Complete Broadcasting Programmes a Week in Advance

Wireless Weekly

INTEGRATING "Radio in Australia & New Zealand"

VOL. 14, No. 23.
FRIDAY, NOVEMBER 29, 1929
(Registered at the G.P.O., Sydney, for transmission by post as a newspaper)

Every ship at sea is a floating telegraph office transmitting and receiving messages from all parts of the world.

Radiograms to Ships at Sea
are accepted at all Post Offices throughout the Commonwealth and at the A.W.A. Offices at Sydney and Melbourne

Amalgamated Wireless
(Australasia) Ltd.

Special Portable Set Number
How to Build a Simple Four-Valve Portable Set to Take With You on Your Christmas Vacation.
EVEL in the joy of entertainment, over the air, after a day's strenuous business. Joy that is not confined to an individual, but which the whole family can enjoy!

The Stromberg-Carlson
Treasure Chest All Electric-3
Loud Speaker Extra—Brings you Manifold Joy!

Just sit in your easy chair—listen in to the latest Jazz, Song and Dance numbers, Classic Music, Election Speeches, News and everything worth while that you should know. Just plug in—no batteries to worry about—and dial your favourite items.

If you want to hear the best in radio, arrange for a demonstration of a Stromberg-Carlson All Electric Six. Obtainable from all Authorised Stromberg-Carlson Dealers who will gladly arrange a demonstration without obligation.

MADE IN AUSTRALIA

Stromberg-Carlson
(Australia) Ltd.
72-76 William Street, Sydney
COLVILLE MOORE
A.C. THREE RECEIVER
A TRIUMPH IN TONE AND MECHANICAL PERFECTION.

100% ALL ELECTRIC
RIGHT OFF YOUR POWER OR ELECTRIC LIGHT SOCKET.
PLUG IN—TUNE IN
No Aerial or other loose wires. Solves your entertainment problem.

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

LET US SHOW YOU ALL OUR LATEST MODELS AT No. 4 ROWE STREET.
AC THREE, Console Model, complete with speaker. CASH PRICE, £34. Deposit, £7. Monthly, £2/10/1.
AC SIX, Console Model, complete with speaker. CASH PRICE, £56. Deposit, £12. Monthly, £4/1/5.

DEMONSTRATIONS IN YOUR OWN HOME WITHOUT OBLIGATION
COLVILLE MOORE WIRELESS SUPPLIES LIMITED
Phones, 82261, 84594.
4 and 10 ROWE STREET, SYDNEY.
THE TIMMONS SPEAKER UNIT!

Superlative Tone

Magnificent Volume

NO FIELD CURRENT, NO HUM

INCLUDES OUTPUT FILTER
PERMANENT 10in. MAGNET

£3/3/- (BAFFLE FREE)

The Super Magnetic Unit with the tone and volume of a dynamic

HYDRA 2MF 500 v. TESTED Fixed Condensers.............. 3/-

POWERPLUS 4MF Fixed Condensers
1000 v. ........................................ 6/6
650 v. ........................................ 5/-

CLOCK 30 HENRY CHOKES For Your Electric Set or Eliminator. 27 Only at ............... 15/-

BAKELITE NEUTRODYNE KITS, Complete ..................... 10/6

MONARCH SPECIAL Audio Transformers, 33oz. Weight ........ 15/6

Complete First Quality Parts, Including A.C. Valves
3-VALVE ALL ELECTRIC £13/13/-, Chart Free

TEFAG Super Sensitive 4000 Ohm. Headphones with Adjustable Diaphragms ............. 12/6

ELECTRIC SOLDERING IRONS — 240 volt with special automatic solder feeding device ........ 19/6 complete

BELLTRON Bell Ringing Transformers, Tapped, 3, 5, and 8 Volts, From 240v. A.C. .......... 7/6

PILOT RESISTOGRADS (New Type), Used as Volume Control. Eliminator Voltage Control, etc., 6/6

PRICE'S RADIO SERVICE

WINGLELO HOUSE, ANGEL PLACE

Box 3326PP
DURING the past week the Sydney "A" Class stations added another world's record to their long list. This was brought about by 2FC broadcasting for the first time a sitting of the Federal Senate and the opening of the Commonwealth Parliament by His Excellency the Governor-General.

Some years have elapsed since 2FC managed to break into the State Parliament in New South Wales. Those behind the scenes still have vivid recollections of the struggle which ensued between the Speaker and the Premier over which he presided, he determined was adamant, and claiming his right as controller of the State House ceased. The result, however, was the greatest disappointment to both these elements in the Parliament. The transmission was an outstanding success, and the Broadcasting Company received in the vicinity of 7000 letters appealing for more broadcasting from Parliament. In fact, several years elapsed before this agitation for more transmissions from the State House ceased.

In the light of this experience, it can be easily understood that all the efforts of the broadcasting stations to get into the Federal House at Canberra were side-tracked. Applications were made on many occasions to the Bruce Government, but were invariably turned down.

Consent of the President

When the new Labor Government was elected, immediate steps were taken to lift the feeling of the Scullin Cabinet on the question of broadcasting from Canberra. Mr W. J. Long, M.P., the Member for Angicultural Districts who promised to bring the matter before the Ministry in their official capacity. The new Cabinet looked at the whole matter from the broadest aspect and immediately agreed that the opening day's proceedings of the new Parliament should be made available to those resident in different parts of the Commonwealth, as well as to the more fortunate who could be present at Canberra.

The Broadcasting Company, having received permission to go ahead, then had to face certain traditional difficulties which attach to Federal Parliament's proceedings. As the broadcast was to take place in the Senate, it was necessary to get the consent of the President of that Chamber, who has absolute control over the domestic affairs of his own portion of Parliament. Then the greatest care had to be exercised in the installation of microphones. No chance could be taken, as once the division bells summoning members to the Chamber commenced to ring, no outsider is permitted to place a foot on the floor of the Senate Chamber. This meant that if anything had gone wrong with wires or microphones, no member of the broadcasting staff could enter the House to adjust the trouble.

No Wires, no Obstructions

A spot had then to be chosen from which the announcer could describe the proceedings without in any way interfering with the proceedings of the House. No wires were allowed to obstruct the passages, nor stands to block the view of any members or officers taking part in the proceedings. How all these difficulties were overcome and a successful transmission was carried out, is now known to listeners in this and the adjoining States. The Governor-General, His Excellency Lord Stonehaven, entered into the spirit of the proceedings, as did also Senator Kingsmill, President of the Senate. In delivering their speeches they saw that reception in the microphone was not overlooked, and in this way made for the general success of the first broadcast from the Federal Parliament.

That the Scullin Ministry has made a move in the right direction is demonstrated by the large mail that has been received by the Australian Broadcasting Company, Limited, from listeners who were able for the first time to be present, through wireless transmission, at the opening of the Federal Parliament, and to hear the proceedings of a sitting of the Senate. It is hoped that now that the ice has been broken, the new Ministry will make the utmost use of wireless in granting to listeners the privilege of hearing debates on outstanding subjects at various periods from the Federal Capital.

By H. P. WILLIAMS

Extraordinary difficulties were in the way of broadcasting from the Houses of Parliament, as Mr. Williams, who has a long experience in the political arena, recounts in the article below. The Scullin Government is the first to look favourably at broadcasting.

BROADCASTING PARLIAMENT

For the first time a sitting of Federal Parliament was broadcast last week by 2FC. On the opening day microphones were installed in the Chamber, and the complete ceremony was put on the air. The company illustration shows the chamber.
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**Broadcasting Parliament**

By H. P. WILLIAMS

During the past week the Sydney "A" Class stations added another world's record to their long list. This was brought about by 2FC broadcasting for the first time a sitting of the Federal Senate and the opening of the Commonwealth Parliament by His Excellency the Governor-General.

Some years have elapsed since 2FC managed to break into the State Parliament in New South Wales. Those behind the scenes still have vivid recollections of the struggle which ensued between the Speaker and the Premier over that transmission. The management of 2FC after many interviews with the Speaker, at last persuaded him of the glory that would, in years to come, attach to the fact that he was the first Speaker in any House of Parliament in the civilised world who had presided over a sitting, proceedings of which were broadcast to the world at large. This evidently appealed to the Speaker, and he permitted the lines to be run in and the microphones to be installed.

**Sir George Fuller Objected**

As soon as the then Premier of New South Wales—Sir George Fuller—heard that the sitting was to be broadcast, he entered the strongest protest, and this was backed up by his Ministers. The struggle then commenced, and all sorts of difficulties were brought to bear on the Speaker, in the hope of preventing the broadcast. The Speaker, however, was adamant, and claimed his right as controller of the domestic arrangements of the House over which he presided, be determined to keep faith with the Broadcasting Company.

It will be remembered that, by the strange workings of Providence, one of the most contentious measures ever before the State Parliament happened to come on during that day, and some of the most upobaoous scenes ever known in a Parliament occurred. There were two factors which led to these scenes. A certain portion of the House, led by members of the Ministry, who were opposed to broadcasting, apparently wished to make this first transmission so delicate that there would be a public outcry against the broadcasting of Parliament. Another part of the House saw in the fact that microphones were installed in the Chamber an opportunity to make the proceedings as farcical as possible, so as to discredit the Ministry for having brought down such a contentious measure as the "Ne Temere Bill." The result, however, was the greatest disappointment to both these elements in the State Parliament. The transmission was an outstanding success, and the Broadcasting Company received in the vicinity of 7000 letters appealing for more broadcasting from Parliament. In fact, several years elapsed before this agitation for more transmissions from the State House ceased.

In the light of this experience, it can be easily understood that all the efforts of the broadcasting stations to get into the Federal House at Canberra were side-tracked. Applications were made on many occasions to the Bruce Government, but were invariably turned down.

**Consent of the President**

When the new Labor Government was elected, immediate steps were taken to put the feeling of the Scullin Cabinet on the question of broadcasting from Canberra. Mr. W. J. Long, M.P., the Member for Ang, acted as an intermediary, and approached the new Prime Minister and several members of the Cabinet, who promised to bring the matter before the Ministry in their official capacity. The new Cabinet looked at the whole matter from the broadest aspect and immediately agreed that the opening day proceedings of the new Parliament should be made available to those resident in different parts of the Commonwealth, as well as to the more fortunate who could be present at Canberra.

The Broadcasting Company, having received permission to go ahead, then had to work in the most careful manner to feed the microphone with the news. This was a great responsibility, and required the greatest care had to be exercised in the installation of microphones. No chance could be taken, as once the division bells summoning members to the Chamber commenced to ring, no outsider is permitted to place a foot on the floor of the Senate Chamber. This meant that if anything had gone wrong with wires or microphones, no member of the broadcasting staff could enter the House to adjust the trouble.

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Interstate Programmes, Wednesday, December 4

3LO
Australian Broadcasting Co, 128A Russell St, Melbourne (Wavelength, 311 Metres).

2UE MORNING SESSION.
7.4 to 8.15: The Monday Morning Show.
10.30 to 12.30: As usual.
1.0 to 1.15: As usual.

EDUCATIONAL AND SPORTING.
1.15: Reading - Todd Marshall's Advice to His Son.
Mr. John Griswold, 2.13: Description of Native Handicraft, the Balart Turf Club Meeting at Dowling Forest.
2.45: Description of Buhlart Turf Club Races at Dowling Forest. By Eric Welch.
5.5: Description of Buhlart Turf Club Races at Dowling Forest. By Eric Welch.

THE RADIO MATINEE.
3.45: Paul JPEG and Band - "Love Thirst" (Bryant). "There's a Four Leaf Clover" (Wendling).
5.30: "Can't Help Myself" (Katha). "Marilyn Monroe" (Mabel). "Cappacino" (Von). "One Mile" (Ballarat Turf Club Mittell). "My Sugar and Me" (Palmer). "Lila" (Leslie Westan).

Our Radio Service to Listeners: Mr. H. K. Love. 8.00, 11.30: As usual.

3LO

WIRELESS WEEKLY
Friday, 29th November, 1929

3AR
Australian Broadcasting Co, 128A Russell St, Melbourne (Wavelength, 311 Metres).

MORNING SESSION.
8.15 to 9.15: As usual.
12.30 to 2.30: As usual.
2.30: Quartette - "South of the Border" (Charleston) (Charleston).

3UL

40G

MIDWAY SESSION.
5.30: Children's Hour.
6.30: Close.
7.45: Talk by Mr. F. E. Buckel, "Photof of the Electric Cell and Its Applications.
8.00: Band concert.
8.10: Comments of Foreign Affairs by Mr. J. M. Prentice.
9.10: Continental will close the "Radio of the World".
10.30: Close.

40G

5CL
Central Broadcasters, Ltd, 111 Hindmarsh Square, Adelaide (Wavelength, 440 Metres).

RADIO MATINEE.
11.30: Goodbye to the King.
12.30: As usual.
1.15: As usual.

5CL
A PART
for Every
PURPOSE

TRANSFORMERS

- Pep Punch Transformers, Ratios 2, 3, 5: 10/6
- Golden Voice Transformers, Stages 1, 1A, and 2: 42/6
- Puratone Transformers, Ratios 2, 3, 5: 15/6
- Cavalier Transformers, Ratios 2, 3, 5: 21/6
- Midget Transformer, Ratios 2, 3, 5: 13/9
- Metal Case Transformer, Ratios 2, 3, 5: 17/6

VERNIER DIALS

- Mello Metal Vernier Dial: 9/6
- De Luxe Vernier Dial: 9/6
- Illuminated Complete: 13/6
- Back Panel Dial: 5/6
- Vernier Dial, black or mahogany: 7/6
- Velmo Dial: 6/6
- Baby Velmo: 5/6
- Knobs, black or mahogany, plain or arrowed: 1/6

ELIMINATORS

- "A" Socket Supply
  - ABC Eliminator for .06 valves: £15/15
  - ABC Eliminator for .025 valves: £19/19
- Super Power B Eliminator for sets up to ten valves: £12/12
- "B" Eliminator for sets up to five valves: £10/10
- Maxum "B" Socket Power Unit or Eliminator, for sets up to and including seven valves: £8/15
- A Socket Power Supply: £12/12

AMPLIFYING UNITS

- Concert £30. Home Phonograph: £18/10
- Condensers, Battery Chargers, Rheostats, etc.

Send for Illustrated Catalogue.
There's a big fascination in being able to get all stations within the range of your set.

No matter how faint or indistinct some of the minor stations may be under ordinary circumstances you'll bring them in with all the volume you desire when once you're using MULLARD SPECIAL DETECTOR Valves.

Mullards are super-sensitive and bring in stations you have never dialled before—and seldom dreamed about.

Mullard Loud Speakers speak volume of quality.
GEAR WITH A GUARANTEE

A.C. Gear, for electrifying sets, is comparatively new. You can't afford to buy untried parts from unknown sources. Consider these points: (1) We have sold radio gear for a greater length of time than any other Sydney firm; (2) our reputation is unchallenged; (3) we were first in the field with gear for the home electrification of sets; (4) we give an unqualified guarantee with all A.C. parts; (5) we promise satisfactory results with any set when any part is bought from us; (6) we know the game, and our advice and help are always available; (7) and—our range of A.C. gear is unequalled.

Eliminator Transformers specified in last week's "Weekly" for the A.C. Modern 2, 35/-.

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TRANSFORMERS—GENERAL SPECIFICATIONS.

<table>
<thead>
<tr>
<th>Type</th>
<th>Voltage</th>
<th>Windings</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>260 Full Wave type, 600 volts, centre-tapped, with filament winding</td>
<td>30/-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>260 Full Wave type, 600 volts, centre-tapped, with 4-volt A.C. filament winding</td>
<td>35/-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DU10, or Phillips 373 type, half wave, 300 volts, with 4-volt filament winding</td>
<td>25/-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>201A type (to replace Bell ringer), 300-volt, 5-volt filament winding</td>
<td>25/-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABC Transformers, 300-volt, 4 or 5 volt filament winding, with 4-volt centre tapped A.C. winding</td>
<td>32/6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CHOKES.

<table>
<thead>
<tr>
<th>Type</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 Henry Power Chokes, 50 Henry Chokes</td>
<td>10/6</td>
</tr>
</tbody>
</table>

RECTIFYING VALVES.

<table>
<thead>
<tr>
<th>Type</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>UX 280 Full Wave Rectifying Valves, over 200 volts output</td>
<td>25/-</td>
</tr>
<tr>
<td>Mullard DU10 Valves, Phillips 373</td>
<td>17/6</td>
</tr>
</tbody>
</table>

LOOK FOR RED "GUARANTEE" LABEL!

Wallace Eliminator Kit, for 3-valve sets | 59/6 |
Wallace Eliminator Kit, for 4 and 5 valve sets | 67/6 |
Wallace ABC Pack | 95/- |
Wallace 280 Eliminator Kit (as required for A.C. Modern 2). Suitable for any set | 66/17/6 |

Condensers.

<table>
<thead>
<tr>
<th>Value</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 mfd. Hyd.</td>
<td>6/9</td>
</tr>
<tr>
<td>2 mfd.</td>
<td>4/-</td>
</tr>
<tr>
<td>.5 mfd.</td>
<td>2/6</td>
</tr>
</tbody>
</table>

Resistors.

<table>
<thead>
<tr>
<th>Value</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>100,000 Variable Resistors for detector or radio tap</td>
<td>4/6</td>
</tr>
<tr>
<td>Voltage Dividers, for eliminator output, 18,000 ohms, suitably tapped, wire wound</td>
<td>5/6</td>
</tr>
<tr>
<td>Pilot 1000 ohm. Wire Wound Resistors, for grid bias</td>
<td>3/6</td>
</tr>
</tbody>
</table>

SAME DAY SERVICE "THE WIRELESS SHOP"

for Country Clients.
Miss F. V. Wallace, 6 Royal Arcade, Sydney.
THE OLDEST RADIO FIRM IN TOWN.

Introduce the IMPERIA PORTABLE

A T LAST a set embodying all the advantages, and not one of the disadvantages, of ordinary Portable Radio. Open the lid, select the station and you're listening to a high-class tone-perfect radio set—Simple, Reliable, and low priced.

A MAGNIFICENT GIFT FOR INVALID, RELATIVE, OR FRIEND—A GIFT THAT WILL BRING CONTINUOUS ENTERTAINMENT AND COMPANIONSHIP TO THE BEDSIDE.

Harringtons Imperia Portable can be used in the home or taken anywhere to add to all the pleasures of the outdoors. Come in to our cozy new audition rooms—tune in this remarkable set yourself, or send for illustrated booklet. You will agree that it is definitely an achievement in Portable Radio.

OPEN FRIDAY NIGHTS

Harringtons LTD

ESTABLISHED 10 YEARS.

RADIO, PHOTO., and CINE MERCHANTS,
386 GEORGE STREET, SYDNEY

Phone, MA46007.
Branches All States and New Zealand.
8:40: THE COUNTRY MAN’S WEATHER SESSION—
(b) New South Wales recyclals. (b) Inter-State weather synopses.
8:50: THE MIRBEA SCENE FROM “LA CLOCHERE DU PAPE” — Under the direction of Lynnwood Roberts.
9:00: Symphony Orchestra. Mr. Leslie Herford, baritone.
9:05: Announcement.
9:10: FROM THE HOTEL AUSTRALIA: Cec Minecraft, the Wurlitzer. 
9:15: FROM THE HOTEL AUSTRALIA: Cec Minecraft, the Wurlitzer. 
9:20: C. N. BAEYERTZ will “peak” on “Spo-
9:30: LUNCH-HOUR MUSIC. 9:35: Mr. Jack Win and Miss Nora Windle in a Humorous Sketch.
9:40: British official wireless press.
9:45: Symphony Orchestra. Mr. Leslie Herford, baritone.
9:50: Children’s birthday calls.
10:00: THE AUSTRALIAN BROADCAST- 
10:05: G.P.O. chimes.
10:10: Austradio musical reproduction.
10:15: Announcements.
10:25: Weather report. "What’s on to-day?"
10:30: HORNSEA’S 50th ANNIVERSARY SESSION — M. O. C. musical reproduction.
10:35: Mr. Jack Win and Miss Nora Windle in a Humorous Sketch.
10:40: Mr. Leslie Herford, baritone.
10:45: Memory melodies.
10:55: Mails and shipping information.
11:00: A.B.C. sporting service.
11:05: A.T.N. main news service.
11:15: Announcements.
11:20: A.B.C. sporting service.
11:30: CLOSE.
11:35: Announcements.
11:40: Symphony Orchestra.
11:45: Symphony Orchestra.
11:50: Café music.
12:00: THE CHAMPION TRIO — Band Selections.
12:05: News.
12:10: A.B.C. sporting service.
12:20: A.B.C. sporting service.
12:30: M.T. Mailing Service.
12:35: News.
12:40: A.B.C. sporting service.
12:45: Weather report.
12:50: A.B.C. sporting service.
1:00: Symphonies and pageants.
1:05: News.
1:10: A.B.C. sporting service.
1:15: Weather report.
1:20: A.B.C. sporting service.
1:25: Weather report.
1:30: Mails and shipping information.
1:35: News.
1:40: A.B.C. sporting service.
1:45: Weather report.
1:50: A.B.C. sporting service.
2:00: Symphonies and pageants.
2:05: News.
2:10: A.B.C. sporting service.
2:15: Weather report.
2:20: A.B.C. sporting service.
2:30: Mails and shipping information.
2:35: News.
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4:20: A.B.C. sporting service.
4:30: Mails and shipping information.
4:35: News.
4:40: A.B.C. sporting service.
4:45: Weather report.
4:50: A.B.C. sporting service.
5:00: Symphonies and pageants.
5:05: News.
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7:25: Weather report.
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7:45: Weather report.
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There's a big fascination in being able to get all stations within the range of your set.

No matter how faint or indistinct some of the minor stations may be under ordinary circumstances you'll bring them in with all the volume you desire when once you're using MULLARD SPECIAL DETECTOR Valves.

Mullards are super-sensitive and bring in stations you have never dialled before—and seldom dreamed about.

2 volt 4 volt 6 volt
PM2DX PM4DX PM6D

ALL 13/6 EACH

Mullard Loud Speakers speak volume of quality.
IF A BOSOM PAL OFFERED TO IMPROVE YOUR RESULTS AND REDUCE YOUR OPERATING COST MORE THAN 50 PER CENT.—YOU WOULD SIT UP AND TAKE NOTICE.

We positively guarantee to do this for you without any alteration to your set.

Simply instal one of our new guaranteed Economic “B” Battery Eliminators. Complete in handsome duco metal case, £3/13/-; or in home assembling kit form, £3/3/-

SPECIALY APPROVED BY THE ELECTRICITY DEPARTMENT

<table>
<thead>
<tr>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complicated Earthing System.</td>
<td>It has a specially designed Power Transformer.</td>
</tr>
<tr>
<td>Old-fashioned Bell Transformer.</td>
<td>It has a special Philips Rectifying Valve at 15/-.</td>
</tr>
<tr>
<td>Hum.</td>
<td>It will deliver up to 180 volts.</td>
</tr>
<tr>
<td>Alterations to Set.</td>
<td>Voltage can be regulated to suit your Set.</td>
</tr>
</tbody>
</table>

It costs 3/6 more, but it is definitely better. And isn’t it worth 3/6 to be assured of guaranteed satisfaction?

Economic Radio Stores
25 ROYAL ARCADE, SYDNEY

And at
126A PITT STREET; UNION STREET,
NEWCASTLE,
PARRAMATTA.

Please mail more details re your advt. 29/11/29.

NAME
ADDRESS

Electric Reinartz Three

Reviewed in This Issue Uses—

RADIOKES COMPONENTS

These were chosen because of their undisputed superiority, their excellence of design and finish, and moderate price.

RADIOKES Electric Reinartz Coil, illustrated at right. Price, 11/9 each.
RADIOKES “B” Voltage Dividing Resistor, tapped 180, 135, 90, 45 volts. Price, 8 6 each.
RADIOKES R.F. Choke, 8/6 each.
RADIOKES Centre Tapped Resistors for AC Filament use, 10, 20, 50 ohms., 2 6 each.
RADIOKES Midget Condenser, 23-plate type. Price, 8/6 each.
RADIOKES “C” Bias Resistor, Vitreous type, 2000 ohms 5/6, 2500 6/- each.

“W.W.” Screen-Grid Portable

featured in this issue, also employs Radiokes components for reliability, Efficiency, excellence of design, and beauty of finish.

Radiokes products are recognised by all the radio fraternity as being the highest quality goods that can be produced, that they are at all times dependable, and that Radiokes guarantee the purchaser complete satisfaction.

Radiokes Shielded RF Units are used in the W.W. S.G. Portable. Price, 24/- each, at your dealer’s, or direct from

METROPOLITAN ELECTRIC CO., LTD.,
Radiokes House,
126-130 SUSSEX STREET, SYDNEY
State Programmes, Thursday, December 5

3LO
Australian Broadcasting Co., 104a Russell St., Melbourne (Wavelength, 387 Metres).

EARLY MORNING SESSION
7.0 to 8.10: Great Australian Songs.
8.10 to 9.30: MORNING SESSION
9.30 to 10.15: MIDDAY SESSION
10.15 to 11.0: Educational Session.

SPRING INTERLUDE
11.12: Description of Dwelling Forest Hurtle Race, two miles. by Eric Welch; Ballarat Turf Club's Meeting at Dwelling Forest. 2.20: Quartette -Criterion Quartette. 2.45: Orchestral -Concert Hall Orchestra. 2.57: Cyril Scott. 3.28: Duet, Bernard and Robinson. 3.57: Orchestral -Cleveland Symphony Orchestra. 4.05: Johannes Brahms. 4.16: Dorothy Manning. soprano; David Lyle, tenor; Reuben Betts, crooning baritone; and Beryl Scott, pianist. 4.45: Evensong. 5.30: From Kooyong Tennis Courts -Description of Inter-State Tennis Matches by Mr. A. W. Dunlop.

MORNING SESSION
2.0: Christian Foresters -Miss Minto Knight. 3.10: Musical Interlude. 4.00: Food and Cookery -The Development of Electric Cooking -Miss B. Osborne. 5.10: Musical Interlude. 6.00: Your Health and Appearance -The Value of Sport in your Daily Life -Mrs. N. Ellis. 11.00: From Kooyong Tennis Courts -Description of Inter-State Tennis Matches by Mr. A. W. Dunlop. 11.00: Close down.

EVENING SESSION

NIGHT SESSION
11.00: Round and About with Olid Men Out -Whose Subject tonight is "Do You Like Fish?" 11.30: A Study of Recital. 12.00: Description of Pension Concerts in A Minor. Op. 18 (Grieg) -Allegro Moderato, Andante, Allegretto Moderato, Adagio. 12.30: Arthur De Greet and the Royal Albert Hall Orchestra. 1.00: Soprano and contralto recital.

SPORTING INTERLUDE
12.30: Christmas Foresters -Miss Minto Knight. 1.00: Inter-State Tennis Matches by Mr. A. W. Dunlop.

12.00: Close down.

6WF
Australian Broadcasting Co., Ltd, Wellington Street, Perth (Wavelength, 456 Metres).

EARLY MORNING SESSION
6.00: Great Australian Songs.
7.00: Weather forecast. 7.30: Adelaide Kyger will speak on Households (1). 8.00: Musical selections. 8.30: Transmissions stations 1 A.M. weather report. 8.45: Shopping and market news. Housewives' Guide. 9.00: Children's Corner. 10.10: Music. 11.00: Close down.

MORNING SESSION

EVENING SESSION
6.15: Children's Corner.
7.00: Programme review.
8.00: Perth City Band. 8.29: James Carnochan, baritone. 8.40: Perth City Band. 9.11: James Carnochan, baritone. 9.30: Perth City Band. 10.10: Weather, News. 10.15: Close down.

7ZL
Tasmanian Broadcasting P.L., Mercutio Miles, Elizabeth Street, Hobart (Wavelength, 384 Metres).

MORNING SESSION
6.00: Great Australian Songs.
7.00: News service; Current Affairs; Wellington Radio Broads.-
8.00: Close down.

EVENING SESSION
6.00: Great Australian Songs.
7.00: Evening Session; and Monday Session.
8.00: Close down.

2UW

MIDDAY SESSION
12.30 to 4.30: GREAT AUSTRALIAN SONGS.

EVENING SESSION
5.30: Children's Hour.
7.45: Close.
8.00: Programme review.
9.15: Children, the Power are Economic Social Trends.
11.00: Music. 10.00: Close.

MADAME HESSELA, soprano, will be on the air from 3LO on December 3 in a programme of operatic numbers. Madame Hesella has had much experience in both grand and light opera, and studied at the famous Petrograd Conservatory, giving recitals in all the great Australian capital cities.

AN original musical programme will be given from Service Room Number 6 by Gregory Ivanoff, when, under the title of "Song of the South," many well-known classical and popular numbers will be introduced. Every type of musical performance -fiddle music, classical, popular, duets, comedy, and vaudeville will be taken in turn.

MADAME HESSELA, soprano, will be on the air from 3LO on December 3 in a programme of operatic numbers. Madame Hesella has had much experience in both grand and light opera, and studied at the famous Petrograd Conservatory, giving recitals in all the great Australian capital cities.
Some Thoughts About Buying a Loud-speaker

"B.3." ASHFIELD, wants to know how anyone can be expected to decide on a speaker when there are so many types to be seen and heard. He mentions two makes and asks which is the better.

Answer: We can understand that it must be extremely difficult for the intending listener to choose a speaker. The strange part of it is that in the show rooms of the manufacturers' agents are sold one can usually hear about the most wretched reproduction possible. If listeners were to select their speakers by comparing them as demonstrated in the city, it is not reasonable to think that they would turn down most of the better types and buy some third rate.)

Of course, the problem of standards of frequencies had been eliminated to the point where the reproduction sounded soft and shallow. They would later find that the speaker lacked definition and that all volume and all music would sound the same. They would also find that their neighbors would not be pleased with the wretched noise which was being broadcast through a wooden crate stuffed with pillows.

Some of the most pitiful demonstrations of musical reproduction are heard in some quarters.
Between You and Me and the Microphone

Mr. Johns' Indiscretion

However, Mr. Johns didn't know any better. Any man who could write an essay (with illustrations) on "Jiu-Jitsu for Women" should not be expected to know any better. But that he should be allowed to see his essay in "Wireless Weekly" is almost altogether ununderstandable: it shows what editors will do, and proves that if our editors would take us more into his confidence about this paper, everything would be much better off, as we have often told him. Because he is another of the unworthy brigade—he doesn't know the first thing about women.

