30: "Sun" news and late sporting. 6.40: 2BL Dinner Quartet: (a) "Love in Arcady" (Wood), (b) "The Old Refrain" (Kreisler), (c) "Fantasie Espagnole" (Hosmer), (d) "Invano" (Amadei), (e) "Two Solon Pieces" (Ireland), (f) "Farewell My Love" (Lehar). 7.7: Australian Mercantile, Land, and Finance Co.'s report; weather report and forecast by courtesy of Govt. Meteorologist; Producers' Distributing Society's Fruit and Vegetable Market Report; Grain and Fodder Report ("Sun"); Dairy Produce Report ("Sun"); Mr. Pim and Miss Pam in Advertising talks, handy hints, and nonsense. 7.53: An Ad Special. 7.55: Programme and other announcements.

EVENING SESSION.

Announcer: Basil Kirke.

Accompanist: G. Vern Barnett.

8.0: G.P.O. Chimes. From the Capitol Theatre: The Capitol Unit Entertainment. 8.7: From the Studio: Jack Kisson, basso. 8.14: Graham and Manning, entertainers—(a) Duet, "Sing a Little Song" (Gallatly), (b) Dorothy Manning, "My Princess of the Willow Tree." (c) Duet, "Till the Cows Come Home" (Gallatly). 8.24: Will and Barbara James, instrumental and vocal—(a) "Roses of Picardy," (b) "Dream House," (c) "Lost Chord." 8.54: From the Capitol: Fred Scholl at the Wurlitzer Organ. 8.54: From the Studio—Jack Kisson, basso. 9.1: Weather report. 9.2: Claude Corbett will speak on General Sporting. 9.17: From the Capitol Theatre—Stage presentation. 9.30: From the Studio, Graham and Manning, entertainers—(a) "You can feel it doing you good," duet (Weston). (b) "What about your old fashioned Father?" (Lee), Harry Graham. (c) "Our Society for Physical Research," duet (Gallatly). 9.40: Will and Barbara James, instrumental and vocal—(a) "Promise Me," (b) "Hawaiian Moonlight," (c) "Bohemian Girl" (Balfe). 9.50: The Savoyans Dance Band. 10.5: Laurel Mather, popular vocalist. 10.12: The Savoyans Dance Band. 10.22: Late "Sun" news.

10.32: Late weather report. 10.34: The Savoyans Dance Band. 10.57: To-morrow's programme. 10.59: The Savoyans Dance Band. 11.30: National Anthem, Close.

2GB

10.0: Music. 10.10: Happiness talk by A. E. Bennett. 10.20: Music. 10.30: Women's session, by Miss Helen Beegling. 11.0: Close down. 2.0: Music. 2.5: Women's radio service, by Mrs. Dorothy Jordan. 3.30: Music. 3.15: Close down. 5.30: Children's session by Uncle George. 7.0: Music. 7.30: Short talk by Miss Beegling. 8.0: Mr. William Green, tenor. 8.7: Miss Ada Brook, pianiste. 8.15: Miss Mary Neal, contralto. 8.25: Instrumental music. 8.30: Humorous Interlude by Mr. Jack Win and Mr. Heath Burdock. 8.35: Mr. Clement Hosking, baritone. 8.45: Address. 9.0: Weather report. 9.3: Instrumental music. 9.10: Mr. William Green, tenor. 9.20: Mr. Heath Burdock, Shakespeare recital. 9.30: Miss Mary Neal, contralto. 9.40: Instrumental music. 9.50: Mr. Clement Hosking, baritone. 10.0: Humorous Interlude by Mr. Jack Win and Mr. Heath Burdock. 10.5: Dance music. 10.30: Close down.

2UW

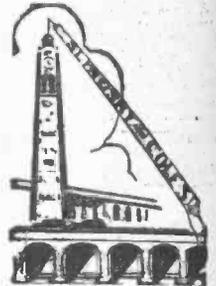
MIDDAY SESSION.

12.30: Request numbers. 1.0: G.P.O. clock and chimes; music. 1.15: Talk on "Home-craft," by Pandora. 1.40: Music. 2.30: Close down. 4.30: Musical programme.

EVENING SESSION.

5.30: Children's Hour, conducted by Uncle Jack. 6.30: Close down. 7.0: G.P.O. clock and chimes; request numbers. 9.0: G.P.O. clock and chimes; comments on foreign affairs, by Mr. J. M. Prentice. 9.10: Music and request numbers. 10.30: Close down.

THIS WEEK'S SPECIALS



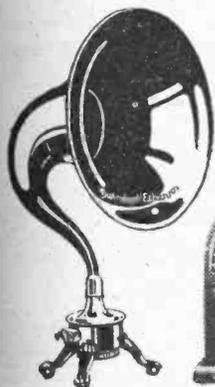
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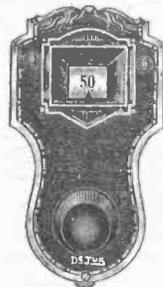


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Interstate Programmes, Wednesday, May 15

3LO

EARLY MORNING SESSION.

7.15 to 8.15: See Friday.

MORNING SESSION.

Announcer: Frank Hatherley. 11.0: To-day's radio recital—Sauce Supreme. 11.5: Miss I. D. Bevan will speak on "Homeing Confectionery." 1.25: Mrs. M. Callaway Mahood will speak on "The Art of Decoration." 11.45: Mrs. Clarence Weber will speak on "Physical Culture for Women—Keep Yourself Free from Chubbiness." 12.0: Melbourne Observatory time signal. 12.1: British official wireless news from Rugby; Reuters's and the Australian Press Association cables. "Argus" news service. 12.15: New-market stock sales; cattle sales report; bullocks and calves, by the Associated Stock and Station Agents, Bourke Street, Melbourne.

MIDDAY MUSIC.

12.20: The Radio Revellers. 12.30: Jack Stocks, "The Woman Hater." 12.37: Stock Exchange information; prices received this day by the Australian Mines and Metals Association, from the London Stock Exchange. 12.40: The Radio Revellers. 12.50: Dorothy Stephen, entertainer. 12.57: The Radio Revellers. 1.7: Meteorological information; weather forecast for Victoria, New South Wales, South Australia, and Tasmania; ocean forecasts; river reports; rainfall. 1.14: "The Kauias," Hawaiian instrumentalists. 1.21: The Radio Revellers. 1.30: Speeches transmitted from the Rotary Club luncheon, at the Freemasons' Hall, Collins Street, Melbourne. 1.58: Description by Eric Welch of Hurdie Race, 2 miles, Bendigo races.

AFTERNOON SESSION.

2.5: Dawn Assheton and Laszlo Schwartz, soprano and violinist, in interpretations of folk and character songs, thirty minutes of melody from many lands. 3.30: Description by Eric Welch of Bendigo Plate, 4 furlongs, at Bendigo races. 4.45: Bert. Sutcliffe, baritone. 5.22: The Station Orchestra. 5.30: Captain Donald Maclean. 5.43: Description of President's Reception, 1 1/2 miles, Bendigo races. 5.50: The Station Orchestra. 5.50: Clella Genoni McNeill, soprano. 5.57: The Station Orchestra. 5.58: Description of Novice Handicap, 3/4 furlongs, at Bendigo races. 6.20: The Jodel Trio. 6.30: Description of Homebush Handicap, 7 furlongs, Bendigo races. 6.50: "Herald" news service; Stock Exchange information. 6.50: Close down.

EVENING SESSION.

8.0: "John, the Piper's Son," answers to letters and birthday greetings. 8.25: "The Sunbeam Singers"—Song, "As In Old Gardens," The Sunbeams; song, "Old Man Sunshine," Florrie Whitman; song, "Some Folk," Joy Dunstan; duet, "Drowsy Baby," Jean and Bonnie Keen; song, "The Man Who Brings the Sunshine," Ellen Bailey; humorous recitation, "A Bad Little Girl," Florrie Whitman; duet, "Sleepy Hollow Tune," Jean and Bonnie Keen; finale, "Good-night," The Sunbeams. 8.40: "John, the Piper's Son" has another adventure with Nosey Parker to tell you.

EVENING SESSION.

7.5: Stock Exchange information. 7.15: Market reports. 7.30: Evening session. 7.45: Birthday greetings. 7.48: Out of the past. 7.46: Under the auspices of the Department of Agriculture, R. Crowe, Exports Superintendent, will speak on "Marketing Methods."

NIGHT SESSION.

Announcer: Renn Millar. Accompanist: Agnes Fortune. 8.0: Programme announcements. 8.1: The Station Orchestra—Overture, "Plymouth Hoe" (Ansell). "Babbling Brook" (Lange). 8.10: Dawn Assheton, coloratura soprano, and Laszlo Schwartz, violinist—in their dramatic interpretations of folk and character songs; forty minutes of unique music and story songs. 8.50: Lindsay Begg, song, "The Man Who Brings the Sunshine." "Two Preudes" (Liadov). "Berceuse" (Iljynski). "Prelude" (Fuchselski). "Faraphraze on Tchaikovsky-Korsakov, Bardiene, Cesar Cui, and Liadov. (First performance in Australia). 9.20: The Victorian Postal Institute Choir. "Peer Gynt Suite No. 2" (Grieg). 10.0: News session. "The Woman Hater"—Selection, "Princess Pat" (Herbert). 10.17: Jack Stocks, "The Woman Hater"—National Anthem. 10.34: "The Kauias," Hawaiian instrumentalists—"Aloha, Oe" (Lilikoukani). "Selected." 10.45: Ern Hall's Radio Revellers, with Hugh Euxham—"Constantinople" (Carlton). "My Angelina" (Wayne). "There's a Rainbow Round My Shoulder" (Jolson). "Oh, is She Mad As Me" (Friend). "High Up Over the Top" (Bener). "When Love Comes Along" (Lapeere). "Roll Up the Carpets" (Nixon). Selected and request numbers. 11.30: God Save the King.

3AR

NEWS SESSION.

10.0 to 10.59: See Friday.

MORNING MUSICAL SESSION.

11.0: Popular melodies. 11.10: The Station Orchestra (conductor, Fred Hall). 11.30: Ballads. 1.30: The Station Orchestra. 11.40: Ballads. 1.30: The Station Orchestra. 12.20: Ballads. 12.10: The Station Orchestra. 12.20: British official wireless news; announcements. 12.30: Close down.

AFTERNOON SESSION.

Announcer: John Stuart. 3.0: A little dance music. 3.30: Iris Rothstadt, piano recital. 3.40: Ballads. 4.0: Iris Rothstadt. 4.10: Ballads. 4.30: Close down.

EVENING SESSION.

Announcer: John Stuart. 6.50: Orchestral. 6.50: Jazz Jingles for the Juniors. 7.10: News service; announcements. 7.20: Vocal variations.

NIGHT SESSION.

8.0: Trial Scene and Extract from "The Merchant of Venice," from the Seymour Town Hall. Shakespeare opens in Seymour Town Hall. Magnificent production of the trial scene, and extracts leading up to it from "The Merchant of Venice," by Mrs. R. A. Scott.

Synopsis of play read by the Rev. W. E. Boydew. Overture, March from "The Merchant of Venice." Pianist, Miss E. Jones. Violin, Miss G. Halpin. Violin, Mr. V. Sabastucci. Opening Scene: Street scene where the bond is made between Shylock and Antonio.

Sixty-five part players, as pedestrians, gypsies, strolling minstrels, bondholders, gondoliers, etc.

Principal Characters:

Gipsy Family: Mrs. A. Clark, Miss D. Wright, Miss Ivy Dunstan, and Geoff. Scott. English Family: Mr. W. Bond, Mrs. A. Bolton, Miss M. Sloper, Elsie Middlebrook, and Phyllis Morrison. Venetian Ladies: Mrs. W. Adams, Miss K. Costa, Miss D. Boddy. Moorish Gentlemen: Messrs. G. Diggle and A. Elliot.

Dame Tolet: Miss M. Drew. Venetian Dame: Mrs. F. T. Walsh. Peddler: Mr. R. Darby. Gondoliers: Messrs. W. Caffrey, J. Oaten, and E. Lubek.

