

Complete Broadcasting Programmes a Week in Advance

Wireless Weekly

3^d

INCORPORATING "RADIO IN AUSTRALIA & NEW ZEALAND"

VOL. 14, NO. 26

FRIDAY, DECEMBER 20, 1929

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



Send
Xmas & New Year
Greetings Abroad
via **BEAM**

TO GREAT BRITAIN
10 WORDS FOR 4/-
To the United States and Canada, Austria,
Switzerland, Fiji, and New Guinea,
AT SPECIAL LOW RATES

Further information available from
The Beam Wireless Offices,
at Sydney and Melbourne.

COMPLETING
The
**PRE-SELECTOR
FOUR**

THE NEW TARIFF
on Radio Sets and Parts

MORE ABOUT THE
GLIDER

"A MOST PECULIAR
WIRELESS SET"





Xmas Radio Sale

10 PER CENT. OFF

Free Gift with each 10/- Purchase.

<p>ELECTRIC 18/6 SOLDERING IRONS</p> <p>240 Volt, with Self-Feeding Solder Device, Plug, and Cord.</p>	<p>10/6</p> <p>Neutrodyne Kit</p> <p>Bakelite Space Wound. Complete with Angle Brackets, Etc.</p>	<p>5/-</p> <p>4MF CONDENSERS</p> <p>650 v. TEST</p> <p>See Each One Actually Tested before Purchasing.</p>
<p>COMPLETE £13/13/- KIT OF PARTS ALL-ELECTRIC THREE</p> <p>Valves and First Quality Parts.</p>	<p>100 volt 15/9 SIEMENS "B" BATTERIES</p> <p>Voltage Guaranteed.</p>	<p>CLOCK 15/- 30 HENRY CHOKES</p> <p>For Eliminators, Electric Receivers, Etc.</p>
<p>THE 63/- "TIMMONS" SPEAKER CHASSIS</p> <p>Will give you the tone and volume of a Dynamic, incorporates a Filter and Permanent Magnet.</p>	<p>LESS 10%</p>	<p>THE 65/- "KODEL" One Valve Portable</p> <p>Complete with Valve, A. and B. Batteries, Tefag Phones, Aerial, and Earth.</p>
<p>TEFAG 12/6 4000 ohm PHONES</p> <p>Each Headpiece can be adjusted to give Maximum Sensitiveness. Heavily Plated. Leather Band.</p>	<p>LEWBURY 70/- Transformer and Choke</p> <p>For that All Electric.</p>	<p>JEFFERSON Safety Type 10/- Bell Ringing Transformers</p> <p>TAPPED 6 Volts, 12 Volts, 18 Volts. Excellent for Eliminators, Bells, Electric Working Models, etc.</p>
<p>3/- 2MF CONDENSERS</p> <p>Powerplus or Hydra.</p>	<p>WATES 10/6 VOLT-AMP METER</p> <p>0-6 Volts, 0-150 Volts, 0-30 M.A. A Useful and Accurate Meter at a reasonable price.</p>	<p>LEWCOS 22/6 WAVE TRAP</p> <p>A Sure Remedy for a Station that's Chipping In.</p>

PRICE'S = RADIO = SERVICE

Box 3326PP.
Wingello House,
Angel Place, Sydney.

—Make it a Happy Xmas!



1930 SALONOLA (FULLY SHIELDED) ALL-ELECTRIC 3 VALVE

JUST PLUG IN.

£3/10/- DEPOSIT

8/1 WEEKLY. CASH PRICE 30 GNS.

- 1. EACH SET is adjusted to suit the prevailing conditions of the locality for which it is required.
- 2. NO SERVICE NECESSARY.
- 3. GUARANTEED TWELVE MONTHS.

- 1. NO EXTRAS TO BUY. Amplion Cone Speaker included. Any other make supplied by arrangement.
- 2. EASY TO INSTALL, OPERATE, and care for. Full instructions that anyone can easily and efficiently carry out accompany each set.

FREE HOME DEMONSTRATION
WITHOUT OBLIGATION.

FREE INSTALLATION WITHIN 20 MILES OF G.P.O., SYDNEY

Write or Call for Prices and Full Particulars of Salnola "1930" THREES, FIVES, and SEVENS

HOME RECREATIONS (Aust.) LTD.

HEAD OFFICE: 388 GEORGE STREET (Opp. Beard Watson's), SYDNEY.
BRISBANE: 297 Queen Street. NEWCASTLE: 88 Hunter St. PARRAMATTA, 232 Church St.



Sweep the Air with this NEW Receiver

Study the features of the AIRMASTER ALL ELECTRIC THREE. Realise the convenience, simplicity, and economy of this new batteryless set. Three valves only, giving unrivalled tone and costing under threepence a week to run. Complete shielding of the AIRMASTER ensures immunity from interference. With the simplified control the programmes are received at any desired volume, and with absolute fidelity of reproduction.

PRICE—Complete with Valves—
£27/10/-

You may Purchase an
**AIRMASTER
RECEIVER**

for cash or on Easy Terms. Very Low Deposit.

- ☞ AIRMASTER incorporates a jack for magnetic pick-up, enabling electrical amplification of gramophone records.
- ☞ The handsomely finished cabinet of the AIRMASTER is a model of compactness.
- ☞ Exceptionally durable A.C. valves are used, ensuring maximum life.
- ☞ Ample power is provided in the AIRMASTER for the operation of a dynamic speaker. The AIRMASTER includes a volume control and an illuminated dial.

FREE INSTALLATION ANYWHERE IN THE METROPOLITAN AREA.

AIRMASTER

ALL ELECTRIC THREE

DEALERS.—In addition to the AIRMASTER, we are distributors for the ALPINE ALL ELECTRIC TWO, the famous BRANDES with selector tuning, and the ALPINE SCREEN-GRID RADIO SETS.

Write or call for particulars

OBTAINABLE FROM

S. E. TATHAM & CO.
160 CASTLEREAGH STREET, SYDNEY

'PHONES:
M 4151-2.

'PHONES:
M 4151-2.

Vol. 14 No. 26
Friday,
December
20,
1929.

Wireless Weekly

Incorporating "Radio in Australia & New Zealand"

Address:
Box
3366PP,
G.P.O.,
Sydney.

£2 IF YOU GUESS THE INSTRUMENTS PLAYED



Here's an interesting competition which will test out the reproduction qualities of your set, and your knowledge of colour in music. On Friday, December 20, "Wireless Weekly" and the A.B.C. have arranged to broadcast short pieces by thirty different instruments, and listeners will be invited to guess the names and the order of the instruments played. With the exception of the bagpipes and the tin whistle, all the instruments are pictured above. They include: Accordeon, Piano, Xylophone, Autoharp, Mouth Organ, Jew's Harp, Cowbells, Kazoo, Magic Flute, Swanee Flute, Ocarina, Flute, Saxophone, Alto Saxophone, Bass Saxophone, Trombone, Trumpet, Clarinet, Fife, Piccolo, Violin, Violoncello, Bass Guitar, Ukulele, Mandolin, Steel Guitar, Banjo. See Page 10 for full details of the competition and Page 23 for coupon.

(Pictures by courtesy Palings and J. Albert and Son.)

Between You and Me and the Microphone

Some Covering Remarks on the New Broadcasting Fashions for Men.

WE are always thinking of clothes, one way and another. The shabbiness of old clothes, the desirability of new clothes we saw in the shop window coming home, the cost of new clothes, what other people think of our clothes, the necessity of clothes, the foolishness and obscenity of clothes, the deceitfulness of clothes, and so forth. Our thoughts on clothes sometimes leave the moronic mud-puddle, and bask in the sunlight of aestheticism, for surely clothes have their values as works of art—they constitute a kind of symbolism, and we have spent a great deal of time trying to find out what lies behind it. Our present-day young women aid us considerably in our researches.

Many people have written about clothes. We remember especially some remarks of Montaigne, and Swift wrote of a religion which postulated the universe as a suit of clothes; also, Mr. Carlyle wrote "Sartor Resartus," which means the tailor re-tailored, or possibly something else; but Mr. Carlyle is scarcely to be called informative on his chosen subject. We, ourselves, have written a two-hundred-line poem in four-beat rhyming couplets on clothes, which, perhaps, you are, of course, anxious to hear; but we have only space for the three summarising couplets:

- The Coat can't be shelved for most obvious reasons
- We must have a coat to take off in hot seasons;
- The Waistcoat, you'll know, if you're on: the alert,
- Conceals the sad fact that you're wearing a shirt;
- The Trousers—there's no need to argue upon—
- They're always regarded as sine qua non!

We read the whole business to the Mosman Debating Society as a speech in reply on the motion that "This House deplores the foolishness of Modern Masculine Apparel;" but no one laughed, because it was the Mosman Debating Society. De Mortuis . . . and, anyhow, we were awarded second prize for the evening, and as the Mosman Debating Society is still going strong, why should we say de Mortuis. . . ?

De Mortuis!

The very word is like a bell to toll us back again to broadcasting in New

South Wales. What we have written up to date is only a simple prelude to the great big fugue. Let us cast away preludes. Let us clear our brain. Let us begin: A little bird has whis—no. We have hea—no! The latest scand—NO! Our former apprehensions—that's it! Our former apprehensions have been confirmed by the passage of time, and we are in a position to inform the public authoritatively that the studio staff and retained artists of 2BL and 2FC have gone into mourning—Evening Dress. By Order. By Special Request. Vivat Rex, and God Save the King.

Immediately the public asks itself the

anyhow, if you haven't that's not our fault, and we're not going to waste our good time explaining it to you. Here's John been waiting for the past half-hour to take us out to celebrate Christmas with two and six he managed to borrow or steal in this desolate building—so if you don't know what it is you'd just better ask someone and find out.

Well, the thingumbobs at 2BL and 2FC have gone into Evening Dress, which, we suppose, will cause our lamented Mr. Benson some pain, as he will probably call it "yet one further attempt to eliminate, contaminate, and obviate the personalities of broadcasters, bringing all New South Wales broadcasting to a monotonous condition of blackness and drab sameness." However, we shall do battle with Mr. Benson on behalf of the Australian Broadcasting Company if he should dare to take such an attitude. We shall instance the State Theatre—how the splendour of the uniforms of the gentlemen who frisk us away to our seats in the back stalls enraptures us, and makes us think twice as highly of the show as a unit of entertainment; how Evening Dress is the Dress of Leisure, and how it will lend an air of charm and culture to future broadcasting activities; how listeners will feel over the air the subtle je ne sais quoi which can only be conveyed by the moth-bally atmosphere of Evening Dress; how announcers will be able to make notes of announcements and weather reports on their shirt fronts, provided these do not melt and run during the hot weather; and how it will impress occasional visitors to the studio to see such genteel gentility

in such an environment. Mr. Benson won't stand a chance.

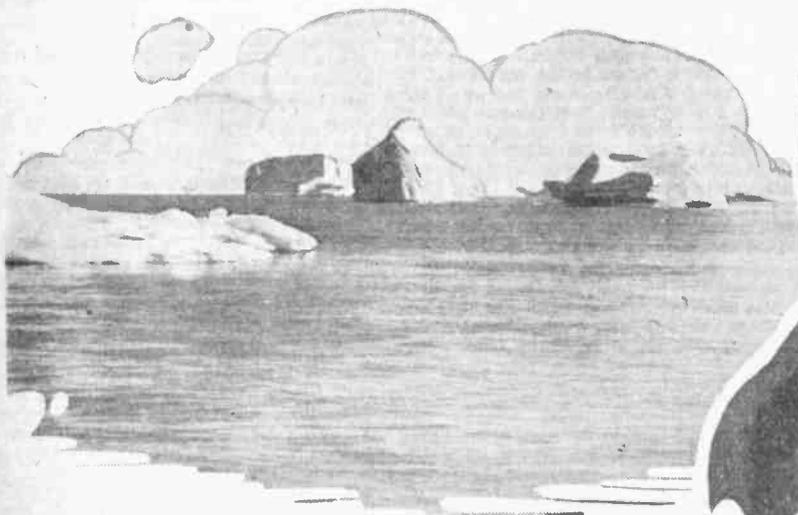
The only thing worrying us is what we heard somewhere that you can always tell if a man's a gentleman by the way he wears Evening Dress; and so we may not go to see our friends at 2BL and 2FC any more, because we're afraid—you see, if there's anything we dislike positively, it's a Gentleman; and if there's anything that dislikes us positively, he's a gentleman—so there you are. The worst of it is we always seemed to get on well enough with the people at 2BL and 2FC, and we shall miss them awfully in the future. John says we've only got five minutes.

James



SOUTH *With* SCOTT

From a Talk Broadcast Recently
By Rear-Admiral Evans



REAR-ADMIRAL EVANS

I HAVE been asked to give you a talk over the air concerning my Antarctic experiences, and I propose to commence with a few sidelights on the early Antarctic relief expeditions and conclude with the story of the Long White Trail, which will be a brief description of Captain Scott's last sledge journey.

My own connection with Antarctic exploration dates back as far as 1902, when, as a rather wild acting sub-lieutenant, I aspired to become an explorer. Most boys with the adventure spirit in their veins look enviously towards the icy continent of the frozen South or to the pack ice of the Arctic North, where the polar bear and walrus abound. There is something dreadfully fascinating about these little-known areas. Only to-day we have received news that Commander Byrd has flown from the Bay of Whales to the South Pole and back, and at the present moment Sir Douglas Mawson, the greatest living explorer of our Empire, is facing again the secrets of the South.

My own introduction to the ice took the form of a relief expedition in a dirty 32-year-old whaler called the Morning. She was originally a Norwegian ship, the Morgen, of Tonsberg, and having been selected by Sir Clements Markham, president of the Royal Geographical Society, and a veteran Arctic explorer himself, I signed on as second mate of this funny little ship. Her crew were sturdy Yorkshiremen for the most part. We sailed away from England, taking no fewer than 128 days to reach New Zealand.

Tiny, Old Fashioned Craft

Think of it, and picture to yourselves the little Morning, a pathetic sight to those who bade us farewell before that long, monotonous voyage. A tiny craft, only 147 feet in length, her dull black sides marked with scars of countless battles with the ice, her age given away by her old-fashioned clothes,

for her rigging was of the early '70's; and even though we had partly remasted her, her other spars were sadly in need of replacement. But for all this, and for all the stench of her blubber-saturated holds, I was proud to be one of the company that was to sail in her to the Great White South. From a rather smart flagship midshipman, I soon became a grubby little sea dog, my hands hard and ingrained with dirt from hauling on ropes, working aloft, and generally hanging on.

Mostly we proceeded under sail, and this meant hours daily at the pumps, for the little ship leaked like a sieve. But, despite her drawbacks, and cramped living spaces, and the slowness of our advance, we had a wonderful skipper, and no man I have ever met displayed more character and courage than this man—my new captain, William Colbeck.

"Intangible Something"

Although the Morning had auxiliary engines, she could hardly steam six knots under the most favorable conditions, so it meant sailing good and true, and sailing days in windjammers are never to be really forgotten. There is an atmosphere about them, and an intangible something that grips one. Joseph Conrad and John Masefield are two of the few men who have been able to express life under sail. In some way we get down to realities on those great trackless oceans, and men show what they are made of. The worst blackguards, away from the pubs and backwaters of sea ports, show in sailing ships qualities which are admirable, and kindle some kind of affection in their fellow-creatures.

Our men in the Morning were not all saints, picked for their splendid character—far from it! We had two at least who had spent many months in prisons, and there were occasions when we had our rough-and-tumbles. The weather and the wind were the things that mattered most on that long outward voyage. When the wind was fair all hands smiled and chancies echoed through the ship; but when winds were foul there were generally grimaces, for nothing can be so irritating as a hard head wind day after day.

First Sight of N.Z.

Some of the gales we encountered in the Great Southern Ocean are unforgettable. Came terrific deluges of rain, which drenched everybody fore and aft, wind increasing every minute, upper topsails coming in, then huge seas washing over us. Decks covered with a seething mass of foam, and ropes washed everywhere, tangling and twisting round everything, while men hang on wherever they can, lifting their boots clear of the water as it swishes from side to side. This sort of thing happened frequently, and we spent long days and nights laboring heavily in seas that seemed mountains high, and white-crested waves looking every minute like overwhelming us, in our tiny craft—these things I shall never forget, and I shall never forget that little ship, the Morning, tearing ahead like some poor, wild, frightened creature, with only two square sails set. However, it all helped us grow into men, and that long outward voyage prepared us for what was to come in the Southern Seas.

I shall never forget my first sight of New Zealand, early one Sunday morning, when

gradually closing the coast. We witnessed at dawn the beautiful snow-clad mountains of the Southern Alps, with the great white moon setting behind them, a sight which filled my young heart with indescribable joy.

I think if Coue had been with me, and gone through the days I have, most certainly he would have said of New Zealand, "Every day, and in every way, I love it better and better and better!"

Now, don't get jealous! For, if Coue lived to-day, he would say, as my flag captain, my secretary, and I do, of Australians, that "Every day, and in every way, we love you better and better and better." So now you know!

However, to get along with this Antarctic business. That first relief expedition was really a great Antarctic paper-chase—for over a month after leaving New Zealand we worked our tiny, weather-beaten ship southward over trackless wastes of ocean until we met the ice. I nearly screamed with enthusiasm with the sight of our first iceberg, little dreaming how much my future was to be mixed up with ice, adventure, war, and storm.

Life on the Morning

I made two voyages in the Morning, and, being very much in earnest, when hardly 20 years old, no doubt I had my leg pulled a great deal by my elders and seniors in the expedition. I learnt that most people have their mouldy days, when all the world looks yellow; I also learnt that grievances are stupid things, and made up my mind that, if ever I had a grievance, I would keep it to myself or forget it. Folk do get a bit mouldy on sea voyages, especially on very long ones. We sometimes got mouldy in the Morning, but these relief voyages to the Great White South were in reality the most important chapters in my life, for my future depended on how I acquitted myself then.

I met important men like Dick Seddon, Sir Joseph Ward, Scott, and a host of others, and my first two Antarctic voyages taught me what real work was.

On Christmas Day, 1902, an unknown island was sighted. We immediately shaped a course for it, and our little engines went full speed ahead, singing "Clinkety-clonk, clinkety-clonk, clinkety-clonk." Nearer and nearer the island the little ship came, and all was bustle and excitement. We christened this island after Captain Scott, and by some oversight this is the only piece of land that bears that great explorer's name.

There is a tremendous thrill in discovering new land, and knowing that no other human eyes have seen it, and that when you land your foot is the first to tread there—the land feels almost sacred. This is one of the great thrills of exploration. Another thrill is found in the pack ice, gazing around from aloft; and third thrill is when, having forced the little exploring ship through 400 or 500 miles of pack ice, varying in thickness from one to thirty feet perhaps, one enters an open ocean. And imagine the thrill that the gallant airman Byrd felt yesterday when he returned, conqueror of two Poles, after a flight of 19 hours, a distance of nearly 1700 miles out and home, over that frozen continent—a journey which took my party 4½ months of weary foot-slogging.

Back to the South

All these things have their memories—memories which are calling Mawson and Davis and Moyes and all the Discovery's veteran explorers back to the South again.

One passage in my book, "South With Scott," that I wrote in the China Seas, I propose to read to you, because it conveys a heart-sense of Antarctic exploration. It runs: "The evening before we finally broke through into open water was beautifully still, and a

low cloud settled down in the form of a thick fog—it was a change from the fine, clear weather. Frost rime settled everywhere, and for a time we had to stop. There was a weird stillness over all, and whenever the ship was moved amongst the icefloes a curious hiss was heard. This sound is well known to all ice navigators; it is the sear of the floe against the greenheart sheathing which protects the little ship, and it is to the ice-master what the strange smell of the China Seas is to the Far Eastern navigator, what the Mediterranean "cheesy odors" and the eucalyptus scents of Australia are to the P. and O. and Orient officers, and what the pungent peat smoke of Ireland is to the North Atlantic seamen. I suppose the memory of the pack ice hissing around a wooden ship is one of the little voices that call—and they sometimes call as the memory of "a tall ship and a star to steer her by" calls John Masefield's seamen "down to the sea again." I sometimes feel a mute fool at race meetings, society dinner parties, and dances; the lure of the little voices I know then at its strongest. It is felt by the polar explorer in peace times and in the hey-day of prosperity, and it is surely that which called Captain Scott away, when he had everything that man wants, and made him write as he lay nobly dying out there in the snowy wild—

"How much better has this all been than lounging in too great comfort at home."

But this is yielding dream to my little address to you, and I must apologise now, and conclude with the story of the Long White Trail.

Long White Trail

I refer, as I said, to the story of that long march of something like 1800 miles which took Scott and his companions out to the Pole—the goal of their hopes—and almost home again.

Those who took part in that long white trail were sixteen in number, and by a system of supporting parties a large quantity of foodstuffs, fodder, and fuel were taken from our base camp at Cape Evans out on to the Great Ice Barrier. The whole journey lasted about five months, during which time the only shelter we had against the biting cold and icy blizzard consisted of our fur-lined sleeping bags and the little green canvas tents.

The first stage of the journey led for nearly 500 miles over the Great Ice Barrier, and in this we were assisted by motor sledges, Manchurian ponies, and Siberian sledge dogs. Two supporting parties returned during this advance, and when we had killed all our ponies owing to a great blizzard which ate into our food reserve, three teams of four men each commenced the ascent of the Beardmore Glacier, 150 miles in length, rising to some 6000 feet above the Barrier level. This stage was marked by numbers of large crevasses, sometimes bridged with snow and invisible; at other times, great open chasms as wide as Macquarie Street.