There are two sorts of men (and you want to listen to this—this is not theory, but the result of a long life's experience), the first thing about woman is that she is not a physical match for man. The strongest man in the world could knock the stuffing out of the strongest woman in the world in the first round of a fair contest, and the weakest man in the world could send the weakest woman in the world out for the count if you made it worth his while. We ourselves feel equal to stouthing any one of the A.B.C. typistes, and, provided we were in training a few weeks beforehand, we would think nothing of a bout with the programme director, Miss Gibson.

The second thing about women is that they don't want to be physically superior to men, any more than a bullock wants to be physically superior to one of his bullocks. The weakest woman in the world can twist the strongest man in the world around her little finger. Any of the A.B.C. typistes could twist us round her little finger if she wanted to, and Miss Gibson could do what she—uh—is to use crying over spilt milk.

But in the innocence of his heart Mr. Johns wasn't satisfied with this—he wanted to make women physically equal to men, so he wrote this essay on "Jiu-Jitsu for Women," which boils down as follows:—If a man should lay a wicked hand on a Defenceless Woman's shoulder (or chest) she may execute a Swift Move—she—but Gibson could do what her little finger if she wanted to, and Miss Gibson could do what she—uh—is to use crying over spilt milk.

When the editor saw all these letters he quivered, and said, "You'd better do something about this, James; and fix it up pretty quick and lively before our directors get to hear of it; so we took our first opportunity and went to see Tiresias yesterday. A dignified old chap is Tl., and what he doesn't know about anything is not to be found in the "Sydney Morning Herald" on the one hand, or the "Pornophun Review" on the other.

We told him the whole sad story, and said, "You see, Tl., we represent over four thousand odd letters from women all over the country, of which the following example is representative:—

"Dear Mr. Johns,—Can't you do something about this Johns man's article? We used to get on quite well without Jiu-Jitsu, and we don't want to be unnecessarily cruel; but all good girls are supposed to support a wife and family. The other half—"

"What about the other half?"

"The other half, we are sure, would be inclined to resent a suggested bigamy, as being somewhat immoral."

"That rather complicates the matter," said Tl. "You certainly have some bright acquaintances, James; but I was young myself once. Of course, you have considered a counter for this Jiu-Jitsu hold."

"Why," we exclaimed, "we didn't think of that!"

Tiresias looked at us reproachfully, and with his little finger to his mouth. His essay (with illustrations) on "Jiu-Jitsu for Women" should not be expected to know any better. With his little finger to his mouth. His essay should not be expected to know any better. His little finger, that is. We ourselves felt equal to stouthing any one of the A.B.C. typistes, and, provided we were in training a few weeks beforehand, we would think nothing of a bout with the program director, Miss Gibson.

The consequences of this article by Mr. Johns were immediate, far-reaching, and disastrous.

Poor old John had to do this week's dance with his left hand. Poor Mr. Hull came in the other day with his arm in a sling. Twenty-five (or twenty-six—we can't remember the exact number—we got a fearful headache coming home from a dance the other night), twenty-five, say, of our dearest friends are going about with their arms in slings, their hands torn off, or their heads bandaged.
GEAR WITH A GUARANTEE

A.C. Gear, for electrifying sets, is comparatively new. You can’t afford to buy untried parts from unknown sources. Consider these points: (1) We have sold radio gear for a greater length of time than any other Sydney firm; (2) our reputation is unchallenged; (3) we were first in the field with gear for the home electrification of sets; (4) we give an unqualified guarantee with all A.C. parts; (5) we promise satisfactory results with any set when any part is bought from us; (6) we know the game, and our advice and help are always available; (7) and—our range of A.C. gear is unequalled.

Eliminator Transformers specified in last week’s “Weekly” for the A.C. Modern 2, 35/-.

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<tr>
<th>TRANSFORMERS—GENERAL SPECIFICATIONS.</th>
<th>CHOKES.</th>
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<tr>
<td>260 Full Wave type, 600 volts, centre-tapped, with filament winding</td>
<td>30 Henry Power Chokes, 50 Henry Chokes</td>
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<tr>
<td>260 Full Wave type, 600 volts, centre-tapped, with 4-volt A.C. filament winding</td>
<td>UX 280 Full Wave Rectifying Valves, over 200 volts output</td>
</tr>
<tr>
<td>DU10, or Philips 373 type, half wave, 300 volts, with 4-volt filament winding</td>
<td>Mullard DU10 Valves, Philips 373</td>
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<tr>
<td>201A type (to replace Bell ringers), 300-volt, 5-volt filament winding</td>
<td>LOOK FOR RED “GUARANTEE” LABEL!</td>
</tr>
<tr>
<td>ABC Transformers, 300-volt, 4 or 5 volt filament winding, with 4-volt centre tapped A.C. winding</td>
<td>Wallace Eliminator Kit, for 3-valve sets</td>
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<th>CONDENSERS.</th>
<th>RECTIFYING VALVES.</th>
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<td>4 mfd. Hydra</td>
<td>UX 280 Full Wave Rectifying Valves, over 200 volts output</td>
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<td>2 mfd. “</td>
<td>Mullard DU10 Valves, Philips 373</td>
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<td>.5 mfd. “</td>
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<tr>
<th>RESISTORS.</th>
<th>FULL DIAGRAMS AND INSTRUCTIONS WITH “ELECTRIFIED RADIO” (HOW TO MAKE YOUR SET ALL-ELECTRIC).</th>
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<tr>
<td>100,000 Variable Resistors for detector or radio tap</td>
<td>Ten pages of descriptive matter on AC work. 1/-, Posted 1/3.</td>
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<tr>
<td>Voltage Dividers, for eliminator output, 18,000 ohms, suitably tapped, wire wound</td>
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<tr>
<td>Pilot 1000 ohm. Wire Wound Resistors, for grid bias</td>
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SOME DAY SERVICE “THE WIRELESS SHOP” for Country Clients.

Miss F. V. Wallace, 8 Royal Arcade, Sydney.

THE OLDEST RADIO FIRM IN TOWN.

Introduce the IMPERIA PORTABLE

At last a set embodying all the advantages, and not one of the disadvantages, of ordinary Portable Radio. Open the lid, select the station and you’re listening to a high-class tone-perfect radio set—Simple, Reliable, and low priced.

A MAGNIFICENT GIFT FOR INVALID, RELATIVE, OR FRIEND—A GIFT THAT WILL BRING CONTINUOUS ENTERTAINMENT AND COMPANIONSHIP TO THE BEDSIDE.

Harringtons Imperia Portable can be used in the home or taken anywhere to add to all the pleasures of the outdoors. Come in to our cozy new audition rooms—tune in this remarkable set yourself, or send for illustrated booklet. You will agree that it is definitely an achievement in Portable Radio.

OPEN FRIDAY NIGHTS

Made throughout of famous Pilot parts; Rechargeable Accumulator “A” Battery; Adjustable Type Speaker, great volume and clarity; Automatic Switch, which cuts the set off when door is closed; large rubber studs for protection against scratches and jar; solid steel handle, leather-covered; small and compact in size.

PRICE COMPLETE, £22/10/-

Easy Terms Can Be Arranged.
**WIRELESS WEEKLY**

Friday, 29th November, 1929

"W.R.J." — Brisbane, wishes to start collecting "QIL" cards as a hobby.

Answer: QIL cards are reports cards used by amateur transmitters to provide information of long-distance receptions which have been exchanged, and to supply details of the signals which were received. You would require a collection of QIL cards if you should take an interest in interlaced work, and wish to compare your results with the performances of other operators. To send in your own QIL cards you should get in touch with the Secretary of the Australian QIL card committee, which is composed of a society of amateurs.

"B.C." — Cambridge.—We would be very interested to have further details of the receiver. If it is not working satisfactorily, there seems to be a good opportunity of giving it a run, in Sydney, and possibly promoting a description of it.

"H.R.M." — Bournemouth.—The short-wave coils probably would be included in a set for broadcasting from the short-wave stations in England, Europe, and America under favorable conditions, but they would be of no service in reception from New Zealand or Australian broadcasting stations. Yes, the incommutator dials would be an advantage when the short-wave coils are used, since they would permit precise adjustment.

"B.M." — Catlins.—We have had little success with the pentodes, except when feeding a moving-grid type through the ordinary transit coil provided in the speaker itself. The pentode is a very useful valve, where the greatest output is required, and we have not yet found a pentode producing a better quality than the type of the balanced output valve of the three-electrode type.

"HAYWARD." — Berrington.—Cannot recommend the attempt to rebias the pentode further by putting in a new dry battery instead. "Hayward" asks us if "that old thing again" which you have mentioned in "Wireless Weekly" and not to change it, because it passes listeners over your receiver.

Answer: It is very difficult to suggest any reason why the "PI" should give unsatisfactory when the circuit variation suggested in the previous issue, which is supposed to improve selectivity, would have little chance of doing so. Would you state more fully what the misunderstandings are in regard to the "PI" circuit?

"B.R.N." — Altnahoe, has a set which works well for the "R.F." stage but not for the "A.F." stage after that. If the set is switched off for a while, it would not work when switched on again. What is the trouble?

Answer: It seems highly probable that the "R.F." stage is not being used, but that part of the valve is not being used. There is also a possible probability that the grid valve is being used as a power valve if destroys reproduction is to be had. If there is no useful valve in the "A.F." stage, the output valve, would suggest the CW03, or 6C5, or 6BY5.

"O.K." — Abbotsford, has a home-built screen-grid set. He would like to make one. He is trying to get a set working provided the coils are not used. He is considering the possibility of getting a set working provided the coils are replaced with transformers.

Answer: It would be quite impossible to advise on the point of getting a set working provided the coils are replaced with transformers. It is not necessarily the case that the grid valve is the trouble, as the grid valve and the valve wiring is of the order of 100,000 ohms.

"A.G.H." — Sandringham, has built a "Standard A.F." valve set, which is quite satisfactory for voice and it fails to work satisfactorily.

Answer: It would be quite impossible to advise on the point of getting a set working provided the coils are replaced with transformers. It is not necessarily the case that the grid valve is the trouble, as the grid valve and the valve wiring is of the order of 100,000 ohms.

"G. AISI" — Surrey Avenue, Surrey Hills, Victoria, is anxious to get a copy of "Wireless Weekly".

Answer: It would be quite impossible to advise on the point of getting a set working provided the coils are replaced with transformers. It is not necessarily the case that the grid valve is the trouble, as the grid valve and the valve wiring is of the order of 100,000 ohms.
Radiotrons have an enviable reputation in Australia for long life and consistent performance. This reputation has been built up over a long period of years, and the addition of three new types complete a range of Broadcast Receiving Valves which will meet all requirements.

**RCA. 221**  
For battery operated sets  
General Purpose.  
Fil. Volts  5.5 to 6  
**FIL. CURRENT 0.6 AMP**.  
Plate Volts  45 to 150

**UY. 224**  
A.C. SCREEN GRID  
General Purpose.  
Heater Volts  2.5  
Heater Cur.,  1.75 amps  
Plate Volts  180

**UX. 245**  
**FOR A.C. OR D.C. SETS**  
Power Amplifier.  
Fil. Volts  2.5  
Fil. Current  1.5 amps  
Plate Volts  180-250

Obtainable from all Radio Dealers

**Amalgamated Wireless (Australia) Ltd.**  
"Wireless House,"  
47 York Street, Sydney

Queensland Distributors:  
J. B. CHANDLER & CO.,  
45 Adelaide Street, Brisbane
IF A BOSOM PAL OFFERED TO IMPROVE YOUR RESULTS AND REDUCE YOUR OPERATING COST MORE THAN 50 PER CENT.—YOU WOULD SIT UP AND TAKE NOTICE.

We positively guarantee to do this for you without any alteration to your set.

Simply instal one of our new guaranteed Economic “B” Battery Eliminators. Complete in handsome duco metal case, £3/13/-; or in home assembling kit form, £3/3/-

<table>
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<tr>
<th>SPECIALLY APPROVED BY THE ELECTRICITY DEPARTMENT</th>
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<tr>
<td>NO Complicated Earthing System.</td>
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<td>NO Old-fashioned Bell Transformer.</td>
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<tr>
<td>NO Hum.</td>
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<tr>
<td>NO Alterations to Set.</td>
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</table>
| YES It has a specially designed Power Transformer.
| YES It has a special Philips Rectifying Valve at 15/-. |
| YES It will deliver up to 180 volts.             |
| YES Voltage can be regulated to suit your Set.    |

It costs 3/6 more, but it is definitely better. And isn’t it worth 3/6 to be assured of guaranteed satisfaction?

Economic Radio Stores
25 ROYAL ARCADE, SYDNEY
And at
126A PITT STREET: UNION STREET, NEWCASTLE, PARRAMATTA.

Please mail more details re your advt. 29/11/29.
NAME
ADDRESS

Electric Reinartz Three
Reviewed in This Issue Uses—
RADIOKES COMPONENTS
These were chosen because of their undisputed superiority, their excellence in design and finish, and moderate price.
RADIOKES Electric Reinartz Coil, illustrated at right. Price, 1/1/9 each.
RADIOKES “B” Voltage Dividing Resistor, tapped 180, 135, 90, 45 volts. Price, 8/6 each.
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Answer: I have been told that a darned fine amplifier is necessary before a speaker can be listened to with the idea of judging its effectiveness. The first essential is a good amplifier with a poor amplifier and with the speaker which is at fault. It is just that the type of speaker may sound as if the high-grade pick-up operating from new and high-grade parts will produce good results with this.

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Why own a "Half-time" Radio?

that denies you daylight reception of races ... news ... community singing ... and all the wealth of entertainment that's on the air.

Hundreds are changing over to the luxury of the new super powered "full-time" radio that definitely GUARANTEES DAYLIGHT reception, at full speaker strength—to every country resident, no matter how remote.

The New 
ASTOR
DOUBLE SCREEN GRID RADIO

Table Model, in Two-tone Dues, complete with heavy-duty accessories and Amplion Speaker. Price: £4.16. Easy Terms. Deposit from...

BY employing a new radio principle the Astor Double Screen Grid radio revolutionises long range daylight reception. Two giant amplifiers are incorporated, which give 18 times the amplification of two normal valves.

AMPLION A/SIA LTD., 53-55 York Street, SYDNEY

Send the coupon NOW!

Messrs. AMPLION (A/sia) LTD., 53 York Street, Sydney.

Dear Sirs,—Please forward, without obligation, your Illustrated Folder on the New Astor Double-Screened Grid Receiver.

Name

Address
A desirable from the two condensers match up. There is an open circuit in the grid of the detector.

In the wiring, it would seem that there are too many connections. It may be mounted within an inch or so of the home aerial. A larger aerial probably would improve reception.

The connection would be better than your diagram "B." Would suggest that you wind new primaries of 34 or 36 gauge wire in the form of a hank and placed near it. Also suggest the two condensers be connected in such a manner that the two are as parallel as possible. The connection of the two condensers this way would give slightly greater sensitivity.

If you wish to acquire a collection of QSL cards, some day we could arrange to have the cards passed out absolutely free of charge.

If you fail to get any sound from the new coils, it is possible that your coupling may be too weak. Providing the variable condensers are adjusted to give full deflection of the meter, you should be able to hear some sort of indistinct sound. Is the meter metering the plate circuit and wiring from the plate circuit and the first grid circuit and wiring?

A trickle charger operates in the filament circuit and does not expect loud signals. If you fail to get any sound, it may be mounted within an inch or two of the home aerial. It may be operated in this manner by means of a power supply and rectifier.

If you wish to acquire a collection of QSL cards, some day we could arrange to have the cards passed out absolutely free of charge. It is very difficult to suggest any reason why your set does not give better performance. Some day we could arrange to have the cards passed out absolutely free of charge. It may be mounted within an inch or two of the home aerial. It may be operated in this manner by means of a power supply and rectifier. It would also possibly improve if a separate aerial was supplied to suit. Since the plate circuit and wiring from the plate circuit and the first grid circuit and wiring, it seems highly probable that the detector oscillating and you should supply.

If you fail to get any sound, it may be mounted within an inch or two of the home aerial. It may be operated in this manner by means of a power supply and rectifier. If you wish to acquire a collection of QSL cards, some day we could arrange to have the cards passed out absolutely free of charge. It may be mounted within an inch or two of the home aerial. It may be operated in this manner by means of a power supply and rectifier. It would also possibly improve if a separate aerial was supplied to suit. Since the plate circuit and wiring from the plate circuit and the first grid circuit and wiring, it seems highly probable that the detector oscillating and you should supply.

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BY employing a new radio principle the Astor Double Screen Grid radio revolutionises long range daylight reception. Two giant amplifiers are incorporated, which give 18 times the amplification of two normal valves.

Table Model, in Two-tone Door, complete, with heavy-duty accessories and Amplion Speaker. Price, £48. Easy Terms, Deposit from...

AMPLION A/SIA LTD., 53-55 York Street, SYDNEY

SEND THE COUPON NOW!

Name
Address

Messrs. AMPLION (A/SIA) LTD., 53 York Street, Sydney.

Dear Sirs,—Please forward, without obligation, your Illustrated Folder on the New Astor Double-Screened Grid Receiver.

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Radiotrons have an enviable reputation in Australia for long life and consistent performance. This reputation has been built up over a long period of years, and the addition of three new types complete a range of Broadcast Receiving Valves which will meet all requirements.

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<tr>
<th>Model</th>
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<th>Fil. Volts</th>
<th>Fil. Current</th>
<th>Plate Volts</th>
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<tr>
<td>RCA. 221</td>
<td>For battery operated sets, General Purpose.</td>
<td>5.5 to 6</td>
<td>0.06 AMPS.</td>
<td>45 to 150</td>
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<td>UY. 224</td>
<td>A.C. SCREEN GRID</td>
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<td>UY. 245</td>
<td>FOR A.C. OR D.C. SETS</td>
<td>2.5</td>
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<td>Power Amplifier.</td>
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<td>Plate Volts</td>
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Obtainable from all Radio Dealers:

Amalgamated Wireless (Australia) Ltd.

"Wireless House,"
47 York Street, Sydney

Queensland Distributors:
J. B. CHANDLER & CO.,
45 Adelaide Street, Brisbane
Hull came in the other day with his arm drawings with his left hand. Johnst were immediate, far-reaching, and open, or (9) Cause Him Great Pain. On Hard Pavement and split his Head...
Headin' South
with Radio Aboard

By P. A. MORSE

By R-R-R! B-r-r-r-c! I rubbed my eyes and sat up. It was 4 o'clock-not p.m., but a.m. Big Ben had rudely dragged me back from a sylvan shade, where the water bubbled over cobbles, majestic mountains raised their lofty peaks, and tall trees waved in the breeze.

Possibly those dream visions were stimulated by my thoughts as I dropped asleep a few hours previously, after packing the car with the tent and camping gear ready for an early morning start to the Wollondilly River-130 miles distant. Within five minutes the whole family were afoot, having been deprived of their blankets (quite the speediest way to rouse slumberers). By 4.30, after a hurried cup of coffee, we were dodging milk carts headin' south for one of the loveliest spots in this fair State of ours-three clear days in the great out-doors.

An early start has its advantages, because if you happen to have womenfolk aboard you're lucky if you manage to pass a town without something being bought, but at this hour the only places that showed life were fishermen's shops. We managed a clear run to Picton, where we had breakfast-grilled fillet of the Bargo River, with the birds singing a sweet tune more beautiful than any orchestra ever could provide, and the Bargo's own water lashing over smooth cobble stones, making music for any tired business man's ears.

The road, a good one, runs a winding course from the valley we pulled up to drink in the life open-a fine place for cars to put up a morning plunge.

For 16 miles we ran with the "extra air" and had a perfect run. At one spot about 14 miles from Picton, where we had breakfast-grilled fillet of the Bargo River, with the birds singing a sweet tune more beautiful than any orchestra ever could provide, and the Bargo's own water lashing over smooth cobble stones, making music for any tired business man's ears. We managed a clear run to Picton, where we had breakfast-grilled fillet of the Bargo River, with the birds singing a sweet tune more beautiful than any orchestra ever could provide, and the Bargo's own water lashing over smooth cobble stones, making music for any tired business man's ears.

By eleven we had tents up, beds made, collapsible tables out, and everything ready for a couple of days' real enjoyment. And they proved "days of real sport."

The country folk, providing you consider their property rights, they were comfortably seated in the tent with the irate farmer-Irate no longer-in their midst. In the morning an irate farmer bore down upon them with clenched fists and fire in his eyes. "What're youse blokes doing here? Don't you know this is private property, and my property?"

Fortunately one of the party was an insurance man, well versed in the gentle art of persuasiveness and modern diplomacy. He took the floor. Within five minutes the three were comfortably seated in the tent with the irate farmer-Irate no longer-in their midst. It's really wonderful how the soft answer turns the wrath away. Of course, the farmer was explaining: "I didn't know you were this kind of chaps; stay, why bless me, stay as long as you like; enjoy yourselves." He left them half an hour later and did not arrive until after nightfall.

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He left them half an hour later and his last words were: "Now, I'll be back soon; I'm going to get the missus to cook you a chicken." And he did. He was hospitality itself, so much so that our friends stayed right there and did not join the main party except for a couple of visits.

While the days were glorious the nights were even better, for we had taken precaution to bring with us a "Cossor Melody Maker," and by using one cell of the car battery for the A battery and an ordinary B dry battery we had a complete radio set, keeping us in touch with "the voice of the
Two views of the Walkabilli, showing the camp.

One of the party had a trailer.

L O G
SUNDAY, OCTOBER 6TH, 1929.
3.45 p.m.: 2FC. From Taronga Park Zoo.
4 p.m.: 2FC. Studio Music.
4.15 p.m.: 2FC. Studio. Wurlitzer Organ.
4.25 p.m.: 2FC. "Nights of Gladness."
4.30 p.m.: 2FC. Studio Announcements.
4.35 p.m.: 2BL. Band (Oriel).
4.40 p.m.: 2FC. Sir Keith Smith on Aviation.
7 p.m.: 2FC. "In a Persian Market."
7.30 p.m.: 4QG. City Tabernacle Choir.
7.15 p.m.: 2FC. The Monaco Quartette.
7.28 p.m.: 3LO. "Humoresque."
7.40 p.m.: 3LO. "Overture."
7.58 p.m.: 4QG. St. Stephen's R.C. Church.
8.3 p.m.: 5CL. St. Peter's Cathedral.
8.45 p.m.: 2FC. "Land of Hope and Glory."
9.20 p.m.: 2GB. Miss G. Augin.
9.27 p.m.: 2OE. Band. "Officer of the Day."
3.30 p.m.: 2FC. Capitol Theatre.
9 p.m.: 2FC. Weather Report.
9.2 p.m.: 2FC. Wireless Singers.
9.36 p.m.: 3LO. Orchestra.
9.43 p.m.: 4QG. Band.
9.46 p.m.: 4QG. Closes.
9.47 p.m.: 2FC. Orchestra. (Horace Keats.)
10 p.m.: 2FC. Announced half-hour's Meditation Music.
10.20 p.m.: 5CL. Lecture.
10.30 p.m.: 5CL. News of E.W. Air Race.
10.45 p.m.: 5CL. Closes down and announced time as 10.15 p.m.
10.45 p.m.: 5CL. Overture, "Fidelia" (lady announcing), said teading with Hobart and Williams Port. Tas.

dilated 4QG, and was rewarded by hearing the Brisbane Municipal Band playing in Wickham Park. This brought down the house for there were several Queenslanders in our party, and what Brabanante does not know Wickham Park on a Sunday night! But that's another story.

That Sunday evening, round a blazing camp-fire under the stars, without a care in the world, is one long to be remembered. We forgot there were such places as cities and such things as business, in which men put brain and brawn against one another for money. It was unthinkable. We lived again the days of real sport, when the world was without a care.

The "Cossor Melody Maker" was the standard type, put together in 90 minutes—at least, that is what the proud owner told us—with a visible swelling of his chest—the only addition being a pentode valve, recommended by the makers. In the third stage of audio...

YOUNGER SET ACTIVITIES
SWIMMING club for girls opens Monday night, December 2nd, at 6.30 p.m. at the men's Domain Baths.

Members are steadily pouring in for tuition in swimming, diving, and life-saving. Business girls are setting their obligation to belong to the A.B.C. Girls' Radio Swimming Club after business hours. An expert business teacher will instruct the members. The fee is 7/6 for six weeks' tuition.

Business Girls' Tennis Club opened Thursday night, November 21, at No. 2 Court Moore Park. A large number of members rolled up, and were instructed in the mysteries of the science of tennis. Some have already quite a good style, and, with further coaching, will go well ahead, whilst others are new chums, who will have to learn the A B C of tennis.

New children's clubs. Vaucluse and Wollstonecraft are the newest Younger Set clubs, being only three weeks old. Vaucluse has grown so rapidly that they are forced to move in order to have two courts. This speaks well for their enthusiasm.
PORTY-TWO men, including captains of the radio and allied industries, capitalists, engineers, and patent attorneys, gathered together recently in the Park Avenue apartment of Harris Hammond to hear a newly-developed radio receiving set for which astounding claims had been made.

The inventor and his backers confidently told the gape-mouthed that the principles upon which the set operated revolutionised hearers and practices that now guide the field of radio. Moreover, prominent patent attorneys asserted that these principles avoided all existing basic patents in radio engineering, and virtually created an entirely new field of radio development because of their fundamentally new and radical character.

The demonstration of the set was conducted under the direction of Dr. Alger S. Riggs, its inventor, a young radio scientist, who held the fixed attention of the laymen, engineers, and technical counsel invited to the demonstration for nearly two hours. When he was through discussing its operation by tuning in various broadcasting stations, they pelted him with questions.

Almost to a man the witnesses declared they were "deeply impressed." Every engineer present agreed that Dr. Riggs had demonstrated that he could accomplish what he claimed, although the method of accomplishment was withheld as the inventor's secret.

The observers saw a small, compact device, looking somewhat like a radio receiving set's chassis, but free from the confusion of wires and valves usually seen inside the cabinet of an ordinary receiver. They heard the received broadcast programmes reproduced through a magnetic loudspeaker of the ordinary type. Then they heard phonograph records amplified through the new set.

faithful Reproduction

In all cases, the reproduction was faithful in the extreme. The tonal quality and the clarity equaled, if not excelled, the set the auditors had ever heard. This held true of orchestral, piano, violin, and single voice reproductions alike. This held true of orchestral, piano, violin, and single voice reproductions alike.

Dr. Riggs holding his new invention. The lower portion shows the fine condensers and inductors, next, the tuning dial, and then, on right, the six and tubes, five of which are called frequency amplifiers and one a detector.

The heart of the new Riggs' invention--vacuum tubes of different construction. The tubes are claimed to have an output millions of times greater than that of ordinary tubes, and a positive grid bias gives the watts undistorted output.

The only man whose name is withheld at present, that because of the avoidance of existing radio patents and the excellent performance of the apparatus, the new invention opens up prospects for commercial exploitation on a gigantic scale. Not only can the apparatus be used for radio receivers, but the principles involved in the broad patents applied for, it is said, will cover its use in broadcast transmitters, radiotelephony, land line repeaters, specific high accuracy electrical measurements, amplification of extremely high radio frequencies, and motion picture sound reproduction.

The only man whose direct connection with the project can be revealed is J. J. O'Brien, of Detroit, who heads the Brihall Corporation, which controls the Riggs patents. It is understood that nearly $90,000 has been spent by the young inventor's backers to carry the invention through its developmental stages.

Technically described by the writer of the invention, the set consists essentially of a selector by which the desired signal is filtered from an ordinary antenna. The signal passes through a radio frequency amplifier wherein it is amplified to the proper degree for detection. The detector is a substantially straight line and possesses
The sensitivity of the grid leak and condenser, with the quality and power handling capacity of the negative "C" bias power detector.

"However, utilising neither grid leak, condenser, nor negative "C" bias, it accomplishes something never before accomplished with a vacuum tube detector.

"The detected signal is passed into a polar amplifier. The audio amplifier, which raises the detected signal up to loudspeaker volume, is capable of extremely high quality reproduction, due to the fact that no transformer or reactive couplings are employed. The only transformer in the entire apparatus is the output transformer between the power amplifier and the loudspeaker, which is of the ordinary dynamic type.

New Kind of Valve

"Five stages of radio frequency amplification are utilized together with a detector followed by two stages of audio amplification. The tubes are of entirely new design, in accordance with the new principles. The usual tubes cannot be used in the apparatus, nor can my tubes be used in any other radio apparatus."

The most radical departure in the Riggs system is its elimination of the necessity of negative grid bias, heretofore regarded absolutely essential in all amplifier circuits, patent rights on which are tightly held and guarded. The inventor revealed that his system uses a positive bias, accomplishing what has been considered technically impossible. That positive voltages were shown on a voltmeter when applied to each tube in the system, can be attested to by the engineer and by the engineers who witnessed the demonstration.

No Known Circuit

"Five stages of radio frequency amplification, which compared favorably with three other well-known high quality receiving sets in the room, was also the subject for much comment by nearly everyone present at the demonstration. The set, in general, seems to accomplish everything any set will do— and more—and at the same time does not utilise any known accepted circuit.

"The inventions of Dr. Riggs in the operation and use of electron-discharge de

rectly at them from the back of the set.

First start, by securing a wooden base board and laying out the parts as shown.

When in position screw down firmly to the board.

PARTS RECOMMENDED

<table>
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<tr>
<th>AC 3 Banding</th>
<th>317A Vox or Standard American AC tube.</th>
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<tr>
<td>1211A Vox or Standard American AC tube.</td>
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<td>1212 Vox or Standard American AC tube.</td>
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<td>1213 Vox or Standard American AC tube.</td>
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<tr>
<td>1215 Vox or Standard American AC tube.</td>
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WARNING.—Although, with ordinary care, it is not possible to obtain any shock at all from the set when properly constructed, it is advisable to place your set in a cabinet, to always switch off the power main when making any alterations or adjustments.
The Sydney Male Choir will give a recital from the Conservatorium of Music on November 30, through 2FC. By general request, the first number will be "The Phantom Host" (Hearst), followed by two songs by Edna McLelland, "Cradle Song" (Gounod) and "No Death" (Stainer). The second number, "The Dover Charter," will be given by the "Storyteller" at 3L0 on Tuesday, December 3, when he will tell the story of the discovery of the malaria germ, and his impressions of the discoverer.