Vocal and Instrumental Items making and breaking of the bond, accompanied by Misses E. Jones and G. Halpin, and Messrs. G. Cerasbi and V. Sabastucci.

Trio, Gipsy Laughing Chorus: Messrs. E. H. Mace, R. Hilton, and Rev. W. F. Daunt.

ACT III, Scene 1: "Three Thousand Duets" with Shylock, Bassanio and Antonio.

Song: "Tell Me, Gipsy," Miss D. Boddy. Song: "Romany Song," Master Geoff. Scott.

Dance, Spanish to harp and violin accompaniment; Miss Franklyn Hopworth.

Harp solo, selected, Mr. G. Cerasbi. Violin solo, selected, Mr. V. Sabastucci.

ACT III, Scene 1: "How, what news on the Rialto? Salario, Salario, Shylock, and Tubal. Song, "Gipsy Love Song," Miss D. Wright.

ACT II, Scene III: "Gaelic, Look to Him." Shylock, Salario, Antonio, and Gaoler.

Fall of curtain to mark lapse of 24 hours. Rises on the trial scene, in which the councillors and officers of the shire appear as the Magnificos of the Court.

Duke: Mr. Morton Boddy. Magnificos: President, J. Morrison; councillors, J. Crittick, T. Freeman, G. A. Stages, H. Sidebottom, G. W. M'Alister, W. D. Chisholm, F. B. Halpin, A. J. Coyne, G. A. Scott, M. Leahy, and W. J. Sinclair.

Train Bearers: Frances Fox and Mary Denny. Antonio: Mr. Reginald Hilton. Bessanio: Mr. Paul Garey. Gratiano: Mr. Colin Hall. Salario: Mr. Robert Ashton. Tubal: Mr. Andrew Mercer. Shylock: Mr. Rupert Scott. Tubal: Mr. Aubrey Grant. Gaoler: Mr. Francis Walsh. Fortia: Mrs. R. A. Scott. Clarissa: Miss Dorothea Boddy.

INTERVAL.

Musical Interlude by Misses Erma Jones and Gladys Halpin.

Official opening of the Town Hall by the President of the Shire (the State Premier has been invited).

Speeches by Parliamentarians and others, interspersed with musical items from Rev. W. F. Daunt, Messrs. E. H. Mace, G. Cerasbi, and V. Sabastucci.

National Anthem. 10.30: From the Studio, news service, announcements. God Save the King.

5CL

MORNING SESSION.

Announcer: C. J. O'Connor.—11.0: Chimes. 11.1: Morning melodies. 11.15: Kitchen Craft and Menu Talk. 11.45: Miss M. E. Chambers (matron of the Mothers and Babies' Health Centre Association) will speak on "Exercise and a Day with a Baby under Six Months of Age." 12.1: Middy music. 12.15: General news service; British official wireless news. 12.52:

Railway Information: Stock Exchange Information: Meteorological information. 1.0: Chimes. 1.1: Lunch-hour recital. 1.35: Bendigo race result. Hurdie Race. 1.55: Meteorological information. 2.0: Close down.

AFTERNOON SESSION.

Announcer: C. J. O'Connor. Accompanist: Ann Finlay.—3.0: Chimes, and resume of race result. general programme, including Station Quarter Beryl Gould, mezzo soprano; Lisette Foglia, ve. pianist. 3.24: Bendigo race result, Novice Handicap. Frank M. Cate, baritone; Mrs. Marion, contralto. 3.47: An organ recital by Gertrude Couper, from Parkside Baptist Church. 4.4: Resume of previous race results. 4.5: Geoff. Scott, Hurdie Race. Bendigo race result. Homebush Handicap, Mrs. Rogers, cornetist. 4.55: Stock Exchange information. 5.10: Resume of race results; close down.

EVENING SESSION.

Announcer: J. L. Norris.—8.0: Resume of race results. 8.1: Birthday greetings, correspondence, songs, and stories by "Miss Wireless." 8.30: An interlude—dinner music. 8.50: 5CL's sporting service, supplied by "Silvius." 9.0: "The Star" news service, supplied by "Silvius." 9.1: Stock Exchange information. 9.2: General market report on "Australia." 9.3: Winifred Klek, B.A., B.D., will speak on "Australia and the Problem of Population." 9.35: Boy Scout Corner. 9.40: Address by Mrs. J. L. Norris, 740: SCL Baseball Girls' Club, an entertainment by "The Red Lady."

NIGHT SESSION.

Announcer: J. L. Norris.—8.0: Chimes. 8.1: Allan Mouth Organ Band (conductor, Mr. R. Dutton)—"Winnipeg Fair March" (Koidel), "Hi-Diddle-Dee-Dee" with vocal chorus (Holtzman), negro melody, "Swanee River" (Foster). 8.10: Nettie Rodney, soprano—"Some Day, Sweetheart" (John Benjamin), "sunshine" (Berlin). 8.17: Dave Howard, saxophone—"Londonery Air" (H. S. Moran), baritone—"Rosebush" (H. S. Moran). 8.23: Victor Innes-Murray—"Because" (Ouy d'Hardenel), "Still as the Water" (Bohm). 8.30: Arthur Fry and his One-Man Band, selections from his repertoire. 8.38: Ronnie Raminon Round, typographical numbers. 8.43: Maryn W. H. shire, whistler—"Eye, Bye, Blackbird" (Henderson), "Russian Lullaby" (Berlin). 8.49: Herbert King, tenor—"To My Mary" (Maud White), "Thank God for a Garden" (Dud Riegg), 8.54: Stanley Stevens and his Musical Saw, selections from his repertoire. 9.1: Meteorological information, including Semaphore telegrams. 9.2: Overseas grain report. 9.3: "The Star" news service, supplied by "Silvius." 9.4: Arthur Fry and his One-Man Band, selections from his repertoire. 9.49: Ronnie Raminon Round, typographical numbers. 9.58: Maryn W. H. shire, whistler—"Highland Laddie" (Brockman), "What Does It Matter" (Berlin). 10.2: Herbert King, tenor—"Dear Love, Remember Me" (Marshall), "My Song is Sweet" (Sans Souci). 10.9: Allan's Mouth Organ Band—"Popaz Band" (Jewelry), Melody of Popular Songs. 10.15: General news service; British official wireless news; Meteorological information. 10.20: 5CL's sporting service supplied by "Silvius" including Bendigo race results; announcements. 10.30: Modern dance records. 11.0: Close down.

4QG

EARLY MORNING SESSION.

Announcer: J. Tyson. 7.43 to 8.30: See Friday.

MORNING SESSION.

11.0 to 12.0: See Friday.

MIDDAY SESSION.

1.0 to 2.0: See Friday.

AFTERNOON SESSION.

3.0 to 4.30: See Friday.

EARLY EVENING SESSION.

6.0: Mail train running times; mail information; shipping news. 6.5: Dinner. 6.55: Commercial announcements. 6.30: Bedtime stories conducted by "Little Miss Brisbane." 7.0: News in brief. 7.5: Stock Exchange news, etc. 7.45: Lecture arranged by the Queensland Agricultural High School and College.

NIGHT SESSION.

8.0: Alf. Featherstone's Dance Orchestra—Rhythmic paraphrases—"June" (arr. Lange). "Nails" (arr. Lange). 8.10: Shirley Radford (soubrette)—In latest popular numbers. 8.20: Alf. Featherstone's Dance Orchestra—Fox-trots—"I don't know why I do it but I do" (Val). "Down by the Diner Front Gate" (Rose). 8.30: A thought for To-night (Will H. Lister)—"It's Worth While." 8.35: The Moana Duo (Hawaiian instrumentalists)—"Smiles then Kisses" (Ancliffe). "Hello Mr. M." Selected number. 8.45: Alf. Featherstone's Dance Orchestra—Jazz waltz, "Spanish Rose" (Hanley).

- 8.55: Vincent Conolly (baritone)—
"When they ask you what your name is"
(Castling).
- 9.0: Metropolitan weather forecast.
Movements of lighthouse steamers.
- 9.5: Alf. Featherstone's Dance Orchestra—
Fox-trots—
"I never dreamt" (Ellis).
"Two Lips" (Rose).
- 9.15: Mrs. Stoddart and Miss McDowall—
Vocal duets—
"Beyond the Sunset" (Tours).
"Good-night, Pretty Stars" (Johnson).
- 9.25: Alf. Featherstone's Dance Orchestra—
One-steps—
"Me-ow" (Kaufman).
"Taxi" (Kaufman).
- 9.35: Jill Manners (soprano)—
"Can it be Love?" (Rubens).
"Two in the Merry Month of May" (Roberts).
- 9.45: Alf. Featherstone's Dance Orchestra—
Old-time waltz, "Sunset on the St. Lawrence"
(Heller).
- 10.0: News, weather.
- 10.15: Alf. Featherstone's Dance Orchestra—
Three-quarters of an hour's dance music.
- 11.0: Close down.

6WF

12.30: Tune in. 12.35: Markets, news, etc. 1.0: Time signal. 1.1: Weather bulletin, supplied by the Meteorological Bureau of West Australia. 1.3: Talk by Dr. Winifred Holloway, of London. 1.20: Music. 1.30: Close down. 3.30: Tune in. 3.35: Musical programme relayed from the Primrose Cafe; vocal items from the studio. 4.30: Close down. 6.45: Time in. 6.45: Bedtime stories by Uncle Duffy. 7.5: Light music by the Perth Piano Trio. 7.30: Commercial and general information. 7.45: Talk on a popular science by Mr. Hal McKall. 8.0: Time signal. 8.1: First weather bulletin. 8.3: Relay of the speeches in connection with Toc H Public Guest night, held in Government House ballroom; musical programme from the studio. 8.50: Late news items, by courtesy of the "Daily News" Newspaper Co.; station announcements; ships within range announcement; late weather bulletin. 9.5: Programme continued from Government House ballroom and the studio. 10.30: Close down.

104.5 Metre Transmission.—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres, commencing at 6.45 p.m.

7ZL

MIDDAY SESSION.

11.30 to 1.30: See Friday. 2.40: Description of Bendigo Plat, 6 furlongs, Victoria. Result of Hurdle Race, 2 miles. 2.45: Close down.

AFTERNOON SESSION.

3.0: Chimes. 3.4: Weather information. 3.15: Description of President's Handicap, 5½ furlongs, Bendigo, Victoria. 3.45: Description of Novice Handicap, 5½ furlongs, Bendigo, Victoria. 4.15: Description of Two-year-old Handicap, 5 furlongs, Bendigo, Victoria. 4.20: Readings from the "Illustrated Mail." 4.30: Close down. 4.45: Description of Homebush Handicap, 7 furlongs, Bendigo, Victoria. 4.50: All sporting results to hand. 5.0: Close down. 6.10: Bendigo race results.

EARLY EVENING SESSION.

6.15: Selections. 6.30: Thora Mather will recite to the wee folk—"Two Little Dolls," "His Little Teddy Bear." 6.45: Bertha Southey Brammall. 7.0: Answers to letters and birthday greetings by Bertha Southey Brammall. 7.5: His Master's Voice in moments merry and musical. 7.15: News session.

EVENING SESSION.

7.40: J. M. Counsel will speak on—"European Affairs." 7.45: Geo. Nation will speak on—"Trees and Shrubs." 8.0: Chimes. 8.5: Recital of instrumental and vocal items by leading international artists, specially arranged by Findlay's Music Warehouse. 9.45: News session. 10.0: Chimes. 10.1: Close down.

A NOVELTY MUSICAL BROADCAST

There will be an unique musical novelty broadcast from 3LO on May 15 by Lindsay Biggins, the gifted young Australian pianist, which is being performed in Australia for the first time. Naturally, there is a story attached to this composition, and it runs thus: It was the custom of the distinguished musicians Rimsky Korsakov, Borodine, Caesar Cui, and Liadov to hold a convivial gathering for the exchange of inspirations and ideas. On one occasion, they called in the cook, and got her to play a "two finger theme" with the index finger of each hand while they wrote variations on the theme. Simple tunes were written at first, but, after frequent visits to the wine cellar, they became tremendously enthusiastic and commenced to dash off fugues, mazurkas, and elaborate marches at a moment's notice. These compositions were passed on to Lindsay Biggins as a souvenir of his student days in Germany, and it is this combination of melodies that will be played from 3LO.