However, we negotiated that part of the journey with no outstanding discomforts.

In latitude 85 south the third supporting party turned homeward, leaving two teams of four men, one under Captain Scott and the other under my own leadership, to face the final stage over that bleak and inhospitable plateau to the Pole itself.

I shall never forget the loneliness of that bitterly cold march. As we advanced southward a steady wind blew in our faces, giving us the sensation of a thousand frozen needle-points jabbing; but even this was better than lying shivering in our sleeping bags when the marching was done. Three degrees from the Pole we established the last large depot. We pushed forward to latitude 87 deg. 35 min., and then Scott came to me on camping and asked me to send the men out of my tent, and we held a little consultation. He told me briefly that he was now quite sure

that he could reach the South Pole, but that he was not sure of being able to complete that long 900-mile march home from the South Pole to our base station at Cape Evans. He pointed out that the season was advanced, that his party was showing unmistakable signs of exhaustion, and that the only way to avert disaster was to take one of my four men to give him greater hauling power. He asked me, therefore, to journey back short-handed, with only two. Of course I consented, fondly imagining that, with a fairly light sledge, I could keep up the prescribed distance of 17 miles a day to the foot of the Beardmore Glacier, and on over the easier Barrier stage. Next day, having transferred our extra provisions to Scott's team, and accompanied them for a few miles, we halted, shook hands all round, and said good-bye. As Scott and his four companions stepped off we gave them three hearty cheers, little realising that these three cheers were the last appreciation they would ever know.

12 Hours a Day

We now turned northward, constantly looking over our shoulders until we saw the last of Scott—a little black speck on a great white horizon of ice.

After the first day's homeward march I realised that by giving up one of my men I had bitten off more than I could chew, and that, if we were to win home alive, it could only be by marching 12 hours a day. Adjusting our routine accordingly, we managed to run down the distance until we reached the top of the Beardmore Glacier, but there was so little margin of safety that a couple of blizzards might well have sealed our doom.

We saved three days' marching by taking our lives in our hands and tobogganing down the great ice falls at the head of the Beardmore Glacier, and this bold step undoubtedly saved our lives.

I shall never forget the excitement of that awful descent. At one time we must have been going at 60 miles an hour as our sledge sped over blue, slippery, wind-swept ice and we crashed from mound to mound. Of course, we had frequent capsize, and we broke the bow of our sledge.

18 Hours a Day

One of my men—Petty Officer Crean—had his trousers torn to ribbons, but we reached the depot that night, and there in the depot cairn we found the spare pair of trousers that Crean had deposited on the outward march. Curiously enough, of all the 16 men who undertook that journey, Crean was the only one who had taken a spare pair of pants.

Descending the Beardmore, we had two dreadful days in a perfect maze of pressure ridges, ice falls, and crevasses. We worked as best we could for 18 hours a day, literally carrying our sledge for the most part. This awkward situation came about through a fog filling up the Glacier Valley and obscuring the landmarks and fringing mountain ranges, so that we could not follow back on our outward route, which we had chosen so carefully.

After a rough march down the glacier we eventually reached the great ice barrier once more, and there we dug out the carcass of one of the ponies we had killed. We ravenously devoured the meat, without even waiting to cook it.

Frozen Sarah

The last stage—500 miles across that vast frozen Sahara which we called the Great Ice Barrier—nearly spelt death for me, because I developed scurvy, and my condition became worse so rapidly that my two companions, Crean and Lashly, despaired of my winning through. No wounded man in the Great War

(Continued on page 17.)

CO-ORDINATION

This week the hand of the new Superintendent of Broadcasting Stations is evident in the programmes.

BEGINNING last week, the Australian Broadcasting Company brought into effect its scheme of co-ordinating the Sydney programmes upon lines similar to those recently established in Melbourne.

A permanent light orchestra and dance band has now been added to the staff, and with the use of these two combinations it is hoped to give considerable added variety to the programmes.

On Mondays the dance band will play during the matinee from 2FC, and will supply the dinner music from both stations. The evening presentation will be carried out by the orchestra in co-operation with the production of a revue programme, while from 2BL a feature will be brass band music and a talk.

On Tuesdays a full orchestra will play at the matinee from 2FC, and will supply the dinner music from both stations. At night-time a full dance programme as hitherto will be the feature of 2FC, while a mixed concert programme, incorporating sketches, will be presented from 2BL.

On Wednesdays the Studio Dance Band will supply the lunch time programme, and the dinner music will be given by the full orchestra. 2FC's programme at night time will embrace a classic presentation, which will be arranged by well-known musicians, using the National Broadcasting Orchestra up till 9.30. After this time song scenes and a lighter type of programme, and the last half-hour will be devoted to a recital of celebrity records. As a set-off against this more classic type of programme, 2BL each Wednesday night will present a mixed revue, and the station dance band will be heard in symphonic numbers. A feature talk will also be included.

On Thursdays the studio dance band will supply lunch time music, also the dinner music from both stations. The night programme from 2FC will feature a play, while from 2BL a pot pourri, covering talks and mixed items, will run till 9 o'clock, and from then till close down time at 10.30, the National Broadcasting Orchestra will supply the finishing items.

On Fridays the full orchestra will appear at the 2FC matinee, while the dance band will provide the dinner music from both stations. The night programme from 2FC will open with an organ recital and mixed concert items until 9 o'clock, when a talk will be interpolated. Then a relay will follow from 3LO Melbourne from 9.15 to 10.15. The evening will conclude with items by a full dance band. On the same night 2BL will feature a ballad programme, accompanied by the National Broadcasting Orchestra, and at about 10 p.m. will give the usual Friday night sporting talk.

The Saturday programme will present a full orchestra from 2BL during the afternoon, and the dinner music will be supplied to both stations by the same combination. At night 2FC will present a popular programme covering revues from the studio and outside performances, and will give dance items from 10.15 until 11.30 p.m. On that night 2BL will also supply a lighter type of programme. A

short revue will run from 8 p.m. to 8.30, when the usual sporting items will be presented until approximately 9.30. At 9.30 the full studio dance band will provide dance music until midnight.

Alternate dance programmes from outside dance bands will be presented in the afternoon programmes from both 2FC and 2BL. The star feature of each week will be the Sunday night presentation, with augmented orchestras, under guest conductors, such as Professor Bernard Heinze, Melbourne, Will Prior, and his State Broadcasting Ensemble, Alfred Hill, of the State Conservatorium, and Howard Carr, with the National Broadcasting Orchestra.

At occasional periods during the weekdays in each month, guest conductors will also be asked to present programmes with an augmented National Broadcasting Orchestra, when the tastes of lovers of the best music will be provided for.

ON Christmas Eve the Harmony Four, a mixed quartette, under the direction of Molyneux Phillips, will appear from 2BL in concerted vocal numbers, duets, and solos. This musical four is composed of well-known broadcasting artists: Mr. Phillips (tenor),

**BERNARD
HEINZE
FOR
SYDNEY**



Professor Bernard Heinze, Director-General of Music for the A.B.C. in Australia, will make a special trip to Sydney early in January, in order to take charge of the programme from 2FC on January 5, when he will act as Guest Conductor of the National Broadcasting Orchestra. He has asked that two vocalists should be engaged, and suggested Wilfrid Thomas (basso), and May Craven (soprano), both of whom are personally known to Professor Heinze as artists of high standing.

Miss Amy Ostinga (contralto), Miss Daisy Mangan (soprano), Mr. Raymond Beatty (basso).

MR. WALTER GEORGE, who is producing the Mirthquaker programme on December 23 from 2FC, will take an active part in the Mirthquakers' fun. Wilfrid Thomas, Alfred Wilmore, tenor, Rowell Bryden and Si Meredith and Maudie Stuart, two comedians, Bertha Beaumont, soubrette, Ivy Davis, soprano, and Dismal Desmond are members of the cast.

After the Mirthquakers have introduced themselves and Rowell Bryden has supplied a preliminary melody, a dramatic episode, "The Sequel," will be given with Walter George, Bertha Beaumont, and Wilfrid Thomas as the husband, wife, and lover respectively. Then Dismal Desmond will be dismal, and Si Meredith and Maudie Stuart will be just the reverse. Bertha Beaumont will sing some snappy songs, and Dismal and Walter George will have a slight argument, and, with the aid of Si Meredith, tell of a wonderful island.

A London incident—on the Thames Embankment, will be played by Wilfrid Thomas and Ivy Davis. Then there is a syncopated opera, which is interrupted by Verdi, who rises to protest against his masterpiece being turned into jazz.

THE Welsh Choral Society has arranged a performance of "The Messiah" from the Sydney Town Hall on Saturday, December 21, which will be broadcast from 2FC, and relayed by Station 3LO, Melbourne.

This performance, which is one of the most outstanding events in Sydney's musical calendar, has been modelled on the lines of the Handel Festivals at the Crystal Palace, London.

Mr. R. J. Hickson, the society's concert director, has got together a festival chorus, and will have a well-balanced and thoroughly trained choir of 700 performers. The principal soloists will be: Miss Helena Stewart, soprano, Miss Virginia Bassetti, contralto, Mr. William Green, tenor, Mr. Reginald Good, basso. Mr. E. H. Jones, the conductor of the Welsh Choral Society, will again act as conductor, with Mr. W. J. Grieves as leader of the orchestra, and Mr. G. Vern Barnett as the organ.

WEEK'S TALKS

DAY SESSIONS.

FRIDAY, DECEMBER 20.

2BL.—9.0: A. C. C. Stevens. 2.30: Half an hour with Silent Friends. 3.45: Claire E. Byrne, "Fun and Games for Wet Holidays (Adults and Children)." 11.0: 2FC.—10.32: Oscar Lind, "Sporting." Miss Furst, "Cooking," 12.0: Frank Downes, "Christmas at Lord Howe Island." 3.0: Dr. Harold Norrie, "Outstanding Personalities in Australian History—John Oxley." 4.0: Redgum, "Gardening."

SATURDAY.

2BL.—9.0: Wilfrid Thomas, a reading. 10.40: G. W. Cooper, "Gardening." 2FC.—10.32: Mr. Ferry, "Racing." 11.0: Miss Furst, "Week-end Suggestions."

SUNDAY.

2BL.—5.10: C. N. Bayertz, "Philosophic Thought, from Bacon to Bergson."

MONDAY.

2BL.—9.0: A. C. C. Stevens. 2.30: Business Efficiency. 3.45: Michael Sawtell, "Books and the Bush." 11.0: 2FC.—10.32: Mr. Ferry, "Racing." Miss Furst, "Cooking;" V. C. Bell, "The Public Forum." 3.0: Museum Talk. 4.0: "Technique of Poetry—Ode and Ballad."

TUESDAY.

2BL.—9.0: A. C. C. Stevens. 2.30: "Half an Hour With Silent Friends." 3.45: Rev. R. B. Lew, "The Spirit of Christmas." 2FC.—10.32: Mr. Ferry, "Racing." 11.0: Miss Furst, "Hints to Housewives." 12.0: Mrs. M. E. Pulsford, "Child Psychology—the Greedy Child; the Aftermath of Christmas." 3.0: Rev. F. H. Roward, "Washington, U.S.A." 4.0: The Storyteller, "From a Window in the suburbs." 3.—The Ghost."

WEDNESDAY.

2BL.—3.45: Goodie Reeve.

THURSDAY.

2FC.—10.32: Mr. Ferry, "Racing."

EVENING SESSIONS.

FRIDAY.

2FC.—9.0: Fred. Arlington-Burke, "Memoirs of the Anzac and Suvla Evacuation." 2BL.—9.30: Claude Corbett, "Sporting."

SUNDAY.

2FC.—6.30: Bishop Radford.

TUESDAY.

2BL.—8. H. Bowden, "The Dickens Trail in London."

WEDNESDAY.

2BL.—Wilfrid Blasket, 7.5

THURSDAY.

2BL.—9.30: Capt. L. Roberts, "The Low Veldt of South Africa."



Under the heading of "New Lamps for Old," Mr. Edward J. Flemming will begin a series of talks over the air, commencing on December 23, from Station 2BL. The more attractive of Mr. Flemming's talks are "Should Men Wear Shorts?" a discourse on the psychology of clothes, "The Blessing Habit," and "The Bachelor Girl's Query."

THE pantomime, "Sinbad, the Sailor," which is being broadcast from 2FC on Christmas Eve, is in two acts. It will be notable for some unusual sound effects. In the scene in the Baghdad bazaar the cries of the water-carriers, the voices of the people, and the ordinary noises of the market will be distinctly audible. The storm and shipwreck will be realistic, and descriptive dialogue will make the scene in the Cave of Jewels and Sinbad's Palace clear before the listener's eye.

Lew James, who is producing the pantomime, will take the chief comedy part of Mrs. Hinbad, Sinbad's mother. Miss Grace Savieri will be Sinbad, Lucy Welsh Fatima, and Dodie Wolfe the Princess Balsora, and Ina Varini the Fairy Queen. The parts of the Old Man of the Sea, Captain Spanker, the Merchant of Baghdad, the King of Balsora will be taken by Charles Ashton, Richard Buller, Walter Cole, and Ed. Lane, respectively.

THE Dream Scene from "The Bells" will be produced by Lynwood Roberts from 2BL on December 27. The plot concerns the murder of the Polish Jew in his sleigh on the Bridge of Vechnern. The murderer becomes rich, and eventually burgomaster of the town. The sleigh bells are always ringing in his ears, and in the play he re-enacts the murder in a courtroom under the influence of a mesmerist.

THE afternoon programme from 2BL on Christmas Day will be occupied by a Christmas novelty, entitled "Christmas Day in the Australian Bush," by Mr. A. C. C. Stevens.

In the evening programme the old will confront the new. On one side is the modern Christmas, represented by May Webster and Paul Daly, who will entertain with a bright selection of songs, among which will be "Didn't I?" and "One Can't be too Careful." The A.B.C. Male Quartet has a programme of songs in a lighter vein than

Walter George

Mr. Walter George, who has been appointed producer for New South Wales

for the Australian Broadcasting Company, gained his early experience at the Savoy Theatre, London, under W. S. Gilbert.

Mr. George, besides playing in all the Gilbert and Sullivan operas, was associated in grand opera with Charles Kenningham and Wallace Brownlow. He was given a royal command by the late King Edward VII., appearing at the opening of the Imperial Institute. He has also appeared with success before the Prince of Wales and the Duke and Duchess of Connaught.

The new style of radio programmes will have "atmosphere" and background, and it will be Mr. George's duty to see that these are properly supplied.



usual. These include "Outside," "Drifting and Dreaming," and "Little Brown Baby." The Newtown Brass Quartet will render instrumental numbers of the same order.

This light modern half will form a contrast to the rest of the programme. The Antique Trio, which plays old-world songs on old-world instruments, consists of Madame Grieg (dulcitone), Veta Wareham (treble viola), and Keith Kennedy (viola da gamba). The favorite air of Louis XIII., a minuet, a song of Old London, and Haydn's Gipsy Rondo and Adagio, are among the numbers; also, as a closing item, Christmas carols.

"The Spectre of Motley Grange" is to be performed. The scene of this radio play, specially written by Codrington Ball, is the banqueting hall of Motley Grange, and the time Christmas Night. Scott Alexander, as the spectre, is sure to adhere to the best traditions of ghost walking.

BBROADCASTING features from 2FC on Boxing Day will include:—Description of the A.J.C. meeting from Randwick; progress results of the cricket match, South Australia v. Queensland, played at Adelaide, and Victoria v. N.S.W., at Melbourne. The evening programme will feature the National Broadcasting Orchestra, the Mirthquakers, the Strollers in a radio play, and the Hotel Australia Dance Band.

From 2BL, sporting descriptions will be given in the afternoon, interspersed with musical items, and at night the Light Orchestra, Alfred Wilmore (tenor), Fred Bluet (comedian), Ahad Duo (instrumentalists), Palmistra (novelty pianist), will help to make the programme from 2BL for Boxing Day merry and bright.

THE Australian Broadcasting Company, by special arrangement with the trustees of the Taronga Park Zoological Trust, has been able to arrange a broadcast from the Zoo. A description of the Zoo will be given, including the beauties of the situation, as well as descriptions of all the animals.

The description will take place on Sunday afternoon, December 22, from 2FC. On Boxing Day, December 26, and New Year's Day, January 1, the Professional Musicians' Band, will be broadcast through 2BL from Taronga Park. The broadcasting fee will be paid by the Musicians' Union on both occasions.

VERY Rough Work on a VERY Hot Night

A Review of "Macbeth"

WE listened in for a while (until well after the famous and notorious and rather wicked murder) to the A.B.C.'s production of Macbeth, by William Shakespeare, produced by Mr. Jackson, with musical accompaniment written by Locke, and conducted by Madame Grieg, on Wednesday night, December 11, from 2FC; and it was very hot—the night we mean. 'Twas a hot night.

But 'twas not a VERY hot night, Mr. Jackson—not by a long chalk. We must show discretion in the use of qualifying words, especially when the length of Mr. Shakespeare's five elastic, but restricted, feet limits the line.

After Macbeth had murdered Sleep and King Duncan, as we so well remember, there is a knocking on the door, and, after some grim drunken foolery from the porter, Lennox and MacDuff come in, to whom enter Macbeth in his nightshirt. They greet him in the well-known cheerio manner:

"Is the king stirring, worthy thane?"

And Macbeth, possibly a little unnerved after the night's murder, answers shortly, and gruffly:

"Not yet."

And so they talk to him in a cheerful way for several lines, Macbeth answering always with a few short, gruff words; and, finally, Lennox makes a long speech about the night:

"The night has been unruly: where we lay
Our chimneys were blown down, and, as they say,
Lamentings heard i' the air, strange screams of
death,

And prophesying with accents terrible

Of dire combustion and confused events

New hatch'd to the woful time: the obscure bird

Clamour'd the living night: some say, the earth

Was feverous and did shake.

To which long effusion, Macbeth replies in these amazing, these astonishing, these thrilling four words:

"'Twas a rough night."

Whatever power Shakespeare has of shocking an audience into understanding of his character's feelings; whatever power he has for expressing feelings which transcend the limits of simple description, is concentrated in these long, cheerful effusions, and the short, gruff, snapped replies.

But whoever took the part of Macbeth:

ved with whoever took the parts of MacDuff and Lennox for cheeriness and good-fellowship. The Christmas Spirit was upon him. "Good-morrow, both," sounded like a dignified "Cheerio, chaps!" The short sentences became positively cheerful, as though Macbeth were saying: "Come in; come in; I've just killed your king and your greatest friend; but what's a little murder between friends? I'll lead you to him." And to conclude, this new reading of the Bard, we heard, instead of "'Twas a rough night," "'Twas a VERY rough night."

That is characteristic of the company's treatment of Mr. William Shakespeare, which we consider not quite charitable. The music by the celebrated Mr. Locke was played on a trio of old instruments we can't spell; it was very charming, placid, tinkly-tinkly music, and about as suitable as an accompaniment to a bloody tragedy like Macbeth as a barrel-organ playing Beethoven.

We say these things out of kindness for Mr. Shakespeare; because, while we know it must be very difficult to produce his plays in any manner over the air, we must make it quite plain that it was only the edge of the shadow of Macbeth we listened-in to on Wednesday night.

Erecting the GLIDER

Last week the design of the Glider was published. Below the assembly of the parts and the arrangement of controls are discussed.

By J. BALL

IN my opinion it is a better plan to construct the wings, ailerons, tail planes, rudder, and control fittings of the glider first. Cut and fit all parts for fuselage and skid, and have all other materials on hand before attempting to erect the glider.

Lay out the fuselage according to dimensions, taking care in the drilling of all holes and the cutting of angles. Fit all joints accurately, and glue together with necessary blocking and stiffeners. Cover runner, tail-fin surface, and pylon at joints with plywood, as detailed, and glue together. Apply and bolt on all fittings, such as wing brace clamps, main wing dismantling fittings, metal launching hook, and other braces.

Now, prepare to assemble the wing. See that metal spar fittings are correctly fitted to spars. Join up and bolt to matched fitting on top fuselage bar, and wire up with No. 32 piano wire guys, properly fitted with turn-buckles, near the longeron fittings and pylon. See that all loops are safely secured with loose end doubled back.

Assemble both wings, fit ailerons, and connect up control cables to control shaft. Do not tighten until glider is completely assembled.