While touring the Continent and London, Mr. Wallace Nelson interviewed many of the world's celebrities, and he has chosen Sir Ronald Ross, the man who built the Panama Canal, for his address from 2FC on Tuesday, December 3. He will give a description of the Ross Institute, where he interviewed Sir Ronald Ross.

It was while dining with Sir Ronald that he met Sir Malcolm Watson, another eminent authority on tropical diseases, whom he will also describe in his talk. He will tell the story of the discovery of the malaria germ, and his impressions of the discoverer.

During his stay in Sydney, Sir Ronald will be in charge of Station 5DN, where he had probably in the world. While touring the Continent and London, he has chosen Sir Ronald Ross, the man who built the Panama Canal, for his address from 2FC on Tuesday, December 3. He will give a description of the Ross Institute, where he interviewed Sir Ronald Ross.

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Both teams are in the pink of condition, and have practiced together sufficiently to ensure speedy passing and good combination. The broadcast will be made by W. Morris, the secretary of the Water Polo Association of Australia, who will give the uninitiated a few points about the game before the match.

Mrs. Ernest Hume will speak from 2BL on December 5 on "The Experiences of a Lady Announcer." She was well known in Adelaide as the only woman active in management of a broadcasting station, and also as the only woman announced in the audience. For two years she was in charge of Station SDN, where she had previously occupied the position of children's storyteller, elocutionist, and program director.

Mrs. Hume's second talk will be on "Celebrities I Have Met in the Studio," and her impressions when facing the microphone for the first time. The third of the series will be "Pen Pictures of Life," touching briefly on subjects such as "Nurses, Children versus Parents," and "Optimism."

The Rev. R. B. LeW does not claim to be an expert in feminine psychology, but he has a real admiration and a profound faith in the "Modern Girl," which is the title of his talk from 2BL on December 3. He believes that the modern girl possesses unique opportunities for development of her personality.

The modern girl differs in many respects from her grandmother, and, because of her environment, has to make certain adjustments in her outlook and methods of life. Her health is her way of dressing, her gaiety and camaraderie, her independence and efficiency.

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**The official opening of the Hinkler Air Beacon, on December 29 by Mr. John Hopkins, will give sonic advice to young players. Miss Dawson, the young English tennis champion.**

**New feature is the official opening of the Hinkler Air Beacon, on December 29 by Mr. John Hopkins.**

**NEW feature will be introduced into the 3L0 programme on November 29 by Mr. John Hopkins, ecologist, who will commence a series of "Orations of Famous British Statesmen," which will include those of such distinguished people as William Pitt, Lord Chatham, Disraeli, and Mr. Gladstone.**

**The A.B.C. makes an advance announcement that on Christmas Eve, Tuesday, December 24, at mid-day, a special community singing session will be conducted at the Town Hall, Melbourne, at which Christmas carols will be sung and other features appropriate to the season and special greetings to hospitals will be broadcast from 3L0.**

**HAMILTON WEBBER, Mus. Bac., the Australian conductor and composer, is to take over the musical arrangements for the Sunday Night Musical Ensemble from 3L0 on December 8.**

**What would Christmas be without the delicious sweets and confections that form such an important part of the festive menu? Never was the home-made sweet more popular than it is today and dainty confectionery is always an acceptable gift. There are many simple recipes quite within range of the amateur cook, and the talk on "Christmas Confectionery" programmed at 5AR on December 6 by Miss Avis MacLachlan should be followed by many interested housewives. It may be mentioned that the recipes which are given have been chosen for simplicity and will not entail the use of an elaborate outfit.**

**LIZA LEHMANN'S song cycle, "The Dais of William G. James," will give sonic advice to young players. Miss Dawson, the young English tennis champion.**

**ARE WOMEN MENTALLY EQUAL TO MEN?**

**By permission of Messrs. Cramer and Co., London, the Australian Broadcasting Company will broadcast from 3L0 on Wednesday night, December 11, Orff's 'The Tales of Hoffmann.'**

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I was with mixed feelings, both of awe and a certain subdued reverence, with which was mingled a certain—how shall we say it?—certain "je ne sais quoi," that we entered he charmed portals of the State Conservatory of Music. Here, all day long, the south of the State of New South Wales is taught the minors and bars and those de luxe crotches of that. "Music, which is the Food of Love"—Shakespeare, and this is a very wise plan. For "The man that hath no music in himself Is fit for treasons, stratagems, and spoils."—The same composer.

And here, we said to ourselves, lives Mr. Alfred Hill. And here, we said to ourselves, lives Mr. Alfred Hill, and we've come down for an interview.

"Mr. Alfred Hill?"

Hearing us, he came to a dead stop, stood to attention, and looked straight before him. We said again, "Mr. Alfred Hill?"

He continued to look before him.

We repeated ourself, "Mr. Alfred Hill?"

There was no verbal answer: but we twifhted we detected a slight uplift of the righthand brow, and thus encouraged, we continued.

"We—ar—we're from 'Wireless Weekly,' Mr. Hill, and we've come down for an interview." He must have been warned of our coming, because he said immediately, "Yes, well. Yes, well, you'd better come inside, you can have a look at some stuff I've got in here while I go outside and blush!" He pushed open the door and went in, calling to us to follow him. We went in, past a table-full of students—it was them we had been listening to—and Mr. Hill was arranging some exercise books on a small table in a corner. "Now you sit down," he said, "and study these, and I'll go outside and blush;" and, before we could get a word in edgewise, he was gone. We set down to five exercise books, and they were full of press-clippings, beginning somewhere in 1899, and ending with the "New Jerusalem Cables" in 1929, which is thirty years, gentle reader. Thirty years. Lord, how many interviews will we have written in thirty years?

Mr. Davis—we all know Mr. Davis—he teaches Harmony, etcetera, and is a frequent composer of Australian Nocturnes—came up to the piano behind us and played a few chords. "What's that?" asked Mr. Davis.

We said we hadn't the slightest idea, and turned round to find we were interrupting the work of the class. Mr. Davis played the chords again, and someone in the class said they were variations on the diminished seventh or something. Mr. Davis didn't agree, so we left them to argue it out, and returned to the press clippings.

Clippings from all over the place, they were; the "Bulletin," the "Triad," the "Telegraph," the "Herald," New Zealand papers, Brisbane papers, and so on. We were interested in some photographs of the ballets of "Trapez," a Marion opera, and of a comic opera, book by D. H. Soutar, music by Alfred Hill. Accompanying criticisms said that for the first time a ballet had appeared with bare legs and without tights, and how wonderful it was, and how quite moral we signed, and turned to Mr. Davis, who had dismissed his class, and said, "When will Mr. Hill be back?"

He said, "Mr. Hill has gone outside to blush!" We wondered whether this was a part of the daily routine of the Conservatory.
torium, whether every day every professor went out from his studio for a few minutes for the purposes of blushing, and what for; and we said, "But he ought to have done it up now; when's he coming back?" "I don't know when he's coming back," said Mr. Davis. "But I don't think he'll be back to-night." "Good Heavens! We wanted to get an interview. We thought we made that perfectly plain." "It's all there, isn't it?" asked Mr. Davis, pointing to the press books. "Oh, yes. That's all right; but that's not an interview. We want to talk to him about things - get his opinions - get an interview, see." "I see," said Mr. Davis, undecidedly. "Well, I'm just going down to the buffet, and I'll tell him, but --" Mr. Davis went out and returned to the press clippings.

Thirty years. The twilight, echoes, were failing, and the room was getting dark, and we wondered if Mr. Hill would come back. Thirty years. We began to piece together what we had heard about Mr. Hill, so we might blunder through a page or so of vague interviews. He was a New Zealander, went to Leipzig to study, came back to Sydney, composed operas, wrote for the opera, "The world's greatest authority on the Maori folk - songs and dance." Waltala Pi! Deputy conductor of Conservatorium Orchestra. Conservatorium's first professor of Harmony and Counterpoint and Composition or something like that, heook it up - Thirty years. That would not fill in thirty years - we must get some more information.

At this point Mr. Davis returned. "He won't be back to-night," said Mr. Davis. "That's too bad." we said. "Oh, hell! Did you tell him we wanted to talk to him?" "Yes, I told him you wanted to talk to him. He told me to tell you anything you wanted to know about his private life." "His private life?" "That's what you wanted to talk to him about, wasn't it?" "Oh, hell! Did you tell him we wanted to talk to him about his private life? He did. So that was that. We hope Mr. Hill won't be annoyed with anything we have said here. We had been told about Mr. Hill's eccentricity, but we had to see such a description to believe it, and we believe that such amazing eccentricity in the greatest musician in Sydney is well worth a page of such a disreputable journal as ours is.

A.B.C. WOMEN'S ASSOCIATION SESSION

**Lecture Subjects:**

**FRIDAY, NOVEMBER 29th**
10.40 a.m.: "Madame, Do You Know?" by Miss G. Varley. Miss Varley throws out question after question to the thousands of housewives, and answers them in turn giving valuable information not easily found or understood. The entire outfit is quite well worth a page of such a disreputable magazine as ours is.

10.50 a.m.: "Home Confectionery." by Mrs. L. C. Norton ("Priscilla"). Letters continue to pour in to Priscilla, following up her unique talks on "Home Confectionery." She is a great favorite with hundreds of towns and country folk.

**MONDAY, DECEMBER 2nd**
10.40 a.m.: "Tennis Coaching." by Miss O. Varley. Another tennis coaching session will be given by Miss Varley, and she is always assured of her talk being well received. Judging by the enthusiasm of the 550 tennis members of the A.B.C. Women's Association.

10.50 a.m.: "Chinese Tennis." by Miss Varley. Miss Varley will specially deal with "acte," which so many mothers have to contend with in their growing boys and girls.

**THURSDAY, DECEMBER 5th**
10.40 a.m.: "Aviation," by Miss G. Varley. Miss Varley will urge women to become interested in this sport for women, and tell of other women's experiences.

10.50 a.m.: " Constantinople To -day," by Mrs. Edith Glandville. This will be the first of a series of travel talks to be given by Mrs. Edith Glandville. She is a great favorite among the women listeners, and they will welcome a series of talks from this capable and charming speaker, who has visited parts of the world known to few English women.

**TUESDAY, DECEMBER 3rd**
6.45 p.m.: "Girl Guides." Every alternate Tuesday night is Girl Guides' Night, and thousands of girls in the Junior and Senior Clubs listen in to their leaders, who tell of the latest doings in the Guide world. It is a definite link between all the companies throughout New South Wales.

**THURSDAY, DECEMBER 5th**
6.45 p.m.: "Girls' Radio Club." This will help to form new clubs, and arrange Girl Guides' Night, and thousands of girls in the Junior and Senior Clubs listen in to their leaders, who tell of the latest doings in the Guide world. It is a definite link between all the companies throughout New South Wales.
A CURTISS ARMY BATTLE 'PLANE
For Model Scale Builders

Published in conjunction with the Model Aero Club whose session is broadcast from 2BL every Wednesday evening.

Can you build your scale model to look like this? Here's your Army Hawk ready to take off for a check-up in the chapel. It's a 'warred' fighter ship, designed enough to take for more punishment than its pilots.

GET ready for a new experience.

Readers following the "Wireless Weekly" series of aeroplane model articles have learned how to build "flying stick" planes—models built purely for lightness and flying quality. In this article you'll learn how to build a scale model—a 24-inch reproduction of the famous Curtiss Army Hawk.

You're not going to strive for lightness. You'll forget flying quality. You'll not follow a set of detailed building instructions. You'll use your own ingenuity in producing a model that will have—as nearly as possible—the exact appearance of the ship shown in the drawings and picture with this article.

Before you're through, you'll have had a liberal education in the design of man-carrying ships. You'll know wing shapes. You'll understand the importance of struts and braces. You'll be able to name the parts of big ships and understand their uses.

There's a wide difference between "flying stick" planes and scale models. The "flying stick" has a single balsa beam extending from propeller to tail. The wing sits far back on the stick to balance the plane. The scale model, on the other hand, is patterned exactly after the man-carrying ship. It has a single balsa beam extending from propeller to tail. The wing sits far forward, carrying the weight of the motor, and, of course, the man—carrying 'plane is far forward to exactly after the man—carrying ship.

The "flying stick" planes—models built purely for lightness and flying quality. You'll get a thrill out of reproducing the Hawk. Its speed ranges from 70 to 170 miles an hour. It is designed to out-run and out-trick an enemy 'plane. It will stand unbelievable strains without cracking up. You can pull it out of a dive so fast that you'll lose consciousness—and still it won't crack up.

Before you start building it soak up every bit of detail you can from the drawings. Then begin.

Where to start? That's entirely up to you—but you'll probably begin with the fuselage. The side drawing gives you the exact length of the fuselage, the top view gives you the width at different places, and the picture gives you the general shape.

What materials shall you use? Again that's up to you. Some of you will carve the fuselage out of solid white pine, or balsa. Some will build it up from flat wood, steamed and shaped. Some may actually use metal! Take your choice.

What tools—what methods? Again that's up to you. Anyone can carve with a knife, bend with a pair of pliers, smooth down with a small block plane, and sandpaper to size. Building a scale model is a test of your ingenuity and workmanship, and you don't want to be told exactly how to proceed.

A few tips, though, will help you. Notice the radiator under the propeller. Corrugated cardboard, painted over will reproduce it nicely. For your two gun barrels and your exhaust pipes you can use either small metal...
tubing or wooden pins, painted black. No parts such as ailerons, rudder, or propeller need be movable.

Notice in the picture the N-type strut streamlined, and the extra strut on each wing running to the aileron. In the drawing you'll see that the lower wing is 2 11/32 inches in back of the upper. That's extremely important in air fighting, because it allows the pilot to look forward and down. It reduces the blind area.

The drawing shows you that the top wing is perfectly flat, while the lower one has a dihedral angle of 11 degrees. (The dihedral, you'll remember, is the upward slant of the wing from the centre to the tips.) Notice, too, in the side drawing that both wings have a negative angle of incidence of two degrees. That is, when the ship is in horizontal flight both wings point downward two degrees.

These details are important in scale model building. Watch them carefully as you proceed.

When you've finished the ship, paint it khaki. Then paint in the cockades and array markings.

---

**Philosophers** and some mathematicians tell you that time does not exist. It may not, but its very intangibility plays queer tricks. People whose work lies with the exchange of international messages can tell you that time does exist. People whose work lies with the exchange of international messages can tell you that time can be quantized things about time.

It is said, for instance, that a girl in England recently accepted a boy friend's proposal of marriage at nine o'clock one morning, whereas it was six in the evening (same day) when the young fellow popped the question.

Now they are married and living in Sydney, and the husband has a prevailing way of telling their friends about it. This involves the wife in a cumbersome explanation—how she received a Beam from Sydney from Fred telling her that he couldn't live in Australia without her any longer, and asking her to marry him—quite a long message he seems to have despatched. She replied in all good faith, and now Fred has discovered that, owing to the difference in time between Sydney and London, her message left London earlier than his had been sent from Sydney. She supposed she would never hear the last of it.

That is the curious part of this time business. Send a Beam radio from Sydney at 6 p.m., and it is received in London shortly after 8 a.m. the same day. A Beam to New York lodged at the same time is received soon after 3 a.m. that day. We are ten hours ahead of London, fifteen ahead of New York, eighteen ahead of San Francisco, and 20 hours ahead of Honolulu.

Turning in the reverse direction we find that Suva is two hours ahead of Sydney. This means that Suva is 2½ hours ahead of Honolulu. 6 a.m. Suva time being 7:30 a.m. at Honolulu. But the day for Honolulu is the one previous to that of Suva.

Between those two places lies the International Date Line, running from the North Pole to the South down the whole length of the Pacific Ocean. On the Sydney side of it the day is Monday, on the other side Sunday. Passengers on shipboard travelling west miss out a day of the week, going east they have two Christmas Days if they happen to reach the Date Line on December 25. Were it not for the International Date Line one could, by following the sun westward, get farther and farther ahead of one's starting place until, after travelling round the world, one would have a whole day in hand.

The change of time causes strange things to happen. New Zealanders, for instance, can go to church on Sunday night and, after returning home, tune in a Sydney church service on their radio sets. Or they can dance at night to local broadcast music, and when their stations close down they can tune in Sydney and continue. If their receiving sets were sufficiently powerful, they could follow the stations westward, and keep the ball going until their own broadcasters chirped up again next day. They could go on forever.

New Year's Day is approaching. Anyone who likes to be out of the ordinary, can sit up the night before and hear music played on that date in New Zealand in 1930 when we are still in 1929.
The MELODY OF SPEECH

The half-hour talk on the Melody of Armistice by Mr. C. N. Baeyertz, on November 3, in conjunction with his article in Wireless Weekly, aroused so much interest that he has been asked to speak again on the subject next Sunday, December 1, from 2FC, at 7.30.

Mr. Baeyertz is desirous that listeners on that occasion will have before them the illustrative diagrams contained in this article from his pen.

In the former article he transcribed in musical notation 18 examples of melody, which he subsequently spoke over the air. As these transcriptions meant nothing to those unable to read music, he now adopts a simple notation, easily understandable by every reader, musical or unmusical.

In reading the excerpts, note the relative pitch of the melody, and the rising and falling slides in the voice. Understand, also, that I am not laying down tyrannical yardsticks, but that I am sincere. I have marked one melody. There are others.

OSM SHORT-WAVE NOTES

NE of the most interesting transmissions of the week has been that of the celebrations in London, transmitted by 5SW on 25 metres. I picked up the first portion of this programme at 8.35 p.m. with ease, the volume and steadiness of the transmission being the best I have heard from 5SW for some time.

The first chorus sung by school girls came through delightfully clear, as did the technic of speech. The Queen says to Hamlet

"Hamlet! you have your father much offended"

Note the bitter irony in the melody of Hamlet's reply-

"Madam you have my father much offended."

She loved me! for the dangers I had pass'd
And I loved her! that she did pity them.

This only is the witchcraft I have us'd.

KIRIM

Radio Manila is still operating on about 25 metres, but volume varies very considerably. On some occasions splendid speaker strength can be obtained, particularly between 8.30 and 9 p.m.

RA97

RA97 has been coming with wonderful punch during the past week on 30 metres. He can occasionally be heard making special tests on 35 metres. These announcements are generally made by the lady announcer, who speaks in English between about 8.45 and 9.15 p.m. This lady gives a summary of the technic of speech as to return to the chief questions of Speech, and can be logged between 8 and 9 p.m.

RA97

This lady gives a summary of the technic of speech as to return to the chief questions of Speech, and can be logged between 8 and 9 p.m.

E

(1) Horror "O save me, Hubert, save me!"
(2) Irony "Cry aloud; for he is a god:
(3) Pathos (in a minor key)
She was dead. Dear gentle, patient, noble
Nell, was dead."
(4) Indignation. I'd rather be a dog and
bay the moon than such a Roman!"
(5) Satire. I am a Jew! Hath not a Jew
eyes? Hath not a Jew hands, organs,
dimensions, senses, affections, passions? Fed
with the same food, hurt with the same
wounds, subject to the same diseases, healed
by the same means, warmed and cooled by
the same winter and summer as a Christian
is?"

F

Falstaff asks the Chief Justice, 2 Henry IV.
"Will you, my lordship, lend me a thousand pounds to furnish me forth?"

To which the Chief Justice replies "Not a penny, not a penny!"

I

Entreat me not to leave thee or to return from following after thee for whether thou guest I will go and where thou lodgest I will lodge thy people shall be my people, and thy God my God; where thou diest I die and there will I be buried. The Lord do so to me and more also. If ought, but death past thee and me—Ruth 1.16.17
AND OTHERS—INCLUDING ALL LOCALS
At Full Volume and Perfect Clarity
THIS IS WHAT BUILDERS OF THE SUPER SELECTIVE
"RENO Watts THREE"
"THE THREE VALVE SET WITH THE FIVE VALVE PERFORMANCE"
ARE REPORTING DAILY
IT MATTERS NOT WHETHER YOU REQUIRE AN ALL-ELECTRIC OR BATTERY OPERATED SET,
There is no set on the market to-day which carries the same wonderful guarantee of satisfaction or can give you the same remarkable efficiency as our
— RENOWN 3 —
Build the Famous Renown and You Build Satisfaction

THERE IS NO ARGUMENT
We guarantee absolute satisfaction. You are the Judge

BATTERY OPERATED KIT COMPLETE
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ACCESSORIES, from 5 9 5
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ALL-ELECTRIC KIT COMPLETE £20/5/0
including the Philips Famous Power Pack.

"Yours for Lower Prices and Service that Satisfies"

THE ECONOMIC RADIO STORES
COUNTRY CLIENTS: Page 54 has a message for you. Avail yourself of a properly organised department which can take care of your every requirement.

126A PITT STREET.
SYDNEY
(near Kings St.)
PHONE, M6139

13 UNION STREET.
NEWCASTLE
(4 off Hunter St. West)
“Phone, NEW, 1622.

MAIL ORDER DEPT.,
492 GEORGE ST.,
SYDNEY.

CORNER CHURCH &
MACQUARIE STS.,
PARRAMATTA,
PHONE, UW9601.

25 ROYAL ARCADE,
SYDNEY
(near Palace Theatre)
PHONE, M6138.
HAVING listened to broadcasting every night during the winter, and having decided to set away from the city and civilization for a trip or a vacation during the summer, I think that enthusiasts should wish to cart along some more civilization with them in the form of a radio receiver. And yet we certainly do.

About the first thing that comes into my mind when a trip to the hills, or a vacation down the coast is suggested, is a radio set. A radio receiver. While I'm not in the form of a veteran of DX-hunting, I do know something about radio, and I must say that the radio enthusiasts should wish to cart along some civilisation for a trip or a vacation during the summer, it well justifies the added weight.

The basis of the receiver is a light and cheap fibre suit-case. The usual difficulty with such a case is that the lid opens the wrong way, and that the aerial cannot be fitted in it effectively, since it would be flat on the table or ground when the set was in operation.

The Carrying-case

This trouble has been overcome by taking the handle off the side of the case and fitting it at the top. The case is then carried in a vertical position, with the set on top, and the batteries under it. When the case is placed on the ground, the lid swings open to one side, and the aerial can then be moved to the position which gives best reception. The removal of the handle from its normal position just means the filing of four rivets.

By JAMES LAMB

The set is rather heavy, as is rather strange that it can then be moved to the position which gives best reception. The removal of the handle from its normal position just means the filing of four rivets.

THE PARTS USED

C8—90012 Sanéco fixed condenser.
R1—2 megohm grid leak.
R2—see text.
R3—Radioval radio frequency choke.
T1, T2—Two Philips radio frequency transformers.
L1, L2—Coll. unit, see text.
Four UX type valve sockets, Pilot.
Baseboard and panel, shielding can, two small order-Knab resistors, detail, three wax, wooden frame inside same, bell wire for loop aerial, Britten G.E. speaker unit, and case, and batteries.

WIRELESS WEEKLY

Friday, 29th November, 1929

Pasting around the four sides of the case, and the aerial, gives best reception. The circuit is just about as straightforward and simple as it could possibly be. The loop in the lid of the case connects directly to the grid and filament, and the first tuning condenser of the r.f. valve. No external bias is supplied to this valve, since it operates quite well with the grid return made to the negative filament. The screen-grid of the r.f. valve is by-passed in the usual manner, and is fed from a tapping on the "B" battery. The primary winding connected to the plate of V1 is wound in a "hank," and placed inside the secondary L2. This hank method of winding may appear to be crude, but it is certainly most convenient and thoroughly effective. As Mr. Hull has pointed out so often in connection with the "1930 Superhet," the idea in back winding is to put on the turns as clumsily as possible. Li is wound with wire of about 34-gauge, which was pulled off an old radio-frequency choke. The actual size of the wire does not matter very much, so long as it is of 30-gauge or a little finer. The coil was wound on an old UX 199, which makes it about one inch in rivets, but I preferred the simple way of using four short machine screws.

Of course, the case is of flimsy construction, and since there is no reinforcement in the ends (not in my particular case), it is desirable to make a wooden frame to fit inside the case. I made the frame from wood about one-half inch thick. It fits snugly around the four sides of the case, and the screws that hold the handle run through the top piece. The case used measures 20 in. high, 12 in. wide, and 6 in. deep. It is just big enough to hold the set, batteries, and speaker, without any spare room, and, for this reason, I would suggest that builders of the set buy a case that is slightly larger. The sizes of the panel are given in the drawing, but, obviously, these will have to be varied if the case is wider.

Let us deal first with the construction of the set itself. Essentially it consists of a four-valve affair, with one stage of screen-grid radio frequency amplification. The circuit is just about as straightforward and simple as it could possibly be. The loop in the lid of the case connects directly to the grid and filament, and the first tuning condenser of the r.f. valve. No external bias is supplied to this valve, since it operates quite well with the grid return made to the negative filament. The screen-grid of the r.f. valve is by-passed in the usual manner, and is fed from a tapping on the "B" battery. The primary winding connected to the plate of V1 is wound in a "hank," and placed inside the secondary L2. This hank method of winding may appear to be crude, but it is certainly most convenient and thoroughly effective. As Mr. Hull has pointed out so often in connection with the "1930 Superhet," the idea in back winding is to put on the turns as clumsily as possible. Li is wound with wire of about 34-gauge, which was pulled off an old radio-frequency choke. The actual size of the wire does not matter very much, so long as it is of 30-gauge or a little finer. The coil was wound on an old UX 199, which makes it about one inch in rivets, but I preferred the simple way of using four short machine screws.

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REVIEWING THE PROGRAMMES

A Poet's Play

We listened to Mr. John Pickard's "The Tomb of Osiris" last Thursday night. We heard the gabbling crowds in the courtyards of the palace of the great Queen Hatesheput, we witnessed the entry of the queen, we heard the acclamation of the multitude, the speech of the grand vizier or someone, the speech of the queen herself. We heard the priests singing to the great god Osiris (Mozart's Osiris or something or other, and wonderfully effective!), and we watched the dancing girls, in the usual manner in which one watches dancing girls. We followed the queen into her boudoir or whatever it was—a wonderful place—and weaves-dropped during her conversation with her tirewoman or whoever she was. Oh, yes, and before that a messenger had arrived, telling the queen of a fleet of triremes or something he had seen in the distance—that was why the queen was making so careful a toilette. Yes. And it was the King of Babylon, and he offered her almost everything Mr. Pickard could think of, but she turned him down cold. After some charming business about doves the queen's favorite enters, torn about by the poisonous claws of the cat, with the great green eyes who was once the great god Osiris. He has been out hunting for the secret of eternal life, which he found eventually in the tomb of Osiris, where he had followed the cat. He imposes this secret to the queen, and gives her the stuff she has to drink to make herself eternal, offering a gilt-edged guarantee that she will continue to live in a vampirish manner on the bodies of thousands of slaves which he will arrange to have killed and put in her tomb. When she has finished with these slaves she will be strong enough to live eternally, and, in the course of a few thousand years will meet the true love to whom she aspired across the centuries. She takes the drug, screams, and is gone. End of set one to the majestic Tannhauser overture.

In the second act (there isn't much space) two English tomb-fanciers enter her tomb, and there is Hatesheput, after all these years, yearning for her lover. Tremendous! Will he go to her? His companion rocks away in a violent hysteria. No; he can't do it! It's impossible! He's dreaming! Yes! He will! He is hers! He moves towards her—he is in her ar—THE CAT—THE GREEN-EYED CAT—a thundering crash as the whole tomb moulards into oblivion, and the turgid brooding magnificence of Wagner closes the romance.

Where Mr. Pickard got his Egypt from one doesn't know—he is a very young man. What matters is that the effect was there, and that we saw all these things with our own eyes; which postulates a poet, and adds to our hopes for the future of Sydney's radio drama. We have now two good playwrights, the dramatic Mr. Donnelly and the poetic Mr. Pickard; also a good producer in the efficient dramatic Mr. Donnelly and the poetic Mr. Pickard; also a good producer in the efficient Mr. Halbert; and we hope that in the future, these gentlemen will be SUITABLY ENCOURAGED.

P.S.—We had some severe criticisms to make, but we left them till last, so that we wouldn't have time to make them.

SECRET OF THE RADIO INDUSTRY—6

TESTING RECEIVERS IN THE SELECTION OF THOSE WHICH MAY BE CLAIMED TO BE TRULY PORTABLE.
The Safety Valve

Critics Have Hazy Idea of Variety of Tastes

Dear Sir,—From my reading of letters in the "Safety Valve" over the last twelve months I am inclined to the conclusion that a large number of the critics of programmes have a very hazy idea of the infinite variety of tastes that have a right to be catered for by the Broadcasting Company in such a community as ours. I would prefer to see such a variety exists should be potent to everyone who keeps his eyes and ears open, and that each listener has an equal right to his tastes and to have them gratified should not need to be argued.

The latest recruit to the ranks of the critics, Super-Six, thinks too much time is taken up with such items as "Women's Interest Talks, Household Hints, Household Helps," etc., and that more time should be given to those parts of the programme which he likes. Perhaps, it would be a good thing for our country if there were a greater demand for such talks. It may be that such critics are not the more expensive type of listener and profit from such talks. Let us hope there seems to be a certain back of these criticisms, too, a vague conviction that our own tastes are in some way more superior than those of others. There may be a feeling of superiority in all of us, a natural instinctive feeling, which makes us do without such "compromise" items, and if It is not done, we should hate to miss Maggie Foster playing "Danny Boy" and which was worth the whole year's miserable fee.

Here it is. This is my suggestion, published this amplifier only goes to confirm my opinion that if it does not support this suggestion I will forthwith discontinue my subscription, and thus save another threepence a week by borrowing the paper from a neighbour, because I would not possibly do without it entirely. Mr. Soullin had better take notice, too, or I'll fix him next chance I get by voting for him, so that it is in his own selfish interest to get this referendum going next week—Yours, etc.

L. C. COVE.

A.B.C. is Good

Dear Sir,—I always read with interest the criticisms in the "Safety Valve." My opinion of the new Broadcasting Company is that it is good. The country people say that the music is "running gramophone," and the new Broadcasting Company is better than ever.

We have good music, descriptions of the erasing matches, the Speedway Royal, etc. The country folk say that the new Company is no good, they say that the music is rotten. Well, every place I have been to with a radio, when the market session comes on, we always switched on to another station. That market session is bunk in my opinion, (probably because it does not interest me or most city folks.)

The new A.B.C. younger set sessions are "bonzer" in my opinion. The Boys' Aero Club has 700 members, and it promotes aviation in every way to the younger members. The girls, too, have a club, and meet and go for picnics, etc., same as the boys. Yours, etc.