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FARMER'S

Pitt, Market and George Streets

Local Programmes, Thursday, May 16

2FC

EARLY MORNING SESSION

Announcer: A. S. Cochrane

7.0: "Big Ben" and announcements. 7.2: Official weather forecast, rainfall, river reports, temperatures, astronomical memoranda. 7.7: "Sydney Morning Herald" summary. 7.12: Shipping intelligence, mail services. 7.15: Studio music. 7.25: Investment market, mining sharemarket, metal quotations, wool sales, breadstuffs markets, inter-State markets, produce markets. 7.40: Studio music. 8.0: "Big Ben"; close.

MORNING SESSION.

Announcer: A. S. Cochrane.

10.0: "Big Ben" and announcements. 10.2: Pianoforte reproduction. 10.10: "Sydney Morning Herald" news service. 10.25: Studio music. 10.30: Last minute information to the 2FC racing commissioner. 10.40: Studio music. 11.0: "Big Ben"; A.F.A. and Reuters' cable services. 11.5: Close down.

MIDDAY SESSION.

Announcer: A. S. Cochrane.

12.0: "Big Ben" and announcements. 12.2: Stock Exchange, first call. 12.3: Official weather forecast, rainfall. 12.5: Summary of news, "Sydney Morning Herald." 12.12: Rugby Wireless news. 12.15: A reading. 12.30: Studio music. 1.0: "Big Ben"; weather intelligence. 1.3: "Evening News" midday news service; Producers' Distributing Society's report. 1.20: Studio music. 1.28: Stock Exchange, second call. 1.30: Studio music. 1.50: Last minute sporting information by the 2FC racing commissioner. 2.0: "Big Ben"; close down.

AFTERNOON SESSION

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

2.30: Programme announcements. 2.32: The Book Lover's Corner. 3.0: "Big Ben"; the Popular Trio. 3.15: Vera Brooke, popular items. 3.27: Dorothy A. Nall will speak on "India." 3.32: The Popular Trio. 3.47: A reading. 4.13: Vera Brooke, popular items. 4.20: The Popular Trio. 4.45: Stock Exchange, third call. 4.47: Popular Trio. 5.0: "Big Ben"; close.

EARLY EVENING SESSION.

Announcer: A. S. Cochrane.

5.40: The chimes of 2FC. 5.45: The Children's Session, conducted by the "Hello Man"; letters and stories; music and entertainment; Linden Court Juvenile Choir. 6.30: Dalgety's market reports (wool, wheat, and stock). 6.40: Fruit and vegetable markets. 6.43: Stock Exchange information. 6.48: Weather and shipping news. 6.50: Rugby Wireless news. 6.55: Late sporting news. 7.0: "Big Ben"; late news service. 7.10: The 2FC Dinner Quartet, conducted by Horace Kents. (a) Three Dances, "Tom Jones" (Carman). (b) "Traumerel" (Schumann), (c) "Sun Flakes" (Phillips), (d) "The Desert" (Rumberg), (e) "Gipsy" (Signorelli).

EVENING SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

7.40: Popular music. 7.45: Programme announcements. 7.48: Empire Week, a short talk in connection with Empire Shopping Week. 8.0: "Big Ben"; Frank Hutchins, pianoforte recital. 8.12: Bryson Taylor and Gladys Evans, "The Opera Duo" in ten minutes from the opera, "Andre Chenier," by Giordano, introducing "Narrative," Act I (for tenor), "La Mama Morte," Act III (soprano), finale, "Ora Soave," Act II. (duetto for above voices. 8.20: Eleanor Ross, elocutionist. 8.28: Gladstone Bell, cellist. (a) "Chant d'Antoine" (Tchakowski). (b) "Tarantella" (Sautre). 8.48: Gladys Evans, soprano. 9.05: Graham Kent will speak on Bridge. 9.10: Frank Hutchins, pianoforte recital. 9.22: Bryson Taylor and Gladys Evans, duettists, present "A Vocal Nocturne," introducing— "Bird Songs at Eventide" (Coates). "The Sandman" (Brahms). "A Summer Night" (Goring-Thomas). 9.30: Gladstone Bell, cellist.

(a) "Wielinstin Schonen Tagen" (Popper).

(b) "La Fileuse" (Dimkler).

9.40: Bryson Taylor, tenor. 9.47: From the Hotel Australia; Cec. Morrison's Dance Band. 10.0: "Big Ben"; from the Studio, Peggy Peate. 10.7: From the Hotel Australia, Cec. Morrison's Dance Band. 10.21: From the Studio, Peggy Peate. 10.28: Late weather report. 10.30: From the Hotel Australia, Cec. Morrison's Dance Band. 10.37: From the Studio, to-morrow's programme. 10.59: From the Hotel Australia, Cec. Morrison's Dance Band. 11.30: National Anthem; close.

2BL

MORNING SESSION.

Announcer: A. C. C. Stevens.

8.0: G.P.O. Chimes; weather reports, metropolitan and State. 8.3: Studio music. 8.30: G.P.O. chimes; news and information service from the "Daily Telegraph Pictorial." 9.0: G.P.O. chimes; Studio music. 9.30: Half an hour with silent friends. 10.0: G.P.O. chimes. close.

MIDDAY SESSION.

Announcer: A. C. C. Stevens.

11.0: G.P.O. chimes; 2BL Women's Sports Association session, conducted by Miss Gwen Vary. 11.30: Advertising hints. 11.40: Women's Session, conducted by Mrs. Cranfield. 12.0: G.P.O. chimes; special ocean forecast and weather reports. 12.3: Studio music. 12.30: shipping and mails. 12.35: Market reports. 12.48: "Sun" news service. 1.0: Studio music. 1.30: Talk to children and special entertainment for children in hospital. 2.0: G.P.O. chimes; close down.

AFTERNOON SESSION.

Announcer: A. C. C. Stevens.

Accompanist: Kathleen Roe.

3.45: G.P.O. chimes; popular music. 3.50: Romano's Dance Orchestra, conducted by Bennie Abrahams. 4.0: G.P.O. chimes; from the Studio—Irene Duncan, soprano. (a) "Dream Hour" (Brook); (b) "The Winds in the South" (Prindle Scott). 4.7: B. A. M'Michan, a series of talks on "The Care of Dogs," to-day's subject—"Food and Feeding." 4.22: Romano's Dance Orchestra, conducted by Bennie Abrahams. 4.32: From the Studio: Irene Duncan, soprano—(a) "For Remembrance" (Margaret Woolmer), (b) "Invitation" (Owen). 4.39: From the Studio, popular music. 5.0: G.P.O. chimes; pianoforte reproduction. 5.15: Studio items. 5.37: Features of the evening's programme.



Dorrie Ward, soprano, who will be heard from 2BL to-night.

EARLY EVENING SESSION.

Announcer: Basil Kirke.

5.40: Children's Session, conducted by Uncle Bas; music and entertainment; letters and stories. 6.30: "Sun" news and late sporting. 6.40: 2BL Dinner Quartette—(a) "Scene Epaganole" (Lacome); (b) "Romance Sans Paroles" (Van Goens); (c) "Veronique" (Messager); (d) "Minuet" (Beethoven); (e) "Wierceller" (Per Winge); (f) "Mazurka" (Malling). 7.7: Australian Mercantile Land and Finance Co.'s report; weather report and forecast by courtesy of Government Meteorologist; Producers' Distributing Society's Fruit and Vegetable Market Report; Grain and Fodder Report ("Sun"); Dairy Produce Report ("Sun") Weekly Traffic Bulletin. 7.25: Mr. Pim and Miss Pam in advertising talks, handy hints and nonsense. 7.53: An Ad. Special. 7.53: Programme and other announcements.

EVENING SESSION.

Accompanist: G. Vern Barnett.

Announcer: Basil Kirke.

8.0: G.P.O. chimes; band items. 8.20: W. E. Lewis, baritone. 8.27: Will and Barbara James, vocal and instrumental— (a) "Mexican Serenade." (b) "Poor Little Me." (c) "Sextette from Lucia." 8.37: Band items. 8.56: Weather report 8.57: 2BL interviews to-night's personality. 9.9: Dorrie Ward, soprano. 9.15: Sketch by Zena and James Kendall. 9.22: Band items. 9.37: W. E. Lewis, baritone. 9.44: Will and Barbara James, vocal and instrumental— (a) "Song of India." (b) "Isle of Golden Dreams." (c) Selections "Il Trovatore." 9.56: Sketch by Zena and James Kendall. 10.8: Dorrie Ward, soprano. 10.15: Band items. 10.28: Late weather report; to-morrow's programme. 10.30: National Anthem. Close.

2GB

10.0: Music. 10.10: Happiness talk by A. E. Bennett. 10.20: Music. 10.30: Women's session, by Miss Helen J. Beegling. 11.30: Close down. 2.0: Music. 2.5: Women's radio service, by Mrs. Dorothy Jordan. 2.30: Music. 3.15: Close down. 5.30: Children's session by Uncle George. 7.0: Music. 7.30: Short talk by Mrs. Jordan. 8.0: Mr. Leonard Brewer, violinist. 8.8: Mr. Wagner, baritone. 8.15: Madame Betts Vincent in an illustrated talk on "The Making of Music." 8.30: Instrumental music. 8.40: Humorous sketch by Mr. Jack Win and Miss Nora Windie. 8.50: Miss Elsie Peerless, soprano. 9.0: Weather report. 9.5: Address. 9.15: Instrumental music. 9.25: Mr. Wagner, baritone. 9.35: Mr. Jack Win and Miss Nora Windie in a humorous sketch. 9.45: Mr. Leonard Brewer, violinist. 9.55: Miss Elsie Peerless, soprano. 10.5: Dance music. 10.30: Close down.

2UW

MIDDAY SESSION.

12.30: Music. 1.0: G.P.O. clock and chimes; music. 1.15: Talk on "Homecraft," by Pandora. 1.40: Music. 2.30: Close down. 4.30: Musical programme.

EVENING SESSION.

5.30: Children's Hour, conducted by Uncle Jack. 6.30: Close down. 7.0: G.P.O. clock and chimes; request numbers. 8.15: Talk on "Gardening," by Mr. S. H. Hunt. 8.30: Music. 9.0: G.P.O. clock and chimes; comments on foreign affairs, by Mr. J. M. Prentice. 9.10: Music and request numbers. 10.30: Close down.

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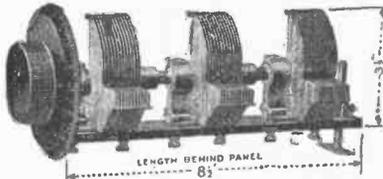


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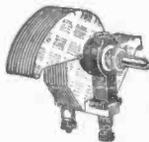
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Interstate Programmes, Thursday, May 16

3LO

EARLY MORNING SESSION.

7.15 to 8.15: See Friday.

MORNING SESSION.

11.0: To-day's radio recipe—Chocolate Pudding.
11.5: Miss B. Maclean will speak on "The Temperaments: How to Recognise Them." 11.25: Captain Donald Maclean will tell you about "Famous Women of History." 11.45: Sister Purcell will speak on "Infant Welfare."

MIDDAY SESSION.

12.0: Melbourne Observatory time signal. 12.1: British official wireless news from Rugby; Reuters and the Australian Press Association cables; "Argus" news service. 12.15: Newmarket stock; cattle sales report, bullocks and calves, by the Associated Stock and Station Agents, Rourke Street, Melbourne. 12.20: Community singing, transmitted from the King's Theatre, Russell Street, Melbourne, Old-time Choruses, conducted by Frank Hatherley; Ern Hall's Radio Revelers with Hugh Kukham, Jack Stocks, "The Woman Hater." 12.40: Stock Exchange information; prices received this day by the Australian Mines and Metals Association from the London Stock Exchange 12.43: Community singing resumed. 1.45: Meteorological information; weather forecast for Victoria, New South Wales, South Australia, and Tasmania. 1.55: Close down.