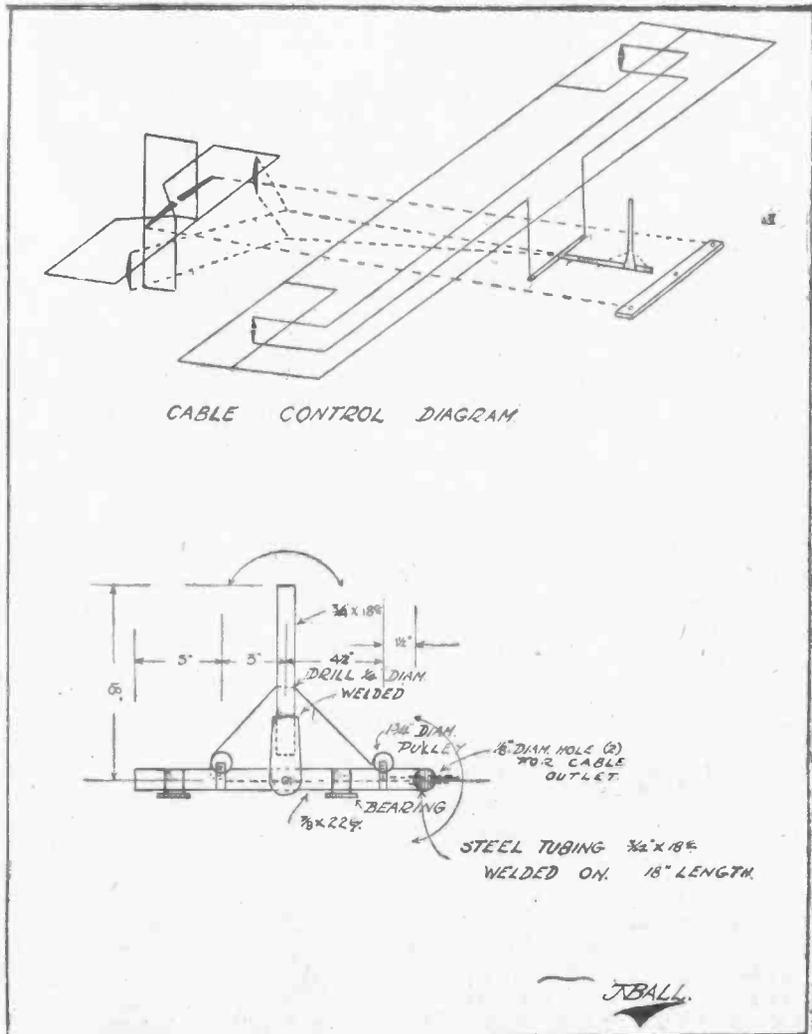
Next assemble tail surfaces, using U bolts that come up through the tail plane units from under top longeron. Fit in cross buckle piece and adjust guy wires. Next fit elevators with regular hinges and pins, and hook up control wires. Check everything as you proceed, so that nothing has to be taken down later on. You are now ready to fit in rudder with hinges and pins. All pins in this glider are to be of carbon steel and of proper length, and secured with aircraft safety pins or cotter pins.

Now hook up rudder controls to control column (joystick), and check up measurements.

See that all units are properly and securely connected. Tighten guy wires, stays, and braces, so that wings and stabiliser will be straight, level, and at right angles to fuselage. Adjust control wires so that when they are in neutral the ailerons conform to the wing shape and the elevator centre line conforms with the stabiliser centre line.

Check leading edges to see that they are in line, and also that they are at right angles with the centre line of the fuselage.

In putting in control cables, which are of 3-32in. wire cable, excessive tautness is not desirable, as this only puts unnecessary strain on the pins, horns, eye-ends, cable



joints, cables, pulleys, and other fittings. It also causes excessive resistance to movements, and will possibly cause some portion to fracture or bend.

Controls must be absolutely sensitive, and the slightest movement of the control lever should correspondingly be transmitted to the ailerons, rudder, and elevators. To produce this simultaneous movement there must be perfect and equal tension in the left and right hand cables, without excessive tautness, otherwise the machine will be hard to control and fatiguing to the pilot.

All controls should respond to any applied force with smoothness and ease of movement right up to the extreme limits of movement possible, and any tightness or stiffness at any part of the movement should be carefully traced from the joystick, along the cables to the ailerons, elevators, or rudder.

THE CONTROL SYSTEM

THE control system of the glider described here is the same as in all modern aeroplanes.

The control system, or joystick, as it is commonly known, described here is simple and easy to make if the drawings are followed carefully.

First carry the rudder controls from the drilled holes in the ash rudder, 3-32in. cable should be used, and adjusting turn-buckles fitted near the rudder control horns. Adjust for tautness and movement before fastening turn-buckles.

Next take over the aileron controls from the control bracket at the rear of the control column, under the seat. Fix each cable to its mate that comes down from the interior of the wing. Make sure that the two ailerons are connected from the horns by the balance wire before tightening up controls with turn-buckles.

Much care and testing should be used in affixing the aileron wires before a flight is attempted. As the stick is moved over to the right the right aileron should go UP and the left DOWN. The reverse movement should be noted when the stick is carried over to the left. Then the right aileron should go DOWN and the left UP.

The elevator controls are brought back from the elevator horns and carried to a single cable about a foot ahead of the fixed stabiliser. This goes for both upper and lower elevator horns. Then the upper wire or cable is carried to pulley sheave on upper longeron near wing, and then down to double pulley behind seat. From here it is carried over control bracket to base of control stick and fastened. Then second wire or cable is carried from base of stick over forward pulley and under through tubing and out to double pulley, from where it is carried out to joint of double lower cables and fastened. To adjust, tie joystick in neutral position and set cables until elevators are dead in line with fixed stabiliser or tail plane. Do same with aileron and rudder cables, and glider is then ready to fly.

Wireless Weekly

Incorporating "Radio in Australia and New Zealand."

FRIDAY, DECEMBER 20, 1929.

SWEEPING DEVELOPMENTS IN RECEIVER DESIGN

THE very definite trends in the development of the American radio receivers are indicated from the receivers on display at the recent New York Radio World's Fair. Screen-grid valves for the radio frequency amplifier; high-powered output valves in the audio amplifier; and the moving-coil speaker.

As might be expected, these trends have not trickled into the radio industry in a half-hearted manner—they have been introduced with a grand sweep. Though the moving-coil speaker was hardly used at all a couple of years ago it is now standard equipment in approximately 93 per cent. of present-day American radio receivers. And this does not mean that the remaining 7 per cent. use the magnetic speaker, either. The new condenser speaker and other radical types are already being incorporated in some of the high-grade sets. The screen-grid valve has been developed rather slowly in America, but even so, more than 50 per cent. of the receivers on exhibition in New York made use of them either as radio or audio amplifiers, or both.

The one great sweeping victory has been for the high-powered output valve or valves. Whereas a very great many Australian receivers still use an output stage with a rating of about .3 watts or less, no less than 98 per cent. of the modern sets shown in New York had output valves with an undistorted rating of at least 1.5 watts. And what do you know about this! Just 88 per cent. of them made use of push-pull amplification in the final audio stage.

Notwithstanding the greater amplification that the screen-grid valves can provide, the number of valves used has not shown any definite decrease. Instead of the three and four valve set with which most Australians expect the "last word" in results, we find seven, eight, and nine valve receivers predominating, even though three or four of these valves are of the screen-grid type. Out of 133 sets classified 13 of them had six valves, 65 had seven valves, 35 had eight valves, and 20 had nine or more valves. The "seven tube" set still maintains its popularity, not particularly as a "distance-getter," but merely as the average type of household music-box.

MUSICAL INSTRUMENTS COMPETITION

IN conjunction with the A.B.C., we have arranged a competition so that listeners-in may test their knowledge of the sounds made by different musical instruments, and also the reproductive qualities of their receivers. From 2BL at 8.40 on Friday evening, December 20, listeners will be introduced to the sounds made by 30 different kinds of musical instrument. First, the number of the instrument will be given; then the instrument will be played, and listeners are invited to write down the name of the instrument against the number. Elsewhere we print illustrations of each instrument, with the exception of the bagpipes and a tin whistle, which will be played during the evening. All you have to do is, take a sheet of paper and mark down the margin the figures 1 to 30. Then as each instrument is played, write down the name of the instrument which, in your opinion, made the sound; and be sure to write it down against the number given for that instrument. For example:—

1. Tin whistle.
2. Accordeon.
3. Trumpet.

and so on. When you have your thirty instruments listed, send the list with your name and address to "Wireless Weekly," Box 3566 PP, making sure to mark your envelope, "INSTRUMENT COMPETITION."

The prizes for the winners of this competition will be: First prize, £2; and two (2) consolation prizes of 10/.

The names of all correct answers (if there are more than one) will be placed in a hat and the first name to be drawn will receive the first prize. The second and third will receive the two consolation prizes. If there are no correct answers, the prizes will be awarded to those which are nearest correct.

No entries will be received after midday, December 31. The decision of the Editor, in conjunction with the management of the Australian Broadcasting Co., Limited, is final.

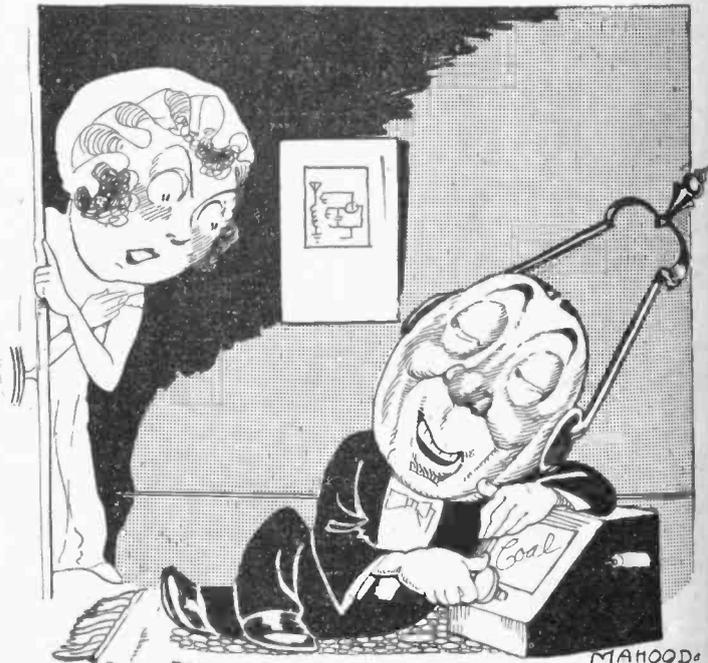
Study the illustrations printed carefully. Even if the sound is like nothing on earth, it must come from one of these 30 instruments.

Illustrations of the instruments which will be used in this novel competition, arranged by "Wireless Weekly" in conjunction with the Australian Broadcasting Company, will be found on page 3, and the coupon on page 23.

B.G.E. TELEPHOTOS

AS the result of a contract recently successfully completed by the B.G.E. Co., photographs, drawings, cheques, advertisements, etc., are being transmitted daily between Sydney and Melbourne for business and private purposes, with (to quote from the official announcement) "photographic accuracy and telegraphic speed. It is proposed to extend the system to other capitals connected by carrier telephony when and as the business warrants.

Static Imminent



"Wilfred, whatever are you doing?"

"Just tunin' in, m'dear. Wunnerful long distance reception to-night."

No Justification for Delay in Relay Plans

Dear Sir.—The leading article, "Old Promises" (W.W., 6/12/29), will be endorsed, no doubt, by 100 per cent. of licence holders, particularly in country districts. Evidently the authorities have no real desire to make broadcasting a success, or even to hold its existing position. There can be no possible justification for the delay in carrying out transmitting and relay improvements. Had broadcasting been in the hands of private business this necessary extension would, beyond doubt, have long been in existence.

In my opinion, so far, nothing has been done about the improved service promised. I doubt whether new company programmes are of more interest than those of the older companies, and personally I do not expect very much now real competition has been removed. In any case, good or bad, I should say 80 per cent. of programmes are ruined so far as country is concerned by static and other weather interference, and in the larger Australian States there will never be any rapid growth of licences until the remedy proposed is carried out, but many licences will be lost beyond doubt. I think we are well justified in demanding these improvements be carried out with all possible speed; the money is being collected for this purpose, and it is the plain duty of the authorities to deliver the goods.

I do not think you should take John Bull seriously, and in reference to outbacker I have often wondered why his short-wave proposal has not been properly tried out.—Yours, etc.
FOR A FAIR DEAL.
Young (December 9, 1929).

Wool Reports

Dear Sir.—Regarding the remarks made by D. Gard ("W.W.," 29/11/29). From what he says it is to be understood that he is one of those irresponsible fellows, who like the geometrical point, has position but no magnitude. As he is probably not broadminded enough to grasp the import of the market reports to country folk we will have to excuse him when he refers to them as "bunk."

As the wool reports are often omitted by the A.B.C., the man on the land has to wait for his weekly mail. If our friend was capable of understanding that the wool industry is the backbone of Australia, and that the prices, which have been falling for the last few years, are responsible for a large percentage of the unemployed to-day, he would alter his opinion in favor of the many thousands who eagerly await an improvement in the broadcasting of that, which is one of the foremost interests of every grazer in Australia.—Yours, etc.,

"USE MORE WOOL."

Rowena (December 2, 1929).

Morse or.....?

Dear Sir.—Would the person who has a mania for broadcasting by scraping the terminals of his battery please cease, as it is very annoying, especially as it occurs incessantly from 7 to 10 p.m.; sometimes for half an hour without stopping. No matter what station is tuned in the noise persistently interferes. I have received word from friends of mine stating that they hear the noise also. I call it noise because the culprit has no idea of the Morse code. He appears to live somewhere around Bruce Street, between Perry and Leman streets, and if an Inspector happens to see this, would he kindly investigate?—Yours, etc.,
TROUBLED.

Newcastle (December 1, 1929).

The Safety Valve

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

Radio Talk

Dear Sir.—A suggestion for improving programmes. There is, I think, now no talk on radio from the "A" class stations. Those in the past were impractical, and by the wrong man. If a man like Mr. Ross Hull were to give a talk once or twice a week on general lines on recent radio progress and modern practice in construction I think that half the set owners in the State would be interested. If the time chosen for such a talk was suitable and no questions were answered over the air it would be a valuable addition to the programmes.—Yours, etc.,

PENTODE.

Willoughby (December 1, 1929).

Bound For.....?

Dear Sir.—"John Bull" was candid; very. So shall I be. "John Bull" can go straight to —. I mean he can seek a warmer climate. What has he to grumble about? I'll bet he gets his 3d worth. I will admit that pages 3 and 4 (W.W.) 22/11/29 are not much, but as to pages 5-13-21, even if they don't interest "John Bull," they certainly do interest other readers. My own opinion is that "John Bull" wrote that letter (which I call insulting) just to stir up a hornets' nest. I'll wager he did that, too. Please publish this, as I want "John Bull" to write again. When he does, consign his letter to W.P.B. Don't publish any more letters of that sort, please.—Yours, etc.,

Singleton.

KEITH RUDKIN.

4 Critical Effort

Dear Sir.—

From 2BL and 2FC

The programmes for to-night

Are just the same as usual—

We hope you think it's right.

We hear some sounds come o'er the air

As dismal as a crow;

Like the noise a Soul would make

From regions down below!

And on it goes till 10 o'clock—

You give a silent curse;

For, instead of getting brighter,

The noise is getting worse.

The other night, I must confess,

I listened in with glee;

For coming in quite clearly

Was a new sound to me.

I called some friends to listen in,

For it was rather good;

It didn't sound like someone

Sawing lumps of wood!

But I got a rude awakening

When at last I knew

It was the rain and static

We were listening to.

—Yours, etc.,

Moss Vale.

A. CHARD.

"Super-six" Replies

Dear Sir.—Taking up "Reinartz" I am glad to see he states that probably 999 people out of 1000 would in all probability be bored, etc.

Now, Mr. Editor, please don't forget to insert those words, "probably" and "probability;" otherwise you will spoil any effect that was supposed to be contained in his letter to you.

Also, Mr. Reinartz, I can assure you that I am fully cognisant of the existence of other stations, and my special thanks are hereby extended to 2YA, 3DB, 3EX, 3LO, 3AR, 2UE, 2GB, 2KY, 4QG, and a few amateur stations, including 2CS (Waratah), for the undoubted excellence of their programmes in general, and I hope and pray that very soon the annual licence fee will be, at least, doubled to enable some assistance and recompense to be given to these stations. But there is no logic in the veiled suggestion of "Reinartz that I should listen-in to these stations and stop criticising 2BL and 2FC.

These are the only two stations (N.S.W.) who receive a percentage of the licence fees, and, therefore, are the only two stations I am entitled to criticise, and I believe they both merit and deserved the criticism of everyone in many ways.

If, as "Reinartz" says, my opening letter contains to him no logical criticism, I now ask him, and everyone else who may be reading these letters: Who wants to listen to the monotony of the instrumental trios and the unsavory quartettes, and who will say they have not often heard the gramophones of 2BL and 2FC fade away for the want of winding up? Come on, all of you, and incidentally you might mention what you think of the alternate programmes, as I suggested, if only as a means of doing something to liven up the broadcasting people. My dear readers, if you take these things lying down you can expect nothing better.—Yours, etc.,

"SUPER-SIX."

Hamilton (December 9, 1929).

Electrical Interference

Dear Sir.—Writer was the first to install a wireless set in this district, and agrees with "Q.R.M." and "O.W.M." regarding electrical interference. My licence is now due, but is not being renewed owing to interference from an automatic lighting plant next door. Another of the same class has been installed at the local tin crushing plant, and when required will add to the noise from the first mentioned. Have tried everything possible; even your interference eliminator and counterpoise earth with very little improvement. At times our local picture dynamo sends out a few fat sparks, but the operator, when told, quickly attends to it. Not so with the lighting plants, for the owners know very little about them. Condensers across the brushes was suggested by me when the last one was installed, but the electrician said it was not the practice to do so. They should be compelled to cut out the interference, as suggested by "Q.R.M." and "O.W.M." If their lighting was interfered by excess reaction I'd let them have it for a night or two; then along would come the remedy for the interference caused.—Yours, etc.,

T. NEWTON.

Herberton (November 21, 1929).

SANTA CLAUS HIMSELF COULD NOT THINK OF GIFTS BETTER THAN THESE

A Present That Gives Better Results at Less Cost.
THE NEW "B" BATTERY ELIMINATOR
Complete (in Art Metal Cabinet),
£3/13/-
OR
In Home Assembly Kit, with Instructions,
£3/3/-
Better Than "B" Batteries.
Costs Only a Few Pence Per Year to Run.

The Gift Set for 1930.
THE SUPER RENOWN 4.
50 Per Cent. Improvement Over Previous
Model Assured.
Build It!—Or Convert Your Present Set—We'll
Show You How—You'll be Delighted With the
Wonderful Improvement.
GET PARTICULARS NOW!

THE NEW GIFT FOR XMAS—For 1930—For Years to Come

THE
**SILVER
BELL**

ALL ELECTRIC RECEIVER.

Requires No Aerial

And is Unconditionally
Guaranteed.



Designed on the
**FAMOUS RENOWN
PRINCIPLE**

Will Positively Give You Better
Entertainment than most sets
Selling for Many Pounds More.

£18'2'6

COMPLETE,
WITH PHILIP'S VALVES.

Suitable Speakers from 37/6.

SOME USEFUL GIFT COMPONENTS

UX 280 Type Rectifying Tubes	17/6	UX 199 Type Valves	4/10
AWA Push Pull Transformers	25/-	UX Valve Sockets	1/3
Famous Cannonball Head Phones	12/6	Telefunken 3 Valve Sets with Valves . .	£5/12'6
Electron Aerial Wire 100 ft.	2/-	Amplion Loud Speakers from	37/6
Climax 45 volt B Batteries	12/-	Magnavox X core Speaker Units from	£5/15/-

**WE THANK ALL OUR CUSTOMERS FOR THEIR GENEROUS SUPPORT,
AND WISH ONE AND ALL A MERRY XMAS AND PROSPERITY IN 1930**

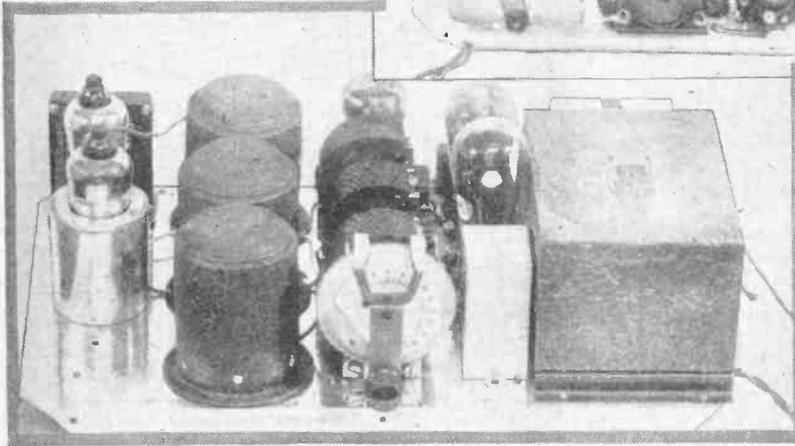
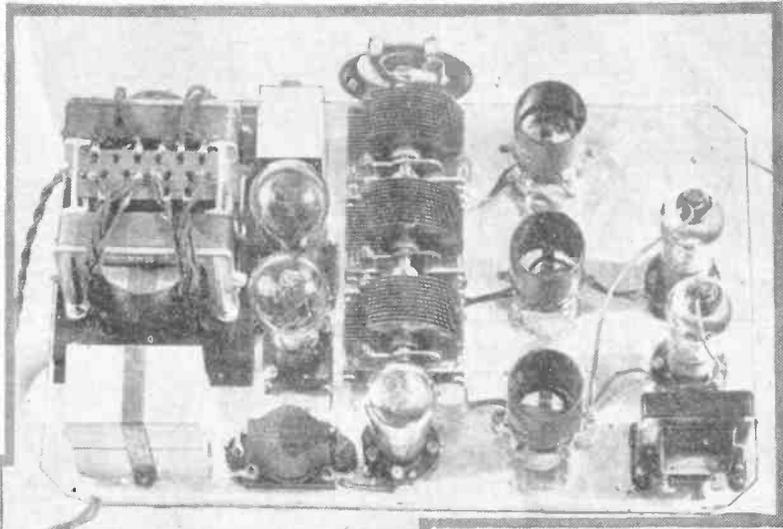
Economic Radio Stores
25 ROYAL ARCADE, SYDNEY

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

Please mail more details re your
advt., 20/12/29.