Waverley

D. GARD.

Homebush Prices

Dear Sir,—In your issue of the last instant Mr. E. C. L. Killen, of Nyngan, expresses his opinion that the publicly opinion in these parts regarding the treatment of the man on the land by the A.B.C. We all awaited with interest the "better programmes" promised when the A.B.C. took over, but to our disgust it is worse, not better, we have received.

Practically every market report is given in detail, particular attention being paid to poultry, vegetables, and Sussex Street produce, but the poor old sheep man has to wait for his weekly mail to find out how Homebush prices are. Why make fish of one and flesh of the other? If the A.B.C. cannot find time for the sheep and wool prices, let them cut the lot of the markets and give us more general news.

Practically everyone of my neighbours who has sets are making the same complaint about the broadcasting, so if the A.B.C. want to show a public opinion, they'd better listen and alter matters. Otherwise they will find that there will be fewer licences next year—Yours, etc.

Burradene. A. T. BURRELL.

U.K. and U.S. Development

Dear Sir,—It is interesting, almost amusing, to read what the London writer says about the Radio Fairs in London and New York ("W.W.," 8/11/29). Her letter, I infer that England is ahead of U.S.A. in screen-grid construction, also that radio sets were getting smaller, but by studying the American catalogues this year, one sees 8-valve screen-grid super. Why then, the infer-ence? It looks one-sided to me.

When I look at the recent photos of English radio, and then at Mr. K. L. Williams' log, I would favor the Americans. I would like to hear someone else's views on the subject, and also take this opportunity on congratulating Mr. Williams on his feat. Yours, etc.

Pascoe Vale, Vic. GAIU GO AUSSIE.

K-ZEER-M

Dear Sir,—You seem to receive such a mean bunch of complaints and rants that it gives me the greatest pleasure to pen an appreciation, offer a suggestion, and, maybe, give a little help in clearing up the KZERM.

Manila, mystery. I take it none of your listeners ever went to school in U.S.A. If they did they would have learned to start A.B.C., etc., in the usual way, but finishing up X, Y Zee—not X, Y, Zed, as it is pronounced here. Manila is the capital city of an American Territory, and they learn the alphabet in the American way. I wonder what that suggests anything about that call sign? I wish some of your correspondents could hear 2FC as she toasts in Canberra. I use a Superehert, with plate bend detection and feed it into a Ferranti plate ampli- fier with PX 650's, been using it for a year now, with radio and a B.T.H. pick-up, and the feeling of wonder and excitement I experienced when I first turned it on has not worn off yet. That "Wireless Weekly" has published the facts so we can confirm our opinion of the paper and the information contained therein. Yours, etc.

Melbourne. N. S. KEY.
The second valve, of course, is the detector and should really have an external bias battery, as can be seen from the diagram. The third valve, V3, is the first audio amplifier, and should really have an external bias battery. However, to avoid complications, its grid return is taken to the negative filament lead, where it gets sufficient bias to permit satisfactory action. It can be used with a 67L plate volt.

The second audio is provided with bias in the manner indicated, and its plate circuit is connected to the speaker with a pair of flexible leads. In general, an attempt has been made to avoid anything freakish in the way of circuits, and to simplify connections and battery leads wherever possible.

The valves used in the set comprise an Oram S410 for the r.f. valve; two D.E.L. 410's for the detector and first audio, and a D.E.P. 410 for the output amplifier. Since these valves each take a filament current of 1 ampere, the total drain is 4 amperes. This is rather high for dry cells, though it does permit them to be used for short periods. Three dry cells are shown in the photograph, but since that was taken I have bought a small 4-volt accumulator, which takes up less room, and which makes a much more satisfactory supply. As a matter of fact, we probably will have a car by the time we go on the proposed trip, and I plan to run the filament from the 6-volt car battery. For this work I plan to fit the same type of flash-lamp batteries (the flat 42-volt type which can be bought for a few pence almost anywhere. The mug I used is about 3 in. in diameter and the same in height. The end of this shield is formed by an aluminium disc slightly larger than the opening of the mug. This disc is supported to the panel by the same machine screw that holds the stick to the bracket of the coil-former. The rim of the mug is cut or filed away, so that the two leads of L3, the grid lead of L2, and the "B" lead of L1, may pass between it and the disc on the panel. These leads are all made of rubber-covered flexible. The plate lead to...
VI is run through a hole in the side of the mug near to that valve. The mug itself is held over the coil by two machine screws, which pass through the rim and through the panel. The construction of the coil unit and the shield sounds complicated, but in reality it is very simple indeed.

Before the panel has been screwed to the base it will be well to mount the condensers, transformers, and battery terminals on the under-side of the base. The locations of these units are shown in the lay-out sketch. In my receiver I used a battery plug and socket, instead of terminals, but there is no reason why either of them should be used. Flexible leads could be run from the various points on the set direct to the terminals on the batteries, without any sacrifice of performance resulting. With all the components in position, the wiring may be started. It is a good plan to start on the filaments. One of the filament terminals on each socket is first connected to a lead running across the set. This is then connected by a lead running through the base to the negative terminal of the battery plug. In the diagram a resistance, R2, is shown in the negative lead. This is not essential, but it is desirable. It is an Amperite or ballast resistor, suited for carrying about 0.4 amperes. A one-ohm resistor could be used instead. The positive filament terminals are connected up in the same manner, and carried to their terminal.

The wire used in this set was the flexible type of Celestic. This is better than the solid type in a portable set, where considerable vibration must be tolerated. Some solid wiring is much more likely to come off at the joints than the flexible type, and, further, the flexible type permits joints to be twisted together or bent over much more easily than the solid.

The leads which come through the side of the shielding mug are, of course, of rubber-covered flexible, which is less likely to chafe through and cause a short. The important leads in the receiver are the grid lead to V1, the plate lead from V1, and the grid lead to V2. These should all be as short and direct as possible. The grid condenser is mounted on solid wires (just a fraction of an inch long), between the stator terminal of C2 and the grid terminal on the socket of V2. The wiring under the base can be seen in the illustrations. It is quite crudely done, and there is no necessity for any very great care as to the length of wires. Of course, they should be as short and direct as possible.

At this stage the construction of the loop can be undertaken. In my receiver it is fitted on the wooden form on which the lid of the case was built. This frame consists of wooden strips about one inch wide, running around the inside of the lid.

The idea is first to cut out four narrow strips of wood or bakelite about one inch long, and drill holes near the end of each. These are screwed to the wooden frame of the lid near the corners, and the wire of the loop is threaded under them. The loop winding consists of nine turns of bell wire in my set, but if the size of the case is altered it is probable that a slightly different number of turns will be necessary. A tap is taken at the first turn of the loop from the filament end, so that an outside aerial could be connected at any time. This tap is shown with an arrow in the circuit diagram.

In my own loop the turns are wound rather crudely, but it would possibly be an advantage to wind them carefully, separating the turns very slightly. When the turns are put in place and pulled up tight the wood screws that hold the bakelite strips may be tightened up.

The speaker is the next item. Mine was built up from a splendid magnetic type driving unit and cone obtained from the British General Electric Co. First, a piece of flexible strip about four inches square was screwed to the surface of the lid to act as a foundation for the unit. Then the unit was mounted on this wooden surface, with screws through the two lugs on the unit. The cone was slightly too large to fit in the lid of the case, so it was trimmed down slightly. The edge of the cone rests on the surface of the lid, forming a sort of semi-floating arrangement, which works very well indeed. This speaker is connected to the output of the set with a pair of light, flexible leads, which run under the edge of the cone. When the case is closed the apex of the cone sits in between the "A" and "B" batteries. To prevent it from being damaged, the batteries are held in place by wire bands, which are attached to wood screws in the wooden frame inside the walls of the case.

In operation, the receiver is surprisingly selective, and care must be taken when first locating the various stations. The only probable troubles are oscillation of the r.f. valve and an inability to tune the loop right to the top or down the bottom of the band. The oscillation will be avoided if the wiring and the shielding are carried out carefully, while the adjustment of the loop tuning is simply a matter of varying the number of turns. If the detector valve happens to be particularly "microphonic," a howl may be set up by vibration from the speaker. This trouble has not been found in my own receiver, but should it occur it probably could be avoided by wrapping some strips of cloth loosely around the detector valve.
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HAVING listened to broadcasting every night during the winter, and having decided to get away from the city and civilization for a trip or a vacation during the summer, I want to state that, if an enthusiast should wish to cart along some more civilization with them in the form of a radio receiver, and yet we certainly do.

About the first thing that comes into my mind when a trip to the hills, or a vacation down the coast is suggested, is a radio set. Long before we have decided upon the place to go to, or the manner of getting there, I have thoroughly thought out the radio gear that I am to take—the spare valves, the aerial wire, and all the junk that goes with them.

In the past I have had some very splendid times on vacations or on short trips, rigging them. This year I planned to build myself an entirely self-contained set. One that was fitted up in a case with a handle, so that it could be carried around with ease—a set that could be put into operation at a moment's notice without the necessity of hitching up batteries, or stringing an aerial. After much experimental work, I built myself the set illustrated in this article.

**Splendid Performance**

Though I have not yet taken it away on the much-looked-forward-to vacation, I anticipate from the result obtained around Sydney that it will be a thorough success. Using no set with decent filament and plate supply must be, but it is light enough to be carried without any very special effort. Then, on account of the plate voltage provided, the reproduction is much better than the usual run of "portables" with 43 or 90 volts of "B," and the improvement, to my way of thinking, well justifies the added weight.

The basis of the receiver is a light and cheap fibre suit case. The usual difficulty with such a case is that the lid opens the wrong way, and that the aerial cannot be fitted in it effectively, since it would be flat on the table or ground when the set was in operation.

**The Carrying-case**

This trouble has been overcome by taking the handle off the side of the case and fitting it at the top. The case is then carried in a vertical position, with the set on top, and the batteries under it.

When the case is placed on the ground, the lid swings open to one side, and the aerial can then be moved to the position which gives best reception. The removal of the handle from its normal position just means the filing of four rivets. Fitting it in the new position could be accomplished with rivets, but I preferred the simple way of using four short machine screws.

Of course, the case is of flimsy construction, and since there is no reinforcement in the ends (not in my particular one), it is desirable to make a wooden frame to fit inside the case. I made the frame from wood about one-half inch thick. It fits snugly around the four sides of the case, and the screws that hold the handle run through the top piece. The case used measures 20in. high, 12in. wide, and 6in. deep. It is just big enough to hold the set, batteries, and speaker, without any spare room, and, for this reason, I would suggest that builders of the set buy a case that is slightly larger. The sizes of the panel are given in the drawing, but, obviously, these will have to be varied if the case is wider.

Let us deal first with the construction of the set itself. Essentially it consists of a four-valve affair, with one stage of screen-grid radio frequency amplification. The circuit is just about as straightforward and simple as it could possibly be. The loop in the lid of the case connects directly to the grid and filament, and the first tuning condenser of the r.f. valve. No external bias is supplied to this valve, since it operates quite well with the grid return made to the negative filament. The screen-grid of the r.f. valve is by-passed in the usual manner, and is fed from a tapping on the "B" battery.

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<td>British O.E. speaker unit and cone.</td>
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**Imporant of Coils**

The coil unit, L1, L2, L3, is a very important component of the receiver, and careful attention must be given to it. The primary winding connected to the plate of V1 is wound in a "hank," and placed inside the secondary L2. This hank method of winding may appear to be crude, but it is certainly most convenient and thoroughly effective. As Mr. Hull has pointed out so often in connection with the "1930 Superhet," the idea in hank winding is to put on the turns as clumsily as possible. Li is wound with wire of about 34-gauge, which was pulled off an old radio-frequency choke.

The actual size of the wire does not matter very much, so long as it is of 30-gauge or a little finer. The coil was wound on an old UX 199, which makes it about one inch in length and 34-gauge. It is light enough to be carried without any very special effort. Then, on account of the plate voltage provided, the reproduction is much better than the usual run of "portables" with 43 or 90 volts of "B," and the improvement, to my way of thinking, well justifies the added weight.

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Advances in Beat-Frequency Oscillators

During the last few years, the variable frequency oscillator for audio frequencies has become a very important piece of laboratory apparatus. By its aid, a practical study of the frequency characteristics of audio frequency transformers, of speakers, of detectors, and of complete receivers has been made possible.

Most enthusiasts are familiar at least with the frequency curves of audio frequency transformers, but few know much of the apparatus used to make their delineation possible. The type of oscillator now generally used for work of this sort is known as the "beat-frequency oscillator." Much development work has been done on it in recent years, and modern types not only have a constant sinusoidal output over their frequency range, but a calibration which is practically unchanged by variations in temperature and battery voltage.

In the "General Electric Review" for October, M. S. Mead, jun., discusses the fields of application, the principle of operation, and the design of oscillators of this type. "The beat-frequency oscillator," he states, "was first developed for use in connection with the art of recording and reproducing sound. It is now recognised that the fidelity of any system used for speech or music depends largely upon its ability to transmit all of the component frequencies equally well; and, therefore, the action of the system can be tested by using pure, or single-frequency tones supplied from a beat-frequency oscillator.

"For instance, a vacuum-tube amplifier is to be tested to determine how it amplifies the various frequencies throughout the audible range. A small signal is impressed across the grid of the first tube by means of the beat-frequency oscillator. This input voltage is maintained constant as the oscillator frequency is varied and the output voltage from the amplifier is read, using either thermo-couple or vacuum-tube voltmeters. The graph of the ratio of output to input is called a frequency characteristic. The ideal usually sought for is that this characteristic be a straight line parallel to the abscissa. Aside from the sound recording and reproducing fields many uses for beat-frequency oscillators exist. Its calibrated scale covering the audio-frequency range makes the oscillator a convenient frequency standard. For instance, in calibrating quartz crystals, the crystal frequency is determined by measuring the frequency of the beat note between the crystal oscillator and the standard frequency which is available in steps of 10,000 cycles. In measurements of inductances, capacity, and power-factor by means of bridges there is needed a pure-tone-frequency source. Sometimes a measurement at 1000 cycles only is sufficient, but many times measurements are desired throughout the audio range. The oscillator is also useful in calibrating various instruments, such as vacuum-tube voltmeters. It is also used in audio frequency transformer testing, and more generally in tests on various kinds of transformer steel. Another application is in the adjustment and tests of resonant shunts which are to be placed in power lines to reduce certain prominent harmonics which interfere with telephone communication.

The beat-frequency oscillator makes use of two separate radio frequency oscillators, one of which operates at a fixed frequency, and the other at a variable frequency controlled by the operator. The difference in frequency between the two oscillators is made equal to the desired audio frequency, so that when the two radio frequency oscillator outputs are combined and fed into a detector, the phenomenon known as "beat" occurs.

"It is to be noted that the frequency variation necessary in the controlled radio oscillator is small relative to its maximum frequency. The frequency is controlled by a single variable condenser in shunt with a larger fixed condenser. For instance, with a fixed oscillator frequency of 100,000 cycles per second and a desired audio frequency of 50 to 10,000 cycles per second the controlled radio-frequency oscillator would have to be varied from 90,000 to 99,950 cycles per second or approximately 10 per cent of its maximum frequency.

"Beat-frequency oscillators must meet several definite requirements in order to be of the greatest degree of usefulness. The output wave shape should be a pure sinusoidal function of time. The output voltage on a constant-impedance load should not vary over the frequency range. There should be a minimum of frequency drift with changes in temperature and battery voltage. Drift is understood to refer to slow changes in audio frequency, not produced by the operator, but due to changes in frequency of either radio-frequency oscillator. The control dial should permit accurate and convenient setting of the frequency. There should be no radio frequency present in the output circuit.

"Wave-shape distortion in beat-frequency oscillators may arise from several causes, including poor audio amplification, bad detection, and inter-coupling between the two radio-frequency oscillators. Poor frequency amplification may introduce both odd and even harmonics. The odd-harmonic distortion usually comes from the transformers if they are not large enough to handle the audio voltages impressed on them. The even-harmonic distortion may be caused by not operating the tubes on the proper part of their characteristic, particularly the output stage, or if the latter is pull-up, the even-harmonic distortion in it is, of course, largely eliminated. The best form of detection for beat-frequency oscillators seems to be that known commonly as bias or plate-curvature detection. If the detector is operated on the part of its curve where the plate current is proportional to the square of the input voltage, the result of impressing the two radio-frequency voltages on the grid will be a current flowing in the plate circuit proportional to the difference of the two radio-frequency voltages and with a frequency equal to their frequency difference.

At this stage in his discussion, Mr. Mead proceeds to detail two particular oscillators which have been developed. One of these is of a portable type, and employs four valves from a common plate battery of 90 volts, and a dry-cell filament battery. The fixed oscillator is crystal controlled at a frequency of 100 kilocycles. In the second, and more elaborate oscillator, a total of twelve valves are used, four of which are high-powered output valves used in the output amplifier. A crystal controlled oscillator is, of course, again used. The complete article could well be studied closely by sincere students of modern radio technique.
The grid return is taken to the negative filament lead, where it gets sufficient bias to permit satisfactory operation. The second audio is also run at the 47V-plate volts. The second audio is provided with bias in the manner indicated, and its plate circuit is connected to the speaker with a pair of flexible leads. In general, an attempt has been made to avoid anything freakish in the way of circuits, and to simplify connections and battery leads wherever possible.

The valves used in the set comprise an Osram S416 for the r.f. valve, two D.E.P. 419's for the detector and first audio, and a D.E.P. 410 for the output amplifier. Since these valves each take a filament current of 1.4 amperes, the total drain is 4.6 amperes. This is rather high for dry cells, though it is permissible to use such batteries for short periods. Three dry cells are shown in the photograph, but since that was taken I have bought a small 4-volt accumulator, which takes up less room, and which makes a much more satisfactory supply.

As a matter of fact, we probably will have a car by the time we go on the proposed trip, and I plan to run the filament from the 6-volt car battery. For this work I plan to fit the same type of flexible battery leads wherever possible.

The reaction coil, which is mounted in the same manner as L1, consists of 30 turns of 20-gauge wire (or line wire) wound in a hank one inch in diameter. I will discuss the mounting of the coils later on.

The second valve, of course, is the detector. It is provided with the usual grid condenser and leak, though the leak runs to the positive filament lead, and not connected across the grid condenser, as is more usual. The reaction condenser, C2, is a midget of 23 plates. It is controlled by the knob, to be seen in the very centre of the panel. The radio-frequency choke and the connections to the first audio transformer are quite normal, as can be seen from the diagram.

The third valve, V3, is the first audio amplifier, and should really have an external bias battery. However, to avoid complications, its grid return is taken to the negative filament lead, but in the 6-volt range. The plate-supply consists of three of the smallest 6-volt "B" batteries that I could obtain. The set could be operated from 90 volts—within the screen grid and the first audio voltage at 45—but the results would not be quite the same. The bias battery consists of two flash-lamp batteries (the flat 44-volt type) in series.

In building the receiver it is first desirable to make the set proper, and get it running well on the bench before assembling it in the case. The first work is to prepare a baseboard just wide enough to fit in between the wooden slides of the frame inside the case, and just deep enough to make the panel come flush with the front edges of the frame. In my receiver the base measures 10in. by 4in., and is made of five-ply wood. As is shown in the photographs, some of the apparatus is mounted above this base, and some below it. When the box has been prepared, the four valve sockets can be screwed to it across the rear edge. These are the only items which are attached to the upper surface of the base.

The second valve, of course, is the detector. It consists of 30 turns of 30-gauge wire (or line wire), wound in a hank one inch in diameter. I will discuss the mounting of the coils later on.

The second valve, of course, is the detector. It is provided with the usual grid condenser and leak, though the leak runs to the positive filament lead, and not connected across the grid condenser, as is more usual. The reaction condenser, C2, is a midget of 23 plates. It is controlled by the knob, to be seen in the very centre of the panel. The radio-frequency choke and the connections to the first audio transformer are quite normal, as can be seen from the diagram.

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The loop -+135+circuit of baseboard-compare with drawing below.

Plan view of back-panel; compare with above drawing.

Wiring lay-out of set.

Plan view of baseboard; compare with drawing below.

WIRING WEEKLY
Page Twenty-One

V1 is run through a hole in the side of the mug near to that valve. The mug itself is held over the coil by two machine screws, which pass through the rim and through the panel. The construction of the coil unit and the shield sounds complicated, but in reality it is very simple indeed.

Before the panel has been screwed to the base it will be well to mount the condensers, transformers, and battery terminals on the underside of the base. The locations of these units are shown in the lay-out sketch. In my receiver I used a battery plug and socket, instead of terminals, but there is no reason why either of them should be used. Flexible leads could be run from the various points on the set direct to the terminals on the batteries, without any sacrifice of performance resulting. With all the components in position, the wiring may be started. It is a good plan to start on the filaments. One of the filament terminals on each socket is first connected to a lead running across the set. This is then connected by a lead running through the base to the negative terminal of the battery plug. In the diagram a resistance, R2, is shown in the negative lead. This is not essential, but it is desirable. It is an Amperite or ballast resistor, suited for carrying about .4 amperes. A one-ohm resistor could be used instead. The positive filament terminals are connected up in the same manner, and carried to their terminal.

The wire used in this set was the flexible type of Celestite. This is better than the solid type in a portable set, where considerable vibration must be tolerated. The flexible type permits joints to be twisted together or bent over much more easily than the solid.

The leads which come through the side of the shielding mug are, of course, of rubber-covered flexible, which is less likely to chafe and cause a short. The important leads in the receiver are the grid lead to V1, the plate lead from V1, and the grid lead to V2. These should all be as short and direct as possible. The grid condenser is mounted on solid wires (just a fraction of an inch long), between the stator terminal of C2 and the grid terminal on the socket of V2. The wiring under the base can be seen in the illustrations. It is quite crude, but there is no necessity for any very great care as to the length of wires. Of course they should be as short and direct as possible.

At this stage the construction of the loop can be undertaken. In my receiver it is fitted on the wooden frame on which the lid of the case was built. This frame consists of wooden strips about one inch wide, running around the inside of the lid.

The idea is to cut out four narrow strips of wood or bakelite about one inch long, and drill holes near the end of each. These are screwed to the wooden frame of the lid near the corners, and the wire of the loop is threaded under them. The loop winding consists of nine turns of bell wire in my set, but if the size of the case is altered it is probable that a slightly different number of turns will be necessary. A tap is taken at the first turn of the loop from the filament end, so that an outside aerial could be connected at any time. This tap is shown with an arrow in the circuit diagram. In my own loop the turns are wound rather crudely, but it would possibly be an advantage to wind them carefully, separating the turns very slightly. When the turns are put in place and pulled up tight the wood screws that hold the small bakelite strips may be tightened up.

The speaker is the next item. Mine was built up from a splendid magnetic type driving unit and cone obtained from the British General Electric Co. First, a piece of three-plus about four inches square was screwed to the surface of the lid to act as a foundation for the unit. Then the unit was mounted on this wooden surface, with screws through the two lugs on the unit. The cone was slightly too large to fit in the lid of the case, so it was trimmed down slightly. The edge of the cone rests on the surface of the lid, forming a sort of semi-floating arrangement, which works very well indeed. This speaker is connected to the output of the set with a pair of light, flexible leads, which run under the edge of the cone. When the case is closed the apex of the cone sits in between the "A" and "B" batteries. To prevent it from being damaged, the batteries are held in place by wire bands, which are attached to wood screws in the wooden frame inside the walls of the case.

In operation, the receiver is surprisingly selective, and care must be taken when first locating the various stations. The only probable troubles are oscillation of the r.f. valve and an inability to tune the loop right to the top or down the bottom of the band. The oscillation will be avoided if the wiring and the shielding are carried out carefully, while the adjustment of the loop tuning is simply a matter of varying the number of turns. If the detector valve happens to be particularly "microphonic," a howl may be set up by vibration from the speaker. This trouble has not been found in my own receiver, but should it occur it probably could be avoided by wrapping some strips of cloth loosely around the detector valve.
**Champion Radio Valves**

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**Champion Radio Valve UX-226**

**A.C. Amplifier**
The Champion UX-226 is designed for use either as a radio or audio frequency amplifier. It employs a heavy filament of the oxide coated type designed for operation on low voltage alternating current. The electrical characteristics are similar to those of the Champion 201-A, except that the Champion UX-226 is not generally suitable for use as a detector.

**Champion Radio Valve UY-227**

**A.C. Detector**
The Champion UY-227 differs from a general purpose valve in that it has a heater element instead of a filament. Emission in a valve is caused by heating the surface of the filament which is heated so as to emit electrons. In the Champion UY-227 the emitting surface is separated from the heating wire by a piece of insulating material. This does away with the hum which would be heard if a general purpose valve were lighted with alternating current. In order to get a separate electrical connection to the cathode, or emitting surface, an extra prong is necessary in the base.

**Champion Radio Valve UX-280**

**Full Wave Rectifier**
The Champion UX-280 is a full wave thermionic Rectifier. This valve is evacuated to a very high degree, and has many advantages over the gaseous conduction type of rectifier. A very heavy oxide filament is used in the Champion 280, which will stand very severe treatment, and still continue to give unusually high emission. The plates of the Champion UX-280 full wave rectifier are made of a wire mesh in order to facilitate the dissipation of heat.

**Champion Radio Valve UX-171A**

**Power Amplifier and General Purpose Valve**
Champion UX-171A is a Power Amplifier valve designed to give maximum undistorted output to the loud speaker. It should only be used in the last audio stage, with the proper grid and plate voltages applied. A loud speaker coupling device is essential with the Champion UX-171A to keep direct current out of the loud speaker. If used in the proper way the Champion UX-171A will give volume and clearness beyond comparison.

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**FACTORY REPRESENTATIVES**
We Compete the Discussion on Transmitters

As has previously been mentioned, valves can be used as rectifiers. The same points that were emphasised in discussing valve rectification of a.c. for receivers, etc., will apply in the case of transmitters, unless one is dealing with a still higher power, which has to be handled.

It is possible to use two valves in a transmitter supplying a.c. direct. The valves are placed in parallel, and this type is called a "self-rectifying" transmitter.

In this type it is not necessary to use a filter. The valves being placed in parallel give full wave rectification, and the high voltage is obtained by an electrolytic rectifier. The plate of each valve is supplied with a.c. from the power transformer. When, say, valve No. 1 is receiving positive potential, the other will be negative. Therefore, the circuit will oscillate with valve No. 1. When the current reverses the second valve will be included in the circuit, and no current will flow in the plate circuit of the first valve because it will be negative with respect to the filament, and the electrons will be repelled.

Self-rectified transmitters are usually a source of interference, since they usually give a very broad signal. Transmitters which are directly coupled to the aerial are banned, since these can also be very broad. One often sees some old transmitting circuits with the oscillator directly coupled to the aerial. Unless the circuit is absolutely symmetrical, it is possible to get a plate circuit of its own will ensure a note that is absolutely steady than usual.

The frequency as steady as possible. By a quartz crystal is used to obtain stability in the oscillator. The crystal can be controlled by the crystal is so exactly placed in a master-oscillator circuit, and a power amplifier used to put more constant frequency energy into the aerial.

Most amateurs purchase their crystal ready-made for certain wavelengths. A crystal has to be cut and finelly ground to oscillate at a certain frequency. It will, of course, produce harmonics, and you will remember that I mentioned that the bands were in harmonic relation, thus enabling us to work on several bands with one crystal.

Crystal Grinding

A crystal should be ground with absolutely flat surfaces. If the surface is rough or uneven it will not oscillate. The shape of the crystal is of minor importance providing the surfaces are flat. The thinner the crystal the lower will be its fundamental wavelength. Powdered emery and kerosene on a piece of flat glass is generally used for grinding. The crystal is moved round in a circular motion. Final grinding is done with very fine carborundum and oil. The usual complete transmitter may be divided into five sections. The first section is the power supply of 260 volt alternating current supplying the plate and filament transformers. The plate transformer steps the alternating current up to a voltage between 400 and 2500 (depending on the valve used in transmitter), while the filament transformer steps down the voltage to the rated value of the valve filament. Any variation of the high voltage usually is obtained by changing taps on the secondary winding. Adjustment of the output of the filament transformer is obtained by the use of a rheostat in the primary circuit of the transformer. From the secondary of the high-voltage transformer the alternating current is led to the rectifier—the second division—where it is changed into pulsating direct current. This current then goes on through the third section—the filter—where the pulsations are smoothed out, so that the current is now a steady, direct current. This supply is then led to the valve oscillator, which converts it into a very high frequency alternating current of the frequency to which the oscillator is tuned. The fifth section of the transmitter is the antenna system. It is tuned approximately to the frequency of the oscillator, and takes its power from the plate circuit of the valve, through an antenna coil inductively coupled to it.

The type of valve to be used should be given consideration before a start is made with the construction of any of the apparatus for the transmitter. The design of almost every item in any apparatus can be influenced by the valve with which it is to be operated. The rating of the transformers, for instance, the current-carrying capacity of the filament, the capacity of the output and input condensers, the type of variable condensers, and the design of the inductances all will depend on the power and voltage rating of the valve.

Fortunately, there is a splendid variety of transmitting valves to choose from. What is more, the valves available are of high quality, with satisfactory characteristics. If they are handled carefully, and operated correctly, they will give wonderful service.

The amateur usually uses the lowest-power transmitting valve—the UX10—for his first transmitter, and this practice is a good one. The use of low power enables the transmitter to be built cheaply, yet providing full opportunity for the amateur to gain a knowledge of the operation and handling of a transmitter. Many of the most experienced amateurs actually prefer a lower-power transmitter of this type, finding that they can readily communicate over many thousands of miles with them under good conditions. The distance that can be covered by a transmitter is, in fact, not very much dependent upon the power of the transmitter, but given a receiver valve in the hands of an experienced amateur can send across the world when conditions are very good, but a higher-powered transmitter can send no farther than this, but they have the advantage in being able to put signals with greater reliability and readability into far-distant countries.

Selecting the Valve

In choosing the valve it is well to remember that a really good performance and a clean signal can be obtained only if the valve is run at or under its rated power, and only if the power-supply equipment has an ample margin. In those days, valves and power supplies were often heavily overloaded to the point where the plate of the valve was white hot and the transformer windings about to go up in smoke. In those days the whole idea was to get the most possible antenna current. Modern practice is to operate the entire equipment well below its full rating. In this way, even the most powerful transmitter is but a fraction of that available, the signals usually will be more readable at distant points because of their clear tone and steadiness. It is an undisputed fact that 7.5 watts of antenna power from a 75-watt tube can make an infinitely superior signal to 7.5 ten-watts watts from a 7.5-watt valve.
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Advances in
Beat-Frequency
Oscillators

During the last few years, the variable frequency oscillator for audio frequencies has become a very important piece of laboratory apparatus. By its aid, a practical study of the frequency characteristics of audio frequency transformers, speakers, of detectors, and of complete receivers has been made possible.