AFTERNOON SESSION.

Announcer: Frank Hatherley, Accompanist: Agnes Fortune. 1.58: Description by Eric Welch of the Trial Handicap, six furlongs, Bendigo races. 2.5: Dawn Assheton, soprano, Enrico Schvartz, violin. 2.30: Description of Kirby Handicap, one mile, Bendigo races. 2.45: Station Orchestra. 2.55: Clelia Genoni M'Neill, soprano. 3.2: The Station Orchestra. 3.13: Description of Brush Steeplechase, two miles, Bendigo races. 3.20: Fritz Hart will speak to the students of music. 3.35: Bertha Jorgensen, violin. 3.43: Description of Distance Handicap Trot, 1 1/4 miles, Bendigo races. 3.50: Dr. Loftus Hills will speak on "Topics of the Week." 4.1: Rev. Wm. Botomey will continue his series of talks on "Sigurd, the Volsung," by William Morris. 4.13: Description of Flying Handicap, 5/8 furlongs, at Bendigo races. 4.20: The Station Orchestra. 4.30: Clelia Genoni M'Neill, soprano. 4.37: The Station Orchestra. 4.45: Even-song, transmitted from St. Paul's Cathedral, Melbourne. 5.30: Result of Encourage Handicap, one mile, run at 4.45, Bendigo races; acceptances and barrier positions for the Williamstown races to be held on Saturday, May 18. 5.35: Close down.

CHILDREN'S HOUR.

6.0: Birthday greetings and answers to letters by "Bobby Bluegum." Then half an hour of song and story, and more fun with "Ector and Orace."

EVENING SESSION.

7.5: Stock Exchange information. 7.15: Market reports. 7.30: News session. 7.45: Birthday greetings. 7.45: Out of the Past. 7.46: A dressing room talk. 8.0: A Maker of History.

NIGHT SESSION.

Announcer: Renn Millar.

Accompanist: Agnes Fortune.

- 8.1: Programme announcements.
- 8.2: Rod M'Gregor will speak on "Football."
- 8.15: The Radio Revelers—
"The Rose of Flanders" (O'Hagen);
"Oh, Ya Ya" (Friedl);
"Stars are the Windows of Heaven" (Malle).
- 8.24: Jack Stocks, "The Woman Hater"—
"Popular Parodies."
- 8.27: The Radio Revelers—
"Only a Rose" (Prinl);
"That's Her Now" (Ager);
"Song of the Vegabonds" (Prinl).
- 8.36: Dorothy Stephen, entertainer—
Novelty Numbers.
- 8.39: The Radio Revelers—
"Japanese" (Kienner);
"Constantinople" (Carlton);
"In the Woodshed She Said 'Bo Woud'" (Johnson).
- 8.48: "The Kauls," Hawaiian instrumentalists—
"Maul Oia" (Sherwin).
- 8.51: The Radio Revelers—
"Mimnetonka" (Wallace);
"Fireworks" (Williams).
- 8.55: "Roses of Yesterday" (Berlin).
- 9.0: Jean Gibson will give a musical monologue.
- 9.3: The Radio Revelers—
"Jo Anne" (Ward);
"Gypsy" (Gilbert).
- 9.12: Jack Stocks, "The Woman Hater"—
More Popular Parodies.
- 9.15: The Radio Revelers—
"Flower of Love";
"Wear a Hat with a Silver Lining" (Sherman).
- 9.24: Dorothy Stephen, entertainer—
Up-to-the-minute Melodies.
- 9.27: The Radio Revelers—
"One Alone" (Romberg);
"Just Give the Good-bye to Me" (Sisael);
"The Desert Song" (Romberg);
"Wear a Hat with a Silver Lining" (Sherman).
- 9.36: "The Kauls," Hawaiian instrumentalists—
"Walpo!" (Hopkins).
- 9.39: The Radio Revelers—
"A Room with a View" (Coward);
"What a Girl!" (Banders);
"Dynamite" (Henderson).
- 9.48: Jean Gibson will entertain with a short musical monologue.

- 9.51: The Radio Revelers—
"The Dance of the Blue Danube" (Fisher);
"Rose Time" (Hall);
"Forever More" (Burnett).
- 10.0: News service; meteorological information; British official wireless news from Rugby; announcements.
- 10.15: The Radio Revelers—
"Me and the Man in the Moon" (Monaco);
"Nebraska" (Sisael);
"When You Said Goodnight" (Donaldson).
- 10.24: Jack Stocks, "The Woman Hater"—
"Mourful Memories."
- 10.27: The Radio Revelers—
"Dookey Dookey, Doo!" (Sherwin);
"Counting the Alliestones" (Tilsley);
"My Starlight" (Tilsley).
- 10.36: Dorothy Stephen, entertainer—
Latest Hits.
- 10.39: The Radio Revelers—
"Daybreak" (Evans);
"Toy Town Artillery" (Carlton);
"Promise Me" (Booth).
- 10.48: "The Kauls," Hawaiian instrumentalists—
"Song to Hawaii" (Bedding).
- 10.51: The Radio Revelers—
"Ready for the River" (Moret);
"My Stormy Weather Pal" (Plantadosi);
"What'll You Do?" (Cohn).
- 11.1: The Radio Revelers—
"Do You?" (Plantadosi);
"Pa's Old Hat" (Guy);
"Colombo" (Nichols);
"I Fall Head over Heels in Love" (Thayer);
"Sonny Boy" (Brown);
"Sally of my Dreams" (Kernell);
"You're a Real Sweetheart" (Friend);
"The Tile Trot" (Pensio).
- 11.30: God Save the King.

3AR

NEWS SESSION.

10.0 to 10.59: See Friday.

MORNING MUSICAL SESSION.

11.0: Melody. 11.30: The Kauls, Hawaiian instrumentalists. 11.37: Ballads. 12.0: The Kauls. 12.7: Ballads. 12.30: British official wireless news; announcements. 12.30: Close down.

AFTERNOON SESSION.

Announcer: John Stuart.—3.0: The Strad Trio. 3.28: Ballads. 3.30: Frank Johnstone, cello. 3.44: Ballads. 3.54: The Brad Trio. 4.4: Captain Donald MacLenn. 4.20: Ballads. 4.30: Miss P. F. Yerbury. "East is East." 4.45: Close down.

EVENING SESSION.

Announcer: John Stuart.—6.0: The Station Orchestra. 6.10: Ballads. 6.20: The Station Orchestra. 6.30: Ballads. 6.40: The Station Orchestra. 6.50: Announcements. 7.0: Ballads. 7.20: News service; announcements; acceptances and barrier positions for Williamstown races on Saturday. 7.30: Ballads.

NIGHT SESSION.

Announcer: John Stuart.

Accompanist: Reg. Brown.

- 8.0: Dr. Loftus Hills, Fancies.
- 8.15: W. R. Warner, under the auspices of the Nurses and Seedsmen's Association of Victoria, will speak on "Autumn Tints."
- 8.30: Piano recital, Lindsay Higgins—
"Kazurka in A Minor" (Chopin);
"Polonaise in A Major" (Chopin);
"Scherzo in B Flat Minor" (Chopin).
- 9.0: The Melody Makers in
Harmony and Happiness.
- 9.20: Dawn Assheton, coloratura soprano, and Laszlo Schwartz, Hungarian violinist, in Hungarian, Slavonic, Bohemian, and Oriental selections.
- 10.0: Jeda Trio (Alva Hattenbach, violin; Edna Hattenbach, cello; and John Simons, piano)—
"Tri-o," "Andante" (Beisiger);
"Slavonic Dance" (Dvorsak);
Violin solo, "Londonderry Air" (Old Irish);
"Gavotte" (Mehul-Burmester);
Trio, "Andante Religioso" (Thome).
- 10.20: News service; announcements.
God Save the King.

4QG

EARLY MORNING SESSION

7.43 to 8.30: See Friday.

MORNING SESSION

11.0: From the City Hall, civic reception to visiting delegates of the Congregational Union; from the studio, a gardening talk by "Teema," at conclusion.

MIDDAY SESSION

1.0: Market and weather information. 1.15: From the Constitutional Club, a lunch-hour address. 2.0: Close down.

AFTERNOON SESSION

3.30: A programme of records. 3.30: Mail train running times. 4.15: This afternoon's news. 4.30: Close down.

EARLY EVENING SESSION

6.0: Mail train running times; mail information; shipping news. 6.5: From the Wintergarden Theatre, Wurlitzer organ. 6.25: Commercial announcements. 6.30: Bedtime stories, conducted by "The Sandman." 7.0: News in brief. 7.5: Stock Exchange news, etc. 7.5: Metal quotations. 7.45: Lec-

turette, "A Talk on Books," by Mr. J. Dora (M'Leod's).

NIGHT SESSION

- 8.0: A programme arranged by Mr. Eric Johnson—
Instrumental Quartette—
Group I: Grand Opera—
"Country Dance" (from "Neil Gwyn"—German);
Double Quartette—
"The Harvee Home" (from "Marriage of Figaro"—Mozart);
Stanley Tamblin (bass-baritone)—
"She Alone Charmed" My Sadness (from "Queen of Sheba"—Cunco);
Mrs. Robert Bell (soprano)—
"Michael's Song" (from "Carmen"—Bazet);
A thought for to-night (Willi H. Lister)—
"The Beauty of it all";
Double Quartette—
"Anvil Chorus" (from "The Troubadour"—Verdi);
Instrumental Quartette—
"Pastoral Dance" (from "Neil Gwyn"—German).
- 8.20: Group II—Folk-songs—
Mildred Bell (contralto) and Stanley Tamblin (bass-baritone)—
"Voca"—"Trittomba" (Italian);
Double Quartette—
"Must I then, must I then from my Village depart" (German);
Jack Lord, tenor—
"Sic a wife as Willie had" (Scottish);
Double Quartette—
"The Postilion" (Swedish);
Instrumental Quartette—
"Serenade" (from "Millions of Ariques"—Drigo).
- 8.40: Group III—Sacred—
Mrs. Robert Bell (soprano)—
"Ave Maria" (Cooper);
W. W. Crisp (tenor)—
"God, my Father" (Dubois);
Double Quartette—
"Benedictus" (Eric John);
Instrumental Quartette—
"Ovations" (Raff).
- 9.3: Group IV—Classical—
Muriel M'Hugh (soprano)—
"Say, who borrow" ("Marriage of Figaro"—Mozart);
Double Quartette—
"The Victor's Return" (Mendelssohn);
Mildred Bell (contralto)—
"Hatfield Bells" (Martin);
"Autumn Song" (Mendelssohn);
Double Quartette—
"Meeting" (Mendelssohn);
Instrumental Quartette—
"Norwegian Dance No. 5" (Grieg).
- 9.20: Group V—Miscellaneous—
Double Quartette—
"Plantation Song" (Gatty);
W. W. Crisp (tenor)—
"Fishermen of England" (German);
Stanley Tamblin (bass-baritone)—
"Captain Blaze" (Richards);
Mildred Bell (contralto)—
W. W. Crisp (tenor) and Stanley Tamblin (bass-baritone)—
Vocal duet, "Two Beggars" (Black);
Instrumental Quartette—
"Under the Tree" (Thome).
- 9.40: Group VI—Light Opera—
Double Quartette—
"Day Born of Love" (from "Geisha"—Jones);
Mildred Bell (contralto);
"A Dance for Jack" (from "Country Girl"—Monekion);
Double Quartette—
"In England" (from "Merrie England"—German);
Instrumental Quartette—
"Merry Makers' Dance" (from "Neil Gwyn"—German).
- 10.0: News; weather; Close down.

5CL

MORNING SESSION.