NAME
ADDRESS

Constructing the Pre- Selector 4



This article gives the constructional details for the Pre-Selector Four, which employs the unusual method of reception outlined last week.

By ROSS A. HULL

THE purpose of the pre-selector principle in providing improved musical reproduction, in permitting greater selectivity, and in allowing a higher gain in the radio frequency amplifier was discussed in last week's issue. A complete explanation of the circuit and of the operation of all its components also was given. Having cleared away all that under-brush we may now move along to the description of the construction of the set and its operation.

In the assembly of the receiver the same type of construction has been used as in the case of the "1930 Super-Het." The base is of metal, folded down at the edges so as to provide a cavity underneath in which all by-pass condensers, resistors, and most of the wiring are located. This arrangement gives much more room on the upper surface of the base, permits the by-pass condensers to be located immediately under the start of the lead which they are to by-pass and also allows the top of the base to be relatively free from wiring. The improvement in the operation and appearance of the receiver and the simplification of the constructional work make us convinced that we, personally, would never go back to the old wooden base with the whole works and all the tangle of wires on top.

Almost every item in the set is attached to this metal base by 1/4 in. brass machine screws 1/2 in. long. A great many of these screws are necessary, and it is not a bad plan to buy a gross of them at the start. Small hexagonal nuts are, of course, also necessary.

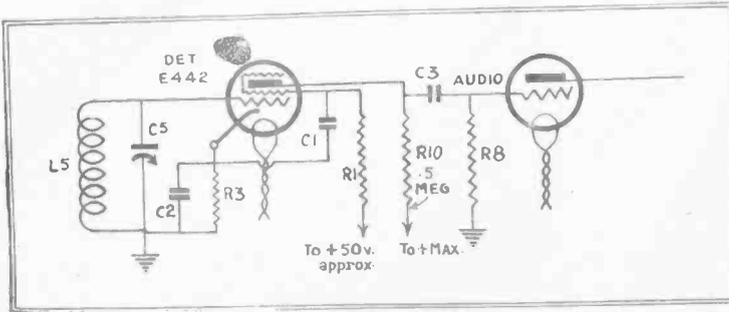
The base of our receiver and the box in which it was enclosed consisted of a standard Radiokes container for the AC 3-32, the only difference being that we had the base-plate specially made of aluminium instead of steel to facilitate the drilling of holes, and the making of many "ground" connections to it. This base and cabinet just provide a comfortable amount of room for the entire apparatus, and make for a modern job of pleasing appearance.

As in any receiver, the success of this set is dependent greatly upon the coil units. They are particularly important in this instance, since tuning is to be done with a condenser gang. If the effective inductance of the three coils, L2, L3, and L5, is not precisely the same, the condensers will not "track" accurately, and the whole purpose of the somewhat complicated tuning system will be defeated.

We understand that a Radiokes kit of coils for this receiver is to be placed on the market, but in case the builder of the set may wish to construct his own coils we provide the details of them. L2, L3, and L5 comprise the coils of the tuned circuits. They are not all similar, however. L5 is the standard sort of secondary. It consists of 80 turns of 26-gauge d.s.e. wire wound on a 2 in. diameter bakelite former. L2 is a similar sort of coil, but it has only 75 turns, the remaining 5 turns which are included in its circuit being wound at the ground end and over the top of the turns of L3. This coil, L3, down to the point where the condenser taps on, is exactly similar to L5. In building the coils, it is a good plan first to wind three coils

each of 80 turns, making quite certain that exactly that number of turns is provided on each of them. At this stage, 5 turns from L2 are removed, and the wire which constituted these turns is then wound over L3 at its ground end, and in the same direction. These turns provide the coupling between the two tuned circuits of the pre-selector, and have been found to give just the value of coupling required. It is quite possible that this coupling would not be correct in cases where some different type of shielding was used or when the capacity between the stators of the first two sections of the condenser gang differed from that of the original model.

The aerial coil, L1, consists of 25 turns of 30-gauge wire wound in a hank or bunch 1 1/2 in. in diameter, and secured with a couple of small wooden wedges inside the bottom end of L2 (the end that connects with L3). L4, the primary of the r.f. transformer, consists of 60 turns of 30-gauge wire, wound in a hank 1 in. in diameter, and similarly attached inside the ground end of L5. L4 and L5 are wound in the same direction, and the start of L4 goes to the "B" positive, the end going to the plate of the r.f. valve. The actual coils used by us were built up from an old Radiokes Neutrodyne kit, the coils of which have three metal brackets which serve to support them from the base. The connections from the coils were all run along the top of the base (slots being cut in the sides of the shields to accommodate them), with the exception of the plate lead to the r.f. valve—which came out through a hole



Showing an alternative method of coupling the detector to the first audio valve. In this arrangement the transformer secondary used as a choke is replaced with a .5 megohm resistor. This simplifies the construction and reduces the cost, but makes the operation of a pick-up rather awkward. It is possible, however, to arrange for the pick-up to be plugged in series with the grid circuit of the detector, a 2000 ohm resistor being shunted across R3 to give the E442 a suitable bias for operation as an amplifier.

Near the top of the shield—and the “B” positive lead—which ran down through a hole in the base-plate. Radiokes coil shields were used to enclose the coils.

When the coils have been completed and the remaining apparatus obtained, the layout can be started. A clear idea of this can be gained from the lay-out sketch and the photographs. Located centrally on the base is the Stromberg-Carlson three-gang condenser. This is secured to the base with machine screws. Alongside this gang the three coils are disposed, the three shielding cans just fitting in the depth of the base if a fraction of an inch of their edges is cut off. To the left of these shields are the sockets for the r.f. valve and the detector and the audio transformer which is used as a choke in the plate circuit of the detector.

The primary of this transformer is arranged to face the rear of the base where the terminals are readily available for the pick-up connection. Immediately behind the rear end of the condenser gang is the first audio valve, alongside it being the audio transformer T2. In front of this transformer is the output valve which it feeds while in front of that valve is the rectifier valve of the power supply. The high voltage transformer and choke unit as supplied by Southern Radio sits on the right front corner of the base. Behind it are the two 4 mfd. filter condensers connected one on each side of the choke, and beside it is the single 4 mfd. condenser which by-passes the plate supply of the detector.

When the components have been shuffled around on the base until the desired layout has been obtained, holes may be drilled for the mounting screws, and all of the apparatus secured in position. At this time the base is turned over and the by-pass condensers arranged in the proper manner. One of the condensers, C1, should first be mounted immediately under the spot where the cathode lead from the first valve will drop through the base. Another should be fitted immediately under the “P” terminal of the same valve (which serves for the connection to the screen). A third .5 mfd. condenser should then be attached where the “B” positive lead drops through from L4. Two more of these condensers are fitted below the cathode and screen-grid terminals of the second valve base. At this time the coupling condenser, C3, and the by-pass condenser across the bias resistor of the first audio valve may be mounted immediately under the socket of that valve. The condenser across the bias resistor of the last valve may also be fitted in a similar manner.

Resistors are the next problem. In each

case the resistor is mounted as close as possible to the condenser which by-passes it. This may either be supported from the base with machine screws or else soldered with a solid joint to one of the lugs of the condenser associated with them. The resistors, R1, do not carry any appreciable current, and can be of the gridleak type. The others, however, should be of the wire-wound variety. An addition to the circuit shown last week might well be mentioned here. It is shown in the three-valve circuit on these pages, but applies also to the four-valve set. It is a centre-tapped resistor similar to R6 connected across the filament terminals of the detector valve. The centre-tap of this resistor is connected to ground. The purpose of the resistor is to reduce line hum, which will be very noticeable if the 4-volt filament supply is not grounded in this manner.

The voltage divider resistors, R7, are mounted approximately in the position shown in the photograph of the underside of the base. In this position, the leads from the filter condenser, C4 (alongside the condenser gang), are immediately above.

Now, the midget trimmer condenser, C6, may be mounted alongside the tuning dial on the left side. It is not shown in the illustrations, since it, together with the volume control resistor, R9, were attached to the panel and were removed when the chassis was taken out of the cabinet. This vernier

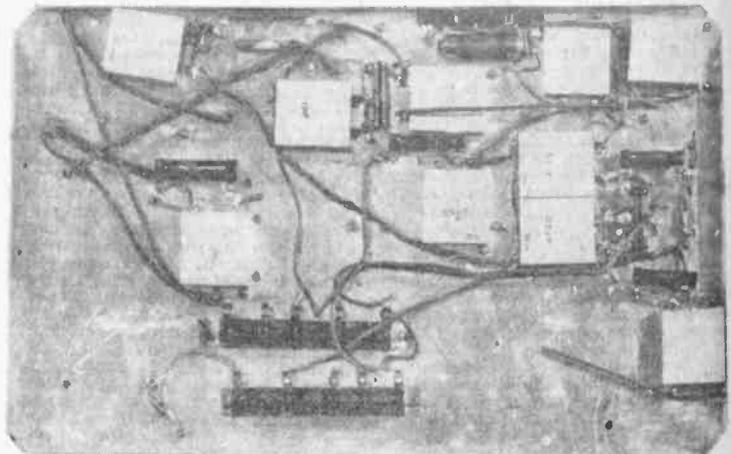
condenser and the volume control could be mounted on the base if necessary and permanent leads could then be provided instead of the flexible leads used by us. The volume control, of course, sits on the right side of the tuning dial.

When all the apparatus has been mounted, it is a good plan to fit all terminals with tinned soldering lugs, and to tin all lugs which already exist—such as those on the resistors and the condenser gang. At this stage wiring may be started. Grid leaks between the coils, valve bases, and tuning condensers might well come first, followed by the wiring between the coupling choke, T1, and the grid circuit of the first audio valve. These are the wires which must be kept clear of all other wires. The filament supply wires, for which twisted flex is used, may now be fitted. The heavy 5 ampere flex should be used and all joints soldered carefully. At the same time, the filament leads for the rectifier valve may be connected. Following this, the remaining wires may be soldered in position, the whole idea being to keep the wires as short as possible without running them near the twisted pair which carries the filament current. The result may be somewhat of a mess, as our job is, but the builder may rest assured that he is producing a more effective arrangement than any possible one in which wires are all carried above a wooden base. Our personal opinion is that wires should never be twisted around terminals unless that practice can obviously be avoided. The use of soldering lugs under all terminals and the careful soldering of all joints permit a far better set to be built in much less time.

Upon the completion of the wiring it should be checked over, preferably by some other person. This checking of wiring cannot be stressed too much. It is the easiest thing in the world for even an experienced set-builder to get a wire or two connected wrongly, and often the faults are passed over time and time again during the checking before they are eventually noticed.

The provision of terminal or a jack for the speaker can be carried out in any manner which happens to suit the builder, as can the mounting of the aerial and ground terminals, and the provision of the flexible power supply lead. In our own set, we merely brought the leads out through holes in the back of the cabinet, and made the connections directly to them.

Before the set is placed in the cabinet, but with the trimmer condenser and the volume control connected up, the preliminary testing may be carried out. A suitable aerial for



A sub-panel view of the wiring.

the set would be about 100 feet of wire, including the lead-in, strung at a height of about 20 to 30 feet. At the same time, the set will give full-blooded reception of the local stations with about 10 feet of wire inside the room. Since the receiver is not supposed to be a distance-getter, and since even the nearer stations in other States will be received so poorly during the summer it is probable that the average enthusiast will prefer to use the small indoor wire.

When a station is first picked up, the individual rotors of the condenser gang should be loosed slightly, and the station tuned in to maximum strength by moving one of them at a time. If the coils have been correctly made, and if they really match, the condensers should be at the same setting with the possible exception of the condenser tuning L2. The latter condenser should be so set that a peak is obtained on the trimmer. Providing everything is in order the tuning should be exceedingly clean. The local stations should not spread away across ten or twenty degrees on each side of the setting for maximum volume as they do in the average set with one ordinary r.f. stage, though it is difficult to say just how many degrees they should occupy, since this is a matter which will be influenced by the location of the receiver and the size of the aerial.

The musical reproduction should be quite impressive as compared to most sets. The existence of more high frequencies than usual with an r.f. receiver will be evidenced by a crispness and brilliance in reception from the better stations. If the set is hitched on to a big aerial and distance reception is attempted, the results may be considered disappointing in comparison with older types of sets with the same number of valves. The chief reason for this is that no reaction is provided. It is, therefore, not possible for the operator of the set to hold the detector on the verge of oscillation and drag in the horribly distorted mush that many enthusiasts consider to be worth-while reception from distant stations. The use of reaction in any receiver constitutes one of the most effective means of killing musical quality. We fail to understand why people are proud of their ability to bring in stations from other States, when they have to use so much reaction to do it that the result is an utter mess. We rather think that enthusiasts should be proud to be able to say that their four-valve set, or even their

LIST OF PARTS USED IN PRE-SELECTOR FOUR

- Two E-442 Philips Valves.
- One UY-227 Radiotron Valve.
- One UX-245 Radiotron Valve.
- One UX-280 Radiotron Valve.
- L. to L5, Three Unit coil kit, with three Radiokes Coil Shields.
- C5, Three-Gang Stromberg-Carlson variable condenser.
- C6, Five-plate Radiokes Midget variable condenser.
- T1, One Ferranti AF3 audio transformer.
- R10, 5 megohm Carborundum resistor, if resistance coupling used to 1st audio.
- T2, One Philips audio transformer.
- C1, Four 5 mfd. fixed condensers.
- C2, Five 1 mfd. fixed condensers.
- C3, One 1 mfd. fixed condenser.
- C4, Three 4 mfd. fixed condensers.
- All "Chanex" 1000-volt rating.
- R1, Three 10,000 ohm resistors, No. 953.
- R2, One 900 ohm, No. 959.
- R4, One 2250 ohm, No. 951.
- R5, One 1200 ohm, No. 956.
- R7, Two Power pack resistors, No. 953
- R6, Two centre-tapped 50 ohm, No. 356
- R9, One Volumgrad 50,000 ohm resistor, No. 940. All of these are "Pilot"
- R3, One Ferranti 40,000 ohm resistor.
- One Southern Radio Power Pack Unit—comprising transformer with 350 volts, each side of centre-tap, and filament windings for 5 volts, 4 volts and 2.5 volts. Also including filter choke.
- Three UY sockets.
- Two UX sockets.
- Folded Aluminium Base 12in. x 19½in. with space at least 1in. deep underneath.
- Note.—The Standard Radiokes AC 3-32 Cabinet, but with aluminium base, is suitable.

five-valve set, will not get distance, providing their failure is the result of not using reaction. To anyone who has any sane views on radio reception, it could not fail to show that the enthusiast in question had overcome that futile interest in making gurgling noises with distant signals and had progressed to the point where he demanded high quality reproduction from his receiver or nothing at all. Of course, reaction could be added to this receiver quite easily, and it would then qualify as a "distance-getter" in the sense that the term is at present used.

As we mentioned last week, the pick-up is connected to the primary of the transformer, T1. It should not be left connected when the radio set is in operation, since the performance of the amplifier will be hampered if this is done. A convenient method would be to connect the terminals of the primary to the contacts of a telephone jack, into which the pick-up could be plugged.

If the operation of a pick-up is not particularly desired, the transformer, T1, may be eliminated and replaced by a coupling resistor of 5 megohms. The arrangement of this resistor is shown in the small circuit diagram. Since there will be a considerable voltage drop across this resistor, the plate lead from the detector may be taken to the output lead of the filter, where it will get the maximum plate voltage. In

all other respects the receiver would be similar.

With this arrangement, the pick-up could still be used by connecting it in the grid circuit of the detector. Experiment with the scheme, however, has not been crowned with much success.

The building of the receiver in the form of a three-valve set is to be discussed next week.

SHORT WAVE 'PHONE NOTES

(By "ELECTRO.")

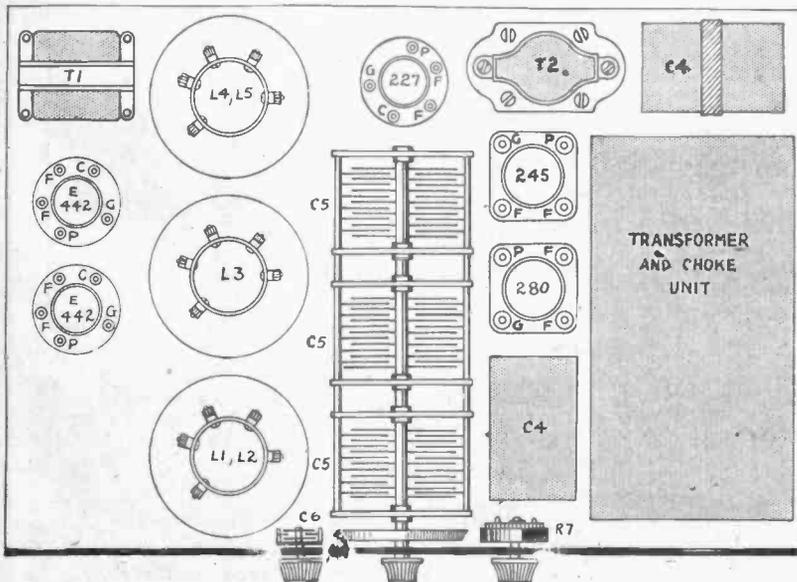
YOUR correspondent, Mr. R. N. Shaw, in recent issues reports that the American stations like KGO are becoming increasingly difficult to pick up on Sunday afternoons. This would appear to be a matter of location. Thus, on both November 10 and November 17, excellent and steady loud speaker volume was obtained here in northern Victoria, though Mr. Shaw did not receive them.

I made no notes on the first date, but on November 17 I have this record:—2 p.m., no sign; 3 p.m., strong carrier; 3.40 p.m., loud speaker. From 4 p.m. there was a 20 minutes' resume of West Coast football matches played that afternoon (Saturday in U.S.A.). Scores, incidents of play, etc., all easy to follow. Reception still good at 5 p.m., but by 6 p.m. they had faded out, not even the carrier being heard. This is in contrast to general experience, as towards darkness reception should be stronger. However, such has been the case for a few weeks lately. On last Sunday I was away from home, so cannot report.

Regarding other stations, RA97 is easily the strongest, but is interfered with badly by static and electric mush; both static and local QRM being serious above 50 metres. Amateur 'phone also at times interferes, particularly a Melbourne one on about 72 metres. Best reception at night time is from KZRM on 24.5 metres, though 40 metres is also good. Recent tests from W2XAF on 31.4 metres have also been at excellent speaker strength, but with a good deal of swinging.

The Bangkok station is another good short-waver to listen to. The two-day 'phone tests between 2ME Sydney and London are easily picked up, Sydney coming in with deafening volume at times. By leaving the R.F. tuning dials adjusted to London's wave and flipping the detector dial back and forth to pick up Sydney and London alternately, it is quite easy to follow both sides of the conversation.

The receiver that I am using is modelled closely after the Air King, featured in "Wireless Weekly" last March. Two screen grid R.F. stages, regenerative detector, and two audio stages. An ordinary 100 feet aerial is generally used. Practically all tuning-in is by means of speaker, the headphones hardly ever being employed.



Showing the layout of parts.

A.B.C. Women's Association Session Conducted By Miss Gwen Varley



Airmaster All-electric 3

THE new Airmaster all-electric 3-valve receiver, which is being distributed by S. E. Tatham and Co., 160 Castlereagh Street, Sydney, presents features which make it of exceptional merit in the new realm of electrically-operated broadcast receivers.

This handsome table model combines cabinet work of exceptional beauty, and is a revelation in compactness. Its tone is surprisingly life-like, and its volume may be controlled from a mere whisper to sufficient strength to fill easily a large room.

The Airmaster has three aerial tapings enabling sharp, medium, or broad tuning, increasing the selectivity of the receiver. This feature is of special advantage to listeners outside the metropolitan area. Complete shielding of the receiver ensures freedom from interference, while ample power is provided for the operation of a dynamic speaker.

A jack for magnetic pick-up enables electrical amplification of photograph records.

South With Scott

(Continued from page 6.)

was ever better tended than I was by those two gallant fellows. They did their utmost to keep me going, but at last the scurry overwhelmed me, and I fell fainting in my tracks. When I came to I realised that I had "shot my bolt," and I ordered the men to leave me in my sleeping bag, with whatever food they could spare.

This was the only occasion when we had any insubordination in Scott's last Antarctic Expedition. The men absolutely refused. One of them said: "No, sir, you have seen us through as far as this. We could never have got back without your navigation, and now, if one goes out, we will all go out together." They put me in my sleeping bag, strapped me on to the sledge, and then these two gallant fellows toiled wearily northward for nearly a week. At the end of this time we had a new fall of snow, which rendered the surface so hopeless that on striking camp the two men found themselves unable to move the sledge with my wasted weight upon it. Even then they did not give up. We were now thirty-five miles from the nearest refuge camp.

They decided that Crean, who had only led a pony out to the foot of the Beardmore Glacier, was the fitter man, and that he should attempt to march the remaining distance in, with what food we could spare him. Lashly had struggled in harness in my party, which had pioneered the way ahead of Captain Scott, right up to the Beardmore Glacier. Lashly therefore remained with me to nurse me until the end came.