Most enthusiasts are familiar at least with the frequency curves of audio frequency transformers, but few know much of the apparatus used to make their delineation possible. The type of oscillator now generally used for work of this sort is known as the "Beat-Frequency Oscillator." Much development work has been done in it in recent years, and modern types not only have a constant sinusoidal output over their frequency range, but a calibration which is practically unchangeable by variations in temperature and battery voltage.

In the "General Electric Review" for October, M. S. Mead, discusses the fields or application, the principle of operation, and the design of oscillators of this type. "The beat-frequency oscillator," he states, "was first developed for use in connection with the art of recording and reproducing sound. It is now recognized that the fidelity of any system used for speech or music depends largely upon its ability to transmit all of the component frequencies equally well, and, therefore, the action of the system can be tested by using pure, or single-frequency tones supplied from a beat-frequency oscillator."

"For instance, a vacuum-tube amplifier is to be tested to determine how its calibrated scale covering 100 kilocycles.

In measurements of audio frequency transformers, the crystal controlled oscillator is the standard of frequency equal to their frequency difference."

The beat-frequency oscillator makes use of two separate radio frequency oscillators, one of which operates at a fixed frequency, and the other at a variable frequency controlled by the operator. The difference in frequency between the two oscillators is made equal to the desired audio frequency, so that when the two radio frequency oscillator outputs are combined and fed into a detector, the phenomenon known as "beat" occurs. If it is to be noted that the frequency variation necessary in the controlled radio oscillator is small relative to its maximum frequency. The frequency is controlled by a single variable condenser in shunt with a larger fixed condenser. For instance, with a fixed oscillator frequency of 100,000 cycles per second and a desired audio frequency of 50 to 10,000 cycles per second the controlled radio-frequency oscillator would have to be varied from 90,000 to 99,950 cycles per second or approximately 10 per cent of its maximum frequency.

"Beat-frequency oscillators must meet several definite requirements in order to be of the greatest degree of usefulness. The output wave shape should be a pure sinusoidal function of time. The output voltage on a constant-impedance load should not vary over the frequency range. There should be a minimum of frequency drift with changes in temperature and battery voltage. Drift is understood to refer to slow changes in audio frequency, not produced by the operator, but due to changes in frequency of either radio-frequency oscillator. The control dial should permit accurate and convenient setting of the frequency. There should be no radio frequency present in the output circuit. "Wave-shape distortion in beat-frequency oscillators may arise from several causes, including poor audio amplification, bad detection, and inter-coupling between the two radio-frequency oscillators. Poor-frequency amplification may introduce both odd and even harmonics. The odd-harmonic distortion usually comes from the transformers if they are not large enough to handle the audio voltages impressed on them. The even-harmonic distortion may be caused by not operating the tubes on the proper part of their characteristic, particularly the output stage. If the latter is push-pull the even-harmonic distortion in it is, of course, largely eliminated. The best form of detection for beat-frequency oscillators seems to be that known commonly as bias or plate-curvature detection. If the detector tube is operated on the part of its curve where the plate current is proportional to the square of the input voltage, the result of impressing the two radio-frequency voltages on the grid will be a current flowing in the plate circuit proportional to the difference of the two radio-frequency voltages and with a frequency equal to their frequency difference."

At this stage in his discussion, Mr. Mead proceeds to detail two particular oscillators which have been developed. One of these is of a portable type, and employs four valves from a common plate battery of 90 volts, and a dry-cell filament battery. The fixed oscillator is crystal controlled at a frequency of 100 kilocycles. In the second, and more elaborate oscillator, a total of twelve valves are used, four of which are high-powered output valves used in the output amplifier. A crystal controlled oscillator is of course, again used. The complete article could well be studied closely by sincere students of modern radio technique.
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The materials required are:

1. Cotton reel.
2. Strips of soft iron 2 inches long, by 1 inch thick.
3. Knitting needle 2 inches long, by approximately 2 inches diameter (steel).
4. Bearings. 2-1/16 inches, by 1-16 inches (by 1-16 inch wide by 1-16 inch thick).
5. Wood blocks, 1 inch, by 1 inch, by 1 inch.
6. Flat-head brass screws.
7. Piece of brass 1 inch by 1 inch by 1-16 inch (contact maker).
8. Yards No. 26 D.C.C. Copper wire.
9. Wood base. 4 inches.
10. Wood block. 1 inch. 1 inch, by 1 inch.
11. Plate sheet brass 1/16 inch thick, 2 inches by 2 inches.
12. Plate sheet brass 1/16 inch thick, 2 inches by 2 inches.
13. Springing brass 1 inch long by 1 inch wide (contact spring).
14. Terminals (screw type).
15. Hinges (for armature poles).
16. Plate sheet brass 1/4 inch thick, 2 inches by 2 inches.
17. Round-head brass screws.
19. Piece springing brass 1/4 inch long by 1 inch wide (contact spring).
20. Terminals (screw type).

Now that we have the materials, we are ready to start. The armature body is made from the centre part of a cotton reel. That is, we cut off both flanges, see that the ends are perfectly square, otherwise the motor will not run steadily. When the ends have been sandpapered smooth, mark off both ends as shown in Figure 1, and file four flats 1 inch wide at equi-distant intervals round the circumference. Take the strip of soft iron, and cut off four pieces 1 inch long by 1 inch wide by 1-16 inch thick for the armature poles, and two pieces 2 inches long by 1 inch wide by 1-16 inch thick for the armature plates. Bend the latter pieces to a horseshoe shape as at A, Fig. 2, and drill two 1-16 inch holes in each short piece as at B. These holes should be slightly countersunk on one side of each plate, to take the heads of small iron wire brads which fix the plates in position on the cotton reel.

For the armature shaft, cut off a 2 inch length from an ordinary steel knitting needle about 3-32 inch diameter. Plug the hole in the cotton reel with a round wooden rod, file the ends flush, and carefully drill a hole through the centre a tight fit for the shaft. Press the latter in plate so that one end projects 1 inch. The bearing standards may be cut out of thin sheet brass to the dimensions given at C, Fig. 4, after drilling a hole in each for the armature spindle and two holes in the bottom parts as indicated. Bend the foot of each at right angles on the dotted line, and then screw them down on a baseboard which simply consists of a piece of wood 4 inches long, 2 inches wide, and 1 inch thick. The spindle must, of course, be slipped through the bearings first, and the latter should be so adjusted that the armature revolves freely.

We can now proceed to wind the magnets, and for this purpose eight yards of No. 26 D.C.C. copper wire will be required, two yards being wound on each armature iron, as in Fig. 2. After winding on each coil, tie a piece of strong thread round the last two or three turns to prevent the coil from coming unwound. Leave about 4 inches of free wire on each coil for connecting-up purposes. From these wires a loop can be formed for connecting the contact maker up join in one, and one of the screws on the contact spring is to be removed. This wire loop is then clamped under the heads of the fixing screws on one of the bearing plates. A short piece of wire connects the terminal T and one of the screws on the contact spring D.

The little motor can now be connected up to the battery, and the contact maker adjusted so that contact is made just as two armature plates are opposite each other in horizontal position. Contact must be broken when the plates come opposite the ends of the magnets. When the position of the contact maker has been finally adjusted it can be lightly soldered to the spindle.

Apply a spot of oil where the spindle runs in the bearings and connect up the battery to the two terminals, then, on giving the armature a slight turn with the finger, the little motor should revolve at quite a rapid rate.

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**Figure 1**

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**Figure 2**

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**Figure 3**

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**Figure 4**

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**Figure 5**
Champion Radio Valves

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Champion Radio Valve UX-226

A.C. Amplifier

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Champion Radio Valve UX-280

Full Wave Rectifier

The Champion UX-280 is a full wave thermionic Rectifier. This valve is evacuated to a very high degree, and has many advantages over the gaseous conduction type of rectifier. A very heavy oxide filament is used in the Champion 280, which will stand very severe treatment, and still continue to give unusually high emission. The plates of the Champion UX-280 full wave rectifier are made of a wire mesh in order to facilitate the dissipation of heat.

Champion Radio Valve UX-171A

Power Amplifier and General Purpose Valve

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FACTORY REPRESENTATIVES
We Compete the Discussion on Transmitters

A & has been previously mentioned, valves can be used as rectifiers. The same points that were emphasised in discussing valve rectification of a.c. for receivers, etc., will apply in the case of transmitters, although in this case the applied voltage is much higher than in the receiver.

The master-oscillator has an r.f. output, and since the principle is the same as that for the full-wave rectifier, the plate of each valve is supplied with a.c. from the power transformer. When, say, valve No. 1 is receiving positive potential, the other will be negative. Therefore, the circuit will oscillate with valve No. 1.

In the early days, valves and power supplies were often heavily overloaded to the point where the plate of the valve was white hot and the transformer windings about to go up in smoke. In those days the whole idea was to set the most powerful antenna coils. Modern practice is to operate the transmitter near its rated power, and this practice is a good one. The use of low power enables the transmitter to be built cheaply, yet providing full opportunity for the amateur to gain a knowledge of the operation and handling of a transmitter. Many of the most experienced amateurs actually prefer a lower-power transmitter of this type, finding that they can readily communicate over many thousands of miles, with them under good conditions. The distance that can be covered by a transmitter is, in fact, not very much dependent upon the power of the transmitter, given a receiver powerful enough to analyse the signal. In the hands of an experienced amateur the receiver can send across the world when conditions are right, and the only limit to what signal is possible is the antenna power available.

Adjustment of the output of the filament transformer is obtained by the use of a rheostat in the primary circuit of the transformer. From the secondary of the high-voltage transformer the alternating current is led to the rectifier—the second division—where it is changed into pulsating direct current. This current then goes through the third section—the filter—where the pulsations are smoothed out, so that the current is now a steady, direct current. This supply is then led to the valve oscillator, which converts it into a very high frequency alternating current of the frequency to which the oscillator is tuned. The fifth section of the oscillator is the antenna system. It is tuned approximately to the frequency of the oscillator, and takes its power from the plate circuit of the valve, through an antenna coil inductively coupled to it.

The type of valve to be used should be given consideration before a start is made with the construction of any of the apparatus for the transmitter. The design of almost every item in the equipment will be influenced by the valve with which it is to be operated. The rating of the transformers, for instance, the current-carrying capacity of the valves, the fusible condensers, the type of variable condensers, and the design of the inductances all will depend on the power and voltage rating of the valve.

Fortunately, there is a splendid variety of transmitting valves to choose from. What is more, the valves available are of high quality, with satisfactory characteristics. If they are handled carefully, and operated correctly, they will give wonderful service. The amateur usually uses the lowest-power transmitting valve—the UX210—for his first transmitter, and this practice is a good one. The use of low power enables the transmitter to be built cheaply, yet providing full opportunity for the amateur to gain a knowledge of the operation and handling of a transmitter. Many of the most experienced amateurs actually prefer a lower-power transmitter of this type, finding that they can readily communicate over many thousands of miles, with them under good conditions. The distance that can be covered by a transmitter is, in fact, not very much dependent upon the power of the transmitter, given a receiver powerful enough to analyse the signal. In the hands of an experienced amateur the receiver can send across the world when conditions are right, and the only limit to what signal is possible is the antenna power available.

In choosing the valve it is well to remember that a really good performance and clean signal can be obtained only if the valve is run at or under its rated power, and only if the power-supply equipment has an ample margin. In those days, valves and power supplies were often heavily overloaded to the point where the plate of the valve was white hot and the transformer windings about to go up in smoke. In those days the whole idea was to set the most powerful antenna coils. Modern practice is to operate the entire equipment well below its full rating. In this way, even if the power input is but a fraction of that available, the signals usually will be more readable at distant points because of their clear tone and steadiness. It is an undisputed fact that 7.5 watts of antenna power from a 75-watt tube can make an infinitely superior signal to 7.5 tenths of watts from a 7.5-watt valve.
Local Programmes, Friday, November 29

2FC


EaRLY SsSESS-7 to 8.15 a.m.

1. G.P.O. chimes and Meteorological information to the man on the land.
2. This morning's news from the "Daily Guardian.
3. Hus: "one to-day.
4. Children's Play Calls.
5. Music from the Studio.

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

10.30: Announcement.
12.30: To-morrow's sporting Events, by Oscar Lind.
10.45: HORACE WEBER, at the GRAND ORGAN.
11.0: HOUSEHOLD HELPERS, cooking, by Miss Ruth Purcell.
11.33: MORNING DEVOTION-MICHAEL SAWTELL will speak on "Native customs and Falls by the wayside."
12.5: CAPTAIN L. ROBERTS will speak on "Australians in Transit.
12.20: Midday weather forecast and weather Quotations.
11.15: MORNING DEVOTION-MICHAEL SAWTELL will speak on "Native customs and Falls by the wayside."
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12.5: CAPTAIN L. ROBERTS will speak on "Australians in Transit.
12.20: Midday weather forecast and weather Quotations.
8.0: SCHUBERT PROGRAMME, Miss Gwen Selva, soprano.
3.0: Music.
9.47: CLAUDE CORBETT will give a sport-
7.45: Feature Story.
7.0: Music.
5.15: Children's Session by Uncle George.
3.30: Close down.
2.50: Movie Know All.
2.5: Women's Radio Service by Mrs. Dorothy Jordan.
2.0: Music.
11.45: Close down.
11.30: Talk by Mrs. Jordan.
10.30: WOMEN'S SESSION.
10.20: Music.
10.30: NATIONAL ANTHEM. CLOSE.
10.25: Late news from the "Evening News"
10.7: Late weather forecast.
9.40: W. E. LEWIS, baritone.
9.30: PETER and PRISCILLA, entertainers.
9.28: Weather information for the man on
the land.
9.13: WALLACE NELSON will speak on "A
Stelzer.
8.50: Symphony Orchestra.
8.15: Madame Beze-Vincent in an illus-
trated talk on Schubert.
8.30: Mr. Clement Hocking, baritone.
8.27: Instrumental quintette.
8.56: Miss Gwen Selva, soprano.
8.0: Weather report.
7.35: Mr. Jack Wis and Mr. Heath Burock.
Hymn.
6.30: Symphony Orchestra.
6.15: Miss Maesmore Morris, contralto.
6.0: Simon's Session.
6.0: Musical programme.
5.0: Children's hour, conducted by Uncle
Jack.
4.30: Request numbers.
4.0: Reply of popular music.
3.0: Comments on Foreign Affairs by Mr. J.
M. Prentice.
2.10: Music.
2.30: Close.
1.40: Music.
1.45: Tune in to the ticking of the clock.
1.0: Organ Recital. 2.0: Close down.
12.30: Request numbers.
11.55: Where to go to-night.
11.50: Request numbers.
11.40: Musical interlude.
11.30: Request numbers.
11.20: Musical interlude.
11.15: Calls and announcements.
11.10: Midday Session. 10.5: Breakfast. 10.0:
Clock and Chimes. 9.1: Musical Items.
9.0: Close down.
9.0: Hawaiian steel guitar selections.
8.10: Women's information service. Mrs.
GRAY.
8.30: Music and vocal items from the Studio.
8.10: SPORTING FEATURE (from the rings-
side of McHugh's Leichhardt Stadium.)
7.5: Birthday calls.
7.0: Hawaiian steel guitar selections.
6.30: Wendy's Hour with the Children, and
Birthday Greetings. 7.15: Health Talk by
Mr. T. Gordon Marsden. 7.35: Orchestral
Dinner Selections. 7.55: Programme An-
nouncements and news from the "Sun." 8.0:
Clock and Chimes. 8.1: Overture. "Il Trova-
tore" Selections. 8.10: Vocal and Instrumental
items. 10.15: National Anthem.
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**An Electric Power Unit For A Few Pence**

It is the ambition of every boy to possess a power unit to drive models. The lack of facilities need not deter you, for it is possible to construct a useful electric motor for a few pence, and with the aid of simple tools. This miniature electric motor, which is built up of odds and ends out of the junk box, runs at a rapid rate when connected up to a four-volt accumulator.

The materials required are:

1. Cotton reel.
2. Strip of soft iron 3in. long by 1in. wide by 1-16in. thick.
3. Knitting needle 2in. long, 2lin. wide, and 1in. thick.
4. Bearing standards may be cut out of thin sheet brass to the dimensions given at C, Fig. 4, after drilling a hole in each for the armature spindle and two holes in the bottom parts as indicated. Bend the foot of each at right angles on the dotted line, and then screw them down on a baseboard which simply consists of a piece of wood 4in. long, 2lin. wide, and 1in. thick. The spindle must, of course, be slipped through the bearings first, and the latter should be so adjusted that the armature revolves freely.

Now that we have the materials, we are ready to start. The armature body is made from the centre part of a cotton reel. That is, we cut off both flanges, see that the ends are perfectly square, otherwise the motor will not run steadily. When the ends have been sandpapered smooth, mark off both ends as shown in Figure 1, and file four flats 1in. wide at equi-distant intervals round the circumference. Take the strip of soft iron, and cut off four pieces 1in. long by 1in. wide by 1-16in. thick for the armature poles, and two pieces 2lin. long by 1in. wide by 1-16in. thick for the armature shaft. Take the latter pieces to a horseshoe shape as at A, Fig. 3, and drill two 1-16in. holes in each short piece as at B. These holes should be slightly countersunk on one side of each plate, to take the heads of small iron wire brads which fix the plates in position on the cotton reel.

The armature shaft, cut off a 2in. length from an ordinary steel knitting needle about 3-32in. diameter. Plug the hole in the cotton reel with a round wooden rod, file the ends flush, and carefully drill a hole through the centre a tight fit for the shaft. Press the latter in place so that one end projects 1/16in. The bearing standards may be cut out of thin sheet brass to the dimensions given at C, Fig. 4, after drilling a hole in each for the armature spindle and two holes in the bottom parts as indicated. Bend the foot of each at right angles on the dotted line, and then screw them down on a baseboard which simply consists of a piece of wood 4in. long, 2lin. wide, and 1in. thick. The spindle must, of course, be slipped through the bearings first, and the latter should be so adjusted that the armature revolves freely.

The little motor can now be connected up to the battery, and the contact maker adjusted so that contact is made just as two armature plates are approaching a horizontal position. Contact must be broken when the plates come opposite the ends of the magnets. When the position of the contact maker has been finally adjusted it can be lightly soldered to the spindle.

Apply a spot of oil where the spindle runs in the bearings and connect up the battery to the two terminals, then, on giving the armature a slight turn with the finger, the little motor should revolve at quite a rapid rate.
3L0

Australian Broadcasting Co. Ltd, 122 Russell St, Melbourne (244 Metres).

10:00 Morning Session.
11.30 Orchestral Repertoire.
11.45 Vocal Repertoire.
12.30 Indicative Repertoire.
13.15 Midday Report.
14.00 Afternoon Session.
15.00 Market Report.
15.30 Report.
16.00 Midday Repertoire.
16.45 Midday Repertoire.
17.15 Midday Repertoire.
18.00 Evening Session.
18.30 Report.
19.00 Evening Session.
19.30 Evening Session.
20.00 Evening Session.
21.00 Evening Session.
21.30 Evening Session.
22.00 Mail Notice.
22.30 Mail Notice.
23.00 Mail Notice.
23.30 Mail Notice.
24.00 Mail Notice.

3AR

Australian Broadcasting Co. Ltd, 122 Russell St, Melbourne (244 Metres).

10.00 Australian Repertoire.
10.45 Guitar Repertoire.
11.20 Australian Repertoire.
12.00 Australian Repertoire.
12.45 Australian Repertoire.
13.20 Australian Repertoire.
14.00 Australian Repertoire.
14.45 Australian Repertoire.
15.20 Australian Repertoire.
16.00 Australian Repertoire.
16.45 Australian Repertoire.
17.20 Australian Repertoire.
18.00 Australian Repertoire.
18.45 Australian Repertoire.
19.20 Australian Repertoire.
20.00 Australian Repertoire.
20.45 Australian Repertoire.
21.20 Australian Repertoire.
22.00 Australian Repertoire.
22.45 Australian Repertoire.
23.20 Australian Repertoire.
23.59 Australian Repertoire.
IF your radio is not already giving reproduction that sparkles with life—that is vividly real—your receiver is not up to modern standards.

Overhaul it now and add a new thrill to broadcast reception.

Perhaps all you need to give your radio a new voice is a Power Valve in the last stage, or maybe a new-type speaker. Anyway, write to our Technical Department or consult your nearest dealer specifying

PHILIPS

THERE IS A SPECIAL PHILIPS VALVE FOR EVERY SOCKET OF YOUR AMERICAN A.C. RADIO.
Local Programmes, Friday, November 29

2FC

Australian Broadcasting Company, Ltd., Market St., Sydney (Frequencies: all Mediums).

**EARLY SESSION**—7 to 8.15 a.m.
1. 7.48: What's on to-day?
2. 7.50: Children's B. Good-bye Calls.
3. 7.58: MORNINGSessions—8.10 a.m. to 12.30 p.m.
4. 8.10: HOMEGROWN HELPERS: Cooking, by Miss Ruth Furst.
5. 8.15: Reserve for the man on the land supplied by the State Marketing Board.
6. 8.30: CAPTAIN L. ROBERTS will speak on "Newspaper Advertising for the Man on the Land."
8. 8.50: MORNING DEVOTION.
10. 8:57: G.P.O. chimes and announcements.
11. 9.00: ERIC MASTERS, Baritone.
12. 9:10: ERIC MASTERS will speak on "A Great Australian Professor Wallace." and Claude Corbett's Sportscast: "The Test Kiss."
15. 9:55: What's on the air to-night?

**THE MIDDAY SESSION**—12 noon to 2.30 p.m.
1. 12:00: Stock Exchange, second call.
2. 12:05: A Glance at the afternoon "News." 
4. 12:20: Midday weather forecast and weather synopses.
5. 12:30: Special produce market session for the man on the land.
6. 12:45: MORNING DEVOTION.

**THE LUNCH HOUR**—1 to 2.30 p.m.
1. 1:00: Lunch Hour Music.
2. 1:05: Studio music.
3. 1:15: MRS. MERRINER ATKINSON will speak on "Oxidation and Reduction.
4. 1:30: Austradio musical reproduction.
5. 1:40: J. KNIGHT BARNETT will read "Wuthering Heights." and Faith Healing's.

**MIDNIGHT SESSION**—2 to 5.45 p.m.
1. 2:30: Major General T. MORGAN will speak on "Yapayuwa.
2. 2:45: Austradio musical reproduction.
3. 3:00: FROM THE BALLROOM OF THE ORIENTAL. Sydney Simpson's Syndympocaters in dance music.
6. 3:45: THE STORYTELLER will speak on "The Voyage of the8." and "The Crew of the8.

**THE DINNER HOUR**—6.15 to 7.55 p.m.
1. 6.15: DINNER MUSIC.
2. 6:30: DINNER QUARTET.
3. 6:45: THE GIRLS' RADIO CLUB, conducted by Bennie Abraham.
4. 6:50: ORIENTAL—Sydney Simpson's Syncopaters.

**THE DINNER HOURS Sessions**—7 to 9.30 p.m.
7. 7:30: The Trade Hour—Dinner Marionette.
8. 7:45: Dinner Music.
9. 8:00: Austradio musical reproduction.
10. 8:15: What's on the air to-night?

**TO-NIGHTS PRESENTATION**—from 8 to 10.30 p.m.
11. 8:45: "The Old Time Theatre." and "The Stars" (Phillips). 
2. 9:00: ROMANO'S CAFE DANCE ORCHESTRA, conducted by Bennie Abraham.
3. 9:15: ROMANO'S CAFE DANCE ORCHESTRA, conducted by Bennie Abraham.
4. 9:30: FROM THE STUDIO—Announcements.
5. 9:45: Local Programme—Announcements.
6. 10:00: ROMANO'S CAFE DANCE ORCHESTRA, conducted by Bennie Abraham.
7. 10:15:ROMANO'S CAFE DANCE ORCHESTRA, conducted by Bennie Abraham.
8. 10:30: National Anthem.

**2BL**

Australian Broadcasting Company, Ltd., Market St., Sydney (Frequencies: all Mediums).

**OPENING SESSION**—8 to 11 a.m.
1. 8:15: G.P.O. chimes and announcements.
2. 8:30: Children's "Good-bye" stories, told by the "Hello Man." assisted by the Farm- ers' Radio Club.
3. 8:45: Meteorological data for the country.
4. 8:50: Mails and shipping information.
5. 9:00: P.B.O. chimes and announcements.
7. 9:30: MRS. MERRINER ATKINSON will speak on "Oxidation and Reduction.
8. 9:45: Austradio musical reproduction.

**FROM THE RADIO DISPLAY AT THE STATE SHOPPING BLOCK**
9. 10:00: FROM THE STUDIO—Announcements.
10. 10:15: FROM THE STUDIO—Announcements.
11. 10:30: "Redgum" will give a talk on "Gardening.
12. 10:45: "The Old Time Theatre.

**THE EVENING PRESENTATION**—from 8 to 10.30 p.m.
13. 8:45: From the Cricket Match, England v. Queensland, played at Brisbane, will be broadcast, as received.
14. 9:00: THE STUDIO—AL HAMMETT, Saxophonist, will speak on "A Great Australian—Professor Wallace." and Claude Corbett's Sportscast: "The Test Kiss."
15. 9:15: FROM THE STUDIO—Announcements.
17. 9:45: New music.

**INDEX**

**To Local Programmes**
November 29

Friday, November 29.
1. 7:50: A.B.C. Sporting Service.
2. 8:00: DORRIE WARD, soprano.
3. 8:15: ROMANO'S CAFE DANCE ORCHESTRA, conducted by Bennie Abraham.
4. 8:30: FROM THE STUDIO—Announcements.
5. 8:45: Local Programme—Announcements.
6. 9:00: P.B.O. chimes and announcements.

**To Interstate Programmes**
November 29

Friday, November 29.
1. 7:50: A.B.C. Sporting Service.
2. 8:00: ERIC MASTERS, Baritone.
3. 8:15: ROMANO'S CAFE DANCE ORCHESTRA, conducted by Bennie Abraham.
4. 8:30: FROM THE STUDIO—Announcements.
5. 8:45: Local Programme—Announcements.

**Friday, December 6.
**
1. 7:50: A.B.C. Sporting Service.
2. 8:00: GILBERT MURRAY, baritone.
3. 8:15: ROMANO'S CAFE DANCE ORCHESTRA, conducted by Bennie Abraham.
4. 8:30: FROM THE STUDIO—Announcements.
5. 8:45: Local Programme—Announcements.

WIRELESS WEEKLY

Page Twenty-Nine

Friday, 29th November, 1929

(a) "May in My Garden" (Haydn Wood).
(b) "A Smile" (Landon Ronald).
(c) "April's Here" (Landon Ronald).
9.12: WALLACE MURRAY will speak on "A Great Australian Professor—GILBERT Murray."
9.28: Weather information for the man on the land.
9.30: PETER and PRISCILLA, entertainers. "Perfectly Matched" (Barnaby and Galhally), including, "Oh! You Have No Idea" (Doherty).
9.40: W. E. LEWIS, baritone.
9.45: Symphony Orchestra.
9.47: CLAUDE CORBETT will give a sporting talk.
10.7: THE NATIONAL BROADCASTING ORCHESTRA.
(a) Suite. "Nautical Scenes" (Fletcher).
(b) "Snowflakes" (Bonteje).
10.25: Late news from the "Evening News" over the "Daily Mirror." "Fairy Tale" Selections. 8.10: Vocal and Instrumental Selections.
10.30: NATIONAL ANTHEM. CLOSE.

2GB

Theosophical Broadcasting Station, 69 High St., Sydney (Wavelength. 293 Meters).
10.0: Music.
10.10: Happiness Talk by A. E. Bennett.
10.20: Music.
10.30: Women's Session by Mrs. W. J. Steller.
11.30: Talk by Mrs. Jordan.
11.45: Close down.
12.0: Music.
2.0: Women's Radio Service by Mrs. Dorothy Jordan.
2.50: Movie Know All.
3.0: Musical programme.
3.30: Close down.
5.15: Children's Session by Uncle George.
7.0: Music.
7.45: Feature Story.
8.0: SCHUBERT PROGRAMME, Miss Gwen Selva, soprano.
8.7: Symphony Orchestra.
8.15: Madame Betze-Vincent in an illustrated talk on Schubert.
8.30: Mr. Clement Hoxing, baritone.
8.37: Instrumental Quintette.
8.50: Miss Gwen Selva, soprano.
9.0: Weather report.
9.3: Mr. Jack Wills and Mr. Heath Burdock.
9.35: Symphony Orchestra.
9.45: Symphony Orchestra.
9.50: Miss Maesmore Morris, contralto.
10.0: Musical programme.
10.20: Close.

2UW

Radio Broadcasting Ltd., Falsh's Building, Ash St., Sydney (Wavelength, 316 Meters).
EARLY MORNING SESSION.
12.30: Request numbers.
1.0: Music.
1.15: Talk on Homecraft, by Pandoras.
1.40: Music.
2.20: Close.
3.30: Musical programme.

EVENING SESSION
5.30: Children's hour, conducted by Uncle Jack.
6.30: Close.
7.0: Request numbers.
8.0: Recital of popular music.
8.60: Comments on Foreign Affairs by Mr. J. M. Prentice.
9.10: Music.
10.30: Close.

2KY

Trades and Labor Council, Goulburn St., Sydney (Wavelength, 293 Meters).
MORNING SESSION.
10.0: Tune in to the ticking of the clock.
10.1: Morning Greets.
10.15: Calls and announcements.
10.30: ORCHESTRAL AND VOCAL ITEMS. Home hints and information, MRS. GRAY.
11.0: A few laughs.
11.3: Pianoforte selections.
11.15: Calls and announcements.
11.20: Musical Interlude.
11.30: Request numbers.
11.40: Music and vocal items.
11.55: Where to go to-night.
12.0: Closing announcements.

CHILDREN'S SESSION
6 p.m.: Birthday calls, request numbers, and kiddies' entertainment. AUNT JEMIMA AND UNCLE BERT.