11.0: Chimes. 11.1: Morning melodies. 11.8: Kitchen craft and menu talk. 11.45: Miss P. Birch under the auspices of the Y.W.O.A. 12.15: General news service. 12.22: Railway information; Stock Exchange information; meteorological information. 1.6: Change Information; meteorological information. 1.6: Chimes. 1.1: Lunch-hour recital. 1.35: Result Trial Handicap (Bendigo). 1.59: Meteorological information. 2.0: Close down.

AFTERNOON SESSION.

Announcer: J. L. Norris. 3.0: Resume of race results. General programme, including—Boake-Smith Quartette, Rev. C. H. Meid, result, Distance Handicap; Stella Sobel, soprano; William Dwyer, xylophone; Stanley Huikin, baritone. 3.55: Result Flying Handicap. 4.5: Resume of race results. 4.8: A one-act comedy entitled "The Timetable" (produced by Jack Burgess). 4.21: Result Encourage Handicap. 4.45: Stock Exchange information. 5.0: Resume of race results. Close down.

EVENING SESSION.

Announcer: C. J. O'Connor. 6.0: Chimes, and resume of race results. 6.1: Birthday greetings; correspondence; songs and stories by "The Watite Lady." 6.30: Miss Bebe Francis, 6.50: GCL's sporting service, supplied by "Silvius," including Bendigo race results. 7.1: Stock Exchange information. 7.8: General market reports. 7.10: Mr. F. W. E. Bacom's service. 7.12: Railway information. 7.15: Chimes. 7.20: "New Zealand's Thermal Regions." 7.25: Melba, M. C. Berardi, "French for All." 7.40: Mr. A. W. Whittenbury, hints to poultry breeders.

NIGHT SESSION.

Announcer: C. J. O'Connor. Accompanist: J. G. Finlay. 8.0: Chimes. 8.1: From Adelaide Town Hall.

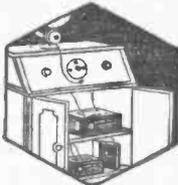
Adelaide Orpheus Society's concert. Part song, "Who Calls with Drake," Adelaide Orpheus Society; part song, "O Peaceful Night," Adelaide Orpheus Society; song, selected, Miss Linda Wald; part song, "In Memoriam," Adelaide Orpheus Society (in memory of the late Messrs. Walter F. Noffke and G. H. Chandler); organ solo, selected, Mr. Frederic Finlay; song, "Elizabeth's Prayer" and "Pilgrim's Progress," Miss Linda Wald and Adelaide Orpheus Society. 9.0: Chimes. 9.1: Meteorological information, including Semaphore tides. 9.2: Overseas grain report. 9.3: Announcements. 9.10: From Adelaide Town Hall, continuation of Adelaide Orpheus Society's concert. Chorus, "Song of the Volga Boatmen," Adelaide Orpheus Society; song, selected, Mr. Stanley Hunkin; part song, "Tom, Tom, the Piper's Son," Adelaide Orpheus Society; song, selected, Miss Linda Wald; part song, "The Sands of Dee," Adelaide Orpheus Society; chorus (organ and piano accompaniment), "The Last Chord," Adelaide Orpheus Society. 10.30: God Save the King. 10.31: From 5CL Studio, general news service. 10.45: Modern dance records. 11.0: Close down.



EVER-READY

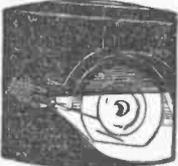
THE LARGEST MANUFACTURERS OF DRY BATTERIES IN THE EMPIRE!

6WF
 12.30: Tune in. 12.35: Markets, news, etc. 1.0: Time signal. 1.1: Weather bulletin. 1.3: Panatrophe hour, relayed from Musgrove's, Ltd., Lyric House, Perth. 2.0: Close down. 3.30: Tune in. 3.35: Musical programme, relayed from the Carlton Cafe; vocal items from the studio. 4.30: Close down. 6.45: Tune in. 6.48: Bedtime stories by Uncle Duffy. 7.5: Light music by the Perth Piano Trio. 7.30: Commercial and general information. 7.45: Talk by Professor A. D. Ross, M.A., D.Sc., F.R.S.E. 8.0: Time signal. 8.1: First weather bulletin. 8.3: Concert by the Perth City Band, conducted by Mr. Les. M. Price, "My Regiment" (Blackburn), "Bridal Rose" (Hume), "Danny Boy" (Hawkins), "Larboard Watch" (Williams), "Sandringham" (Rayner), "Double Eagle" (Wagner). 8.50: Late news items, by courtesy of the "Daily News" Newspaper Co., Ltd.; station announcements; ships within range announcement; late weather bulletin. 9.5: Programme continued from the studio. 9.45: "Health" talk by Mr. H. Hatton, of the Hatton School of Physical Culture. 10.30: Close down.
 104.5 Metre Transmission.—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres, commencing at 6.45 p.m.



FOR RADIO

7ZL
MIDDAY SESSION.
 11.30 to 1.30: See Friday.
AFTERNOON SESSION.
 3.0: Chimes. 3.4: Weather information. 3.15: Description of Brush Steeplechase, 2 miles, Bendigo, Victoria. 3.45: Description of Distance Handicap Trot, 1-4 miles, Bendigo, Victoria. 4.15: Description of Flying Handicap, 5/2 furlongs, Bendigo, Victoria. 4.20: A representative of the Child Welfare Association will speak. 4.30: Close down. 4.45: Description of Encourage Handicap, 1 mile, Bendigo, Victoria. 4.50: All sporting results to hand. 5.0: Close down.



FOR TORCHES

EARLY EVENING SESSION.
 6.10: Results of Bendigo races. 6.30: Betty Braithwaite will play—"Grace" (Mayer), "The Desert Song." 6.48: "The Story Lady." 7.0: Answers to letters and birthday greetings by "Uncle David" and "The Story Lady." 7.18: News session.

EVENING SESSION.

7.30: Under the auspices of the "Come to Tasmania" Organisation, L. Norman will speak on—"How to Spend a Holiday in Tasmania." 7.45: E. Dwyer-Gray will speak on—"Empire Shopping Week." 8.0: Chimes. 8.15: 7ZL's Community Singing—"All My Bonnie is over the Ocean," "Aloha" (Allan's Community Song Book). 8.22: Molly McGann, elocutionist—Selected. 8.25: All—"Sweet and Low," "Old Folks at Home" (Allan's Community Song Book). 8.32: Cliffe Hughes, baritone—Selected. 8.35: All—"Nearer My God to Thee," "Annie Laurie" (Allan's Community Song Book). 8.42: One Act Play, produced by W. E. Fuller. 8.57: Mrs. Cliffe Hughes, contralto—Selected. 9.0: All—"John Peel," "Last Rose of Summer" (Allan's Community Song Book). 9.7: W. Thompson, bass—Selected. 9.10: All—"Jeannine," "Romana." 9.17: Jack Paterson, tenor—Selected. 9.20: All—"Lay My Head Beneath a Rose," "Home Sweet Home" (Allan's Community Song Book). 9.27: A. Alomes, baritone—Selected. 9.30: All—"Moonlight and Roses," "Auld Lang Syne" (Allan's Community Song Book). 9.45: News session. 10.0: Chimes. 10.1: Close down. Popular and Classical Program—John Strauss



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Be sure to visit the Radio Exhibition at the Town Hall, May 1 to May 11.

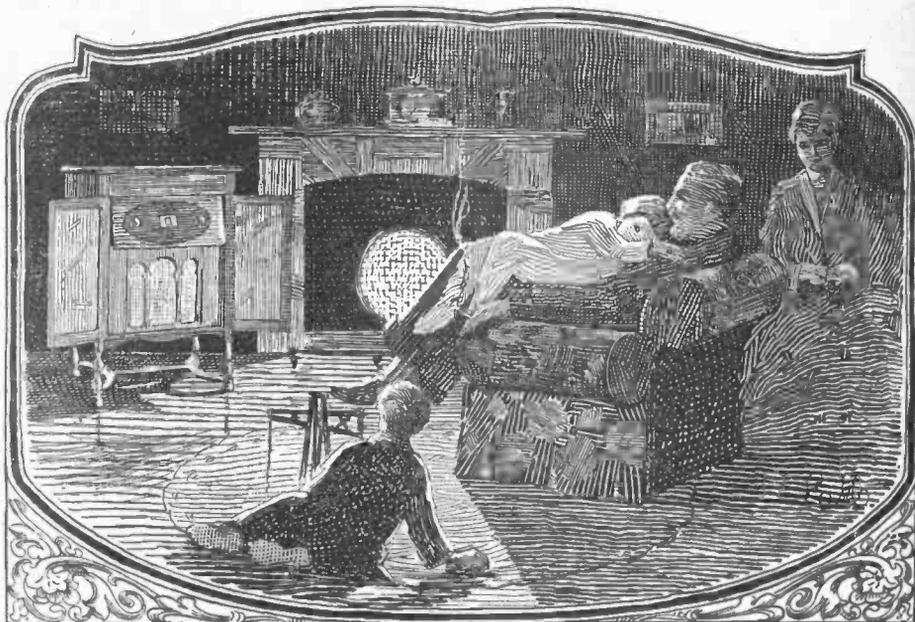
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WEG

"THIS YEAR OF GRACE"
 LOVERS of bright and witty comedy have a treat in store for them, for the first act of the successful revue "This Year of Grace" will be broadcast by 3LO on May 14. Maisie Gay, the brilliant English character comedienne, will be heard at her best, and among the musical numbers included in this act may be mentioned the song of the evening, "A Room With a View." Several clever artists new to listeners will be on the air, and a thoroughly enjoyable time may be anticipated.



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The WIRELESS WEEKLY

RADIO INFORMATION

Under the direction of Ray Allsop and Don B. Knock, Associate Technical Editors

Service

Correspondence Answered only through these Columns (See Coupon Below)

G.M.H. (Randwick)—Advise you to use Airzone material for secondaries, as 12 Go-retail. Finer gauge wire—less self-capacity. Two aerial coupling coils, one 4 turns of Airzone material, and one 12 turns. Use 12-turn coil for higher waves. Secondary 3, reaction 3, covers 14 to 25 metres. Secondary 4, reaction 3, 20 to 32 metres. Secondary 5, reaction 4, 30 to 48 metres. Secondary 9, reaction 5, 45 to 60 metres. Secondary 14, reaction 7, 60 to 120 metres. Above this you cannot get Airzone material owing to business. Use 22 D.G.C. wire for grid and 28 D.S.C. for reaction. Work out from these tables coils up to 800 metres.

General.—Many readers are inquiring for particulars of S.W. coils. See remarks to G.M.H. (Randwick), above.

T.F. (Blackhurst)—Fenthode O.K. Whistle probably threshold noise. Shunt 125,000 ohm variable resistance across secondaries of both transformers. Only need to be adjusted once.

R.M.T. (Cessnock)—Set mentioned was an English job, I think. We have no record of it here. Sorry. 201A's O.K., ditto wire. 8-1 transformer. Wire too small for lower bands.

W.G. (Granville)—One will appear very shortly. A.E. (Cremorne)—Hand capacity. Moving plates of condenser must be reversed.

E.W.E.B. (Paddington)—Eliminator quite O.K. Phillips B and C. Dry batteries will soon give trouble on such a set.

W.A.P. (Mt. Morgan).—Queries have already been answered. Eliminator O.K. No room for such a circuit here. An article on an A.B.C. eliminator will appear shortly.

L.M.D. (Neutral Bay)—Use outside aerial, and wave-trap if necessary. Should not be awkward to erect suitable aerial. Eiectron wire, or any well insulated heavy gauge wire, can be run along the passage—round the room, under the ground, in piping—in fact, all sorts of inconceivable places.

K.M. (Mt. Morgan).—The address was wrong. WZAD is A. L. Dixon, 15 Waratah Street, North Strathfield. Your letter has been forwarded to him. No charge. Australia's prefix was misquoted in QST. It should have been VU, not MH. Actually, this is not a prefix, but part of the call-sign. New Zealand was also quoted wrongly. This should have been ZL, not XL. Others O.K.