His companion, after a fearful march, thigh deep in snow, managed to reach Hut Point after something like 18 hours, and there he collapsed on the floor of the little refuge hut, nearly dead with exhaustion.

But Providence and good fortune smiled upon us throughout that long homeward march, and when Crean revived he found the only doctor within 500 miles, the dog driver, and both the dog teams, fresh and ready for service.

He indicated our whereabouts, the dogs galloped out, and our lives were saved.

President's Afternoon

MRS. ROLAND CONWAY, president of the A.B.C. Women's Association, entertained the members of the committee at afternoon tea in the winter garden of the Hotel Australla last Wednesday, December 11, after the general committee.

Over 30 ladies were present, including:— Vice-presidents, Mrs. Bannister, Mrs. Robinson, Miss Jean Mills, Mrs. O. Ray (treasurer), Miss Gwen Varley (secretary), Mesdames Gibson, Helmers (Ashfield), Miss Hudson (Strathfield), Mesdames Robinson, Beaver (Maroubra), Cavill, Watson (Manly Afternoon Club), Miss Blake (Manly Morning Club), Mesdames Williams, Reid (Bexley), Gibson, Endicott (Coogee), Jones (Waverley), Hibbe, Proctor (Chatswood), Miss Painter (swimming), Mrs. Hinton (swimming), Mrs. Haldane (evening tennis), Mesdames Mitchell, Hinks (golf club).

Younger Set Sessions

The A.B.C. Younger Set Session tennis championships resulted in a win for the Strathfield pair in the girls' doubles championship. B. Francis and B. Ranshaw were the winners, with 36 games.

I. Francis and J. Mills (Strathfield), and M. Elliott and I. Freebury (Rockdale), came second, equal, at 27 games.

E. Brettain and L. Brettain (Coogee) were third.

Boys' doubles championship was very closely contested between Strathfield and Coogee. K. Cohen and B. Rockcliff (Coogee) won, at 22 games.

B. Lambert and E. Cox were runners-up with one game difference at 21.

Mixed doubles championship is planned for early in February, when the school holidays are over.

Singles championship will also be held. This event will be of considerable interest. There are a number of good singles players among both boys and girls.

Challenge matches: Already there is rumored that Vaucluse Thursday Night Tennis Club wishes to challenge Moore Park Club, which meets on the same night. This will eventuate in the New Year.

SWIMMING CLUB

The Monday night Girls' Swimming Club is in full swing at the men's Domain baths. Many girls at the baths have come to the coach and asked if they might join the club, too. Prospects look bright for a big class after the Christmas holidays.

A school holidays' swimming club has also been suggested. Some names have already been registered. Are there any other school-girls who would like to learn to swim or to improve their swimming under the direction of an expert coach in the holidays? The fee is 7/6 for six weeks.

RIDING CLUB

Miss Molly McWilliam gave her first talk on riding to the Girls' Radio Club last Thursday night, and offered to help the members to form a riding club. This is a most sporting offer by Miss McWilliam, who is one of Sydney's leading horsewomen. How many girls will rush this offer remains to be seen. A holiday vacation riding school! Could anything be nicer?

PROGRAMME of speakers and their subjects for week commencing Friday, December 20:—

FRIDAY, DECEMBER 20.

10.40: "Madame, Do You Know," by Miss Varley. Miss Varley will bombard her listeners with questions regarding Christmas, and give many novel ideas of Christmas fetings.

10.50: "Home Confectionery," by "Priscilla" (Mrs. L. C. Norton). Mrs. Norton is much in demand just now in the midst of the Christmas season. Letters are pouring into "Priscilla" for advice in icing of Christmas cakes and home-made candies for Christmas.

MONDAY, DECEMBER 23.

10.40: "Christmas in the Slums," by Miss Gwen Varley. Miss Varley will sketch a story of a Christmas spirit in a Sydney slum area, and show a poor child's joy to that of a wealthy child when Father Christmas comes.

10.50: "A Country Christmas," by Miss Lorna Byrne. Miss Lorna Byrne, of the Agricultural Bureau, will describe Christmas in a country home, which will help to link up the country and city folk as they hear of the efforts made by all mothers to make Christmas a time of goodwill and peace to all. It is every woman's privilege to create the Christmas spirit in her home, whether it be in the town or country.

TUESDAY, DECEMBER 24.

10.40: "Christmas Eve," by Miss Gwen Varley. Miss Varley will suggest various ways in which Father Christmas can leave his trail behind on Christmas Eve. Some of her novel suggestions will be welcomed by many women keen on giving their children the most happiest and most original Christmas possible.

10.50: "Christmas at Bethlehem," by Mrs. Edith Glanville. Mrs. Edith Glanville, who has lived in the East and knows Bethlehem at the world's festive season, will tell her listeners of Bethlehem at this time. Mrs. Glanville is a noted speaker, and her weekly talks are most popular. She takes her listeners from one Eastern country to another in a graphic description.

YOUNGER SET SESSION.

6.45 p.m.: "Junior Red Cross Session," by Mrs. M'Kinnon. Christmas greetings will be sent far and wide by Mrs. M'Kinnon, the well-known organiser of the Junior Red Cross Society, to her thousands of enthusiastic young members, who have done much to give Christmas cheer to other children.

WEDNESDAY, DECEMBER 25.

"Christmas Greetings and Christmas Legends," by Miss Gwen Varley. Miss Varley will greet her hundreds of A.B.C. Women's Association members and the many thousand regular women listeners. She will follow by telling some pretty Christmas legends.

THURSDAY, DECEMBER 26.

10.40: "The Holiday Spirit," by Miss Gwen Varley. Miss Varley will offer many varied suggestions for Boxing and New Year holidays. Motor trips and picnics will be proposed in unusual seaside or mountain spots unknown to the masses. She has helped many people to choose their Christmas holidays in camping etc., and many have written in asking what to take to camp and where to go.

YOUNGER SET SESSION.

6.45 p.m.: "Girls' Radio Club," by Miss Gwen Varley. Miss Varley will also follow on with Christmas greetings to her new family of boys and girls who have recently joined up as members of Younger Set tennis clubs. Eleven clubs are in full swing. Some meet on Saturday mornings, and four in the evenings. Coaches are provided, and consequently large numbers of young people are learning to play tennis.

SPECIAL CHRISTMAS REDUCTIONS!

FAMOUS
 Udisco Electric Sets
 to be sold at special
 bargain rates

33 1-3%

Discount
on all
Udisco
Electric
Sets

SENSATIONAL RADIO SALE

DISCOUNT

33 1-3%

SEE our special tables
 of parts at bargain
 prices

GREAT CLEARING SALE

UNITED DISTRIBUTORS Ltd.

151 CASTLEREAGH STREET, SYDNEY

Byrd Expedition Tests for "Dead Spots" with KDKA

IMEDIATELY following the musical numbers and messages constituting the regular programme of broadcasting to the Byrd Expedition at Little America, which was transmitted recently by KDKA, Pittsburgh, listeners heard a long-drawn-out "buzz," which was maintained for five minutes. This buzz constituted the first of a highly important series of tests in which the radio experts of KDKA are co-operating with those of the Byrd Expedition.

The object of these tests is to secure a better understanding of one of radio's most mysterious phenomena—"blind spots," or "dead areas."

As most radio listeners are aware, there are many small areas where certain broadcasting stations can be heard only with difficulty, if at all, although the same stations come in clearly all around these areas. While some of these "dead spots" are caused by peculiarities of land configuration, others cannot be explained away so easily, and many scientists now believe that the trouble is chiefly due to the so-called "Heaviside layer."

THE "HEAVISIDE LAYER."

The "Heaviside layer," according to theory, is a stratum, possibly magnetic in character, which surrounds the earth. Radio waves cannot pass through it, but are reflected back to earth by it, just as light rays are reflected by a mirror. In some places, waves thus reflected are the ones chiefly received, and this applies especially to long-distance broadcasting; at other places, the waves sent out directly by the transmitter are the ones that convey the messages; but in certain places both sets of waves are received together, and it is due to the interference of these two sets that dead spots, and possibly fading, are thought to be caused. Tests indicate that the Heaviside layer encircles the earth at an average distance of 350 miles, but there is some reason to think that at either the North Pole or the South Pole, or both, this layer approaches close to the earth or perhaps actually touches it. Definite confirmation or refutation of this theory is the object of these tests.

These tests are not merely in the interests of pure science, but also of defence measures as dead spots occur at sea as well as on land, and naturally interfere with naval operations, so that it is most important to secure as much information on the subject as possible.

OSISO TO CATCH ECHOES.

The investigative work at Little America is in charge of Malcolm P. Hanson, radio engineer of the Byrd Expedition, and the most important instrument he will use is an ingenious and versatile instrument known as the Osiso, which was invented by the late Joseph W. Legg, oscillograph engineer of the Westinghouse Company. The Osiso makes photographic records of radio signals and other electric waves, and is so sensitive that it will measure time-differences of only a few millionths of a second.

By means of the Osiso, Engineer Hanson can record the reception of both direct radio signals and their echoes, as reflected by the Heaviside layer, and by measuring the time

Curves Ahead

difference between them, he is able to determine the height of the Heaviside layer near the South Pole.

He has already done considerable experiment work along this line, and recently took a trip for this purpose with two companions ten miles outside of camp in weather so cold that the dogs' noses froze. Hanson carried the Osiso on his back and packed the necessary dry batteries inside his shirt to keep them from freezing. On his return from this trip he radioed as follows:—

"Osiso giving splendid results in temperatures down to 70 below zero, with ski and knapsack and dog-sled transportation. Suggest co-operate oscillographic study by sending special signals to us, co-operating with Dr. Taylor, of Bellevue."

KDKA's radio experts, having received Dr Taylor's suggestions, arranged with Hanson to send him a long, powerful signal on exactly 25.4 metres, which enabled him to make more accurate measurements than was possible with ordinary radio signals. This signal was also transmitted on KDKA's regular broadcasting wave, so that it could be heard by listeners.

The Importance of Voice Coil Impedance

FAITHFUL reproduction and maximum volume can only be obtained when there exists a perfect balance between all components of a sound-amplifying and reproducing system.

Several years of intensive effort to attain the superlative in radio tone quality has taught the radio industry the importance of properly-matched audio units, including the matching of the impedances of amplifier output and loud-speaker input. However, there is still a weak link in the usual sound-reproducing system, and that is the balance between the voice coil and the diaphragm of the dynamic loud-speaker. In many instances, the designer of a loud-speaker goes from one type of diaphragm to another, using the same voice coil, and hastens to report that the original diaphragm is more satisfactory. Obviously, the original diaphragm may be better matched to the voice coil than the second diaphragm. In other words, the voice coil should be matched to the diaphragm, with the electrical impedance matching the mechanical impedance. There is a vast difference between most of the paper diaphragms and the newest bortex or fabric diaphragms, hence the loud-speaker designer should make due allowance in the voice coils employed.

There is a marked trend towards the curved or parabolic type of diaphragm instead of the straight-sided or cone diaphragm, in this season's dynamic speakers. The widespread acceptance of the fabric or bortex diaphragm, in place of the former paper cone, has made possible a wider choice of sizes and shapes than could ever be obtained with paper.

The curved sides of a parabolic diaphragm make for better tonal quality. It appears

that the weaving and buckling of the usual paper cone, which causes paper noises and other forms of distortion, are entirely eliminated in the parabolic fabric cone, while many of the delicate overtones usually lost in paper cones are faithfully reproduced in the new type of cone.

The A.C. Valve Re-designed

A NEW design for the familiar heater type A.C. valve is announced by an American manufacturer. The characteristics of this new valve are identical with the conventional types -27 tube, but in construction and performance it is quite different. To begin with, the elements have the general appearance of a miniature -24 or screen-grid a.c. valve, being much shorter than the usual -27, and about twice as large in diameter. The heater filament is the coil-spring design, and is dipped in liquid ceramic, so that the usual bulky insulator is eliminated. The cathode sleeve, grid, and plate are widely spaced, and the construction of the valve insures accurate and positive spacing at all times. The elements cannot shift unless the valve is actually smashed.

An unusual feature of the new valve is a mica disc insulator at the top of the elements, a trifle smaller than a two-shilling piece in diameter. In addition to serving as a top spacer in preserving the relative positions of the elements, this disc has an effect upon the direction of the electron flow in the valve. It checks "massing" or saturation and subsequent discharge in the operation of the valve, and makes it practically humless. Crackle is entirely absent. The valve has a flat heating time of five seconds.

Re-Broadcasting Inside An Hotel

A UNIQUE and ingenious arrangement for supplying rooms with radio reception has been installed in the Hotel Lincoln, in New York City. Reception of the programmes is accomplished in the first place with six master receiving sets, located on top of the building, at a point where interference from the motors in the building is at a minimum. These receivers operate from the one aerial, but are tuned to six different stations. The output of each set is carried separately by wire to a monitor table, at which an operator controls the volume of reception from each station. From this table the received signals are carried to six radio-frequency oscillators, in shielded compartments. The output of each oscillator is modulated by the signals from one of the stations being received, and the modulated radio-frequency is then transmitted into the steel frame of the building. In other words, the received programmes are each re-transmitted into the building on a different wavelength.

Reception in the rooms is accomplished with receiving sets, which respond only to the new wavelengths. From reports, it would seem that even this extraordinary arrangement is a success.

The
Experimenters'
Department
of Technical
Progress . . .
Conducted by
ROSS A. HULL,
M.I.R.E.

SEE and HEAR TO-DAY

(Establishd 40 Years)

Harringtons

ALL-ELECTRIC IMPERIA 3

Picture the set illustrated here in YOUR home; a handsome radio set that gives you, in actual performance, everything to be expected from sets costing twice as much.

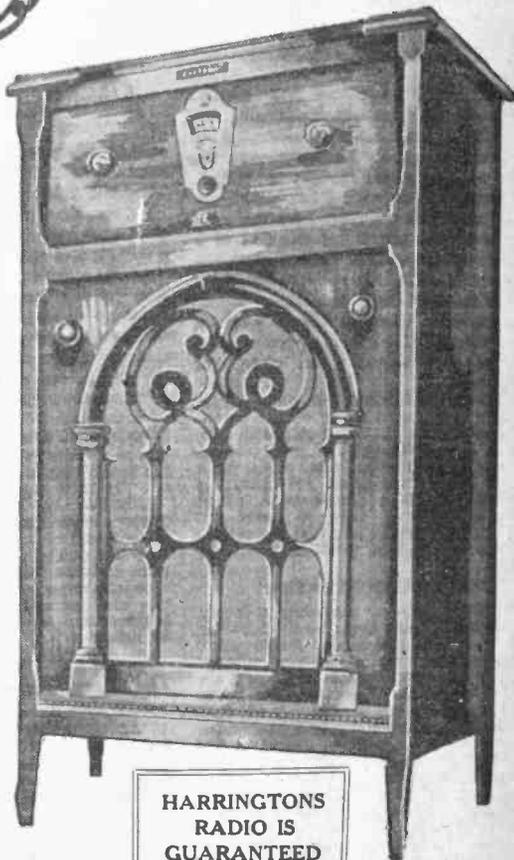
Built exclusively of the world-famous Pilot Radio Parts, the Imperia is a receiver dependable, selective, clear-voiced, and, irrespective of price, one of the finest radio sets you've ever heard.

Come to our beautiful new audition rooms, or go to your nearest dealer to-day, and ask to hear the Imperia.

PRICES

for the Imperia 3 Console model as illustrated; complete, installed, and working in your own home.

£32'10' - 5 Easy Terms
 £5 deposit
 11/10 weekly.



HARRINGTONS
 RADIO IS
 GUARANTEED
 RADIO.

OBTAINABLE from these DEALERS:

- Diamond's Music Store, 268 Liverpool Rd., Ashfield. Tel. U7082
- Phelan and Gardner, Liverpool Rd., Ashfield U1749
- W. H. and W. Fountain, 335 Darling St., Balmaln. W1146
- R. S. Gibson, Radio Service, Sydney Rd., Balgowlah. YU2203
- J. Bissiker, 399 Burwood Rd., Belmore UL1048
- Strangman Bros., Radic and Elec., Lane Cove Rd., Crow's Nest. X4231
- Chatswood Radio Service, Victoria Ave., Chatswood J6386
- E. D. Huckle, Radio Service, 307 Military Rd., Cremorne Junction Y5399
- F. Hubbard, 77 George's River Rd., C. Park UJ3984
- Witts Radio Service, Lyons Rd., Drummoyno Drum. 582.

- F. Flanagan, Enfield Motor Works, 104 Liverpool Rd., Enfield UJ5920
- Wyatt's Radio Store, Ramsey Rd., Five Dock U2953
- J. D. Whittaker, 580 New Canterbury Rd., H. Park Pet. 3998
- Shaw's Radio Store, 21 Good St., Granville LW9045
- H. C. Malcolm, 187 Prince's Highway, Kogarah LW3996
- L. T. Ashdown, 417 P'matta Rd., Leichhardt Pet. 2694
- L. C. Cormley, No. 8 Hotel Manly Bldgs, Manly YU2216
- J. Murray, Radio Service, Whistler St., Manly YU1462
- R. Everett, Radio Service, 67 Emmore Rd., Newtown
- A. W. Morgan, 211 Concord Rd., Nth. Strathfield
- Aspinall and Mumford, Church St., Parramatta
- J. Hillsdon, Church St., Parramatta UM7657
- UW8249
- UW8534

BRANCHES:
 all States and N.Z.

Harringtons LTD

386 George Street,
 SYDNEY. MA6001.

Radio, Photo and Cine Merchants.

Early Morning S. W. Tests Excellent

The London-Sydney telephone tests carried out by KDKA are reported in the notes below by our short wave observer.

GBX AND KDKA.

A FEATURE of reception for the past week was the excellence of the early morning tests between London and Sydney, and the tests carried out by KDKA and 2ME.

The telephony from GBX between 12.10 and 1.15 a.m. on Friday, December 6, was easily the best I have ever heard from London. The clarity of speech was really excellent, whilst there was plenty of volume to spare. Having heard 2ME shortly after midnight announce that he was changing over to GBX I awaited the latter's signals. At 12.10 a.m. London boomed in exactly where expected on the dials with a roar.

On the same Friday night KDKA was working with 2ME. I first heard him at 11.15 with musical items, after which he called 2ME, and thanked the latter for co-operation.

A special test allowed programme be sent around the world for 13,000 miles. 2ME's part in the test came through very strongly also. Apparently KDKA was working through London. Tests continued until 12.5 a.m., when 2ME informed KDKA that the latter's signals were weakening, and that 2ME was changing over to GBX.

JAVA-HOLLAND STATIONS.

Quite a number of these stations were heard during the week. Such stations as PLE on 15 metres, and PLE on 16 metres can be heard almost any night after 9 o'clock, carrying on duplex telephony; whilst such others as PHI on 16 metres, PLR on 28, and PCL on about 26, can also be heard frequently late at night. Some excellent musical programmes are put over by PHI, whilst some of the 'phone stations regale listeners with records prior to going over to duplex 'phone. Of these PHI is easily the best, but the new beginner in particular will probably find that a station down so low as 15 or 16 metres takes some "bagging," as tuning is very fine and tricky. However, these stations are well worth searching for.

KGO'S SCHEDULE

For the information of those who have been inquiring for definite information regarding KGO's present transmission I can now definitely state that this popular station is on the air every Tuesday, Friday, and Sunday afternoon.

It is little use, however, endeavoring to tune in KGO until about 4 p.m., when his signals begin to strengthen. The station closes down at 6 p.m., on Tuesday and Friday, and at 7 p.m. on Sunday. On Tuesday and Friday KGO was only poor speaker strength, but between 5 and 7 p.m., on Sunday he faded up to good speaker. The station's programme on December 1 was much more varied than usual, many vocal request numbers being

By R. N. SHAW.

these including "Mother Machree. One splendid saxophone trio was heard. Orchestral numbers included "I Don't Want Your Kisses if I Can't Have Your Love," "Do You Believe in Me?" and "I May Be Wrong." Items were given from the Oakland studio, the San Francisco studio, and two hotels. At exactly 7 p.m., I heard the Oakland time-piece chime 1 a.m.

SSW AND GBX.

Reception of both these London stations has been excellent during evening hours. Good speaker strength was noted on GBX be-

Mr. J. W. Robinson has been appointed manager for Station 4QC (Brisbane), which comes under the control of the Australian Broadcasting Company on February 1, 1930. Mr. Robinson has for the past four years been Director of the Queensland Radio Service, which embraces 4QC.

tween 6 and 7 p.m. on Monday, Wednesday, and Thursday. On the latter date a private conversation from London was perfectly clear. The London speaker, whose accent sounded very Australian, mentioned weather with the remark: "It's raining like—you know—here now!" Inquiries were made regarding the probable Test team to be sent home, and also regarding various persons in Australia.

5SW transmitted some excellent items, and on Wednesday night between 10.45 and 11.30 o'clock, well-selected records were played. Two records heard very clearly at speaker volume were "Wouldn't it be Wonderful" and "Building a Nest for Mary."

RADIO MANILA.

Radio Manila was logged every evening except Monday, giving the usual news and musical programme, chimes, etc. Wednesday night's programme was made up largely of speeches and items pertaining to the work of the Red Cross. A lady held forth for some time, speaking good English. The station is still just above 5SW.