EVENING SESSION
7.0: Musical interlude.
7.5: Birthday calls.
7.15: SPORTING FEATURE. Turf topics. Review of candidates and their prospects for to-morrow. MR. GEO. A. DAVIS.
7.40: Request numbers.
8.0: Hawaiian steel guitar selections.
8.10: Women's information service. MRS. GRAY.
8.30: Music and vocal items from the Studio.
9.10: SPORTING FEATURE from the ringside of McHugh's Leichhardt Stadium. Full description of main 15-round event.
10.0: Closing announcements.

2UE

Broadcasting Station 2UE, Everett St., Maroubra, Sydney (Wavelength, 293 Meters).
EARLY MORNING SESSION.
7.15: Breakfast. Time Hour Orchestral Music. 8.0: Clock and Chimes. 8.1: Musical Items. 8.30: Close down.
MIDDAY SESSION.
10.0: Orchestral, Music, and Women's Session conducted by Miss Dorothy Vaulter.
11.30: Old Time Orchestral and Vocal Concert. 12.0: Close down.
AFTERNOON SESSION.
1.0: Orchestral and Vocal Items. 1.45: Organ Recital. 2.0: Close down.
EVENING SESSION.
6.30: Wendy's Hour with the Children, and Birthday Greetings. 7.15: Health Talk by Mr. T. Gordon Marsden.

52 ISSUES DELIVERED POST FREE FOR ONE YEAR

"WIRELESS WEEKLY" gives you the complete broadcasting programmes from every important station in Australia a week in advance in addition to topical news and articles and a technical constructive article by a qualified radio man.

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Subscription Rates: 12 months (52 issues). 13/- post free; 6 months (26 issues). 6/- post free.

13/-
Local Programmes, Saturday, November 30

2FC

EARLY SESSION—7 to 8.15 a.m.
6.0: From the Studio. (Meteorological Information for the man on the land.)
7.3: This morning’s news from the “Daily Guardian.”
7.7: Australian Musical Reproduction.
7.8: Mail and shipping information.
7.9: What’s on the air to-night?
7.85: What’s on to-day?
8.0: Music from the Studio.
8.15: “Big Ben” and Meteorological Information.

Austradio Musical Reproduction—7.45 a.m.
11.30: G.P.O. chimes and announcements.
12.0: The Sydney Male Choir.

12.0: FROM THE STUDIO—THE COUNTRY MAN’S RACE SESSION.
(a) “New South Wales Forecasts.”
(b) “Inter-State Weather Synopses.”
(c) Yachman’s and Fisherman’s Forecast.
(d) “Big Ben.”
12.12: STUDIO MUSIC.
12.15: Studio Music at 12.15 p.m.
12.20: Midday weather forecast and Weather Signal Quotations.
12.25: FROM THE STUDIO—LATE SPORTING RESULTS.
12.30: News.
12.35: Studio Music.
6.45: Children’s “Good Night” Stories, told by the “Hello Man.”
6.50: Dinner Hour Music.
6.55: Radio Service to Sydney Male Choir.
7.0: Musical programme.
7.0: Musical Items.
7.15: Turf Talk by Mr. C. R. Orme.
7.25: Special Country Session.

Electric Motors & Generators
Large Stocks of New and Reconditioned. All Voltages and Sizes.
Complete range of Small Motors and Wireless Generators. D.C. and A.C.
Varicole Rheostats. Regulators, etc. In stock or built to any specification
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F. T. S. O’Donnell, Griffin & Co., Ltd.
51-53 ORF STREET, CITY, N.S.W.

A 3 VALVE ALL ELECTRIC RADIO AIR SET FOR £20
And a Loud Speaker FREE
This set has 3 Valves in all and will only be sold during November and December at this price.
WIRELESS WEEKLY Friday, 29th November, 1929

2BL

OPENING SESSION—8.15 to 9.15 a.m.
8.15: G.P.O. chimes and announcements.
8.16: Music for every mood.
8.40: Meteorological data for the country.
8.45: Mail and shipping information.
8.50: Memoirs from the past.
9.0: This morning’s story.
9.30: Evening News.
10.0: News from the “Daily Guardian.”
10.10: Australian musical reproduction.
10.30: Dinner Hour Music.

MIDNIGHT SESSION—11 noon to 12 noon.
12.0: G.P.O. chimes and announcements.
12.1: A pianoforte recital.
12.30: LUNCH-HOUR MUSIC.
1.0: Afternoon news from the “Evening News.”
1.10: Australian musical reproduction.
2.0: J. KNIGHT BARNETT at the “Wurlitzer.”
2.12: Studio music.

AFTERNOON ENTERTAINMENT—2.30 to 3.15 p.m.
2.30: 2BL INSTRUMENTAL TRIO.
2.45: LOUIS EVANS, soprano.
(a) “Vagabond” (“Mammon” Massenet). (Barron)
(b) “Lament of Is-iss” (Bantock).
2.45: 2BL INSTRUMENTAL TRIO.
3.0: AL SHAW, piano.
(a) “ Destiny Waltz” (Baynes).
3.0: 2BL INSTRUMENTAL TRIO.
3.15: AL SHAW, piano.
(a) “Destiny Waltz” (Baynes).
(b) “This is Heaven” (Baynes).
(b) “Sweetheart” (Baynes).
3.30: 2BL INSTRUMENTAL TRIO.
3.45: LOUIS EVANS, soprano.
(a) “Little Brown Owl” (Sanderson).
(b) “Break O’ Day” (Sanderson).
3.50: 2BL INSTRUMENTAL TRIO.
4.0: AL SHAW, jazz pianist.
(a) “Putzy” (Perry).
(b) “Yes, Always Be in Love With You” (Ruby).
4.0: 2BL INSTRUMENTAL TRIO.
4.15: Close down.

THE DINNER HOUR—6.15 to 7.55 p.m.
6.15: DINNER QUARTET.
6.30: DINNER QUARTET.
6.45: “THE CAPTAIN” to his comrades.
7.0: The A.B.C. Sporting Service.
7.15: DINNER MUSIC.
7.30: MUSIC FROM THE ARCADIA THEATRE, CHATSWOOD.
Organ recital by Nicholas Robinson.
8.0: What’s on the air to-night?

TO-NIGHT’S PRESENTATION—8 to 10.00 p.m.
Our sporting programme to-night is in sharp contrast with the choral music by the Sydney Male Choir. At 8.00 p.m. to 9.00 p.m., the Sydney Male Choir. 9.00 p.m. to 10.00 p.m., Austradio musical reproduction.

8.0: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
8.12: DES TOOLEY, the Girl with the Unusual Voice.
(a) “Down Among the Sugar Cane” (De Rose).
(b) “Sweetheart of All My Dreams” (Prior).
(c) “An Old Italian Love Song” (Harrison).
19.00: WALLY BARNES, comedian.
19.29: HAROLD HARRISON, mouth-organ soloist.
(a) “March” (Old Comrades) (Teitel).
(b) Medley of Popular Songs.
1.00: “Kingsley Home” (Foster).
2.00: “Poor Old Joe” (Foster).
3.00: "Grenville River" (Foster).
3.12: MIDNIGHT SPECIALS.
3.15: TO-NIGHT’S BIG SPORTING FEAT.
3.30: Weather Information for the man on the land.
3.35: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
4.08: DES TOOLEY, The Girl with the Unusual Voice.
(a) “High on the Hilltop” (Whitting).
(b) “Mean to Me” (Turk-Allert).
(c) “This is Heaven” (Baynes).
5.55: HAROLD HARRISON, mouth-organ soloist.
(a) “Destiny Waltz” (Baynes).
(b) “Over the Waves” (McIntosh) (Ross).
2.00: WALLY BAYNES, comedian.
10.12: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
10.25: Late news from the “Evening News.”
11.00: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
12.0: NATIONAL ANTHEM. CLOS.

2GB
Thomashall Broadcasting Station, 29 Bgirl St., Sydney (Wavelength, 261 Metres).

3.0: Musical Session.
5.15: Children’s Session by Uncle George.
7.0: REQUEST HOUR.
9.0: MINI-TUNAL SESSION.
10.30: Close.

2UW
Radio Broadcasting Ltd., Paddington. 28 St., Sydney (Wavelength, 430 Metres).

5.30 p.m.: Children’s Hour, conducted by Uncle Jack.
6.30: Close.
7.0: Musical programme.
10.30: Close.

2KY
Trades and Labor Council, Geelbarn St., Sydney.

CHILDREN’S SESSION
5.30 p.m.: Birthday calls, request numbers, and Eddy Kelly’s entertainment.
AUNT DEMIMA and UNCLE BERT.

EVENING SESSION
7.0 p.m.: Musical Interlude.
8.0: Birthday calls.
9.0: SPORTING FEATURE. Turf topics. How they ran to-day.
10.0: Request numbers.
10.0: Closings announcements.

2UE
Broadcasting Station CUE, Everett Street, Maroubra. (Wavelength, 235 Metres).

EARLY MORNING SESSION, 7.15 to 8.20, as usual.

EVENING SESSION
8.30: Wendy’s Hour with the Children, and Birthday Greetings. 10.15 to 11.00.
7.0: Radio Talk by Mr. Eddy Kelly’s Entertainment.
7.30: DINNER MUSIC.
8.0: CLERK and CHUNEE.
10.30: Close down.
**WHY PAY MORE?**

**LEVENSON'S CUT-TO-THE-QUICK LOW PRICES ARE FAMOUS FOR VALUE**

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**LEVENSON'S RADIO**

*The Palace of Wireless.*

**226 Pitt Street, Near Lyceum Theatre.**

Branch, 86A Pitt Street, between Hunter Street and Martin Place.

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**WIRELESS WEEKLY**

*Page Thirty-Three*

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**Bakelite Formers, 1, 1½, 2, 2½ in., 3 in., 4 in.**

**Radion Transformer, 2½, 3, 3½, 4 in., 6d each.**

**Pyrex Glass Insulators, 1/9**


**Bakelite Panel, Black, 3½ square inch**

**Crystals.**

**Bakelite Adapters, 3-way 2½; 6-way, £1. for battery cables, 6½; 7-way, 7½; 7-way Cable and Adapter with plug, 10½.**

**Wates' 3 in 1 amp. Volt Meters, 11/6**

**Quam Variable Condensers, 2½ list price. Now 6½. 00025, 00035, 0005, with dials.**

**0 to 1 amp. Panel Meters, 3½**

**Loop Aerial for indoor use, £10/10/- value. A splendid piece of workmanship. Now £2.**

**Marwil Rheostats, 1/9**

**Build Levenson's 3-Valve Inter-tube Radio. All parts cost only 5½d. Valves, etc. extra. Charts, 6d, free with parts.**

**Recent Bell-ringing Transformers, latest and improved model.**

**Reinartz 3-Coil Tuner, 4/9**

**Charts for L, 2, 3, 4, or 5 valve sets. Six different makes of crystal sets. Eliminators, Charts, A.C. Sets, etc., 6d each. Free with parts, 20 charts, 5½.**

**De Jur 1930 Diving Drake Coil Kit, with Stages. Perfect in detail. 3½.**

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**Aerials, 100ft. lengths.**

**Electron Aerials**

**Pure Mull Stranded Phosphor Bronze Aerial, 2½.**

**8½/9 Copper**

**2½.**

**1½/6 Enamel**

**3½.**

**1½/6 Silk**

**5½.**

**De Jur Gramophone Pick-up, 52½.**

**Like-a-Flash Heavy Duty 45-volt "B" Batteries. 25½. Now 15½. Vertical type. Never a complaint. The best selling battery offering.**

**Light Duty 45-volt B Batteries, 10½.**

**A few left. Amplion AR 19 Loud Speaker, £6 10/-list price. Never to be repeated at this price. Now 9½.**

**Lightweight Headphones, 10½.**

**Amplion AR 88 Loud Speakers. Famous the world over. 90/- list price. My price, 45/- Just half.**

**Portable Radio Cabinets, 39½.**

**Wired any kind of coil. Latest coil winders, 32½.**

**SCO Continental Transformers, 10½.**

**AC Equipment.**

**Transformers for A.C. Parks, £2.5 5½. Double Chassis. £3. £5 Henry Chassis. £4. Voltage Regulators, £1 6½ Blue Rectifier. £3 6½. A.C. Transformers for A.C. Parks. £9. Metal Panel Tray. £6. Cabinet, polished wood. £5. A.C. Set. Illuminated dial, with chromed plates. £15.**

**5-Valve Midget Kits, 5½.**

**Build your own set "B" Battery Eliminator. A superb model. Simple controls, 6d from with parts. For sets up to 5 valves. £1 6½. Everything. Fix sets over 5 valves, £3 6½ Everything. Build Levenson A Battery Charger. Not a trickle charger. Charges 2, 4, or 6 volt Batteries. All parts, 5½. Build in 15 minutes.**

**Silver Knight R.F. Choke, 5½.**

**Build Levenson's All-station Crystal Set. 25½. All parts. Any child could build it. Cabinets 7½ extra. Read Thu. Mr. T. N. write: "As Rayleigh I get all stations in Metropolitan area of great strength, and I consider my purchase a sound.**
IF your radio is not already giving reproduction that sparkles with life—that is vividly real—your receiver is not up to modern standards.

Overhaul it now and add a new thrill to broadcast reception.

Perhaps all you need to give your radio a new voice is a Power Valve in the last stage, or maybe a new-type speaker. Anyway, write to our Technical Department or consult your nearest dealer specifying

PHILIPS

THERE IS A SPECIAL PHILIPS VALVE FOR EVERY SOCKET OF YOUR AMERICAN A.C. RADIO.
Interstate Programmes, Saturday, November 30

3LO
Australian Broadcasting Co., 178A Russell St., Melbourne.

WIRELESS WEEKLY
Friday, 29th November, 1929

3LO

EARLY MORNING SESSION.

7.0 to 8.30: See Program.

MORNING SESSION.

12.30 to 12.50: See Program.

MIDDAY SESSION.

1.0 to 1.30: See Program.

AFTERNOON SESSION.

3.0: Subject: Bonding. Description of cricket match.

VENUE SESSION.

4.0: Sporting description of Welter Handicap.

SATURDAY SESSION.

5.0: Transmission from Assembly Hall, Collins Street, Melbourne.

7AR
Australia Broadcasting Co. 1484 Russell St., Melbourne (Wavelength 181 metres).

WIRELESS SESSION.

8.10 to 10.0: See Program.

MIDNIGHT SESSION.

12.0 to 3.0: See Program.

THE RADIO NATIVE.


MIFFY SESSION.

4.10: See Program.

EVENING SESSION.

5.0: Musical Interlude.

11.30: "Stamp Collecting.

9.0: "Kathleen Marnie" (Pointer).

5CL
Central Broadcasters Ltd., 141 Hindmarsh Square, Adelaide (Wavelength 980 metres).

12.0: Chimes. 12.1: Late selections for Flemington raced by "Blind." 12.5: Probable starters and selections for to-day's races at Geelong.

9.0: Weather. 9.11: Player piano music; "Waltz for Yvette." 9.15: Riders and positions for Handicap Trot Races.

EARLY MORNING SESSION.

7.0 to 8.30: Weather. 8.1: Riders and positions for Randwick Races. 8.15: Riders and positions for Flemington Handicap Trot Races. 8.2: Inter¬vals. 8.25: Riders and positions for Flemington Handicap Trot Races.

MORNING SESSION.

9.0: Description of Trial Welter Handicap.

10.0: Description of events at the Makecome.

5.0: Transmission from Assembly Hall, Collins Street, Melbourne.

1.0: Running description of Welter Handicap.

11.30: "Stamp Collecting.

7ZL
Tasmanian Broadcasters Pty., Bakery Hill, Elizabeth Street, Hobart (Wavelength 651 metres).

11.30 a.m.: Record recital.

12.0: "Veteran Car." 12.1: Early morning session.

1.0: "The Mounties." 1.1: Weather. 1.2: Record recital.

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ments, motors, record players, etc. It is

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85/-.

22/6.

14/6.

17/6.

11/3.

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NEW PHILIPS AE VALVES FOR AMERICAN RECEIVERS

F109 AMPLIFIER DIRECTLY HEATED 15/-
F209 DETECTOR & AMPLIFIER INDIRECTLY HEATED 27½
C603 POWER VALVE 15/-
I560 FULL WAVE RECTIFIER 30/-

POSSESSING REMARKABLE RIGIDITY WITH LONG LIFE SENSITIVITY & CONSISTENT PERFORMANCE

NOW AVAILABLE AT ALL DEALERS

They're Better if They're Philips
Local Programmes, Saturday, November 30

2FC

**EARLY SESSION—7 to 8.15 a.m.**

6.0: "DANCE ORCHESTRA" (Meteorological Information for the man on the land). 6.2: This morning's news from the "Daily Guardian." 6.45: Australian Musical Reproduction. 6.6: Mail and Shipping. 6.7: What's on to-day? 6.7: Children's Birthday Calls. 6.8: "Big Ben" and Meteorological information for the man on the land. 6.9: From the Conservatorium of Music—Second Half of Concert Arranged by the Sydney Male Choir. 7.0: From the Ballroom of the Oriental—Sydney Simpson's Symphonists in Dance Music. 7.0: This morning's news from the "Daily Guardian." 7.05: From the Studio—the Country Man. 8.15: Open National Anthem.

**THE EVENING PRESENTATION—8 to 11.30 p.m.**

The choral offering throughout 2FC to-night by the Sydney Male Choir, from the Conservatorium, will make a wide appeal. 2BL's Programme on Popular Lines, offers a desirable contrast.

6.0: From the Conservatorium of Music—Concert Arranged by the Sydney Male Choir. 8.0: From the Studio—the Country Man. 9.0: From the Ballroom of the Oriental—Sydney Simpson's Symphonists in Dance Music. 10.0: Choral National Anthem.

**2BL**

**OPENING SESSION—8.15 to 11 a.m.**


**MIIDY SESSION—15 noon to 1.30 p.m.**

12.0: G.P.O. chimes and announcements. 12.2: A piano recital. 12.30: Lunch-Hour Music. 1.0: Afternoon news from the "Evening News." 1.1: Australian musical reproduction. 2.0: J. KNIGHT BARNETT at the "Wur
deer." 2.1: Studio music.

**AFTERNOON ENTERTAINMENT—2.30 to 5.15 p.m.**

2.30: 2BL INSTRUMENTAL TRIO. 2.45: LOIS EVANS, soprano. (a) "Gavotte" ("Manon" Massenet). (b) "Lament of Life" (Bacchus). 2.45: 2BL INSTRUMENTAL TRIO. 2.45: AL SHAW, piano. (a) "Storm Front" (Bloom). (b) "Sweetheart of All My Dreams" (Pitch). 3.11: 2BL INSTRUMENTAL TRIO. 3.25: LOIS EVANS, soprano. (a) "Little Brown Owl" (Sanderson). (b) "Break o' Day" (Sanderson). 3.30: 2BL INSTRUMENTAL TRIO. 3.45: AL SHAW, piano and tenor. (a) "Lament of Life" (Bacchus). (b) "Sweetheart of All My Dreams" (Pitch). 4.15: Close down.

**THE DINNER HOUR—6:15 to 7.58 p.m.**

6.15: DINNER QUARTET. 6.45: "The Captain" to his comrades. 7.0: The A.B.C. Rival Talk by Mr. 7.20: DINNER MUSIC. 7.30: FROM THE ARCADIA THEATRE, CHATSWOOD. Organ recital by Nicholas Robbins. 8.0: What's the air to-night? 8.10: Close down.

2GB
Thameside Broadcast Station, 39 Bigh St., Sydney (Wavelength, 360 Metres).

**3:0: MUSICAL SESSION.**

5.15: Children's Session by Uncle George. 7.0: REQUEST HOUR. 7.30: MUSICAL SESSION. 10.30: Close.

2UW

**5:30 p.m.: Children's Hour, conducted by Uncle Jack. 6.30: Close. 7:0: MUSICAL SESSION. 10:30: Close.**

2KY
Broadcasting Station (2UE), Everett Street, Marrickville, Sydney (Wavelength, 245 Metres).

**EVENING SESSION—7 p.m.: Musical Intermediate 7.30: Birthday calls. 7.45: Sporting Feature. 8:0: Children's Hour.**

**CHILDERN'S SESSION—6 p.m.: Birthday Calls, request numbers, and Eddleby's entertainment.**

**EVENING SESSION—7 p.m.: Musical Intermediate 7.30: Birthday calls. 7.45: Sporting Feature. 8.0: Children's Hour.**

2UE
Early Evening Session, 7.15 to 8.20, as usual.

**EVENING SESSION—8.30 p.m.: Wendy's Hour with the Children, and Birthday Greetings. 10.15: The A.B.C. Rival Talk by Mr.**
LEVENSON'S CUT-TO-THE-QUICK LOW PRICES ARE FAMOUS FOR VALUE

De Jur Gramophone Pick-up, 52/6

Light Duty 45-volt B Batteries, 10/6
A few left. Amplion AR 19 Loud Speaker, £6 10/- list price. Never to be repeated at this price. Now 50/-

Lightweight Headphones, 10/6
Amplion AR 88 Loud Speakers. Famous the world over. 90/- list price. My price, 45/- Just half.

Portable Radio Cabinets, 39/6
Weld any kind of coil. Latest coil winders, 32/6.

SCO Continental Transformers, 10/6
AC Equipment.
Transformers for A.B.C. Park, 5/6; Double Chance, 5/-; 5 Valve Screen, 4/-; Voltage Reducer, 7/6; 0 Blue Screen, 5/6; 4 Valve, 7/6; Two Valve Screen, 7/6. A.B.C. Park Chas. 6/-; Metal Panel Tray, 6/-; Cabinet, polished wood, 5/-; A.C. set. Illuminated dial with engraved plates, 12/6.

5-Valve Midget Kits, 5/-
Build your own safe "B" Battery Eliminator. A splendid model. Simple controls. 5d each with parts. For sets up to 3 valves, 7/6. For sets over 3 valves, £2 3 6. Build Levenson "A" Battery Charger. Not a trickle charger. Charges 2, 4, or 6 volt Batteries. All parts, 5/- Build in 15 minutes.

Silver Knight R.F. Choke, 5/6
Build Levenson's All-station Crystal set, 2/-, all parts. Any child could build it. Cabinet 7/6 extra. Read this—Mr. T. M. writes: "Mr. Boley I get all stations in Metropolitan area of great strength, and I consider my purchase a snap."

Send 9d. in stamps for illustrated catalogue and bargain bulletin coupon enclosed, valid next week. On first 1/- order.
Local Programmes, Sunday, December 1

2FC

THE CHURCH HOUR—10 a.m. to 10.30 a.m.
10.00: Announcements.
10.05: Studio Music.
10.45: Musical Items.
11.00: FROM ALL SAINTS' CHURCH OF ENGLAND, WOOLLARRA—Morning Service, conducted by Rev. Canon W. Leslie Langley.
12.10: Studio Music.
12.30: CLOSE.

11.00: FROM ALL SAINTS' CHURCH OF ENGLAND, WOOLLARRA—Morning Service, conducted by Rev. Canon W. Leslie Langley.
12.10: Studio Music.
12.30: CLOSE.

2UE
Radio Broadcasting Station, Lid, Friday's Building, Ash St., Sydney (Wavelength, 305 Metres).

7.00: Musical Session.
7.40: Interview with "The Master." (Wool.)
8.00: Address by Rev. Peter E. Cromer.
8.10: Address by Mr. Victor E. Cromer.
8.20: Children's Hour, conducted by Uncle Steve and Aunt Twinkle.
8.30: Musical Programme.
8.50: Announcements.
9.00: Weather report.
9.10: Address by Mr. Roger J. Jones.
9.20: Address by Mr. Victor E. Cromer.
9.30: Address by Mr. Roger J. Jones.
9.40: Address by Mr. Victor E. Cromer.
9.50: Address by Mr. Roger J. Jones.
10.00: Address by Mr. Victor E. Cromer.
10.10: Address by Mr. Roger J. Jones.
10.20: Address by Mr. Victor E. Cromer.
10.30: Address by Mr. Roger J. Jones.
10.40: Address by Mr. Victor E. Cromer.
10.50: Address by Mr. Roger J. Jones.
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11.40: Address by Mr. Victor E. Cromer.
11.50: Address by Mr. Roger J. Jones.
12.00: Address by Mr. Victor E. Cromer.
12.10: Address by Mr. Roger J. Jones.
12.20: Address by Mr. Victor E. Cromer.
12.30: Address by Mr. Roger J. Jones.
12.40: Address by Mr. Victor E. Cromer.
THE WEEK'S GOOD CAUSE --Life

3L0


THE CHILDREN'S CORNER.


10.0: 

EVENING SESSION.


5CL


5CL


APRIL 15, 1929

APRIL 15, 1929

APRIL 15, 1929

APRIL 15, 1929

10.0: Daylight Saving time begins.

APRIL 15, 1929

APRIL 15, 1929

APRIL 15, 1929

APRIL 15, 1929

10.0: "Morning Service from St. Peter's, Unley." 10.15: "Devotional Service from Unley Methodist Church." 11.0: "Devotional Service from Rose Park Congregational Church--Minister, Rev. J. G. Edmonds. 11.5: "Devotional Service from Unley Methodist Church." 12.0: "Devotional Service from St. Peter's, Unley." 12.15: Close down.

APRIL 15, 1929

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10.0: Daylight Saving time begins.

APRIL 15, 1929

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APRIL 15, 1929

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10.0: "Morning Service from St. Peter's, Unley." 10.15: "Devotional Service from Unley Methodist Church." 11.0: "Devotional Service from Rose Park Congregational Church--Minister, Rev. J. G. Edmonds. 11.5: "Devotional Service from Unley Methodist Church." 12.0: "Devotional Service from St. Peter's, Unley." 12.15: Close down.

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Interstate Programmes, Saturday, November 30

**3LO**

Australian Broadcasting Co., 178A Russell St., Melbourne.

**EARLY MORNING SESSION.**

7.0 to 8.0: loaf. 8.0: War News. 8.30: Melbourne Race Results. 8.45: Augustus O. T. W. 8.55: Melbourne Observe-54. 9.0: Melbourne Observe-54. 9.15: Dancing started. 9.30: Horse racing.

**MORNING SESSION.**

13.30 to 13.50: Local and Australian results. 13.30: Weather and news. 13.30: Weather and news.

**MIDDAY SESSION.**

1.0 to 1.30: At leisure.

**AFTERNOON SESSION.**

3.0: Spectator. 3.15: Description of cricket match. 3.15: Description of cricket match. 3.20: From Kensington Cricket Grounds. 3.15: Description of cricket match. 3.25: Kensington Cricket Grounds. 3.30: Kensington Cricket Grounds. 3.35: Kensington Cricket Grounds.

**5CL**

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


**3AR**

Australian Broadcasting Co., 1408 Russell St., Melbourne (Wavelength, 184 Metres).

**NIGHT SESSION.**

8.10 to 10.0: Roy Johnson.

**MIDDAY SESSION.**

12.0 to 13.0: At usual.

**THE RADIO MATINEE.**

3.0: Paul Jopp and His Band--"It's a Wonderful World."

**EVENING SESSION.**


**5CL**

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


NEW PHILIPS AE VALVES FOR AMERICAN RECEIVERS

F109 - AMPLIFIER DIRECTLY HEATED - 15/-
F209 - DETECTOR & AMPLIFIER INDIRECTLY HEATED - 27½
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1560 - FULL WAVE RECTIFIER - 30/-

POSSESSING REMARKABLE RIGIDITY WITH LONG LIFE SENSITIVITY & CONSISTENT PERFORMANCE

NOW AVAILABLE AT ALL DEALERS

They're Better if They're Philips

(Advt. of Philips Lamps (Australia), Ltd. (Radio Dept.). Head Office and Showrooms, corner Clarence and Margaret Streets, Sydney, N.S.W.)
Local Programmes, Monday, December 2

**2FC**


EARLY SESSION—7 to 8.15 a.m.

7.0: "Big Ben" and Meteorological information for the man on the land.

7.15: This Morning's News, from the Sydney Morning Herald.

7.30: Austradio Musical Reproduction.

7.45: Mails and Shipping.

7.48: What's on to-day?

7.50: Children's Birthday Calls.

8.0: Music from the Studio.

8.15: Close.

MORNING SESSION—8.15 to 12.30.

8.30: Announcements.

8.40: A Glance at the afternoon "Sun" and "Herald" second call.

8.45: To-night's Programme.

8.50:Children's Birthday Calls.

8.58: What's on to-day?

9.0: "Big Ben" and Meteorological information for the man on the land.

9.10: Lunch Hour Music.

9.15: G.P.O. chimes and announcements.

9.18: Announcements.

9.20: Midday weather forecast and weather Quotations.

9.27: Announcements.


9.30: "Big Ben." (a) Interstate Weather Synopsis. (b) Manxman's and Fisherman's Forecast.

9.35: A.B.C. Racing Observer.


9.50: "Comrades in Arms' (Adair).

9.55: "Big Ben." (b) "Kiss Me Again" (Herbert). (a) "She's Funny That Way" (Moret). (b) "Dance Hall" (Carruthers). (a) Selection, "Adoration" (Ball). (b) "Duet for trombone and euphonium." (a) Selection, "Songs of Ireland" (Streeton). (b) Selection. "Adoration." (Ball).

10.0: "Big Ben." "Evening News." (b) Selection, "Something Different." (a) Add a spice of mystery, and there is a talk on the forthcoming water polo contest, at the Domain, Sydney. Through 2FC service, Alfred Hill's one-act opera, "Teora," will, in response to many requests, be presented for the second time, and will be relayed to 3LO Melbourne. The production of "The Country Man's Weather" will be preceded by a Concert Programme. Through 2BL Service items by the Dulwich Hill Band and "Goofy" in "Something Different," Songs and Comedy Numbers will continue to be popular on the air.

8.0: THE NATIONAL BROADCASTING ORCHESTRA conducted by Alfred Hill—"Maori Rhapsody."
EVER-READY comes out of every test with flying colors!

All over the world, day in and day out, keen radio enthusiasts — people who buy on value obtained and not on promises — are testing "Ever-Ready" Radio Batteries. For small sets and large, "Ever-Ready" power — quiet and smooth-flowing — is depended on to "deliver the goods."

And because it does this without falter over many months of almost continual use, because an "Ever-Ready" is reasonably priced at the start and built for economy in operation, new friends are flocking to the "Ever-Ready" standard each week!

Ask your dealer to show you the range of "Ever-Ready" types — a battery for every requirement. Write us, too, for your copy of the FREE "Ever-Ready" folder in colours, sent by return mail!