T.W. (Tamut)—Circuit of Countryman's One Valve is published in these columns for you.

A.I.K. (Double Bay).—Probably speaker or C has trouble. If more than one or two people speak, additional volume cannot be carried. Try reversing speaker leads. Set should not require neutralising. Use transformers. In order to test condensers with "C" battery and 'phones, connect rotor plates to one side of 'phones. Other side of 'phones should be connected to one side of "C" battery, and other side of "C" battery to fixed plates of condenser. You should only hear a faint click. Now touch 'phone tips across battery, leaving condenser out of circuit. If click is equal to that heard with condenser in circuit, latter component is shorted. Another way is to charge condenser with high voltage ("B" battery will do). Touch positive connection from battery to rotor plates, and negative connected to fixed plates, leaving connection for a few seconds. Then touch rotor and fixed plates with 'phone tips, when you should hear a click as condenser discharges through the 'phones. To test for touching plates, connect up as in first method and turn rotor plates. If you hear a scraping noise or a click during the whole of the 360 degrees of motion, it is a sure sign that plates are touching.

W.S. (Lidcombe).—Build Neutrodyne. Appeared last week.

A.M.P. (Blackheath)—Wire should be O.K. Try set alone without aerial, and see if stations can be heard; then attach patent aerial. Probably you connected it wrongly.

W.E.J. (Loomberah).—Adaptor O.K. Quite. Cannot advise what valve to use, as you did not mention what type valves are being used in set. It then happened to be four or six volt valves, suggest four volt), Mullard PM4D, and it 6 volt. Philips 6A5.

F. V. M. Mieling. "Herston." Lake Cargelligo, writes you have been away from home, and misseo the following numbers of "Wireless Weekly" volume 13, Nos. 1, 2, 3, 4, 5, 6, 7, 8, and 10. I should be obliged if any reader can supply me with them, as I take a great interest in "Proving Radio." I shall be pleased to pay for copies, and for postage to R.A.F. (Tamworth).—See "Proving Radio," Part No. 13. Angus and Robertson, also Swain's. Angus

and Robertson, Castlereagh Street, Sydney; Swain's, Pitt Street, Sydney.

G.V. (Belmore).—Try lower grid leak, say, 100,000 ohms.

R.S. (Gordonvale).—It was not intended to be a charitable act, otherwise postage would not have been requested.

K.J. (Kurri Kurri).—It will, if the wire is suitable enough to carry the current. It is not so much voltage that matters. The amperage of a "B" battery of the general type is usually lower than that of a "C" battery, because the individual cells are smaller, and the cells are connected in series, thus giving an increased voltage, but the amperage is just the same as for one cell. Besides, the inner

the treatment you are giving them. Advise you to get a new set, and treat them properly.

F.H. (Sydney).—Letter has been passed on to Mr. Allsop (re amplifier). The ATL wave four will not suit your requirements. Renown Three not suitable either. The Marneck Five will be better. If you build this receiver, note that the choke should be in series with the plate terminal of the first audio transformer, and not in series with the plate of the valve, as shown.

W.W. (Croydon).—A suitable gramophone amplifier circuit appeared in these columns recently.

B.M.C. (Junees).—An article covering this will appear soon after the Radio Exhibition.

TOM (No address).—Query answered before. When a ship is within radio distance, that distance will be variable. It only means that shore stations have established reliable communication with that ship. In some cases this may mean 50, and in other cases a thousand miles or more. It depends on the locality of the ship.

J. N.R. (Queenland).—Flat "A" battery is your trouble.

"RADIOMANIAC" (Newcastle).—Adding reaction (Reinartz) appeared in these columns twice since January, 1928. Condensers O.K. Yes, you are welcome to our advice. Send us a report. No—headaches conspicuous by their absence to-day.

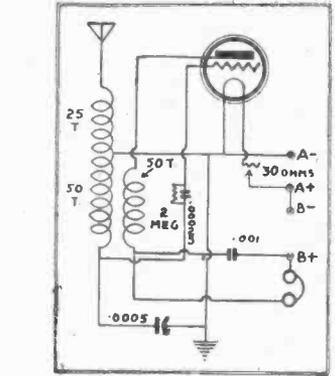
S.M.V. (Taree).—Earth not efficient enough. You must use a copper plate, at least two feet square, and sink it as deep as possible with safety. You don't want it to act as an anchor, you know. Depends on your previous experience. If you understand which wires carry R.F. current, and which carry A.F. current, it would be worth while.

A.R. (Roselle).—It must be disappointing to readers (we know) to have to announce that (at present), any large diagrams cannot be published. The five-valve Solodyne was published in "Wireless Weekly," and also appeared in these columns last week. If you care to repeat your request as soon as you notice I am publishing the questions again, will be pleased to publish the circuit for you.

"FUZZLED" (Summer Hill).—Glad to hear our advice rectified your trouble. Try reducing voltage (slightly) on detector, and increasing coupling between primary and secondary. You cannot hope for the same results on a one-valve Reinartz as you had in the country.

"FENTAVOX" (Singleton).—Parts O.K. (2) All O.K. (3) You are using too high detector voltage. Reduce this, and place .001 condenser across primary of first transformer.

F. V. M.M. (Lake Cargelligo).—It will be necessary to re-tune the set after the long leads have been added. Advisable to shield these leads, and connect shield to earth. Silver paper (tin foil) will do for a shield. Panel O.K. Condensers depend on coils to be used. Best to use condensers and coils specified in the article.



This circuit with a stage of audio added was also published in this section a few weeks ago.

wire has resistance, and if the current is low, it will only be a relatively small output. The heavier the wire used, the larger is its capacity for carrying current.

A.W. (Auckland).—Eliminator mentioned N.G. for your purpose. The eliminator transformers mentioned will be O.K., if you desire to build your own A.B.C. eliminator will be described soon. Output transformer O.K.

S.H. (East Ipswich).—Station you heard was W6XN. Worth while sending your notes to the station, they will be useful. Plates of condenser shown in drawing O.K. They are known as straight law. Add turns to grid coil. Lot of stations you must remember.

H.C.G. (Lidcombe).—Coils should be O.K. Probably wrong battery connections. Are earth and aerial efficient? Try changing over valves.

H.G. (Wairara).—Advise Harkness Reflex, Two.

W.N.S. (Clarence River).—Yes, a S.W. adaptor will work O.K. with the Renown Three, but it would be advisable to cut out the wave-trap.

H.D.B. (Punlome).—First condenser .0002b, second .0005. Renown Three O.K.

A.W.P. (Temora).—A.B.C. eliminator will shortly be published.

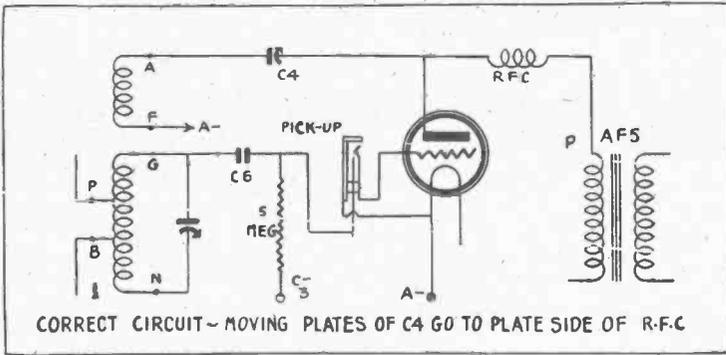
A.L. (Newcastle).—Too high voltage on detector. Use maximum of 30 volts. Detector valve has also probably lost its emission. Whistle will be caused by flat batteries. You are running your valves with

QUERY COUPON

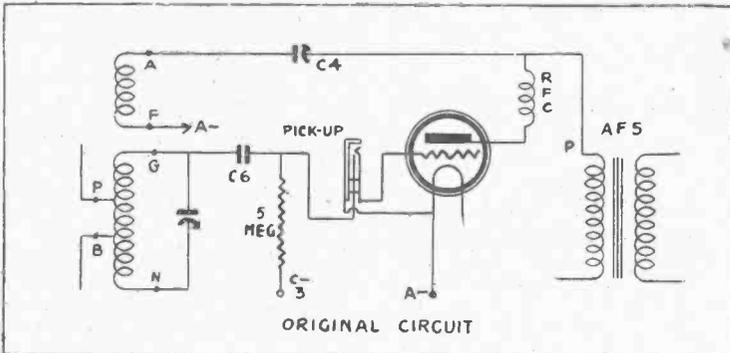
If you are in difficulties about reception or set-construction, let us know, and we will endeavor to see you right. Make your questions brief to the point, and, where possible, show lay-out and wiring design. Under no circumstances will answers to queries be made by letter or by telephone. All answers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

Please answer the accompanying queries in the information Service Department at 111, Pitt Street, Sydney.

Your earliest convenience. I enclose this coupon in hope that I am a bona-fide reader.



CORRECT CIRCUIT - MOVING PLATES OF C4 GO TO PLATE SIDE OF R.F.C.



ORIGINAL CIRCUIT

CORRECTION IN MARNOCK FIVE CIRCUIT

In the theoretical and schematic wiring diagrams of the Marnock De Luxe Five receiver, as described in detail in WIRELESS WEEKLY for February 15, a slight error occurred in the drawings. Although this may have appeared insignificant to many, it is a most important item, covering as it does the control or reaction in the detector circuit. In the original circuit the Radio Frequency choke was shown in series with the plate of the detector valve, with the other end connected to the reaction condenser and the primary of the audio transformer. This would include such a high impedance in the plate circuit that reaction would be difficult to obtain. The correct place for the choke is in series with the primary of the transformer to the plate of the detector valve, and also to the reaction condenser, as shown in the corrective diagram.

R.H. (Mosman).—Re Amperites or Brachstats—yes. No, same size baseboard. Resistance coupling for first stage O.K., but it would be better to resistance couple last stage, using 3/4-1 transformer for first stage, and a 100,000-ohm resistance for primary, and 1/2 meg. leak in secondary of second audio stage.

M.W.B.C. (Strathfield).—Monkey glands will not help a radio receiver! Try .001 fixed condenser across primary of first audio stage. You should be able to make the S.G. valves oscillate by altering plate voltage and B.G. voltage, then control with variable resistance.

W.A.T. (Randwick).—They connect to the telephone terminals or speaker jack, in other words, the P terminal goes to the plate of the detector valve, and the B plus is connected to the B battery, about 30 volts.

R.O.M. (Turramurra).—Takes place of A and B battery. An eliminator is not required with a power pack. Quality of reception excellent. Fluctuation of mains would only make slight alteration in volume, since a good filter is incorporated. You would probably not notice any difference on local stations, though it might be a little more pronounced on distant stations.

W.G. (Turramurra).—A one-valve set will operate efficiently on 45 volts 'B' battery. If more than one valve is used, two 45 volt 'B' batteries will be the minimum. Three is usually plenty for any set.

J.W. (Roselle).—Wire enclosed was 28 D.C.C. Coils too large. Use same number of turns (except reaction, which should be about 25-30 turns), and wind on a three-inch former. Wire enclosed O.K., but add three more turns to primary, four to secondary, and two to reaction. Coil to be altered is L3. No drawing was attached. The reaction condenser is the one which connects to the plate of the detector valve, and also to the moving plates of the main tuning condenser.

J.G. (Lithgow).—The Countryman's One Valve appears in these columns. It was published in a recent number of "Wireless Weekly." I suggest you follow "Proving Radio," first part of this appeared December 28, 1928.

B.C.C. (Turill).—Swains, Ltd., Pitt Street, Sydney,

N.C.W. (Picton).—No; All-Empire better. Coils for Call Sign and Guide Book.

N.C.W. (Picton).—No, All-Empire better. Coils quite efficient, otherwise they would not find place in our receivers. Ever read an article wherein we say the "Mugwump" choke is pretty awful, but it can be used after a style.

W.K. (Summer Hill).—Loosen coupling between primary and secondary. Try midgey condenser in aerial lead. Shorten aerial.