On Monday night between 8.30 and 9.30 the conversations on the Java network were remarkably clear, the constant laughter of a lady speaker being very natural. A speaker was evidently being used near the "mike," as the answers were being heard from the same wavelength. On Tuesday and Wednesday nights the signals were weaker.

VPD.

VPD, Suva, is now operating on a wavelength of 20 metres, and can occasionally be heard during the early morning as well as evening. A two-way conversation on Monday morning was excellent.

THE AMERICANS

Have not heard much of KDKA this week. This station operates on 25.25, whilst 5SW is located on 25.52. Both are frequently on the air together, yet without interference. Indications on Sunday afternoon seem to point to an early improvement in reception of other Americans during the daylight, such as W2XAF, W2XG, etc. The latter is the station which aroused so much curiosity owing to his lengthy sessions on word-writing. W2XAF's signals were much improved on Sunday afternoon.

FOREIGNERS.

RA97 has been testing down as low as 31 metres. At about 10 p.m. on Wednesday I heard a station on about 25 metres, announcements being in foreign language. Several musical items were also heard.

FROM 3AR on December 18, continuing the series of "How Women Dress in Other Countries," Mr. H. O. Esmond will take China and the East. It is interesting to remember that, despite the advantages of civilisation, the dress of the Chinese—especially as far as home life is concerned—has remained unchanged throughout the centuries, and many of the wonderful kimonos and sashes in use at the present day have been handed down from generation to generation.

Every decoration on a Chinese or Japanese costume is significant, and the symbolic dragons and willow tree have formed the basis of many Eastern romances. Mr. Esmond has much to say regarding the Eastern costumes, and interested listeners should remember the date.



Paul Jeacle and his famous band who have established themselves as firm favourites at 3LO.

Local Programmes, Friday, December 20

2FC

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

EARLY SESSION—7.0 to 8.15 a.m.

- 7.0: "Big Ben," and Meteorological Information for the man on the land.
- 7.3: This morning's news, from the "Daily Guardian."
- 7.6: Austradio Musical Reproduction.
- 7.45: Mails and Shipping.
- 7.48: What's on To-day?
- 7.50: Children's Birthday Calls.
- 8.0: Music from the Studio.
- 8.15: CLOSE.

MORNING SESSION—10.15 a.m. to 12.30 p.m.

- 10.15: FROM THE WALSH ISLAND DOCK-YARD AND ENGINEERING WORKS, NEWCASTLE. Launching Ceremony of the final section of the Floating Dock.
- 10.45: Official opening of the main Floating Dock Unit.
- 11.0: FROM THE STUDIO—Cooking, by Miss Ruth Furst.
- 11.10: CABLES—(copyright), "Sun"—"Herald" and A.P.A. News Service.
- 11.15: MORNING DEVOTION, Conducted by Rev. W. T. Dyer.
- 11.30: Austradio Musical Reproduction.
- 11.53: British Official Wireless Press.
- 12.0: "Big Ben." Stock Exchange and Meta. Quotations.
- 12.5: Miss E. L. Armstrong will speak on "How, When, and Where to Travel."
- 12.20: Midday weather forecast and weather synopsis. Special Produce Market Session for the man on the land, supplied by the State Marketing Board.
- 12.30: CLOSE.

THE LUNCH HOUR: 1.0 to 2.30 p.m.

- NOTE: Cricket Results, Victoria v. Queensland, played at Melbourne, and South Australia v. N.S.W., at Adelaide, will be transmitted as received.
- 1.0: Lunch Hour Music.
- 2.0: Stock Exchange, second call.
- 2.2: A Glance at the afternoon "News."
- 2.7: Austradio Musical Reproduction.
- 2.27: Announcements.

THE RADIO MATINEE: 2.30 to 4.30 p.m.

- 2.30: THE LIGHT ORCHESTRA.
- 2.42: INSTRUMENTAL TRIO—Fred Whaite, Piano. Dulcie Blair, Violin. Muriel Lang, Cello.
- 2.49: CARL OVERDORF, Trumpet Solos—(a) "Schubert Serenade." (b) "In the Garden at To-morrow."
- 2.56: THE LIGHT ORCHESTRA.
- 2.59: DR. HAROLD NORRIE will speak on "Outstanding Personalities in Australian History—John Oxley."
- 3.15: MURIEL LANG, Cello Solos—(a) "Priere" (Squire). (b) "Serenade" (Squire).
- 3.22: THE LIGHT ORCHESTRA.
- 3.35: SAM VASCO, Trombone Solos—(a) "Ave Maria." (b) "Come Back, Old Pal."
- 3.42: INSTRUMENTAL TRIO—Fred Whaite, Piano. Dulcie Blair, Violin. Muriel Lang, Cello.
- 3.49: THE LIGHT ORCHESTRA.
- 4.0: "REDGUM" will speak on "Gardening."
- 4.15: THE LIGHT ORCHESTRA.
- 4.30: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

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

THE EVENING PRESENTATION—8.0 to 11.30 p.m.

2FC Listeners will hear with delight Cecilia Hansen, Harpist, who is in Sydney for a brief while. To-night R. A. Bartleman is

INDEX

To Local Programmes

FRIDAY, DECEMBER 20—	22
2FC, 2BL, 2KY, 2UE	23
SATURDAY, DECEMBER 21—	26
2FC, 2BL, 2GB, 2UW, 2KY, 2UE	28
SUNDAY, DECEMBER 22—	30
2FC, 2BL, 2GB, 2UE	31
TUESDAY, DECEMBER 24 (Christmas Eve)—	34
2FC, 2BL, 2KY, 2UW	35
2GB, 2UE, 2KY, 2UW	36
WEDNESDAY, DECEMBER 25 (Christmas Day)—	36
2FC, 2BL, 2GB, 2UE	42
2KY, 2UW (off the air)	
THURSDAY, DECEMBER 26 (Boxing Day)—	
2FC, 2BL, 2GB, 2UW, 2UE	

To Interstate Programmes

FRIDAY, DECEMBER 20—	24
3LO, 3AR, 3DB, 4QG, 5CL, 6WF, 7ZL	25
SATURDAY, DECEMBER 21—	27
3LO, 3AR, 3DB, 4QG, 5CL, 6WF, 7ZL	29
SUNDAY, DECEMBER 22—	32
3LO, 3AR, 4QG, 5CL, 6WF, 7ZL	36
TUESDAY, DECEMBER 24 (Christmas Eve)—	40
3LO, 3AR, 4QG, 5CL, 6WF, 7ZL	44
THURSDAY, DECEMBER 26 (Boxing Day)—	
3LO, 3AR, 4QG, 5CL, 6WF, 7ZL	

contributing Songs which Miss Hansen will accompany, and there is Organ Music by G. Vern Barnett. The big interest item is "Farewell Anzac," the authentic story of Gallipoli's Evacuation, by Fred Arlington Burke. Through 2BL a unique instrument Competition is in progress, which is being held in conjunction with "Wireless Weekly." As many as 30 instruments, perhaps more, will be included, and as each one is played listeners are asked to guess its identity. The first correct answer opened will receive a prize of £2, and the second two correct answers, 10/- each.

- 8.0: FROM THE AEOLIAN HALL—Organ Recital, arranged by G. Vern Barnett—(a) Variations on "Adeste Fideles" (Greig). (b) March on a Theme from Handel (Gull-mont).
- 8.10: FROM THE 1929 RADIO DISPLAY at the STATE SHOPPING BLOCK—R. A. BARTLEMAN, Baritone—(a) "Riding Song." (b) "The Old Bush Track."
- 8.17: CECILIA HANSEN, Harpist—(a) "Fantasie" (arr. Hansen). (b) "Chines Lullaby" (Bowers). (c) "Marionette Dance" (Telescle).
- 8.24: FROM THE AEOLIAN HALL—Organ Recital arranged by G. Vern Barnett—(a) "Spring Song" (Mendelssohn). (b) "Cradle Song" (Salmon).
- 8.34: FROM THE 1929 RADIO DISPLAY at the STATE SHOPPING BLOCK—R. A. BARTLEMAN, Baritone—(a) "The Old Toby Jug." (b) "Comrades of Mine." (c) "Slow Coach."
- 8.42: CECILIA HANSEN, Harpist—(a) "Believe Me" (Debussy). (b) "Believe Me if All Those" (Irish Folk Song). (c) "Just a Memory."
- 8.49: FROM THE AEOLIAN HALL—Organ Recital arranged by G. Vern Barnett—(a) "March of the Wise Men" (Dubois). (b) "Londonderry Air" (arr. Kreisler).
- 8.59: FROM THE 1929 RADIO DISPLAY at the STATE SHOPPING BLOCK—THE COUNTRY MAN'S WEATHER SESSION—(a) New South Wales Forecasts. (b) Interstate Weather Synopsis. (c) Weatherman's and Fisherman's Forecast.
- 9.2: "PARVVOY, ANZAC," by FRED AR-LINGTON BURKE.
- 9.15: PLAY FROM THE MELBOURNE ANNOUNCEMENTS.
- 10.15: FROM THE STUDIO—Late Official Weather Forecast.
- 10.20: FRED MORRISON and HIS BAND.
- 11.30: CLOSE. "NATIONAL ANTHEM."

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 355 Metres).

OPENING SESSION—8.15 to 11 a.m.

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

MIDDAY SESSION—12.0 to 2.30 p.m.

- 12.0: G.P.O. Chimes and Announcements
- 12.2: A Pianoforte Recital.
- 12.30: LUNCH MUSIC.
- 1.0: Afternoon news from the "Evening News."
- 1.5: Austradio Musical Reproduction.
- 1.6: A Pianoforte Recital.
- 2.0: Half an hour with Silent Friends.

AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.

- 2.30: A Pianoforte Recital.
- 3.0: FROM THE BALLROOM OF THE ORIENTAL—Sydney Simpson's Syncopaters in Dance Music.
- 3.12: From the Studio—MARY STEVENS, Popular Vocalist, (a) "My Sin is Loving You" (Brown). (b) "Mean to Me" (Turk).
- 3.19: FROM THE BALLROOM OF THE ORIENTAL—Sydney Simpson's Syncopaters in Dance Music.
- 3.30: FROM THE STUDIO—CHRISTIAN HELEMANN at the Organ.
- 3.45: CLAUDE E. BYRNE will speak on "Fun and Games for Wet Holidays."
- 4.0: FROM THE BALLROOM OF THE ORIENTAL—Sydney Simpson's Syncopaters, in Dance Music.
- 4.12: FROM THE STUDIO—MARY STEVENS, Popular Vocalist—(a) "Maybe, Who Knows?" (Tucker). (b) "Smiling."
- 4.19: FROM THE BALLROOM OF THE ORIENTAL—Sydney Simpson's Syncopaters, in Dance Music.
- 4.30: FROM THE STUDIO—Ballads, Old and New.
- 4.45: The Trade Hour—Demonstration Music
- 5.45: Weather Information. Close Down.
- 5.45: THE DINNER HOUR—6.15 to 7.55 p.m.
- 6.15: DINNER MUSIC, by FARMER'S DANCE BAND.
- 6.45: THE BOY SCOUTS' CLUB, conducted by Mr. Norman Lyons.
- 7.5: The Country Man's Market Session—Wool, Wheat, Stock, Farm Produce, Fruit and Vegetable Markets.
- 7.20: DINNER MUSIC, by FARMER'S DANCE BAND.
- 7.45: Austradio Musical Reproduction.
- 7.55: What's on the air to-night.

TO-NIGHT'S PRESENTATION—8.0 to 10.30 p.m.

The feature of our programme to-night will be a novel instruments competition, which will include 30 instruments, and as each one is played listeners are asked to guess their identity. There will be a prize of £2 for the first correct answer opened, and two consolation prizes of ten shillings each for the next two correct answers opened. In addition, there are orchestral items, comedy numbers by Nat Hanley, and songs by Bertha Beaumont. Claude Corbett will give his sporting talk at 9.40. Through 2FC Service there is an organ recital, and listeners will welcome the first broadcast appearance of Cecilia Hansen, harpist, and Alfred Cunningham will include unusual songs with a harp accompaniment in his programme. A particularly interesting feature is "Farewell, Anzac," when Fred Arlington-Burke will tell the authentic story of the evacuation of Gallipoli.

8.0: THE NATIONAL BROADCASTING ORCHESTRA.
 8.12: NAT HANLEY, Comedian—"Pianology" (N. Hanley).
 8.22: 2BL INSTRUMENTAL TRIO—Fred Waite, Pianist, Dulcie Blair, Violinist, Muriel Lang, Cellist.
 8.30: BERTHA BEAUMONT, in Popular Numbers—
 (a) "When my Dreams Come True" (Berlin).
 (b) "Breakaway" (Cottler).
 8.40: A NOVEL INSTRUMENT COMPETITION—under the direction of Madame Evelyn Grieg. Thirty instruments will be played, and listeners are invited to guess the names of these instruments in succession. There is a first prize of £2 being offered for the first correct answer opened, and two consolation prizes of 10s each for the next correct answers opened. The instruments used will cover a vast variety, from the string, reed, and brass families.
 9.20: NAT HANLEY, Comedian—"Crazy Croonings" (N. Hanley).
 9.30: Weather information for the man on the land.
 9.32: THE NATIONAL BROADCASTING ORCHESTRA.
 9.40: CLAUDE CORBETT will give a Sporting Talk.
 10.0: BERTHA BEAUMONT, Popular Vocalist—
 (a) "I'll Always be in Love With You" (Ruby).
 (b) "Too Wonderful for Words" (Stampet).
 10.7: THE NATIONAL BROADCASTING ORCHESTRA.
 10.25: Late News from the "Evening News." Late Weather Forecast.
 10.30: CLOSE DOWN: National Anthem.

2GB

Theosophical Broadcasting Station, 20 Bligh St., Sydney (Wavelength, 316 Metres).

10.0: Music. 10.10: Happiness Talk, by A. E. Bennett. 10.20: Music. 10.30: Women's Session, by Mrs. W. J. Steizer. 11.0: Talk, by Mrs. Jordan. 11.45: Close down. 2.0: Music. 2.5: Women's Radio Service, by Mrs. Dorothy Jordan. 2.50: Movie Know All. 3.0: Music. 3.30: Close down. 5.15: Children's Session, by Uncle George. 6.50: M.-G.-M. Radio Movie Club Session. 7.0: Music. 7.45: Feature Story. 8.0: OLD ENGLISH PROGRAMME, Miss Kathlene Cracknell, Contralto. 8.7: Symphony Orchestra. 8.15: Mr. Clement Hosking, Baritone. 8.22: Mr. Heath Burdock, Shakespearean Recital. 8.32: Miss Elsie Brown, Soprano (London Street Cries). 8.40: Symphony Orchestra. 8.50: Miss Kathlene Cracknell, Contralto. 9.0: Weather Report. 9.3: Madame Betts-Vincent in an illustrated talk on English Music. 9.18: Miss Elsie Brown and Mr. Clement Hosking in Old English Duets. 9.25: Symphony Orchestra. 9.30: Mr. Jack Win and Mr. Heath Burdock, Humor. 9.35: Mr. Clement Hosking, Baritone. 9.42: Symphony Orchestra. 9.50: Miss Elsie Brown, Soprano. 10.0: Instrumental Music. 10.30: Close down.

2UW

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

MIDDAY SESSION.—12.30: Request numbers. 1.0: Chimes. Music. 1.15: Talk on Homecraft, by Pandora. 1.40: Music and request numbers. 2.30: Close. 4.30: Musical programme.

EVENING SESSION.—5.30: Children's Hour, conducted by Uncle Jack. 6.30: Close. 7.0: Chimes. Request Numbers. 8.0: Popular Music. 9.0: Comments on Foreign Affairs by Mr. J. M. Prentice. 9.10: Music and request numbers. 10.30: Close.

2KY

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

MORNING SESSION.—10.0: Tune in to the ticking of the clock. 10.3: Popular Fox-trots. 10.15: Calls and announcements. 10.30: WOMEN'S SESSION, Home hints and information—Mrs. GRAY. 11.0: A few laughs. 11.5: Pianoforte selections. 11.15: Calls and announcements. 11.20: Musical interlude. 11.30: Request numbers. 11.40: Music and vocal items. 11.55: Where to go to-night. 12.0: Closing announcements.

CHILDREN'S SESSION.—6.0: Birthday calls, request numbers, and Kiddies' Entertainment, Uncle Bert and Uncle Mac.

EVENING SESSION.—7.0: Musical interlude. 7.5: Birthday calls. 7.15: SPORTING FEATURE, Turf topics. Review of candidates and their prospects for to-morrow, Mr. Geo. A. Davis. 7.40: Request numbers. 8.0: Hawaiian steel guitar selections. 8.10: Women's Information Service, MRS. GRAY. 8.30: Music and vocal items from the studio. 9.10: Full description of main 15-round event. 10.0: Closing announcements.

2UE

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

EARLY MORNING SESSION.

7.15: Breakfast Time Hour Orchestral Music. 8.0: Clock and Chimes. 8.1: Orchestral selections. 8.30: Close down.

MIDDAY SESSION.

10.0: Orchestral Music, and Women's Session, arranged by Miss Dorothea Vautier. 11.30: Orchestral and Vocal Old-time Selections. 12.0 noon: Close down.

AFTERNOON SESSION.

1.0: Vocal and Instrumental Selections. 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. 7.25: Music. 7.30: Rural Talk, by Mr. B. J. Fallon. 7.45: Orchestral Selections. 7.55: Programme Announcements and news from the "Sun". 8.0: Clock and Chimes. 8.1: Overture, "Bohemian Girl" Selections. 8.11: Vocal and Orchestral Concert. 10.15: Close down.

Instrument Competition

I believe the order of the Instruments played to be as follows:

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30



Portable Voltmeter

Pattern 136: A most convenient De Luxe Portable Jewell Voltmeter. Beautifully finished of black bakelite, clock stand type of mount. Range of scale 0-7.5—150 volts. Push button switch mounted in the top of flange. Three long leads with 'phone tips. Connected permanently will show filament voltage. By pushing the button the "B" Battery voltage is read.

Write for

Radio Instrument Catalogue No. 15.e.

STROMBERG CARLSON

Australasia, Limited,

76 William Street, Sydney.

'Phone: F4184. Telegrams: "Strom."

NAME

ADDRESS

TEAR OUT and forward to
 "INSTRUMENT COMPETITION."
 "Wireless Weekly,"
 Box 3366PP,
 G.P.O. SYDNEY.

Interstate Programmes, Friday, December 20

3LO

Australian Broadcasting Co., 129A Russell St., Melbourne (Wavelength, 373 Metres).

EARLY MORNING SESSION

7.0: Melbourne Observatory time signal. 7.1: Shipping news. 7.3: Physical exercises to music. 7.20: Reproduced music. 7.40: Mail notices. 7.42: What's on to-day? 7.45: Market reports. 7.53: Weather forecast. 7.55: News service. 8.0: Melbourne Observatory time signal. 8.1: Arrival times of express trains. 8.4: Musical interlude. 8.15: Close down.

MORNING SESSION

10.30: Current happenings in sport, by Mel Morris. 10.45: Musical reproduction. 11.0: Fish Market reports. 11.3: Musical reproduction. 11.30: Morning sales, Melbourne Stock Exchange; metal prices. 11.33: Description of Sheffield Shield cricket match, Queensland versus Victoria, at the Melbourne Cricket Ground. 12.15: News service. 12.30: Close down.

MIDDAY SESSION

1.0: Melbourne Observatory time signal; Stock Exchange information; meteorological data, weather forecast for Victoria, New South Wales, South Australia, and Tasmania; ocean forecast; river reports; rainfall data. 1.15: Comments on the day's news. 1.30: Musical interlude.

AFTERNOON SESSION

2.0: Description of Sheffield Shield cricket match, Queensland versus Victoria at the Melbourne Cricket Ground. 4.0: Florence Elsworth, piano; three fantasia pieces by Schumann, "Aufschwung," "Warum," "Grillen." 4.8: The Studio Light Orchestra's selection from "Bombarde" (Frimont). 4.16: Madame Alina Hesseleva, soprano, and Victor Baxter, tenor—duets, "Sing, Joyous Bird," "In a Gondola" (Phillips). 4.23: Bertha Borgersen, violin. "Two Dream Dances" (Coleridge Taylor). 4.30: Close down. During the afternoon progress scores of the cricket match, S.A. v. N.S.W., at Adelaide Oval, will be given as they come to hand.

THE CHILDREN'S CORNER

8.15: "Billy Bunny," "Spin Peter," and "Rollicking Rita." 8.35: Musical interlude.

EVENING SESSION

8.40: Tennis—the backhand drive—Miss Patricia Dawson. 6.55: Musical interlude. 7.0: Melbourne Observatory time signal. 7.1: Countryman's session—Stock Exchange information; Corn Exchange report; Associated Stock and Station Agents' official report; Wool Exchange report; mines and metals; fish and rabbit prices; farm and dairy produce report, supplied by the Inter-State Dairy Produce Committee; wholesale fruit prices, supplied by the Wholesale Fruit Merchants' Association; retail fruit prices, supplied by the Victorian Fruitgrowers' Association; citrus fruit prices, supplied by the Victorian Central Citrus Association; weather synopsis; river reports; rainfall data. 7.25: Gardening hints—gladioli for autumn flowering. Mr. H. A. Brown. 7.40: News service. 7.45: To-morrow's events at the Motordrome, Eric Akin. 8.0: Melbourne Observatory time signal.