N.S.W. Wholesale Distributors:

THE EVER-READY CO. (Gt. Britain), LTD.,
163 Pitt Street, Sydney.
Local Programmes, Sunday, December 1

2FC
THE CHURCH HOUR—10 a.m. to 10.30 a.m.
6.0: Announcements.
6.15: Studio Music.
10.30: Morning Service, from the “Sunday School.”
British Official Wireless Press.
10.45: Musical Items.
11.15: Studio Music.
12.30: CLOSE.

THE EVENING PROGRAMME—6 to 10.30 p.m.
6.0: THE ALEXANDER QUARTET—Instrumentalists:
(a) Selection, “Brahmsiana.”
(b) Selection, “Brahmsiana.”
7.0: THE ALEXANDER QUARTET—Instrumentalists:
(a) “O Cease Thy Singing, Maiden Fair” (Rachmaninoff).
(b) “In the Silence of Night” (Rachmaninoff).
(c) “Love’s Festival” (Wegartner).
(d) “In the Castle” (Gardner).
(e) “The Song I Love” (de Sylla).
(f) “Kissing is No Sin” (Ethier).
(g) Selected.
7.30: C. BAIKERTZ will speak on “The Melody of Speech.”
8.0: WILL PRIOR’S BROADCASTING ENSEMBLE—Ovation at the Grand Organ.
10.0: Meditation Music.
10.30: CLOSE. NATIONAL ANTHEM.

2BL
MIDDAY SESSION—10.30 to 3 p.m.
10.55: Announcements.
11.0: FROM FULLERTON MEMORIAL CHURCH—Morning service, conducted by Rev. G. COWIE, B.A.
11.15: ORGANIST, Mr. Ronald Marston, A.T.C.L.
11.30: Children’s Session by Uncle George. 2.00: Musical Session.
3.0: Musical Service.
6.30: Evening Service.

EVENING SESSION—6 to 10 p.m.
6.0: For children in hospital—Sydney con- ducted by Mr. Victor C. Marjorie.
6.45: Organ music.
8.30: FROM THE STUDIO—Weathen information for the man on the land.
9.15: PROGRAMME OF CHAMBER MUSIC under the direction of Albert Cazabon, Musical Director of Pericles, Edward Theatre.

Wireless Weekly
Page Thirty-Six

Warneford Outdoor Model Flying Aeroplanes
Postage on above, 1/2.

WIRELESS WEEKLY

Page Thirty-Six

Radio Broadcast, Ltd., Friday Building, Ash St., Sydney (Wavelength, 116 Metres).
10.30 a.m. Music and request numbers.
1 p.m.: Close.
5.30: Children’s Hour, conducted by Uncle Jack.
6.30: Close.
10.30: Musical programme.

WIRELESS WEEKLY

Page Thirty-Six

2UE
Broadcasting Station 2UE, Everett Street, Mortmara, Sydney (Wavelength, 116 Metres).
MIDDAY SESSION
11.00: Message from St. Mary’s Cathedral.
12.30: Musical programme.
10.30: Close.

2UE
Broadcasting Station 2UE, Everett Street, Mortmara, Sydney (Wavelength, 116 Metres).
MIDDAY SESSION
6.0: Music from Royal House. 6.15: “Question Box Talks arranged by Rev. Dr. Rumble, M.O.C.
7.30: Evening Devotions from St. Mary’s Cathedral. 8.15: Orchestral and Vocal Selections 10.15: National Anthem.

LAN BELL, a popular comedian in the early days of broadcasting, will be making a return visit to 2AR on December 4. Mr. Bell is a well-known figure on the concert platform, where his character studies of the country yokel are always appreciated.

CONTINUING her talk on “Your Health and Appearance,” Miss Elizabeth M. Ellis will speak from 3AR on December 5, and the “The Value of Sport in Your Everyday Life” when she will endeavor to show how a little time spent in regular conscientious exercise, will do more for the maintenance of good health, than an occasional afternoon devoted to strenuous sport.


WALther & STEVENSON LTD
THE BOYS’ MODEL SHOP,
395 GEORGE ST., SYDNEY
(telephone Dynas 1).
The Children's Corner.


3. "Children's Serenade" from "Faust." (Saint-Saëns).


5. "Antique Waltz" (Waldteufel).


8. "Ave Verum" (Gounod).


11. "Prize Song." (Schubert).


14. "Lohengrin" (Wedekind).

15. "The Lord is my Shepherd." (Allitseni.


18. "Ye My Brother's Keeper?" Soloist, Miss Fyfe.


22. "Nina." (Spohr).

23. "V'la le printemps." (Thomson).


27. "La Fille Mal Gardée." (Massenet).


32. "Overture." (Haydn).


34. "Overture." (Gluck).

35. "Wedding March." (Gounod).


42. "La Fille Mal Gardée." (Massenet).

43. "Dido and Aeneas." (Handel).

44. "Chant de printemps." (Ravel).

45. "Overture." (Gluck).


51. "La Fille Mal Gardée." (Massenet).

52. "Dido and Aeneas." (Handel).


54. "Overture." (Gluck).


57. "Nina." (Spohr).


60. "La Fille Mal Gardée." (Massenet).


63. "Overture." (Gluck).

64. "Handel's Overture." (Vasella's Italian Band).


68. "Fugue." (J. S. Bach).

69. "La Fille Mal Gardée." (Massenet).

70. "Dido and Aeneas." (Handel).


72. "Overture." (Gluck).


75. "Nina." (Spohr).

76. "Songs of the Olympians." (Leloir).

77. "Fugue." (J. S. Bach).

78. "La Fille Mal Gardée." (Massenet).


81. "Overture." (Gluck).

82. "Handel's Overture." (Vasella's Italian Band).


84. "Nina." (Spohr).


86. "Fugue." (J. S. Bach).

87. "La Fille Mal Gardée." (Massenet).

88. "Dido and Aeneas." (Handel).

89. "Chant de printemps." (Ravel).

90. "Overture." (Gluck).


93. "Nina." (Spohr).


95. "Fugue." (J. S. Bach).

96. "La Fille Mal Gardée." (Massenet).


100. "Handel's Overture." (Vasella's Italian Band).


102. "Nina." (Spohr).


105. "La Fille Mal Gardée." (Massenet).

106. "Dido and Aeneas." (Handel).


108. "Overture." (Gluck).


111. "Nina." (Spohr).


114. "La Fille Mal Gardée." (Massenet).


117. "Overture." (Gluck).


120. "Nina." (Spohr).

121. "Songs of the Olympians." (Leloir).

Interstate Programmes, Monday, December 2

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 473 metres).

MORNING SESSION.

7.30 to 8.30: Transmissions from Melbourne.

EDUCATIONAL SESSION.

2.2: "The fourth view of life," by Mr. W. C. O'Roche, B.A. Dip. Ed. 2.15: Musical Interlude. 2.30: Science in everyday life, Dr. Leslie Hills, O.S. 2.35: Musical Interlude. 2.40: Our Australian youth, Mr. F. Williams. 2.50: Musical Interlude. 2.55: Melbourne observatory bulletin.

THE RADIO NATIVE.


EVENING SESSION.


3AR

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

MORNING SESSION.

7.15 to 11.0: Programmes from Melbourne.

10.15 to 10.30: As usual.

AFTERNOON SESSION.


40G


No details available.

SPECIAL XMAS ISSUE

In preparation now is the finest number of "Wireless Weekly" ever to be published. Short stories, we hope, by steel Rudd. "Brasso" (you remember his yarns), and Felix O'Neil will feature among the constructional articles by Mr. Hull, including an unusual three -valve set and details of how to build a glider for the aviation enthusiasts. Many pages will be printed in two colors, with attractive illustrations. Do not miss this issue, the best value for Xmas on the bookstalls. Remember the issue after next.

WATCH FOR IT—DECEMBER 15.
RAISE THE STANDARD
OF RECEPTION

D.E.P.
410
Osram Valve

A Power Valve which Increases
Tonal Purity

This valve in the power socket of your set gives increased tonal purity of reproduction.
Osram D.E.P. 410 is a highly efficient 4-volt power valve which will handle volume without distortion.
For better results change to Osram, and fit this power valve.

Ask for It by Number—and Say OSRAM
Made in England

Local Programmes, Monday, December 2

FROM THE 1929 RADIO DISPLAY— AT THE STATE SHOPPING BLOCK.

10.5: News from the "Sydney Morning Herald.
10.10: Austradio musical reproduction.
12.30: FROM THE STUDIO—Austradio musical reproduction.
12.45: The Trade Hour—demonstration music.
12.45: THE DINNER HOUR—6.15 to 7.55 p.m. (for the man on the land, supplied by the Farmers' Marketing Board.)
13.0: G.P.O. chimes.
13.05: CABLES (copyright) —"Sun"—"Herald" Quotations.
13.10: "Big Ben" and Meteorological information.
13.18: STRING QUARTET—"The Country Man's Weather" Tantte. (c) "Waiata Poi." (a) "A Maori Lament." (b) "Waiata Maori." (c) "Waiata Pot." 8.15: CLOSE.
7.45: Children's Birthday Calls.
7.48: What's on to-day?
7.50: Mails and Shipping.
13.0: CLOSE. NATIONAL ANTHEM.
EVER-REMY comes out of every test with flying colors!

All over the world, clay in and clay out, keen radio enthusiasts—people who buy on value obtained and not on promises—are testing "Ever-Ready" Radio Batteries. For small sets and large, "Ever-Ready" power—quiet and smooth-flowing—is depended on to "deliver the goods."

And because it does this without falter over many months of almost continual use, because an "Ever-Ready" is reasonably priced at the start and built for economy in operation, new friends are flocking to the "Ever-Ready" standard each week!

"EVER, READY."

Ask your dealer to show you the range of "Ever-Ready" types—a battery for every requirement.

N.S.W. Wholesale Distributors:
THE EVER-READY CO. (Gt. Britain), LTD., 163 Pitt Street, Sydney.
LOCAL PROGRAMMES, TUES., DEC. 3

2FC

EASY SESSION—7 to 8.15 a.m.
1.0: "Big Ben" and meteorological information for the man on the land.
1.3: This morning's news, from the "Sydney Morning Herald.
3.5: Australian musical reproduction.
4.5: Mails and shipping.
4.6: What's on to-day?
5.0: Children's birthday calls.
5.1: Music from the Studio.
10.15: CLOSE.

MORNING SESSION—10.30 a.m. to 12.30 p.m.
10.30: Announcements.
10.32: ABC Racing Observer.
10.43: HORACE WEBER at the GRAND ORGAN.
11.30: HOUSEHOLD HELPS—Hints to Housewives, by Miss Ruth Furst.
11.15: MORNING DEVOTION.
11.20: Australian musical reproduction.
11.30: British official wireless press.
12.0: "Big Ben", Stock Exchange and metal quotations.
12:5: MRS. M. E. PULSFORD will speak on "Child Psychology—The Destructive Child".
12.30: Wednesday weather forecast and weather synopsis; special produce market session for the man on the land, supplied by the State Marketing Board.
12.30: CLOSE.

THE LUNCH HOUR—1 to 2.30 p.m.
1.0: Lunch-hour music.
2.0: Stock Exchange, second call.
2.2: A glance at the afternoon "Sun" and "Herald." (Winbrow).
2.28: "Do Do Something" (Green and Mylne).
2.30: "The Popular Trio.
2.32: Modern music.
2.45: A popular vocalist—"Happy Days and Lonely Nights" (Winbrow).
2.50: "The Australian Broadcasting Company's Women's Association" (Miss Gwen Varlev).
3.0: "Carmena" (Lane Wilson), "Annie Laurie" (Liza Lehmann).
3.12: DOSSIE HARGREAVES, soprano—"Waltz Song," from "Tom Jones" (Germaine Winnicott).
3.24: MURIEL ALLMUTT, entertainer—"Ballade et Polonez" (Vieuxtemps).
3.28: MODERN MUSIC.
3.31: A. PODINOVSKY, violinist—"La Serenata" (Pergament).
3.32: MODERN MUSIC.
3.38: A. PODINOVSKY, violinist—"The Potato Peeler" (Hansell).
3.45: MURIEL ALLMUTT, entertainer—"Pigeon Toes" (Lawson).
4.0: "The Brook" (Pape).
4.05: "The Popular Trio.
4.2: MODERN MUSIC.
4.24: MURIEL ALLMUTT, entertainer—"Waltz Song," from "Tom Jones" (Germaine Winnicott).
4.28: MODERN MUSIC.
4.32: MODERN MUSIC.
4.38: MODERN MUSIC.
4.45: BASS WENTWORTH, popular vocalist—"The Modern Girl".
5.0: "The Australian Broadcasting Company's Women's Association" (Miss Gwen Varlev).
5.15: Announcements.
5.20: "The Australian Broadcasting Company's Women's Association" (Miss Gwen Varlev).
5.28: MODERN MUSIC.
5.30: MODERN MUSIC.
5.32: MODERN MUSIC.
5.38: MODERN MUSIC.
5.45: MODERN MUSIC.
6.0: "Carmena" (Lane Wilson), "Annie Laurie" (Liza Lehmann).
6.05: MODERN MUSIC.
6.10: MODERN MUSIC.
6.15: MODERN MUSIC.
6.20: MODERN MUSIC.
6.25: MODERN MUSIC.
6.30: MODERN MUSIC.
6.35: MODERN MUSIC.
6.40: MODERN MUSIC.
6.45: MODERN MUSIC.
6.50: MODERN MUSIC.
6.55: MODERN MUSIC.
7.0: "The Brook" (Pape).
7.05: MODERN MUSIC.
7.10: MODERN MUSIC.
7.15: MODERN MUSIC.
7.20: MODERN MUSIC.
7.25: MODERN MUSIC.
7.30: MODERN MUSIC.
7.35: MODERN MUSIC.
7.40: MODERN MUSIC.
7.45: MODERN MUSIC.
7.50: MODERN MUSIC.
7.55: MODERN MUSIC.
8.0: "Big Ben", Stock Exchange and weather forecasts for New South Wales, Victoria and A.P.A. News Service.
8.05: Sports results.
8.10: Inter-State weather forecast.
8.15: Announcements.
8.20: Inter-State weather forecast.
8.25: "The Australian Broadcasting Company's Women's Association" (Miss Gwen Varlev).
8.30: MODERN MUSIC.
8.35: MODERN MUSIC.
8.40: MODERN MUSIC.
8.45: MODERN MUSIC.
8.50: MODERN MUSIC.
8.55: MODERN MUSIC.
9.05: Sports results.
9.10: Inter-State weather forecast.
9.15: Announcements.
9.20: Inter-State weather forecast.
9.30: MODERN MUSIC.
9.35: MODERN MUSIC.
9.40: MODERN MUSIC.
9.45: MODERN MUSIC.
9.50: MODERN MUSIC.
9.55: MODERN MUSIC.
THE DISSERT AN - weather
9.20 MAY WILLIE, pianist -
9.13 CONSTANCE BURT, soprano.
9.6 Whos on the air to-night?
TO-NIGHT'S PRESENTATION - 8 to 10.10 p.m.
2BL's classic programme to-night will be taken from the Aeolian Hall. under the direction of G. Vern Barnett. Music-lovers will enjoy this programme, contributed by O'Connell Burg, Hugh McLean. Clement Q. Williams, and May Willis. Brunton Gibb will work in association with Mr Vern Barnett in Elgar's "Carillon." FROM THE AEOLIAN HALL - CLASSIC PROGRAMME ARRANGED BY G. VERN BARNETT
8.0 ORGAN SOLOS - Mr. G. Vern Barnett.
8.15 CLEMENT Q. WILLIAMS, baritone -
(a) "Im Wunderschonen Monat Mai" (Bay
coff).
(b) "'Avs Meinen Thranen Spiessen" (Litolff).
(c) "Die Rose. Die Lille Taube" (Litolff).
(d) "Wenn ich in Deine Augen Seh" (Lit
coff).
8.22 HUGH McLEAN, violinst -
"Romance in F" (Beethoven).
8.25 CONSTANCE BURT, soprano -
8.26 BRUNTON GIBB, in association with G. Vern Barnett at the organ -
"CAVILLON" (Elgar).
8.48 MAY WILLIS, pianist -
(a) "Adagio Molto Moderato." (Grieg).
(b) "First Movements from Concerto in A Minor" (Grieg). orchestral accompaniment played on the organ by G. Vern Barnett.
8.50 CLEMENT Q. WILLIAMS, baritone -
(a) "The Lotus Flower" (Boosey).
(b) "The Trout." (Boosey).
8.56 HUGH McLEAN, violinst -
(a) "Berceuse" (Chill).
(b) "Value" (Teitjifowsky-Aust).
8.2 CONSTANCE BURT, soprano.
8.30 MAY WILLIS, pianist -
"Concert Arabesques" (Schulz-Euler). (Variations on Blue Danube Waltz).
8.35 Miss Kathlene Cracknell, contralto.
8.40 FROM THE STUDIO - Weather: Information for the man on the land.
8.45 IN LIGHTER VEIN -
10.35 Late news from the "Sun" and "News." Late weather forecast.
10.30 NATIONAL ANTHEM CLOSE.

FRIDAY, 29TH NOVEMBER, 1929

THE DINNER HOUR - 6.15 to 7.55 p.m.
6.15 DINNER QUARTET.
6.43 THE GIRL GUIDES' CLUB, conducted by Miss Gwen Varley.
5.5 THE COUNTRY MAN'S MARKET SESSION - Wool, wheat, slock, farm produce, fruit, vegetable, and pig markets.
7.00 DINNER MUSIC.
7.45 Austradio musical reproduction.
7.55 What's on the air to-night?

WIRELESS WEEKLY

2KY

TUDE AND LABOR COUNCIL, Goulburn St., Sydney (Wavelength, 280 Metres).
10.0 to noon and Children's Session, 6.0, as usual.

EVENING SESSION
7.0 Musical interlude.
7.15 SPORTING FEATURE. Turf topics. How they should run to-morrow.
7.45 Request numbers.
8.0 Orchestral selections.
8.10 Women's Information Service, Mrs. Gray.
8.25 Baritone solos, Mr. Higgins.
8.33 Pianoforte solos, Mr. Hancock.
8.40 Music and request numbers from the Studio. SPORTING FEATURE from the ringside of McHugh's Leichhardt Stadium.

2UE

BROADCAST STATION 2UE, Everett Street, Neutral Bay, Sydney (Wavelength, 293 Metres).
EARLY MORNING SESSION, 7.15 to 8.30 as usual.

MIDDAY SESSION, 10.0 to Noon: as usual.

EVENING SESSION
6.30: Wendy's Hour with the Children, and Birthday Greetings. 7.15: Orchestral Dinner Selections. 7.55: Programme Announcements, and News from the "Sun." 8.0: Chimes. 8.10: Vocal and Instrumental Items. 10.15 Close.

A GOOD SET

Deserves a good speaker. Enable your radio receiver to really speak. 6.0 OPERATIC PROGRAMME - Miss Kathleen Cracknell, contralto.
8.15 Symphony Orchestra.
8.22 Symphony Orchestra.
8.30: Mr. Jack Wim and Mr. Heath Burdick, tenor.
8.42 Symphony Orchestra.
8.50 Miss Kathleen Cracknell, contralto.
9.0 Weather report.
9.3: Address.
9.15 Symphony Orchestra.
9.25 Mr. William Green, tenor.
9.35: Mr. Jack Wim and Mr. Heath Burdick, tenor.
9.45: Symphony Orchestra.
9.50 Miss Gladys Verona, soprano.
10.0: Instrumental music.
10.30: Close down.

2UY

Radio Broadcasting Ltd., Oollar's Hilltop, Ash St., Sydney (Wavelength, 293 Metres).

MIDDAY SESSION
12.30 to 4.30, as usual.

EVENING SESSION
5.30: Children's Hour.
6.30: Close.
7.00 Request numbers.

ROLA Magnetic Speakers

Model M

£3-15-0

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WHEN YOU BUY A ROLA--YOU BUY THE BEST

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UNITED DISTRIBUTORS LIMITED,
151 CASTLEREAH ST., SYDNEY

Phone, M 3004
Interstate Programmes, Monday, December 2

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Melbourne, 115 Metres).

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Melbourne, 115 Metres).

3CL


3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Melbourne, 115 Metres).

SPECIAL XMAS ISSUE

In preparation now is the largest number of "Wireless Weekly" ever to be produced. Short stories, we hope by Walter Rudd.

"Brasso" (you remember his yarids), and Felix O'Neill.

WIRELESS WEEKLY

Friday, 29th November, 1925

WATCH FOR IT – DECEMBER 15.
RAISE THE STANDARD
OF RECEPTION

D.E.P.
410
Osram
Valve

A Power Valve which Increases
Tonal Purity

This valve in the power socket of your set gives increased tonal
purity of reproduction.
Osram D.E.P. 410 is a highly efficient 4-volt power valve which will
handle volume without distortion.
For better results change to Osram, and fit this power valve.

Ask for It by Number—and Say OSRAM
Made in England

Your "B" Batteries last longer
when used with "Osram
Valves."
Ask your dealer for the
Osram Valve Guide, free on
request.

At last it is possible to build an All Electric 3-Valve Set at home, or convert your present "battery" receiver into an up-to-date batteryless model. Complete with the "BROADWAY" BUILD-AT-HOME AC3 KIT are simple wiring and layout diagrams, so that any person with a screwdriver, a pair of pliers and a soldering iron will have no difficulty in producing an efficient Receiver far below the cost of a built-up Receiver of equal quality.

**LIST OF COMPONENTS**

1. 1 Lewbury Voltage Divider.
2. 1 Lewbury "C" Bias Resistance.
3. 1 Lewbury Type "C" Power Transformer.
4. 1 Lewbury Type 60 Choke.
5. 1 Kelford UY Valve Socket.
6. 3 Alpha UX Valve Sockets.
7. 1 One-Meg. Gridleak.
8. 3 National Centre Tap Resistances.
9. 2 Pilot No. 413 Audio Transformers.
10. 1 .00025 Fixed Condenser.
11. 2 1-Mfd. Fixed Condensers.
12. 2 4-Mfd. Fixed Condensers.
13. 1 .0005 Fixed Condenser.
14. 1 Radiokes All-Electric Tuner.
15. 1 Saxon .0005 Variable Condenser.
16. 1 Pilot Vernier Art Dial.
17. 1 Essanay 23-plate Midget Condenser & Knob.
18. 1 Pollock R.F. Choke.
19. Speaker, Pick-up, Aerial and Earth Terminals.
20. Baseboard and Oak Panel.
21. 1 Vox 226 A.C. Valve.
22. 1 Vox 227 A.C. Valve.
23. 1 Vox 171A Valve.
24. 1 Vox 280 Rectifying Valve.
25. Hook-up Wire.

All Lewbury Parts guaranteed 1 year

**PRICE OF COMPLETE KIT, £11'19'6**

**RADIO SPECIALS**

"Alpha" 4.5-Volt "C" Batteries. Each... 2/6
"Dutch" 9-Volt "C" Batteries. Each... 2/-
"Winchester" 45-Volt Heavy Duty Batteries 19/6
"Duroia" 60-Volt "B" Batteries. Each... 12/-
"Gracevol" 1.5-Volt Dry Cells. Each... 2/6
"Western Electric" Headsets, 4000 ohms, pair 15/-
"Para" 4000-ohm Headsets. Per pair... 9/-

"Alpha" UX Bakelike Valve Sockets. Each... 1/1
"Eagle" Battery Hydrometers. Each... 2/6
"Record" Bell Transformers. Each... 7/-
"Duroia" Cone Speakers. Each... 23/6
Radio Soldering Kits. Each... 1/3
"Hoosick" .0005 Low-Loss Condensers. Each... 4/9
"Blurad" Phone Plugs. Each... 9d.

**Don't miss Father Xmas and his Movie Show**

RADIO DEPARTMENT, BASEMENT, GEORGE ST. WEST BUILDING
Local Programmes, Tues., Dec. 3

2FC

EARTHLY SESSION—7 to 8.15 a.m.
1.0: "Big Ben" and meteorological information for the man on the land.
7.3: This morning's news, from the "Sydney Morning Herald".
5.3: Australian musical reproduction.
7.4: "What's on today?"
11.3: Children's birthday calls.
8.0: Music from the Studio.
8.15: close.

MORNING SESSION—9.30 a.m. to 12.30 p.m.
10.30: Announcements.
10.32: A.B.C. Racing Observer.
10.45: HORACE WEBER at the GRAND ORGAN.
11.0: HOUSEHOLD HELP—Hints to Housewives, by Miss Ruth Furst.
11.10: CARLS (Copyright) "Sun"—"Herald" and A.P.A. News Service.
11.15: MORNING DEVOTION.
11.20: Australian musical reproduction.
11.25: British official wireless press.
12.0: "Big Ben"; Stock Exchange and metal quotations.
12.5: MRS. M. E. PULSFORD will speak on "Child Psychology"—The Destructive Child (Reprise).
12.30: Midday weather forecast and weather synopsis; special produce market session for the man on the land, supplied by the State Marketing Board.
12.50: close.

THE LUNCH HOUR—1 to 2.30 p.m.
1.0: Lunch-hour music.
2.0: Stock Exchange, second call.
2.2: A glance at the afternoon "Sun" and "News."
2.7: Studio music.
2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.
FROM THE 1929 RADIO DISPLAY, AT THE STAFF SHOPPING BLOCK.
NOTE—Results from the cricket match, England v. Queensland, played at Brisbane, will be broadcast as received.
2.30: THE POPULAR TRIO.
2.42: MURIEL ALLMTT, entertainer—(a) "The Polish Freeler" (Hansell).
2.43: "The Record" (Hansell).
2.43: A. PODINOVSKY, violinist—"Balleste et Pointeau" (Vieutemps).
2.5: REV. F. H. RAWARD will speak.
2.11: THE POPULAR TRIO.
2.31: A NEW SONG.
2.4: MURIEL ALLMTT, entertainer—"Pigeon Toes" (Lawson).
2.43: A. PODINOVSKY, violinist—"La Serenata" (Pergament).
2.43: A MODERN BALLAD.
2.48: THE POPULAR TRIO.
3.0: THE STORYTELLER.
3.15: THE POPULAR TRIO.
3.20: Stock Exchange, third call.
3.30: CLOSE.

EARLY EVENING SESSION—4.55 to 7.35 p.m.
5.45: Children's "Goodnight" stories, told by Aunt Willa, assisted by Cousins Gien and Clarice Mary Turner, entertainer—(a) "Daktyl" (Brehend).
(b) "The Brook" (Pope).
5.45: Dinner-hour music.
7.29: A.B.C. Sporting Service.
7.25: Special country session; Stock Exchange, results, market, weather forecast; late news from the "Sun" and "News"; truck bookings.
7.56: Po-nights programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.
We are introducing a little atmosphere into our State-wide Radio Dance Night. Tonight we are opening with a description of the Water Polo matches from the Domain—just a reminder before the dancing commences.
6.0: FROM THE DOMAIN—Description of the water polo matches.
8.20: FROM THE STUDIO—THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
FROM THE STUDIO - Weather
9.20: MAY WILLIS, pianist
9.6: Request numbers.
7.0: Organ solos - Mr. G. Vern Barnett.
8.15: CLEMENT Q. WILLIAMS, baritone - "CARILLON" (Elgar).
8.36: BRUNTON GIBB, in association with CONSTANCE BURT, soprano - "CONCERT ARABESQUES" (Schulz-Euler, Variations on Blue Danube Waltz).
8.50: Dance music from the Studio.
9.0: Orchestral selections.
9.10: Women's Information Service, MRS. GRAY.
9.25: Mr. William Green, tenor.
9.35: Mr. Jack Win and Mr. Heath Burdock.
9.50: Miss Gladys Verona, soprano.
10.0: Instrumental music.
10.25: Miss Kathlene Cracknell, contralto.
10.30: Close.

TO-NIGHT'S PRESENTATION - 8 to 10.30 p.m.
2BL's classic programme to-night will be taken from the Aeolian Hall, under the direction of G. Vern Barnett. Music-lovers will enjoy this programme, contributed by Constance Barnett, Clement Q. Williams, and May Willis. Brunsun Gibb will work in association with Mr. Vern Barnett in Elgar's "Carillon." FROM THE AEOLIAN HALL - CLASSIC PROGRAMME ARRANGED BY G. VERN BARNETT

8.0: ORGAN SOLOS - Mr. G. Vern Barnett.
8.15: CLEMENT Q. WILLIAMS, baritone - "Im Wunderschonen Monat Mai" (Liepolt).
8.22: HUGH McCLEAN, violinist - Romance in F (Beethoven).
8.25: CONSTANCE BURT, soprano.
8.30: BRUNTON GIBB, in association with CONSTANCE BURT, soprano - "CONCERT ARABESQUES" (Schulz-Euler).
8.40: Music and request numbers from the Studio. SPORTING FEATURE from the ringside of McHugh's Leichhardt Stadium. Results of early events and full description of 15-round event.
8.45: Late news from the "Sun" and "New.
8.50: Late weather forecast.
9.0: National Anthem. close.

2GB
Thomson's Broadcasting Station, 75 High St., Sydney (Wavelength, 280 Metres).
10.0 to 11.15, 2.0 to 3.30, 5.15 to 8.0: As usual.
8.0: OPERATIC PROGRAMME - Miss Kathleen Cracknell, contralto.
8.7: Symphony Orchestra.
8.15: Mr. William Green, tenor.
8.22: Symphony Orchestra.
8.30: Mr. Jack Win and Mr. Heath Burdock, humour.
8.35: Miss Gladys Verona, soprano.
8.45: Symphony Orchestra.
8.50: Miss Kathleen Cracknell, contralto.
9.0: Weather report.
9.3: Address.
9.15: Symphony Orchestra.
9.35: Mr. William Green, tenor.
9.45: Symphony Orchestra.
9.50: Miss Gladys Verona, soprano.
10.0: Instrumental music.
10.30: Close down.

2UW
Radio Broadcasting Ltd., Palmer's, Hailing, Ash St., Sydney (Wavelength, 316 Metres).
MIDDAY SESSION
12.30 to 4.30, as usual.
EVENING SESSION
5.20: Children's Hour.
6.30: Close.
7.0: Request numbers.

WIRELESS WEEKLY
Page Forty-Three

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8.0: Recital of songs by John McCormack.
9.0: Comments on Foreign Affairs, by Mr. J. M. Prentice.
9.10: Music.
10.30: Close.