C.F.C. (Jervis Bay).—You say you don't know what a three stage audio transmitter is. We must both be dunces! 6WP, the W.A. station, works on a very high wave-length—1250 metres. The average broadcast set tunes only from 200 to 500 metres, so that you would not (if you took an ordinary set with you) be able to hear the local station (except, perhaps, on a harmonic). On the other hand, if you have a set tuning around 1200 metres, you would not be able to receive eastern States. Your best plan would be to build a set for purchase one! using plug in coils, when you would be able to change coils for 6WP and eastern stations. The 1929 Neutrodyne is a good broadcast receiver. If you wished for the very best of results at minimum cost you could build the 1929 Neutrodyne, plus a short-wave adaptor, because 6WP transmit their programmes on 100 metres also. The 1929 Neutrodyne appeared last week. Make for another good set, and could be used in same way as Neut; Colville-Moore, Economic Radio, or any such Sydney firms will be pleased to help you.

W.C. (Swanes).—It is a proof that there is interaction (a) between transformers, (b) between grid and plate leads, or (c) between various coils. "Whisper" (Mullumbimby).—Set is not so selective as it might be, evidently. See makers of set. Wave-trap may be necessary, but there is, in any case, something radically wrong with a set in your location that will not separate 2GB, 2BL, and 2FCI 2BL and 2UW use full power allotted. 2UW are having a little trouble with location yet, I.F.C. (Coolah).—All aeriels O.K., but not so efficient as they might be. Too near iron roof. Rather an indoor aerial than a coil aerial. Marnock Five. A.O.B. Eliminator not required, but can be used. No interference, unless you make your set squeal. Can be eliminated by handling set properly.

"Fond Reader" (Wagga Wagga).—Re double valve. No. When valves blow the filaments first, and in the case of valves whose filaments do not glow when in order, you can test for continuity with a "C" battery and a pair of 'phones. If it is not connected to lighting conductors that after use will be useless. Reception will be O.K. Re: Depends on cause. If B plus shorts with A plus when A minus is connected to B minus all valves (if rheostats are on) will blow. If B battery makes contact with filament of the valve, and the others are saved. Re testing valves: Connect positive terminal of "C" battery to one side of the pair of 'phones, and the other side to the 'phones to one of the filament (fil) terminals of the valve. The other filament (fil) terminal should be connected to "C" negative. When the contact is made you should hear a loud click. If not, filament is broken. Test transformers any way. You should hear a louder click through the primary than through the secondary of an audio transformer. Reception good.

F.W. (Menangle).—"I intend to add a stage audio to my one-valve set. (Extraordinary One Valve). Could you give me your advice on the valve socket to use—detector valve socket or standard socket?"

Answer: Couldn't think of anything sarcasm or snooty to say, but I will tell you what I have made specially for R.F. detector, or audio stage. A.M. (East Moree).—Yes, Marco will do O.K. as two valves—Shelac O.K., but don't do too much. Cause losses otherwise. Must be good quality; 30 ohm rheostat.

G.H.B. (St. Peters).—Try choke in R.F. lead. Try using aerial and earth. Do not connect the circuit. Thanks for the Marnock De Luxe magazine, but this is unintentional. The reason is the best colors are easier to reproduce, and give better results. Yes, accepted in the friendly spirit offered.

H. E. McD. (Queanbeyan).—A seven-valve set should bring in the stations mentioned. About you not to replace B.G. stages with 2FCI, but get set fixed. You will probably find set does not require S.G. Queanbeyan is a bad place for reception, I believe, but you should get out with super. SLD, 2BL, and 2FCI should be your best stations.

J.T. (Ward's River).—Use shellac. Barvut of Raven oil.

F.W.W. (Collarenebri).—Stok to the valve and are using No. 4 valves. No. 4 valves are a slight improvement only. No, variable G.L. O.K.

H.B. (Granville).—Letters too long. Use coils with 20, 50, 25. Reaction coil may be reduced if searching is encountered. Cause of all trouble is that you have mounted coil (reaction) too close to secondary. Space, half inch. .001 condenser too large. "C" (Queanbeyan).—I would if you'll get the results. Too near 4G.C. Formers are six six-inch lengths.

"Nil Desperandum" (Erskineville).—Grid trouble Marnock. Five excellent.

D. (Dummoyny).—A.B.C. Eliminator.

D.F.B. (Port).—S.A.—Glad you like the Empire. Reason why you get howl when reaction is turned on is because you are getting a reaction too high. It is not reacting. Glad you like "Proving Radio." Yes, you. "If we readers of your Weekly will read some and learn your Information Service will soon be on the air. It is a pity that you will not. Wouldn't it be wonderful? Yes, but we must progress. 2NO tells me he has had another broadcast wave, which means that readers will soon be pleased with his program as something (very practical) the very latest of—but perhaps I shouldn't tell you yet.

M.F.V. (Victoria).—Try shorting crystal set of circuit. Quite a component is faulty, lead to valves and transformers first, then detectors. Make certain valves are tight down in sockets. Use heavy-gauge wire in connection with separate stages. Reaction coil will reduce volume through voltage drop caused by resonance. Look to earth connection. Try reaction shields, one at a time.

W.J.H. (Wyangala Dam).—Letters in connection with subscription crossed. Circuit of 5-tube set Neutrodyne appeared a week or two back.

W.E.B. (Bowral).—Too high plate voltages on R.F. detector, or both valves, or interaction between leads. Do not (perhaps this is the cause) use variable resistance controlling detector plate current turned right on unless tap on battery is reduced. A.T. (Murrumbidgee).—Wire enclosed is for your circuit. 500,000-ohm variable resistance (line 0) will be required.

L.A.D. (South Australia).—N.G. for charging batteries.

C.R. (Mitham Park).—See reply to inquirer above. Sorry cannot supply detailed circuit of "A" charger at present. As soon as you get columns, as well as replies, appearing in these columns, we will be glad to publish them, in constant demand can be published at present, owing to pressure of space.

G.E.R. (Adelaide).—Yes; and they will be shown at the Sydney Exhibition. Formula for equal impedance is: $E = \frac{V}{I}$, and $I = \frac{V}{Z}$, so $E = \frac{V}{\frac{V}{Z}} = Z$. Impedance, E equals voltage, and I equals current. In order to calculate the impedance of components mentioned, you must know the voltage and the current flowing through them. Be curves by means of frequency meters. Curves are plotted from different readings.

"RADIO ENTHUSIAST" (Bathurst).—Coils O.K. Glad you like "Proving Radio."

D.M. (Wingrove).—Your letter passed on to subscribers' department.

E.S. (Barwood).—The trouble is mainly through the two 6000-volt transmission lines. The 11,000-volt, 15,000-volt, and 500-volt lines may also be the cause, particularly as they are near the house. As an underground aerial is impracticable, suggest you use counterpoise instead. Run the counterpoise parallel to the power lines causing interference, and earth these wires.

L.L. (Wagga).—Your drawings a work of art. Who connects the link over? Circuit wrong. Plate of transformer, not to grid of the next valve, which you've left open.

S.O.S.—Has any reader spare copies of "Wireless Weekly" dated February 1, 8, and 15? Inquirer, 100 Highway, Woodnang, via Glenreagh. Use 18-gauge wire for lead-in. 18-Gauge is O.K. (Send from Henley's Cable Works. Two-pence per foot approx.), depending on type used. Obtainable in single and twin. In twin procedure, wires should be joined. Aerial O.K. What a lot of readers sit down to write one query, then find they are a lot more!

T.L. (North Sydney).—No. 2 S.W. adaptor published in these columns in answer to a query.

"RADIO ENTHUSIAST" (Bathurst).—"B" class stations. Try altering direction of aerial. Outdoor aerial would be better.

J.H. (Marrickville).—Such a circuit appeared in these columns recently.

A.B. (Annandale).—List of parts appeared in an advertisement opposite article. S.W. adaptor O.K. The condenser of the adaptor are used when the adaptor is attached.

W.C.D. (Urband).—28-Gauge enamelled copper wire for coils, but add few more turns—four to primary, and others in proportion. No set I know of. Write me the results asked for. Jefferson, transformers O.K.

MR. W. G. MILLER, of 18 Arthur Street, Croydon, can if any reader can supply him with "Wireless Weekly" containing the Grid Screen Grid receiver, dated November 23, 1928.

L.R.F. (Newcastle).—Instructions on neutralising appeared many times. Set owners can get a lot of useful information by reading these queries weekly. Insulate one of the filament prongs of the R.F. valves and replace in socket. Remove any condensers in series with the aerial, then use in a station near centre of dial, to full volume. Neutralising control. Turn neutralising condenser till station fades out or nearly so, then remove insulation from filament prong. Repeat procedure with each R.F. valve.

D.M. (Leichhardt).—Reception conditions not favorable at present. The Air Scout is an all-electric.

A.R. (Hilcombe).—The R.F. Booster Unit.

"STICKY" (Redfern).—You didn't even mention a circuit, nor even the number of spider-web coils, and enough to read your letter, let alone your circuit. The 201A valve takes .08 amp filament current. Three valves will take .06 x 3, or .18 amp. Wet battery for "A" supply essential. There are other valves which take less filament current, and can be used in wet batteries. The 199 takes .08 amp. There are four-watt series marked by Philips, Osram, 81-Sixty, Marconi, and others, and there are also two-watt types by Cosor, Philips, etc. 20-Gauge wire O.K. The coils should be wound on the primary, and 50 for the secondary, with re-sonance on 20, presuming the main tuning condenser has a capacity of 1000 p.f. The primary should be .4 in. (primary) coil and secondary should be .4 in. distance between secondary and reaction .4 in. Note that "wiring shown", then crossed this out. Use the R.F. coil and more correctly named R.F. coil.

"WIRELESS" (Rockdale).—The Reinartz. Speaker O.K. Not too weak or delicate. You say, "I put in some queries last week, also a coupon, and they are not in this week's issue." Reason it out. Reinartz is the Reinartz's One-Valver. The circuit section is correct. You have erred in wiring some-where. An audio stage is useless if the detector stage is not functioning.

H.J.A. (Cottage Hill).—Layout O.K. Economic R.F. eliminator kit can be relied upon, but be sure to use for your receiver unless you use a rectifying valve. This will cost you 12/6 extra. Secondaries of transformers of this type are primaries not very satisfactory. Fretwork fronts can be obtained from Anthony Borden's and Grace Bros., also Mick Simmons. Re charger, this is not possible. Re charges 160 turns, 30-gauge D.C.C. wire .4 in. diameter former. You say, "Might I suggest that you could save considerable space by completely eliminating all queries and just put the answers?" You will note that this is being done, and it is only temporary. The queries and answers can be a mine of information to one interested in all phases of radio, but the answers are useless unless without the questions; that is, of course, to all those unconcerned.

T.W.D. (Taree).—"I want your advice." That's all I could make out of your letter. The initials and address are given, and advice is—learn to be a typewriter. Writing hopeless.

J.H.C. (Wollstonecraft).—See recent circuit published in these columns. 2ND is not on 200-band at present. He tells me he is building some new transformers, and will shortly be on the 200-band. 20G, 2AR, 2LD are working on this band. The A418.

"ROGGO" (Taree).—Very sorry indeed, but you must have repeated queries. I am sorry to be reading later down in your letter, information given there lead me to look up your letter, and I found it has been answered. Are not you the reader who used to give up "W.W." queries? Your queries were answered immediately? We couldn't answer immediately, as you probably found, but your answer appeared. It was on course. To satisfy my curiosity I looked back, and found that your queries had been answered ON TWO OCCASIONS. Look up issues dated 20th March and 5th April.

W.G.B. (Lane Cove).—You are not a subscriber, and did not enclose cash; therefore, regret we cannot send forward copies required. Go-Getter appeared a few weeks ago. The two receivers mentioned cannot be incorporated, but the Go-Getter can be used as a short-wave adaptor and plugged into the autodyne. Valves have probably lost their emission. The years' good service. You have treated them well.

"INQUISITIVE" (Ashfield).—The article explains how the screws from the holder make contact with the lamp. It comes to a dead-end, and is only there to support the wiring, which would otherwise be damaged by the Stronger lamp, less current N.G. for "A" charger.