NIGHT SESSION

8.0: 59th Battalion Band (Bandmaster, Sgt. J. Dougherty)—Valse Millaire, "The Grenadiers" (Rimmer). 8.8: Robert Allan, alto—"Garden of Happiness" (Wood). "Annie Laurie" (Magraren). 8.15: A. B. Eaton, quartette—First movement from Quartette No. 2 (Beehove). 8.27: Newstead Rush, baritone—"Come Away, Death" (Quilter). "O Mistress Mine" (Quilter). 8.30: Edouard Mignani, pianist, and Cecil Fraser, piano—"Sonata No. 1 in D Minor" (John Ireland). 8.45: A novel musical sketch with a surprise ending. 9.15: 59th Battalion Band—descriptive, "Guard Mounting," in a camp of continuous training. Order and incidents arranged by Captain A. J. May, musical arrangement, Sgt. J. Dougherty. "Bravo, the Armies" (Britten). "The Middy" (Alford); slow march, "Norms" (Bellini); march, "Victoria" (Litgow). 9.40: Mildred and Connie—musical comiques. 9.45: 59th Battalion Band—cornet duet, "Forest Whispers" (Rimmer). 9.58: Newstead Rush, baritone—"The Emperor's Character" (Ira Mornement). "Old Clothes and New Clothes" (Hawkins). 10.5: 59th Battalion Band—"Pat in Australia" (Hawkins), selected. 10.15: Mildred and Connie—musical comiques. 10.23: Mel Morris will speak on "To-morrow's race" at Mentone. 10.33: British official wireless news; meteorological information; items of interest. 10.45: Paul Jacale and his band—latest and brightest dance numbers. 11.30: God Save the King.

3AR

Australian Broadcasting Co., 129A Russell St., Melbourne (Wavelength, 384 Metres).

MORNING SESSION

8.35: Musical reproduction. 8.45: Weather. 9.0: Chimes. 9.1: News service. 9.5: Musical reproduction. 10.0: Chimes. 10.1: British official wireless news. 10.10: Announcements. 10.30: Arnold Coleman at the Wurliizer. 10.50: The daily broadcast service. 11.0: Close down.

MIDDAY SESSION

12.0: Chimes. 12.1: Description of Sheffield Shield cricket match, Victoria v. Queensland, at the Mel-

bourne Cricket Ground. 1.15: Luncheon music, supplied by the Studio Light Orchestra.

AFTERNOON SESSION

2.30: A chat by a prominent woman. 2.45: Topical chatter, The Flapper and Auntie. 3.0: Studio Light Orchestra—Dance des Bacchantes (Gounod), "Schon Rosmarin" (Kreislere). 3.10: Victor Baxter, tenor—"Nina" (Pergolesi), "Duna" (McGill). 3.17: Florence Elsworth, piano preludes—"Raindrop" (Chopin), "Fantasie Impromptu" (Chopin), "3.27: Madame Alina Hesseleva, soprano—"A Request" (Woodford-Finden), waltz, "Il Bacio" (L'arditi). 3.34: Studio Light Orchestra—"Prelude" (Jarnfelt), "Down in the Forest" (Landon Ronald), "Liebesleid" (Kreislere). 3.44: Musical sketch—"A Businesslike Proposal," Alf Lawrence and Nell Crane. 4.0: A woman's wanderings through the Empire—Singapore, Miss Doreen Berry. 4.15: Description of Sheffield Shield cricket match, Victoria v. Queensland, at the Melbourne Cricket Ground. 5.30: Weather data. 5.40: From the M.C.G., description of cricket match resumed. 6.0: Close down.

EVENING SESSION

6.15: Dinner music supplied by Paul Jacale and his band. 7.30: What's on the air to-night. 7.32: Sporting results. 7.35: Road notes. 7.40: Latest musical releases. 8.0: G.P.O. chimes.

NIGHT SESSION

8.1: A.P. recollections—"The Digger's Six Stockings," Mr. C. Ellis. 8.3: Communal singing. Transmission from Geelong, conductor, W. Sampson. 10.30: Weather, news. 10.30: God Save the King.

3DB

The "Herald" Broadcasting Station, Flinders Street, Melbourne (Wavelength 255 Metres).

MORNING SESSION

11.0: Women's Radio Service—"Cookery Problems and Hints," conducted by Miss Iris Turnbull. Mrs. G. Fassal Cox, of the Homelech School of Domestic Science. 12.0: Beatrice Harrison, cello—"Broken Melody" (G 1626). 12.30: Community Singing, under the auspices of the Graham Traders Association, transmitted from the Prahran Town Hall, conductor, Mr. G. J. Mackay; accompanist, Mr. Reg. Brown.

AFTERNOON SESSION

2.30: Berlin State Opera Orchestra—"Symphony No. 39 in E Flat" (Mozart). 4.48-14.50: 3.0: Maartli Offers (contralto)—"O Fatal Gift" ("Don Carlos"), DB 1158. 3.30: Master Yehudi Menuhin (violin)—"La Capriciosa" (Ries), DA 1003. 4.0: Close down.

EARLY EVENING SESSION

5.0: San Francisco Symphony Orchestra—"Valse de Concert" (Giazoun), D 1492. 5.30: Levittown session. 6.30: Goldstream Guards Band—"Mikado" selection. 7.0: Colonial Club Orchestra—"Hello, Sunshine Hello," Bwk 4281. 7.15: Market reports—John McNamara and Co. Pty., Ltd. 7.30: Peter Dawson—"Rolling Down to Rio," B 3023.

EVENING SESSION

8.0: Radio Bridge Game No. 4. Miss Shelby, the dealer, holds: Spades, Q, 6, 5; Hearts, K, 8, 4, 3, 2; Diamonds, Q, J, 10, 7; Clubs, 10. Mr. Leivender, in the west, at left of dealer, holds: Spades, K, 10; Hearts, A, Q, 7, 6, 5; Diamonds, A, K, 4, 3; Clubs, 4, 2. Mr. Thurston, in the north, partner of the dealer, holds: Spades, 9, 8, 7; Hearts, J, 10, 9; Diamonds, 9, 7; Clubs, J, 9, 7, 6. Mrs. Campbell, in the east, holds: Spades, J, 3; Hearts, 10; Diamonds, 6, 5, 2; Clubs, A, K, Q, 8, 3. 8.30: Jack Hylton and his Orchestra—"To Know You is to Love You," B 5850. 8.40: Victor Staub (piano)—"Valse Brillante in F," Parlo, A 2609. 9.30: Gladys Moncrieff—"Heart o' Mine," Col. 0187. 10.0: Black Diamonds Band—"Punjaub March," Zone 2773. 10.15: Reginald Foot (organ)—"Festive Medley," B 2780. 10.45: News. 11.0: God Save the King.

4QG

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

EARLY MORNING SESSION

7.25: News. 7.58: Time. 8.0: Music. 8.15: News. 8.30: Close down.

MORNING SESSION

11.0: Music. 11.5: Social news. 11.15: A cookery talk. 12.30: Music. 11.35: More social news. 11.45: Music. 12.0 noon: Close down.

MIDDAY SESSION

1.0: Market reports and weather information. 1.30: The State Insurance Lunch Hour Club's entertainment. 2.0: Close down.

AFTERNOON SESSION

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

EARLY EVENING SESSION

6.0: Mail train running times; mail information; shipping news. 6.5: Social news. 6.25: Commercial announcements. 6.30: Bedtime stories, conducted by Little Miss Brisbane. 7.0: News in brief. 7.5: Stock Exchange news. 7.6: Metal quotations. 7.7: Market reports. 7.25: Penwick's stock report. 7.30: Weather information. 7.40: Announcements. 7.45: Standard time signals. 7.45: To-morrow's sporting fixtures reviewed.

NIGHT SESSION

8.0: The Rhythm Rascals, dance music. 8.10: The Silkstone Apollo Club (conductor, T. Westwood), chorus, "Excelsior" (Bafer). 8.15: Annie Adams (soprano), "A Request" (Woodford-Finden). 8.19: A Elliott (tenor), "Good-Night." 8.23: D. Owens (elocutionist), "The Eleven-Sixty-Nine." 8.27: The Silkstone Apollo Club, "It Was a Lover and His Lass" (Morley). 8.31: Thelma Marsh (pianist), selected. 8.35: Annie Adams (soprano), "The Silver Ring" (Chamblade). 8.39: The Rhythm Rascals, syncopation. 8.49: The Silkstone Apollo Club, "True Till Death" (Scott-Galby). 8.54: Messrs. Griffiths, Jones, Jenkins, and Wathan, vocal quartette, "Sweet Bye and Bye." 9.0: Metropolitan weather forecast; week-end road information for motorists, officially supplied by the R.A.G.C. 9.15: The Silkstone Apollo Club, "Sands of Dee" (Goldbeck). 9.20: Messrs. T. Westwood and Thompson, vocal duet, "Ora Pro Nobis" (Picolomini). 9.24: The Rhythm Rascals, syncopation. 9.30: The Silkstone Apollo Club, choruses, "Laughter" (Abt), "Ye Banks and Braes." 9.37: J. Thompson (baritone), "Aberfoyle" (Ketyby). 9.43: The Silkstone Apollo Club, chorus, "They Cannot Kill the Soul." 9.47: T. Westwood, selected. 9.57: The Silkstone Apollo Club, choruses, "Men." "The British Grenadiers." 10.0: News. 10.30: Close down.

5CL

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

MORNING SESSION

During the day a description of the cricket match, South Australia v. New South Wales, will be given. 11.15: Chimes. 11.18: Recordings. 11.45: Kitchen chat and menu talk. 12: Recordings. 12.15: News. 12.40: Recordings. 12.52: Railway Stock Exchange and meteorological information. 1.1: Player-program session. 1.59: Meteorological information. 2.0: Chimes. Close.

AFTERNOON SESSION

3.0: Chimes. 3.1: Programme review. 3.4: Recordings. 4.8: Chimes. 4.1: Player-program session. 4.15: An educational talk. 4.25: Stock Exchange. 4.30: Chimes. Close down.

EVENING SESSION

6.0: Chimes. 6.1: Birthday greetings. 6.15: Request numbers. 6.30: Crosley Dinner Session. 7.0: Chimes. 7.1: Senior Birthday League greetings; 5CL's sporting service; market reports. 7.30: "Mo" Manning will review cricket. 7.35: Captain Donald Maclean. 7.45: Mr. Brinkman (Royal Automobile Association) will speak.

NIGHT SESSION

8.0: Chimes. 8.1: Programme review. 8.10: Holders' Silver Band (conducted by Mr. O. Summerton), selection, "Sailors' Songs." 8.20: The Lyric Male Quartette, "Mary" (Richardson), "Little Tommy" (Macy). 8.27: Holders' Silver Band, "I Don't Want to Play in Your Yard," "Alice, Where Art Thou?" (refrains to be sung by Gertrude May, soprano, and James Riley, tenor). 8.37: Reble Saunders, monologist, "Dingle Dongle Dell," "Life." 8.45: L. Taylor, cornetist, "Titanic" 8.50: Vocal number. 8.55: Holders' Silver Band, "Adestes Fideles," "Hark! the Herald Angels Sing." 9.1: Meteorological information, including semaphore tide. 9.2: Overseas grain report. 9.3: Announcements. 9.5: Captain Donald Maclean. 9.15: Holders' Silver Band, "Annie Laurie," "Adestes Fideles," "Heart Grow Fonder" (refrains to be sung by Gertrude May and James Riley). 9.22: Reble Saunders, monologist, "A Little Bit of String." 9.29: E. Creed, euphonium solo, "Glorious Devon." 9.34: The Lyric Male Quartette, "An Evening Pastoral" (Shaw), "A Catastrophe" (Sprague). 9.41: Holders' Silver Band, selection, "Samson and Delilah." 9.51: Vocal number. 9.55: The Lyric Male Quartette. 10.0: Holders' Silver Band, "Softly Falls the Moon." 10.1: Holy Night. 10.10: Vocal number. 10.15: News service. 10.30: Dance recordings. 11.0: Close down.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 435 Metres).

EARLY MORNING SESSION.—7.30: Chimes. 7.31: Meteorological report. To-day's maxim. 7.35: Musical reproduction. 7.58: Mails and shipping intelligence. 8.0: What's on to-day? 8.5: World-wide cable. 8.10: Musical reproduction. 8.27: Features of to-day's programme. 8.30: Close down.

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

MIDDAY SESSION.—12.30: Chimes. 12.31: Musical reproduction. 12.35: Market reports. 12.45: Midday news service. 12.55: Item of interest. 1.1: Luncheon music by the National Broadcasting Orchestra. 2.30: Close down.

THE RADIO MATINEE.—3.30: Chimes. 3.31: Musical reproduction. 3.45: Women's interest talk, "The Labor Women's Central Executive." 4.0: Special recital of reproduced music. 4.5: What's on the air this evening? 5.0: Close down.

EARLY EVENING SESSION.—5.45: Chimes. 5.46: Children's good-night stories by Uncia Bas and Aunty Maxine. 6.15: A.B.C. Younger Set Session. 6.30: Dinner music. 7.30: Weather. 7.31: A.B.C. news. 7.35: Market reports. 7.40: Stock Exchange. 7.48: Review of to-morrow's sporting fixtures. 7.57: Features of to-night's presentation.

EVENING SESSION.—8.0: Chimes. 8.1: Marie Lescaut, soprano. 8.8: Hugh Torrence, tenor. 8.15: Who tells the best tales? Storytellers: Harry Graham, Basil Kirke, "Dryblower" Murphy, and W. S. Tatlor. 8.45: Sporting anticipations by Russell Sandeman. 9.0: Marie Lescaut, soprano. 9.7: Hugh Torrence, tenor. 9.15: Ringside description wrestling match by Russell Sandeman, broadcast from Olympia Gardens. 10.15: What's on the air to-morrow? 10.20: Temple Court Dance Band, conducted by Merv. Lyons. 10.59: Weather report. 11.0: Close.

7ZL

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

11.30 a.m.: Recordings. 11.34: Midlands weather forecast. 11.35: Melody Masters. 11.55: Tasmanian stations. 9 a.m.: Weather report. 12.0: G.P.O. clock chimes the hour. 12.1 p.m.: Shipping information; mail notices; housewives' guide. 12.8: Melody Masters. 12.30: News service; announcements. 12.40: Melody Masters. 1.5: Railway auction sales. 1.10: Melody Masters. 1.30: Close down. 3.1: Melody Masters. 3.4: Weather. 3.5: Melody Masters. 4.15: Personalities, readings. 4.30: Close down. 6.15: Children's corner, with "Uncle David." 7.10: Recorded music. 7.30: News session. 7.40: An Hour with Theodore Chaliapin, bass, and Alma Gluck, contralto. 8.45: James Counsel, "The History and Development of Music." 9.45: News session. 10.1: Close down.

SCREEN-GRID VALVE

Helping Solve Aerial Problem

BACK in the days of the crystal set, the first question asked of the prospective radio buyer was, "Have you space for a good aerial?" for upon the size of the aerial depended the whole performance of the radio receiver. The aerial was literally 75 per cent of the receiver, and unless it was at least 150 feet long the owner could not expect much in the way of results. As valves were introduced and their number increased in the radio set the number of feet necessary in the aerial decreased proportionately, until to-day the 150-foot aerial is practically extinct, except, perhaps, in isolated rural districts.

Two or three years ago the average good receiver, incorporating several stages of tuned radio frequency, could be quite satisfactorily operated on a very short aerial.

The screen-grid valve is largely responsible for the change in aerial requirements, as well as the change in public opinion with regard to aerial substitutes. Many receivers on the market are capable of receiving local programmes without an aerial, or with a few feet of wire at most. These same receivers, operating from a wire around the picture rail or a light socket aerial plug, generally have an excellent range, comparable, in fact, to the average properly erected outside aerial.

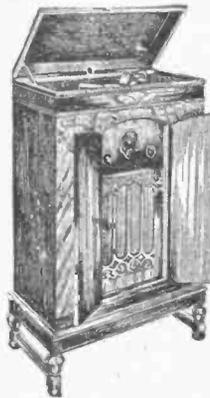
The effect of the enormous increase in set sensitivity upon metropolitan aerial requirements has been quite marked. Radio enthusiasts, finding reception entirely satisfactory with the small aerial, are coming to prefer it to the clumsy roof aerial.

When very simple sets are used, and in certain country localities the aerial will probably remain essential to satisfactory operation, at least for some time to come. In metropolitan areas, however, it is not unlikely that the outside aerial will slowly become a thing of the past.

As built into Australia's

Finest All-Electric Radio

and Phonograph Combination!



The RADIOLA DUOFORTE

An exquisite instrument embodying the highest perfection of the electrical recreation of music . . . either by record or from the air.

Price £125.

Deferred Payments.

Let us demonstrate this incomparable instrument in the privacy of your own home. If desired, arrangements can be made to TRADE-IN your present receiver or old phonograph.



MAGNAVOX DYNAMIC X-CORE SPEAKER UNIT No. 405

[240 Volts A.C.] 10½in. Cone

Price, £8/10/-

For use with all types of Sets or Amplifiers where 210-240 Volts A.C. house lighting current is available. Supplied with cord fitted with "ON" and "OFF" switch.

Carries Lifetime Guarantee of Original Standard of Performance

Wholesale and Retail Distributors for Magnavox Speakers:

MICK SIMMONS LTD.

HEADQUARTERS: HAYMARKET, SYDNEY.

Local Programmes, Saturday, December 21

2FC

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

EARLY SESSION—7 to 8.15 a.m.

- 7.0: "Big Ben" and Meteorological information for the man on the land.
7.3: This morning's news from the "Daily Guardian."
7.8: Austradio Musical Reproduction.
7.45: Mails and shipping.
7.48: What's on to-day?
7.50: Children's Birthday Calls.
8.0: Music from the Studio.
8.10: Condition of the Roads, supplied by the Main Roads Board.
8.15: CLOSE.

MORNING SESSION—AFTERNOON SESSION.

- 10.30: Announcements.
10.32: A.B.C. Racing Observer.
10.45: Studio Music.
11.0: HOUSEHOLD HELPS: Week-end suggestions by Miss Ruth Farst.
11.10: CABLES (Copyright). "Sun-Herald" and A.P.A. News Service.
11.15: Austradio Musical Reproduction.
11.53: British Official Wireless Press.
12.0: "Big Ben." Stock Exchange and Metal Quotations.
12.5: Austradio Musical Reproduction.
12.20: Midday weather forecast and weather synopsis.
12.30: Studio Music.
12.50: FROM RANDWICK: Description of the A.J.C. Meeting in the Running.
NOTE: Cricket Results of the matches, Victoria v. Queensland, played at Melbourne, and South Australia v. N.S.W., at Adelaide, will be transmitted as received. During intervals between races a musical programme will be broadcast from the Studio.
4.35: FROM THE STUDIO: Late Sporting Results.
4.45: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

5.45: Children's "Good-night" Stories, told by the "Hello Man," assisted by Aunt Willie and Cousin Gwen.

6.45: Dinner Hour Music by the Light Orchestra.

7.20: A.B.C. Sporting Service.

7.30: Special Country Session. Stock Exchange Resume. Weather Forecast. Late news from the "News."

7.58: To-night's Programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.

Handel's famous Oratorio, "The Messiah," will be broadcast through 2FC Service to-night, when the performance will be given by the Welsh Choral Society from the Sydney Town Hall. Through 2BL listeners are offered a popular Programme, which opens with a sparkling Revue, and the big sporting feature later on will attract a large audience.

8.0: FROM THE SYDNEY TOWN HALL, "THE MESSIAH."

Welsh Choral Society. Soloists: Helena Stewart (soprano), Virginia Bassett (contralto), William Green (tenor), Reginald Good (bass).

Leader of Orchestra, W. J. Grieves, At the Grand Organ, G. Vern Barnett.

Overture.
Tenor Recit.—"Comfort Ye, Comfort Ye, My People."

Tenor Air—"Every Valley Shall be Exalted."
Chorus—"And the Glory of the Lord."

Bass Recit.—"Thus Saith the Lord of Hosts."
Bass Air—"But Who May Abide the Day of His Coming."

Contralto Recit.—"Behold! a Virgin Shall Conceive."
Contralto Air and Chorus—"O, Thou That Tellest Good Tidings to Zion."

Bass Recit.—"For Behold, Darkness Shall Cover the Earth."
Bass Air—"The People that Walked in Darkness."

Chorus—"For Unto Us a Child is Born."

Pastoral Symphony.
Soprano Recit.—"There Were Shepherds Abiding in the Fields."

Soprano Recit.—"And lo! the Angel of the Lord Came Upon Them."
Soprano Recit.—"And the Angel Said Unto Them."

Soprano Recit.—"And Suddenly there was with the Angels."
Chorus—"Glory to God in the Highest."

Soprano Air—"Rejoice Greatly."
Contralto Recit.—"Then Shall the Eyes of the Blind be Opened."

Contralto Air—"He Shall Feed His Flock like a Shepherd."
Soprano Air—"Come Unto Him, All Ye that Labour."

10.30: FROM THE STUDIO: THE COUNTRY MAN'S WEATHER SESSION.

(a) "New South Wales Forecasts."
(b) "Interstate Weather Synopsis."

Yachtsman's and Fisherman's Forecast. Announcements.

9.40: FROM THE SYDNEY TOWN HALL: "THE MESSIAH" (Handel).