2KY
Trades and Labor Council, Goulburn St., Sydney (Wavelength, 306 Metres).
10.0 to noon and Children's Session, 6.0, as usual.
EVENING SESSION
7.0: Musical interlude.
7.15: SPORTING FEATURE. Turf topics.
9.45: Request numbers.
9.50: Miss Gladys Verona, soprano.
10.0: Instrumental music.
10.30: Women's Information Service, MRS. GRAY.
10.35: Baritone solos, Mr. HIGGINS.
11.0: Piano solos, Mr. HANCOCK.
11.0: Music and request numbers from the Studio. SPORTING FEATURE from the ringside of McHugh's Leichhardt Stadium. Results of early events and full description of 15-round event.
11.0: Dance music from the Studio.
10.0: Closing announcements.

2UE
Broadcasting Station 2UE, Everett Street, Marrickville, Sydney (Wavelength, 293 Metres).
EARLY MORNING SESSION, 7.15 to 8:30: as usual.
EVENING SESSION

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A GOOD SET
Deserves a good Speaker. enable your Radio Receiver to really speak by installing one of these.

Magnavox Dynamic X Core Beverly, £11 9 0
Philips P.C.J. Junior, £10 0 0
Mozart Cone, £9 15 0
M.P.A. Cone, £8 10 0
O'Neill Cone, £8 6

For Value and Service

ROLA Magnetic Speakers

£3-15-0
No Current Required

FITTED WITH ROLA LOW-PASS FILTER

WHEN YOU BUY A ROLA—you buy the BEST

Hear it for yourself

UNITED DISTRIBUTORS LIMITED,
151 CASTLEREAGH ST., SYDNEY

'Phone, M3004
Local Programmes, Wednesday, December 4

2FC
Australian Broadcasting Company, Ltd., Market St., Sydney, 2BL, Room 1, 60 Metres

EARLY SESSION—7 to 7.15 a.m.
1.0: "Big Ben" and meteorological infaima for the man on the land.
2.15: This morning's news from the "Sydney Morning Herald."
4.10: Astronaut musical reproduction
4.30: "Largo" from "Sonata In B Minor.
4.45: Memory melodies.
5.0: Music from the Studio.
5.15: 'BIG BEN" and meteorological infaima for the man on the land.
5.30: Children’s birthday calls.
6.0: Music from the Studio.
6.15: "Here's to the Land that I Love.""(Saints-Saens.
7.0: Music from the Studio.
7.15: "Softly Awakes My Sister" (Cadman).
7.30: "First Arabesque" (Debussy).
8.0: Music from the Studio.
8.15: CLOSE.

MORNING SESSION AND AFTERNOON SESSION
10.0: Announcements
10.10: Studio music.
10.30: "The Wayfarer" (Allitsen).
10.35: FROM THE STUDIO—Stock Exchange and market quotations.
11.0: "The Metropolitan Band—
11.15: Studio music.
11.30: THE METROPOLITAN BAND—

OPENING SESSION—8.15 to 11 a.m.
8.15: O.P.O. choirs and announcements.
8.16: Music for every mood.
8.40: Metaphysical world (for the country.
8.45: Mail and shipping information
9.00: MEMORIAL SERVICE.
9.15: This morning's story.
9.30: A musical interlude.
9.45: British Official Wireless Press
9.45: British Official Wireless Press
9.50: Miss Nora Mack, soprano.
10.0: Symphony Orchestra.
10.0: Symphony Orchestra.
10.0: Symphony Orchestra.
10.05: "The Outpost" (Robert-Hichens) conducted by Mr. Norman Lyons.
10.15: "G.P.O. chimes.
10.30: "Music for the man on the land.

AFTERNOON SESSION—12 noon to 2.30 p.m.
12.0: O.P.O. choirs and announcements.
12.0: A musical interlude.
12.30: "LUNCH-HOUR MUSIC.
12.45: Music from the "Sydney Morning Herald."
13.0: "Music for the man on the land.

DINNER SESSION—7 to 10.30 p.m.
2.30: O.P.O. choirs and announcements.
2.30: A musical interlude.
2.45: "Music for the man on the land.

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8.16: Music for every mood.
8.40: Meteorological data (for the country.
8.45: Mail and shipping information
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DINNER SESSION—7 to 10.30 p.m.
2.30: O.P.O. choirs and announcements.
2.30: A musical interlude.
2.45: "Music for the man on the land.

2GB
The four successive programs of "SKIPPER'S LIFE" are presented in the following manner:

1. "The Skipper's Life" is broadcast from 10.00 p.m. to 11.00 p.m.
2. "The Skipper's Life" is broadcast from 11.00 p.m. to 12.00 a.m.
3. "The Skipper's Life" is broadcast from 12.00 a.m. to 1.00 a.m.
4. "The Skipper's Life" is broadcast from 1.00 a.m. to 2.00 a.m.

MORNING SESSION—8 to 11 a.m.
8.00: "The Skipper's Life" is broadcast from 8.00 a.m. to 9.00 a.m.
8.30: "The Skipper's Life" is broadcast from 9.00 a.m. to 10.00 a.m.
9.00: "The Skipper's Life" is broadcast from 10.00 a.m. to 11.00 a.m.

NOON SESSION—11.00 a.m. to 12.00 noon
11.00: "The Skipper's Life" is broadcast from 11.00 a.m. to 12.00 noon.
12.00: "The Skipper's Life" is broadcast from 12.00 noon to 1.00 p.m.
12.30: "The Skipper's Life" is broadcast from 1.00 p.m. to 2.00 p.m.
1.00: "The Skipper's Life" is broadcast from 2.00 p.m. to 3.00 p.m.
2.00: "The Skipper's Life" is broadcast from 3.00 p.m. to 4.00 p.m.
3.00: "The Skipper's Life" is broadcast from 4.00 p.m. to 5.00 p.m.
4.00: "The Skipper's Life" is broadcast from 5.00 p.m. to 6.00 p.m.

Afternoon Session—6 to 8 p.m.
5.00: "The Skipper's Life" is broadcast from 5.00 p.m. to 6.00 p.m.
6.00: "The Skipper's Life" is broadcast from 6.00 p.m. to 7.00 p.m.
7.00: "The Skipper's Life" is broadcast from 7.00 p.m. to 8.00 p.m.

Evening Session—8 to 10 p.m.
7.00: "The Skipper's Life" is broadcast from 7.00 p.m. to 8.00 p.m.
8.00: "The Skipper's Life" is broadcast from 8.00 p.m. to 9.00 p.m.
9.00: "The Skipper's Life" is broadcast from 9.00 p.m. to 10.00 p.m.

For further information, please contact the Australian Broadcasting Company, Ltd., Market St., Sydney, 2BL.


Make Your Battery Set

All Electric for £9/10

A Novice
Can Easily
Build One

THE SIMPLICITY
ALL-ELECTRIC THREE

List of Parts Required

1-1 Lewbury voltage divider £ s. d.
2-1 "C" Bias resistance 0.13 9
3-3 Kelford or any standard UX sockets 0.7 6
4-1 Kelford or any standard UX socket 0.2 6
5-1 .0002 fixed condenser 0.1 6
6-1 1 Meg grid leak 0.1 6
7-3 National centre tap resistances 0.4 6
8-1 Lewbury power transformer 3.10
9-1 choke
10-1 1 infa. fixed condensers, TCC 250 v. AC 0.8 0
11-2 infa. fixed condensers, TCC 250 v. AC 0.15 6
12-1 Radio Frequency Choke 0.6 6
13-1 Radium All-Electric Tuner 0.11 9
14-1 Amso or any reliable .0006 condenser var 0.10 6
15-1 E叻ary 23-plate midget condenser 0.8 6
16-1 Fixed condenser .0005 0.1 6
Aerial, Earth, Speaker, Pick-up Terminals 0.1 0
Hook-up Wire 0.2 6
1 Vox or standard American AC tube 226 0.12 6
1 Vox or standard American AC tube 227 1.2 6
1 Vox or standard American AC tube 171A 0.15 0
1 Vox or standard American AC tube 280 1.5 0
3 and 3a-2 Kelford Audio Transformers at 17/6 each, or 2 Lewbury at 22/6.

Total Cost - - - £14/3/9

TO RADIO DEALERS

We advise you to get on to the above Simplicity All-Electric, for, owing to their perfect operation, they will be in great demand. Drop us a line and we will be pleased to give you particulars.

Ask Your Dealer for Leaflet Giving Full Particulars

We supply the above wiring diagram in the form of a full-scale drawing FREE. This enables you to use it as a template if necessary.

Build Your Own All-Electric Three and Save at Least £10

Guaranteed by the Agents.

ECLIPSE
340-351 Flinders Lane, Melbourne
32 Clarence Street, Sydney
INTERSTATE PROGRAMMES, Tuesday, December 3

**3LO**
Australian Broadcasting Co., G.M.A. Russell Street, Melbourne (Vic.), 511 Metres.

**EARLY MORNING SESSION.**

7.9 to 8.15: "Sincere Good Morning". 8.15 to 8.30: "Mornin' Melodies".

**MIDDAY SESSION.**

1:0 to 1:30: "Educational Session". 1:30: "A Musical Interlude". 1:30 to 1:45: "B.A. Drama".

**EARLY EVENING SESSION.**

2.45: Piano — Alexander Brallowsky. 2.55: "The Nutcracker". 3.0: "Let Her Go to Sleep" (Mendelssohn). 3.10: "Let Her Go to Sleep" (Finale).

**LADIES' CORNER.**

4.0 to 4.15: "Rising to the Occasion". 4.15: "The Latest Fashions" — Madame La Mode.

**4QG**

**EARLY EVENING SESSION.**


**7ZL**
Tasmanian Broadcasting Co., Broadway Rd., Elizabeth Bay, Hobart (Tas.), 510 Metres.

**EARLY EVENING SESSION.**

7.0 to 7.15: "Chorus". 7.15: "The Latest Fashions" — Madame La Mode. 7.30: "Popular Repertoire". 7.45: "At Home" (French). 8.0: "The Latest Fashions" — Madame La Mode.

**WIRELESS WEEKLY**

Friday, 29th November, 1929

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3LO

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**4QG**

**Queensland Government Radio Service, Brisbane (Queensland Broadcasting Board, 815 Metres).**

**EARLY EVENING SESSION.**


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GRACE BROS

"BROADWAY" BUILD-AT-HOME
ELECTRIC AC3 KIT

At last it is possible to build an All Electric 3-Valve Set at home, or convert your present "battery" receiver into an up-to-date batteryless model. Complete with the "BROADWAY" BUILD-AT-HOME AC3 KIT are simple wiring and layout diagrams, so that any person with a screwdriver, a pair of pliers and a soldering iron will have no difficulty in producing an efficient Receiver far below the cost of a built-up Receiver of equal quality.

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1. 1 Lewbury Voltage Divider.
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3. 1 Lewbury Type "C" Power Transformer.
4. 1 Lewbury Type 60 Choke.
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7. 1 One-Meg. Gridleak.
8. 3 National Centre Tap Resistances.
9. 2 Pilot No. 413 Audio Transformers.
10. 1 00025 Fixed Condenser.
11. 2 1-Mfd. Fixed Condensers.
12. 2 4-Mfd. Fixed Condensers.
13. 1 .0005 Fixed Condenser.
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25. Hook-up Wire.

All Lewbury Parts guaranteed 1 year

PRICE OF COMPLETE KIT, £11'19'6

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"Dutch" 9-Volt "C" Batteries. Each ... 2/-
"Winchester" 45-Volt Heavy Duty Batteries 19/-
"Duroia" 60-Volt "B" Batteries. Each ... 12/-
"Gracevolt" 1.5-Volt Dry Cells. Each ... 2/6
"Western Electric" Headsets, 4000 ohms, pair 15/-
"Para" 4000-ohm Headsets. Per pair ... 9/-

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"Eagle" Battery Hydrometers. Each ... 2/6
"Record" Bell Transformers. Each ... 7/-
"Duroia" Cone Speakers. Each ... 23/6
Radio Soldering Kits. Each ... 1/3
"Hoosick" .0005 Low-Loss Condensers. Each 4/9
"Blurad" Phone Plugs. Each ... 9d.

Don't miss Father Xmas and his Movie Show
RADIO DEPARTMENT, BASEMENT, GEORGE ST. WEST BUILDING

BROADWAY GRACE BROS LTD SYDNEY
**INTERSTATE PROGRAMMES, WEDNESDAY, DECEMBER 4**

**3LO**

Australian Broadcasting Co. Ltd, 20A Russell St., Melbourne (Wavelength, 246 Metres).

**7.50** WEDNESDAY SESSION.

7.0 to 8.15: See Friday.

10.30 to 12.30: As usual.

11.45: Selections.

**8.15** MIDNIGHT SESSION.

1.0 to 1.15: As usual.

**9.20** Transmission from the Rotary Club Clubhouse.

**I.** RUSSIAN LITERATURE AND MUSIC.

2.30: Reading of Part of Tolstoy's Novel, "Anna Karenina." By Eric Welch.

**10.10** AFTERNOON SESSION.

2.30: Quartette—Valse Concertante.

**3AR**

Australian Broadcasting Co. Ltd, 120A Russell St., Melbourne (Wavelength, 35 Metres).

**7.50** MORNING SESSION.

7.15 to 8.15: As usual.

10.30 to 12.30: As usual.

10.15: Transmission from the Rotary Club Clubhouse.

**11.20** MIDNIGHT SESSION.

1.0 to 1.15: As usual.

**12.20** **3.50:** Legendary Australian Composer, "Dorothea Channon." By Eric Welch.

**4.20** AFTERNOON SESSION.

3.20: Quartette—Valse Concertante.
A PART
for Every
PURPOSE

TRANSFORMERS

Pep Punch. Puratone.
Pep Punch Transformers, Ratios 2-1, 3½-1, 5-1 ... 10/6
Golden Voice Transformers, Stages 1, 1A, and 2 ... 42/6
Puratone Transformers. Ratios 2-1, 3½-1, 5-1 ... 15/6
Cavalier Transformers. Ratios 2-1, 3½-1, 5-1 ... 21/6
Midget Transformer. Ratios 2-1, 3½-1, 5-1 ... 13/9
Metal Case Transformer. Ratios 2-1, 3½-1, 5-1, 7½-1 ... 17/6

VERNIER DIALS

Mello Metal. Standard Bakelite.
Mello Metal Vernier Dial ... 9/6
Illuminated ... 12/6
De Luxe Vernier Dial ... 9/6
Illuminated Complete ... 13/6
Back Panel Dial ... 5/6
Vernier Dial, black or mahogany ... 7/6
Velmo Dial ... 6/-
Baby Velmo ... 5/-
Knobs, black or mahogany, plain or arrowed ... 1/-

ELIMINATORS

"A" Socket Supply Maxum "B."
ABC Eliminator for 6 valves ... £15 15/-
ABC Eliminator for 25 valves ... £19 19/-
Super Power B Eliminator, for sets up to ten valves ... £12 12/-
"B" Eliminator for sets up to five valves ... £10 10/-
Maxum "B" Socket Power Unit or Eliminator, for sets up to and including seven valves ... £8 15/-
A Socket Power Supply. Replaces the "A" Battery ... £12 12/-

AMPLIFYING UNITS

Concert £30. Home Phonograph ... £18 10/-
Condensers, Battery Chargers, Rheostats, etc.
Send for Illustrated Catalogue.
### Local Programmes, Wednesday, December 4

**2FC**

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength: 226 Metres)

**EARLY SESSION—7 to 8.15 a.m.**

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00</td>
<td>Information</td>
</tr>
<tr>
<td>7:05</td>
<td>This morning’s news from the “Sydney Morning Herald.”</td>
</tr>
<tr>
<td>7:30</td>
<td>Australasian musical reproduction</td>
</tr>
<tr>
<td>7:45</td>
<td>Mail and shipping</td>
</tr>
<tr>
<td>7:50</td>
<td>Children’s birthday calls</td>
</tr>
<tr>
<td>8:00</td>
<td>Music from the Studio</td>
</tr>
<tr>
<td>8:15</td>
<td>CLOSE</td>
</tr>
</tbody>
</table>

**MORNING SESSION AND AFTERNOON SESSION**

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00</td>
<td>Annuouncements</td>
</tr>
<tr>
<td>9:30</td>
<td>General sporting talk by Oceas Lau.</td>
</tr>
<tr>
<td>9:45</td>
<td>HOUSEWIFE—Cooking, etc. by Miss Ruth Furst.</td>
</tr>
<tr>
<td>10:30</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>10:45</td>
<td>CABLES (Copyright). “Sun”-“Herald,” “Sun”-“Herald.”</td>
</tr>
<tr>
<td>10:50</td>
<td>“Sun”-“Herald,” “Sun”-“Herald.”</td>
</tr>
<tr>
<td>11:00</td>
<td>General sporting talk by Assistant.</td>
</tr>
<tr>
<td>11:10</td>
<td>Late weather forecast and news service from The “Sun” and “Herald.”</td>
</tr>
<tr>
<td>11:30</td>
<td>“Sun”-“Herald,” “Sun”-“Herald.”</td>
</tr>
<tr>
<td>11:45</td>
<td>General sporting talk by Assistant.</td>
</tr>
<tr>
<td>12:15</td>
<td>“Sun”-“Herald,” “Sun”-“Herald.”</td>
</tr>
<tr>
<td>12:45</td>
<td>“Sun”-“Herald,” “Sun”-“Herald.”</td>
</tr>
<tr>
<td>12:50</td>
<td>FROM WARWICK FARM—Description of the races in the running.</td>
</tr>
<tr>
<td>1:00</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>1:15</td>
<td>Close down</td>
</tr>
</tbody>
</table>

**THE OPENING SESSION—8.15 to 11 a.m.**

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.15</td>
<td>G.P.O. chimes and announcements</td>
</tr>
<tr>
<td>8.16</td>
<td>Music for every mood</td>
</tr>
<tr>
<td>8.45</td>
<td>Meteorological data for the country</td>
</tr>
<tr>
<td>8.50</td>
<td>Mail and shipping information</td>
</tr>
<tr>
<td>9.00</td>
<td>Meteorological information</td>
</tr>
<tr>
<td>9.01</td>
<td>This morning’s story</td>
</tr>
<tr>
<td>9.30</td>
<td>A musical interlude</td>
</tr>
<tr>
<td>9.45</td>
<td>British Official Wireless Press</td>
</tr>
<tr>
<td>9.55</td>
<td>Announcements</td>
</tr>
<tr>
<td>10.00</td>
<td>Late weather forecast and news service from the “Sun” and “Herald.”</td>
</tr>
<tr>
<td>10.05</td>
<td>“Sun” -“Herald,” “Sun” -“Herald.”</td>
</tr>
<tr>
<td>10.10</td>
<td>Austradio musical reproduction</td>
</tr>
<tr>
<td>10.15</td>
<td>THE METROPOLITAN BAND—Waltz “Ruby” (Roma).</td>
</tr>
<tr>
<td>10.20</td>
<td>A CPELEBRITY—VITAL</td>
</tr>
<tr>
<td>10.30</td>
<td>Late official weather forecast and news service from the “Sun” and “Herald.”</td>
</tr>
<tr>
<td>10.40</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>10.50</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>11.00</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>11.10</td>
<td>MORNING DEVOTION. Miss Ruth Furst.</td>
</tr>
<tr>
<td>11.15</td>
<td>MALLS AND SHIPPING.</td>
</tr>
<tr>
<td>11.20</td>
<td>British official wireless press</td>
</tr>
<tr>
<td>11.30</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>11.45</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
</tbody>
</table>

**F.E.I.D.D.A.S weather forecast and weather synopsis:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.00</td>
<td>“Deeper and Deeper Still” (Handel)</td>
</tr>
<tr>
<td>12.10</td>
<td>“Waft her, Angels” (Handel)</td>
</tr>
<tr>
<td>12.20</td>
<td>Mr. Edward Barry, baritone.</td>
</tr>
<tr>
<td>12.30</td>
<td>Mr. Jack Win and Mr. Heath Burdock.</td>
</tr>
<tr>
<td>12.40</td>
<td>A musical interlude</td>
</tr>
<tr>
<td>1.00</td>
<td>“The Hunt” (Chiabrano)</td>
</tr>
<tr>
<td>1.10</td>
<td>Close down</td>
</tr>
</tbody>
</table>

**THE AFTERNOON SESSION—12 noon to 2.30 p.m.**

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.00</td>
<td>O.P.O. chimes and announcements</td>
</tr>
<tr>
<td>12.01</td>
<td>A musical interlude</td>
</tr>
<tr>
<td>12.10</td>
<td>Announcements</td>
</tr>
<tr>
<td>12.20</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>12.30</td>
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<tr>
<td>12.40</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>12.50</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>1:00</td>
<td>Announcements</td>
</tr>
<tr>
<td>1:10</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>1:20</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
</tbody>
</table>

**2BL**

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength: 226 Metres)

**OPENING SESSION—8.15 to 11 a.m.**

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.15</td>
<td>G.P.O. chimes and announcements</td>
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<td>Music for every mood</td>
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<td>9.00</td>
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<td>9.01</td>
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</tr>
<tr>
<td>9.30</td>
<td>A musical interlude</td>
</tr>
<tr>
<td>9.45</td>
<td>British Official Wireless Press</td>
</tr>
<tr>
<td>9.55</td>
<td>Announcements</td>
</tr>
</tbody>
</table>

**10.00**

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.00</td>
<td>Late weather forecast and news service from the “Sun” and “Herald.”</td>
</tr>
<tr>
<td>10.05</td>
<td>“Sun”-“Herald,” “Sun”-“Herald.”</td>
</tr>
<tr>
<td>10.10</td>
<td>Austradio musical reproduction</td>
</tr>
<tr>
<td>10.15</td>
<td>THE AUSTRALIAN BROADCASTING COMPANY’S WUMP’S ASSOCIATION</td>
</tr>
<tr>
<td>10.20</td>
<td>contributed by Miss Glen Valery</td>
</tr>
<tr>
<td>10.25</td>
<td>O.P.O. chimes. Close down</td>
</tr>
</tbody>
</table>

**MIDNIGHT SESSION—12 noon to 2.30 p.m.**

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.00</td>
<td>O.P.O. chimes and announcements</td>
</tr>
<tr>
<td>12.01</td>
<td>A musical interlude</td>
</tr>
<tr>
<td>12.10</td>
<td>Announcements</td>
</tr>
<tr>
<td>12.20</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>12.30</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>12.40</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>12.50</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>1:00</td>
<td>Announcements</td>
</tr>
<tr>
<td>1:10</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
<tr>
<td>1:20</td>
<td>“Big Ben” and meteorological infamina</td>
</tr>
</tbody>
</table>

**THE EVENING SESSION—8 to 11.35 p.m.**

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.15</td>
<td>THE COUNTRY MAN’S WEATHER REPORT—“Soiree de Vienne” from “Fledermaus”</td>
</tr>
<tr>
<td>8.30</td>
<td>MISS NORA MACK, soprano</td>
</tr>
<tr>
<td>8.45</td>
<td>Mr. Edward Barry, baritone.</td>
</tr>
<tr>
<td>8.50</td>
<td>Mr. Jack Win and Mr. Heath Burdock.</td>
</tr>
<tr>
<td>9.00</td>
<td>Roman’s dance orchestra conducted by Bennie Abrahams</td>
</tr>
<tr>
<td>9.15</td>
<td>Jaques Walker, pianist</td>
</tr>
<tr>
<td>9.30</td>
<td>Roman’s dance orchestra conducted by Bennie Abrahams</td>
</tr>
<tr>
<td>9.45</td>
<td>MODERN MUSIC</td>
</tr>
<tr>
<td>9.50</td>
<td>Eddie Reeve will give some “Aid to Personality.”</td>
</tr>
<tr>
<td>10.00</td>
<td>Roman’s dance orchestra conducted by Bennie Abrahams</td>
</tr>
<tr>
<td>10.15</td>
<td>MODERN MUSIC</td>
</tr>
<tr>
<td>10.20</td>
<td>Roman’s dance orchestra conducted by Bennie Abrahams</td>
</tr>
<tr>
<td>10.30</td>
<td>MODERN MUSIC</td>
</tr>
<tr>
<td>10.40</td>
<td>Eddie Reeve will give some “Aid to Personality.”</td>
</tr>
<tr>
<td>10.50</td>
<td>Roman’s dance orchestra conducted by Bennie Abrahams</td>
</tr>
</tbody>
</table>

**THE新陈代谢—4 to 5.45 p.m.**

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.20</td>
<td>From the 1919 radio display at the state theatre block</td>
</tr>
<tr>
<td>4.30</td>
<td>The State Orchestra, under the direction of Will Prior.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.20</td>
<td>Will feature to-night the overnight and presentation from the State Theatre.</td>
</tr>
</tbody>
</table>

**TO-NIGHT’S THEATER—2.00 to 11.00 p.m.**

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.00</td>
<td>The Skipsper’s Life</td>
</tr>
</tbody>
</table>

**NATIONAL ANTHEM. CLOSE**
THE SIMPLICITY ALL-ELECTRIC THREE

List of Parts Required

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1 Lewbury voltage divider</td>
<td>1</td>
<td>£ 3.10</td>
</tr>
<tr>
<td>2-1 &quot;C&quot; Bias resistance</td>
<td>1</td>
<td>0.15</td>
</tr>
<tr>
<td>3-3 Kelford or any standard UX sockets</td>
<td>6</td>
<td>0.76</td>
</tr>
<tr>
<td>4-1 Kelford or any standard UV socket</td>
<td>2</td>
<td>0.26</td>
</tr>
<tr>
<td>5-1,00025 fixed condenser</td>
<td>1</td>
<td>0.16</td>
</tr>
<tr>
<td>6-1 1 meg grid leak</td>
<td>1</td>
<td>0.16</td>
</tr>
<tr>
<td>7-3 National centre tap resistances</td>
<td>1</td>
<td>0.46</td>
</tr>
<tr>
<td>8-1 Lewbury power transformer</td>
<td>1</td>
<td>3.10</td>
</tr>
<tr>
<td>9-1 choke</td>
<td>1</td>
<td>0.26</td>
</tr>
<tr>
<td>10-2 1 infd. fixed condensers, TCC 250 v. AC</td>
<td>10</td>
<td>0.80</td>
</tr>
<tr>
<td>11-2 1 mid fixed condensers, TCC 250 v. AC</td>
<td>1</td>
<td>0.15</td>
</tr>
<tr>
<td>12-1 Radio Frequency Choke</td>
<td>1</td>
<td>0.06</td>
</tr>
<tr>
<td>13-1 Radiokite All-Electric Tuner</td>
<td>1</td>
<td>0.11</td>
</tr>
<tr>
<td>14-1 Amsco or any reliable .0006 condenser Var</td>
<td>1</td>
<td>0.10</td>
</tr>
<tr>
<td>15-1 Essanay 23-plate midget condenser</td>
<td>1</td>
<td>0.06</td>
</tr>
<tr>
<td>16-1 Fixed condenser .0005</td>
<td>1</td>
<td>0.16</td>
</tr>
<tr>
<td>Aerial, Earth, Speaker, Pick-up Terminals</td>
<td>1</td>
<td>0.16</td>
</tr>
<tr>
<td>Hook-up Wire</td>
<td>1</td>
<td>0.26</td>
</tr>
<tr>
<td>1 Vox or standard American AC tube 226</td>
<td>1</td>
<td>0.12</td>
</tr>
<tr>
<td>1 Vox or standard American AC tube 227</td>
<td>1</td>
<td>0.12</td>
</tr>
<tr>
<td>1 Vox or standard American AC tube 171A</td>
<td>1</td>
<td>0.15</td>
</tr>
<tr>
<td>1 Vox or standard American AC tube 280</td>
<td>1</td>
<td>0.15</td>
</tr>
<tr>
<td>3 and 3a-2 Kelford Audio Transformers at 17v6 each</td>
<td>2</td>
<td>0.26</td>
</tr>
<tr>
<td>Total Cost - - - £14/3/9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TO RADIO DEALERS
We advise you to get on to the above Simplicity All-Electric, for, owing to their perfect operation, they will be in great demand. Drop us a line and we will be pleased to give you particulars.
Local Programmes, Thursday, December 5

2FC

EASTERN SESSION—4 to 11.45 a.m.
7.0: "Big Ben" and meteorological information, who will also cover events from the "Sydney Morning Herald.
7.3: This morning's news from the "Sydney Morning Herald.
7.5: Children's birthday calls.
8.0: Music from the studio.
8.15: CLOSE.

MORNING SESSION—10.30 a.m. to 12.30 p.m.
10.30: Announcements.
10.32: A.B.C. Racing Observer.
10.45: HORACE WEBER at the GRAND ORGAN.
11.0: HOUSEHOLD HELPS: Domestic Notes by Miss Ruth Purser.
11.15: MORNIN DEVOTION.
11.20: Instrumental musical reproduction.
11.30: British Official Wireless Press.
12.0: "Big Ben" Stock Exchange and metal quotations.
12.20: Midday weather forecast and weather information.
12.30: CLOSE.

THE LUNCH HOUR—1 to 2.30 p.m.
1.0: Lunch-hour music.
2.0: Stock Exchange, second call.
2.30: Announcements.
2.32: MODERN MUSIC.
3.0: Lunch-hour music.
3.15: MODERN BALLADS.
3.37: THE POPULAR TRIO.

THE AFTERNOON SESSION—2.30 to 4.30 p.m.
2.30: THE POPULAR TRIO.
3.0: C. N. BAYERTZ will speak on "Snooker English.
3.15: THE POPULAR TRIO.
4.0: RAY WRIGHT will play "Rose of Rosetta." (Chataloade.
4.30: MODERN BALLADS.

EARLY EVENING SESSION—4.30 to 7.30 p.m.
5.30: The Trade Hour—Demonstration music.
6.30: DINNER MUSIC.

THE EVENING PRESENTATION—8 to 11.30 p.m.
Our feature to-night is the "Music of the Country," from "Miser's Scene" to "Father Buys a Crystal Set." This will be preceded by a short humorous sketch, "Father Buys a Crystal Set." 2BL offers a little of everything, unusual brass quartet numbers, solo groups, Irish stories, violin solo, smart monologues, a talk of interest, and the weekly sound film feature.
8.0: FROM THE CAPITOL THEATRE: Horn Capitoliens, with J. Knight Barnett at the Wurlitzer.
8.30: From the Studio: PEGGY DUNBAR, contralto.
8.32: "FATHER BUYS A CRYSTAL SET"—A comedy sketch, in one act, by Lynnwood Roberts and Company.