H.S. (Camptel).—This was 2LD. His address is given elsewhere in these queries.

G.N. (Kirribilli).—No; I can't shoot you, not that I'd waiver if I had the chance. Your "A" battery is probably ruined through over-charging. Aerial should be longer. Refer to makers.

A 4½-YEAR READER (Roselle).—You don't mean 4½ years old by any chance? Circuit appeared in queries recently. Try reversing grid return.

N.D. (Kogarah).—28-Gauge enamelled. O.K. for coils. Increase number of turns slightly, three to twelve turns. Not critical. Crystal will last indefinitely, provided it is a good one and kept away from moisture and dust. Clean with stiff brush and methylated spirit—never handle crystal with fingers; always use tweezers. 45-Volt "B" battery for Countryman's One-Valver.

"ELIMINATOR" (Mt. Victoria).—Condensers not necessary, but if you want to use them, use 2 mid. condensers, tested 500 volts. See below.

A.B. (Lithgow).—"Eliminator." Mt. Victoria, hastens to advise you that he listens to 2FC on a crystal set when his eliminator is out of commission.

T.L. (North Sydney).—"I've answered your query before. This issue, too, I think you'll find. S.W. adaptor O.K. I refer to the one published in these columns. It was performed by components—these will be treated in my articles on "Proving Radio."

J.D. (Bangalow).—"Re PI 3-valve circuit. Where could I obtain one?"

Answers? I'd like to reply, "Right here," but space for Col. Moore have blue-prints. Economic Radio and Levenson can also supply. Thank very much for the short query.

J.G. (Ethalton).—Sorry, but we haven't any blue-prints. (We are out of print, and the number of the Economist "B" Eliminator.)

L.M.C. (Haberfield).—Wave-trap. See circuit published in recent queries columns.

A.G.M. (Paddington).—Too meagre detail. Transformer may be faulty. Condenser may be broken down. Are you connecting the eliminator properly? What kind of set is the eliminator supplying? It is N.G. with a set over three valves unless a special note is used.

E.A.B. (Kiama).—It is no bother to send you copies, but they must be paid for.

J.S.T. (Queenland).—Quite in order. May be slight increase in volume using six-volt valves. 150 volts not detrimental to audios, but a waste of good battery power, as you'll probably not find any increase in volume when audios have anything from 100 to 150 volts.

R.G.H. (West Maitland).—Yes; wave-trap. Use whole of secondary. As mentioned not much good for R.F. stage, though it will work. The A435 is the correct valve to use. Not enough grid bias on the B403. 30 or 40 volts required.

"BROWNING DRAKE" (F.C.T.).—Good reception of Sydney and Melbourne, with a possibility of New Zealand. 199 Valve quite O.K., but for best results use a six-volt valve. Cannot be improved upon. The Countryman's One-Valver was made specially for the listener well away from stations.

G.O. (Silkstone).—One form of Reinartz.

"PORTEX" (Manly).—Your troubles are all due to wrong wiring in the detector stage or R.F. stage. Try connecting aerial to top of L3 and earth to bottom of this coil. If not is O.K. trouble is in R.F. stage.

MR. DONALD G. BUDDEN, 72 Donald Street, Newcastle, asks if any good reader can supply him with "Wireless Weekly" containing the R.F. Booster Unit.

"HAM" (Newcastle).—Favor the dynamic speaker. They can be bought to run from the mains (either A.C. or D.C.) or from an eliminator.

HENRY EBENEZER (Crow's Nest).—Sorry, no date of this type coil. No. cannot be used to charge Exide battery, not enough current. Trickle charger cannot be used for same reason. Test transformer windings with "C" battery in series with pair of phones. Secondary has more resistance, and will therefore not give such a loud click in the phones as will be heard when primary is being tested.

L.E. (Cardiff).—Earth eliminator through a 1 mid. condenser.

A.G.S. (Harrar).—0003 variable condenser O.K. for Go-Getter. Resistance O.K. also.

A.J.B.G. (Newcastle).—Open grid circuit. See that valve is properly seated. See that grid condenser is connected to grid terminal of detector valve, and test other grid leads, including grid-leak connections. Also look to "C" battery leads. Grid condenser or leak may be faulty.

P.A. (Bellevue Hill).—VK3KL is E. N. Maguire, 163 Victoria Street, Lewisham. VK2X1 is W. A. Craig, 22 Irrara Street, Croydon.

R.H.F. (Queensland).—This is Mr. Dixon, c/o Seale Pritchett, Ltd., Sydney. Thanks for information, which is published below.

G.N. (Mullumbimby).—See these columns, April 19 GENERAL.—R.H.F. (Queensland) advises that KNX, the American station at Hollywood, Los Angeles, California, may be picked up just above 250 on 285.5 metres every night between 6.30 and 7 p.m. The receiver used by R.H.F. is a three-valve Reinartz. He says KNX is received at fair phone strength at 100 volts.

J.W. (Goulburn).—Use B406.

R.F.C. (Carlingford).—Build Go-Getter published recently. .0005 condenser too large for short-wave reception.

A.E. (Ashfield).—Add a stage of audio. Circuits have appeared in these columns from time to time.

J.F.C. (Roosdahl).—Right.

L.J. (Albert Park).—Circuit of Improved Reinartz Three published in these columns.

L.W. (Mitcham).—Yes; Brain's plane carried radio equipment, and worked on 33 metres.

S.O.S.—Mr. J. L. Donaldson, Laurieton Pilot Station (full address) asks if any reader can supply him with the seven issues of Wireless Weekly containing the first seven articles on "Proving Radio," also the issue containing the 1928 Solodyne. He will gladly pay for all of these eight copies. Good if managed to solve your previous problem. Yes, you may join the Country "Proving Radio" Club. You have been enrolled, and your letter has been forwarded to the organising secretary. Good idea, from a local group, set up in these columns weekly. The photograph of "One Week's Queries" has been published in the news section of a previous issue. Your certificate will be forwarded shortly.

L.B. (Moss Vale).—Daylight reception is always inferior to night reception. Changing valve sockets won't help. Valves suggested O.K.

H.G.F. (Cronaube).—Coils same as for three electrode receiver. Circuit published these columns, March 5 (Screen Grid Marco). Leave out audio stages.

"NEUTRODYNE" (Coogee).—Too high voltage on R.F. Remove any fixed or variable condensers that may be in series with the aerial when neutralising. May be interaction, especially owing to the fact that your coils are wrongly placed. They should be placed at an angle to the baseboard and to each other. Circuit O.K.

K.H. (South Kensington).—2AB is A. V. Badger, 13 Emmet Street, Crow's Nest, North Sydney. 2LD is L. H. Dodds, 20 Woodland Street, Marrickville. 2AR is W. H. Hudson, 1 Torrance Road, Dulwich Hill. Will send you card.

L.B. (Hamilton).—Set will be less selective if you carry out your coil suggestion. May give slight fixed, and could be wound on same coil, but it would increase in volume. Yes; reaction coil could be advisable to use variable resistance or condenser to control regeneration. Coil S. 50 turns, coil R. 25 turns. Primary of transformer for R.F. stage, 101 turns secondary 50 turns. Secondary must be tuned. 1000 variable condenser will do this. 100 fixed condensers for all parts marked C except across secondary of transformer. This should be 202. Yes; set will be more selective on local stations if set is shielded. Two boxes, one for R.F. stage and one for detector. Any good four or six volt valves.

C.D. (Moss Vale).—Adjustment of R.F. and detector plate voltage. You will have to experiment with reaction coil. If set does not oscillate, reverse connections. Moving plates connect together.

"GALLAGHER" (Vic.).—70 turns, tapped every ten. Rheostat O.K. Try mid-grid condenser in series with aerial. Seventy five turns on wave-trap O.K.

R.A.F. (Tamworth).—Angus and Robertson, Cadgeragh Street, Sydney.

E. J. Drummond. —Replace 201A valve with a proper rectifying valve. This will give you a greater output.

V.V.J. (Lower Portland).—Four cells give six volts, at 1½ volts per cell. Three cells O.K. Connect either in parallel.

"ST. GEORGE" (Queensland).—Sorry, do not know agents. Do not think they are in Sydney. Do not reply by post.

"TED" (Balmain).—Good circuit, plenty of volume, very selective, good tone. Pretty heavy on batteries, unless heavy-duty type procured.

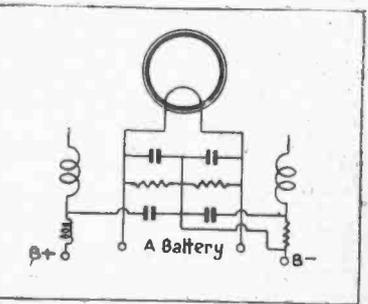
R.H. (Lakemba).—Audio circuits have appeared countless times in these columns. Coils would not have to be altered.

F.S. (Mosman).—Rectifier must first be formed. See instructions in recent "Proving Radio." Aberdeen not very selective for your conditions, but with a wave-trap would be O.K.

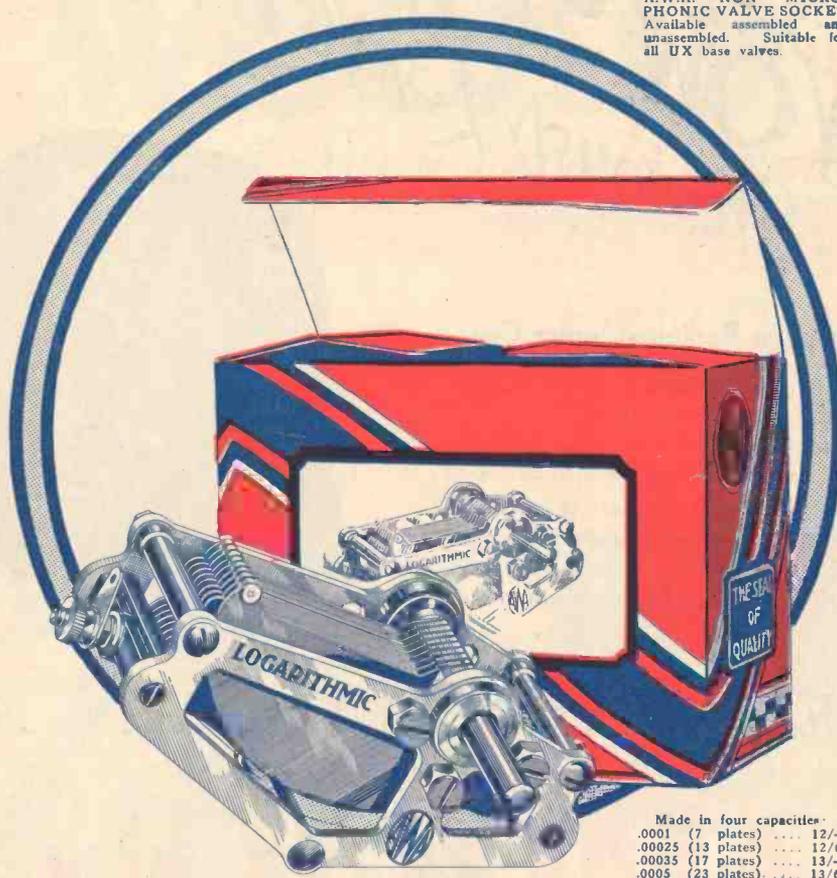
M.F.A. (Adelaide).—Thanks for kind remarks.

T.D. (Queensland).—Small A.C. motor, transformed to desired voltage, rectified, and filtered will be O.K. In rectifier (chemical) allow one square inch of aluminium immersed to every 40 m.a. of current, and allow 50 volts per jar. Step up voltage to slightly more than that required, as there will be a voltage drop through the rectifier.

F.R.M. (South Australia).—Thanks for coupon. You did not repeat your query, but I think this has been answered.



This circuit shows how the filament supply from a step-down transformer should be fed to the transmitting valve. Several readers are inquiring. The idea of this arrangement is to keep the filament supply steady.



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