Chorus—"Behold the Lamb of God."
Contralto Air—"He was Despised."

Chorus—"Surely He Hath Borne our Griefs."
Chorus—"All We Like Sheep Have Gone Astray."

Tenor Recit.—"Thy Rebuke has Broken His Heart."
Tenor Air—"Behold and see if there be any Sorrow like until His Sorrow."

Tenor Recit.—"He was cut off out of the Land of the Living."
Tenor Air—"But Thou didst not Leave His Soul in Hell."

Chorus—"Lift up Your Heads."
Soprano Air—"How Beautiful are the feet of Them that Preach."

Bass Air—"Why do the Nations so Furiously Rage Together."
Tenor Recit.—"He that Dwelleth in Heaven."

Tenor Air—"Thou Shalt Break them with a Rod of Iron."
Chorus—"Hallelujah."

Soprano Air—"I Know that My Redeemer Liveth."
Chorus—"Worthy is the Lamb."

10.25: FROM THE STUDIO: Announcements. Late Official Weather Forecast.

10.30: FROM THE BALLROOM OF THE ORIENTAL: Sydney Simpson's Sycopators in Dance Music.

11.30: CLOSE. "NATIONAL ANTHEM."

2BL

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

OPENING SESSION—8.15 to 11 a.m.

8.15: G.P.O. Chimes and Announcements.
8.16: Music for every mood.
8.40: Meteorological data for the country.

8.45: Mails and Shipping Information.
9.50: Memory Melodies.
9.0: This morning's Story.
9.30: A Musical Interlude.
9.40: British Official Wireless Press.
9.45: New Music.
10.5: News from "The Daily Guardian."

10.10: Austradio Musical Reproduction.
10.40: Mr. G. COOPER, Park Superintendent of City Parks, will speak on "GARDENING."

11.0: G.P.O. chimes; close down.

MIDDAY AND AFTERNOON SESSIONS—12 Noon to 5.15 p.m.

12.0: G.P.O. Chimes and Announcements.
12.2: A Pianoforte Recital.
12.30: LUNCH MUSIC.

1.0: Afternoon news from "The Evening News."
1.5: Studio Music.
1.30: Pianoforte Recital.
2.0: NOTE: During the afternoon sporting descriptions will be given, and in the intervals from the Studio, a programme by the Light Orchestra.

5.0: Complete Racing and Sporting Resume.
5.15: G.P.O. Chimes. Close down.

DINNER HOUR—6.15 to 7.55 p.m.

6.15: DINNER MUSIC.
6.45: "THE CAPTAIN" to his Comrades.

7.5: The A.B.C. Sporting Service.

7.20: DINNER MUSIC.

7.45: Austradio Musical Reproduction.

7.55: What's on the air to-night?

TO-NIGHT'S PRESENTATION—8 to 12.

Before we cross over to the Stadium to-night for our big sporting feature, our popular programme is being contributed by Vera Murray, in new songs; Harrison White, Banjo Solos; Veta Wareham, Violinist; and Florence Page, Monologues.

To those who enjoy classic music 2FC has also a big attraction, "The Messiah," by the Welsh Choral Society, from the Sydney Town Hall.

8.0: HARRISON WHITE, Mandoline Solos: (a) Unaccompanied Mandoline Solo; "Echoes from the Church," arranged as a quartette, and played entirely on one instrument (White).

(b) Imitation of a Mandoline Band.
(c) Imitation of the Bagpipes (White).

8.7: FLORENCE PAGE, Monologues—(a) "The Art of Politeness" (Beer).
(b) "What Does He Call You, Girls?" (Weston).

8.14: VETA WAREHAM, Violinist—(a) "Mazurka de Concert" (Musin).
(b) "Souvenir" (Drdia).

8.21: VERA MURRAY, Popular Vocalist—(a) "For Old Time's Sake" (De Silva).
(b) "Mother's Day" (Green).

8.28: FOREWORD.

8.30: FROM THE SYDNEY STADIUM—A description of the fighting contest.

9.35: FROM THE STUDIO—Weather information for the man on the land.

9.37: CEC MORRISON AND HIS BAND.

9.45: FLORENCE PAGE, Monologues—(a) "Girls" (according to a fourteen-year-old boy) (Turner).
(b) "Tigh Society" (Wood).

9.52: HARRISON WHITE, Banjo Solos—(a) "Entry of the Gladiators" (Puck).
(b) "Selection of Scotch Airs" (White).

9.59: VERA MURRAY, Popular Vocalist—(a) "Little Pal of Long Ago" (Hirsch).
(b) "I wonder if the same Moon Shines in Ireland to-night."

10.7: VETA WAREHAM, Violinist—(a) "Hungarian Dance No. 1" (Brahms).
(b) "Hungarian Dance No. 7" (Brahms).

10.14: SEC MORRISON AND HIS BAND.
12.0: "NATIONAL ANTHEM." CLOSE.

2GB

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

3.0: Musical Session. 5.15: Children's Session, by Uncle George. 6.50: M.G.-M. Radio Movie Club Session. 7.0: Sutton's Request Hour. 8.0: MUSICAL SESSION. 10.30: Close down.

2UW

Radio Broadcasting, Ltd., Paving's Building, Ash St., Sydney (Wavelength, 267 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, Goulburn St., Sydney (Wavelength, 280 Metres).

EVENING SESSION—6.0: Birthday calls, request numbers, and Kiddies' Entertainment, UNCLE BERT and UNCLE MAC. 7.0: Musical interlude. 7.5: Birthday calls. 7.15: SPORTING FEATURE. Turf topics. How they ran to-day. 7.50: Request numbers. 10.0: Closing announcements.

2UE

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

Early Morning Session, as usual.

EVENING SESSION.

6.30: Wendy's Hour with the Children, and Birthday Greetings.

7.15: Turf Talk, by Mr. Hopkins.

7.40: Orchestral Items.
7.55: Announcements, and news from the "Sun."

8.0: Clock and Chimes.
8.1: Overture, "Pique Dame" Fantasia.

8.10: Orchestral and Vocal Music.
10.30: Close down.

Interstate Programmes, Saturday, December 21

3LO

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

EARLY MORNING SESSION

7.0 to 8.15: See Friday.
MORNING SESSION
10.30 to 12.30: See Friday.

MIDDAY SESSION

1.0 to 1.30: See Friday.

AFTERNOON SESSION

2.0: Description of Sheffield Shield cricket match, Queensland versus Victoria, at Melbourne Cricket Ground. 2.13: Description of Two-year-old Handicap, 6 furlongs, Mentone races, by Mel. Morris. 2.20: Description of Sheffield Shield cricket match, Victoria versus Queensland, at Melbourne Cricket Ground. 2.43: Description of Welter Handicap, one mile, Mentone races, by Mel. Morris. 2.50: Description of Sheffield Shield cricket match, Victoria versus Queensland, at Melbourne Cricket Ground. 3.13: Description of Brush Steeplechase, 2 miles 1 furlong, Mentone races, by Mel. Morris. 3.20: Description of Sheffield Shield cricket match, Victoria versus Queensland, at Melbourne Cricket Ground. 3.43: Description of Mentone Handicap, 1 1/4 miles, Mentone races, by Mel. Morris. 3.50: Description of Sheffield Shield cricket match, Victoria versus Queensland, at Melbourne Cricket Ground. 4.0: Melbourne Observatory time signal; sporting results to hand. 4.5: Musical interlude. 4.15: Description of Mentone Plate, 6 furlongs, Mentone races, by Mel. Morris. 4.20: Description of Melbourne Handicap, Victoria versus Queensland, at Melbourne Cricket Ground. 4.43: Description of Mentone Purse, 7 furlongs, Mentone races, by Mel. Morris. 4.50: Description of Sheffield Shield cricket match, Victoria versus Queensland, Melbourne Cricket Ground. 5.0: Sporting results to hand. 6.0: Stumps scores. During the afternoon results of Port Fairy races will be broadcast as they come to hand; also progress reports of the cricket match, S.A. v. N.S.W. at Adelaide Oval.

THE CHILDREN'S CORNER

6.0: "Little Miss Kookaburra."
EVENING SESSION
6.40: Sporting results. 7.0: Melbourne Observatory time signal. 7.1: Countryman's session. 7.25: Stories of our mining fields. Ballara—Mr. Chas. Daley. 7.40: News service. 7.45: Wanderings around the world—Mexico—Mr. H. J. G. Esmonde. 8.0: Melbourne Observatory time signal.

NIGHT SESSION

8.0: Relay from station 2FC, Sydney. "The Messiah," by Welsh Choral Society. (See 2FC programme).
Interlude from Station 3LO, Melbourne.
9.50: Mr. J. Howlett Ross will give a short talk on "The Life of Handel."
9.40: From 2FC. See local programmes.
10.20: All sporting results, new etc.
10.30: Paul Jeacle and his band—dance music.
11.30: "God Save the King."

3AR

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

MORNING SESSION

8.15 to 11.0: See Friday.
MIDDAY SESSION
12.0 to 2.45: See Friday.

AFTERNOON SESSION

3.0: Paul Jeacle and his band—"Somebody Said" (Clare). "Telling the World We're in Love" (Weber). 2.6: Stella Dredge, soprano—"Night" (Landon Ronald). "The Lass with the Delicate Air" (Arne). 3.13: Jesters, in comedy and song. 3.27: Paul Jeacle and his band—Scotch medley. 3.36: Thomas George, baritone—"My Jean" (Coultas). "Brian of Glenara" (Graham). 3.43: Violet McGregor, violin—"The Barren Rocks of Aden." "Will Ye No Come Back Again." 3.50: John D. Sullivan, tenor—"Pine Trees" (Gleeson). "Madeline" (W. G. James). 3.57: A piano number by an absent artist. 4.3: Stella Dredge, soprano—"Carissima" (Penn). "A Brown Bird Singing" (Wood). 4.10: Paul Jeacle and his band—"Lonesome Little Doll" (Cowan). "My Troubles are Over" (Monaco). 4.16: The Two Jesiers, in comedy and song. 4.26: Claude Jeacle, baritone—"Annie Laurie," with harp accompaniment. 4.30: Thomas George, bass—"Come to the Fair" (Martin). "Passing By" (Purcell). 4.37: Violet McGregor, violin—"A S. otish selection. 4.44: John D. Sullivan, tenor—"Come into the Garden, Maud" (Ballet). "Molly Brannigan" (Old Irish). 4.51: Paul Jeacle and his band—"Sweetheart of my Dreams" (Fitch). "In the Middle of the Night" (Rose). "Um-tcha, Um-tcha, da-da-da" (Hart). 5.0: Chimes. 5.1: Musical reproduction. 5.30: Weather data. 5.45: Close down.

EVENING SESSION

6.15: Dinner music supplied by the Studio Light Orchestra. 7.30: What's on the air to-night. 7.32: Sporting results. 7.40: Latest musical releases. 7.45: War experiences of the City of Melbourne Regiment—Capt. D. Joynt, V.O. 8.0: G.P.O. chimes.

NIGHT SESSION

8.1: National Broadcasting Orchestra—Selections from "The Cingales" (Monton).
8.10: The Two Daleys in Stop Press Topicalities.
8.20: Description of events at the Motordrome. 8.35: Sybil Shaw, contralto—"Sapphic Ode" (Brahms). "The Stars Have Eyes" (Sanderson).
8.42: National Broadcasting Orchestra—Two light syncopated pieces. (Coates).
8.50: Description of dirt track racing at the Exhibition.

CHRISTMAS FEATURES

The special features in the Christmas Eve programme, to be broadcast by 3LO, will include—

ORCHESTRAL AND VOCAL CHRISTMAS MUSIC.

THE MAN IN GREY—
An atmospheric descriptive talk, by Mr. Cecil H. J. Williams, A.V.J.A., from Spencer Street Railway Station.

THE CHRISTMAS CAROL" (DICKENS)—
Studio Presentation.

DEPARTURE OF CHRISTMAS TRAINS—
A descriptive talk, from Spencer Street Station.

CHRISTMAS AT THE VICTORIA MARKETS—
A location atmospheric talk.

CHRISTMAS CAROLS—
By the A.B.C. Glee Singers.

APPROPRIATE NOVELTY ITEMS BY PAUL JEACLE'S JOKERS, THE BELLS OF ST. PAUL'S CATHEDRAL.

MIDNIGHT CHRISTMAS CAROLS SPECIAL CHRISTMAS GREETINGS.

Broadcasting features from 3LO on Boxing Day will include—

V.A.T.C. RACES AT CAULFIELD—
Descriptions by Eric Welch.

SHEFFIELD SHIELD CRICKET, VICTORIA v. N.S.W.—
Description by Mel Morris and Rod McGregor.

DANCE PROGRAMME AT NIGHT—
By Paul Jeacle and his band.
From 3 AR on Boxing Day, the following will be featured—

MATINEE RECITAL OF HOLIDAY MUSIC.

"THE GATES OF BAGDAD"—
A story from the "Arabian Nights," with incidental music by Frederick Hall.

"A TRIP DOWN THE BAY"—
An atmospheric scene, introducing Dad, Mum, and the Kids in many humorous situations.

9.5: Tom Wildbourn, entertainer—Humorous character sketch, "The Sandwich Man's Story" (A. Hesse).

9.12: Alfred Ackland, violin—"Gavotte" (Rach. Lullaby" (Moszkowski).

9.18: Description of events at the Motordrome. 9.23: The Two Daleys in Stop Press Topicalities.

9.44: National Broadcasting Orchestra—"Scenes Pittoresques" (Massenet).

9.54: Description of dirt track racing at the Exhibition.

10.9: Weather and news.
10.19: Description of events from the Motordrome. 10.34: National Broadcasting Orchestra—Four dances from "The Rebel Maid" (Phillips).

10.40: Sybil Shaw, contralto—"The Silver Ring" (Chaminade). "Rose in the Bud" (Forster).
10.47: Tom Wildbourn, entertainer—Song, "Along the Rocky Road to Dublin" (Grant). Coster sketch and song, "Best Little Woman in the World" (Le Brunn).

10.54: National Broadcasting Orchestra—"Two Valses" (Dvorak).
11.0: Rex Dance Band.
12.0: God Save the King.

3DB

The "Herald" Broadcasting Station, Flinders Street, Melbourne (Wavelength 255 Metres).

AFTERNOON SESSION
2.0: Ernest Leggett London Octet—"Operatic Fantasia," Parlo A 2841. 2.30: Jessica Gragonette (soprano)—"Old Folks at Home," Bwk. 4497. 3.0 Rate Da Costa (piano)—"Razor Blades," Parlo A 2615. 3.30: Johnny Marvin—"To Know You is to Love You," EA 607. 4.0: A. and P. Gypsies—"Haida, Troika" Bwk. 3105. 4.30: Marie Tiffany (soprano)—"Pale Moon," Bwk 15197. 5.0: Wilhelm Beckhaus (piano)—"Bohemian Duple" (Smetana) BB1130. 5.30: Levithan session.

EARLY EVENING SESSION
6.30: Peter Dawson—"Hinton, Dinton," Theme and Variations." C 1470. 7.15: Market reports—John

McNamara and Co. Pty., Ltd. 7.20: Waring's Pennsylvanians—"My Castle in Spain," EA 523.

EVENING SESSION
8.0: New Symphony Orchestra—"Nell Gwynn Dances," B 2087.
8.30: Paul Robeson (bass)—"I Got a Home," B 2727.
8.0: Nat Shilkret and his Orchestra—"Lady Divine," EA 531.

9.30: Band H.M. Coldstream Guards—"We Macgregor Patrol," B 2924.
10.0: Dora Maughan and Walter Pihl—"Just What I Thought," B 3000.
10.30: Reginald Poort (organ)—"Love's Garden of Roses," B 2988.

10.45: News.
11.0: God Save the King.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).
Early Morning Session as usual; no morning session, no midday transmission, afternoon session (as usual), and early evening session (as usual).

NIGHT SESSION
8.0: The Studio Orchestra, ten minutes' dance music: Helen McGregor Robertson (solicitor), "In the Driving Days" (Paterson); Millcent Nagel, at the piano, in popular numbers; Claude Walker, ten minutes with Henry Lawson: the Studio Orchestra, dance music, the last heat and the final of the main trophy race will be relayed from the Davies Park Speedway; the Studio Orchestra, dance music: Mrs. R. G. Allen (soprano), "A Birthday" (Cowan); Helen Robertson (solicitor), "Bebe Ribbons"; Millcent Nagel, at the piano; Mrs. R. G. Allen (soprano), "The Market" (Carew); the Studio Orchestra, dance music.

10.0: News; weather. Close down.

5CL

Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).
Day sessions as usual (see Friday).

NIGHT SESSIONS
8.0: Programme review and announcements.
8.10: A Night in the Bush (in which Frank Perrin and the madrigal singers will take part).
8.45: Hilda Reimann, violinist, "Liebesleid" (Kreisler), "La Preceuse" (Kreisler).

9.1: Don and Dot.
9.1: Captain Donald Maclean will continue his series of talks, entitled, "Feats of the Mighty."
9.18: The Madrigal Singers.

9.23: Hilda Reimann, violinist, "Gavotte" (Rameau).
9.27: Don and Dot.
9.37: Instrumental number.

9.44: Phyllis Everett, contralto, "Down Here" (May Brahe) "Betty's Garden" (Sanderson).
9.51: Hilda Reimann, violinist, "Spanish Dance" (Sarasate).

9.58: Gordon Hele, baritone, "The Floral Dance" (Moss). "Down Among the Dead Men."
10.8: Instrumental number.
10.15: The Madrigal Singers.

10.20: Sporting, including Mentone race results; yachting, cricket, tennis, athletics, and other sporting results.
10.30: Dance recordings.

11.0: Close down.

6WF

Australian Broadcasting Company, Ltd (Wellington Street, Perth (Wavelength, 435 Metres).
Day sessions as usual (race results during afternoon).

EVENING SESSION.—(Trotting results broadcast immediately received). 8.0: Chimes. 8.1: Musical reproduction. 8.2: Description of motor-cycle events, broadcast from Speedway meeting, Claremont. 8.22: Musical reproduction. 8.32: Description motor-cycle events, broadcast from Speedway meeting. 8.42: Musical reproduction. 8.52: Description motor-cycle events, broadcast from Speedway meeting. 9.0: Announcements. 9.5: Trotting resume. 9.8: Musical reproduction. 9.15: Description of motor-cycle events, broadcast from Speedway meeting. 9.25: Musical reproduction. 9.35: Description motor-cycle events, broadcast from Speedway meeting. 9.45: Musical reproduction. 9.55: Description motor-cycle events from Speedway meeting. 10.0: What's on the air tomorrow? 10.5: An hour's entertainment by celebrity artists (reproduced). 10.59: Weather. 11.0: Close

7ZL

Tasmanian Broadcasters Pty., Bursary Bldg., Elizabeth Street, Hobart (Wavelength, 410 Metres).
11.30 a.m.: Sonora recital. 11.34: Midlands weather forecast. 11.35: Sonora recital. 11.55: Tasmanian stations' 9 a.m. weather. 12.1: Shipping information; mail notices; Housewives' Guide. 12.8: Sonora recital. 12.30: News; announcements. 12.40: Sonora recital. 1.5: Railway auction sales. 1.30: Close down. During the afternoon, description will be given of the Mentone races, held at Mentone, Melbourne. 3.0: G.P.O. clock chimes the hour. 3.1: Transmission from the T.C.A. Ground, cricket match, A grade, Sandy Bay North-west, described by Syd. Jones. 5.10: All sporting results to hand. 5.15: Close down. 6.10: All sporting results. 6.25: Children's Corner, with "Uncle David." 7.10: Recorded music. 7.40: Jack O'Hartz will continue his talks on "A Game of Bridge." 7.50: James Counsell will speak on "European Airfare." 8.1: Record recital. 8.15: A request programme of popular records arranged by Paton's Music Warehouse. 10.2: Close down.

RADIOKES

COMPONENTS

are Specified and Used in

PRE-SELECTOR FOUR

Described in This Issue.

RADIOKES CHASSIS and STEEL CABINET

are the basis of construction of this modern and excellent receiver. A good set deserves a good housing, and the best cabinet you can procure is a beautiful Radiokes. Price, with Steel Chassis, £2/7/6, complete.

RADIOKES SHIELDED COILS



Radiokes Shielded Coils have been chosen for use in the Pre-Selector Four, for very obvious reasons.

RADIOKES Midget Condensers are the World's Best. These are specified for use in this set, as they are the highest grade procurable, and sell at moderate prices. Made in 5 sizes from 4/3 to 8/6 each.

RADIOKES R.F. CHOKES

for use in all modern receivers, both battery operated and power sets. Also for short-wave work. Small, compact, and rugged. Price 8/6 each.



RADIOKES Vitreous Resistors

are produced in light, medium, and heavy duty models, from 10 to 10,000 ohms. Priced from 2/6 to 6/6 each. Radiokes 12,000 ohm voltage divider with taps for 180v., 135v., 90v., and 45v. Price 8/6 each.

RADIOKES POWER CONDENSERS

For Electric Sets and Eliminator Work Highest quality job produced, with a test voltage of 1000 volts. Small and compact, made in 1 m.f., 1 m.f., and 4 m.f. Moderately Priced.

At Your Dealer's, or Direct

**Metropolitan Electric Co.,
Limited**

126 SUSSEX STREET, SYDNEY.

Local Programmes, Sun., Dec. 22

2FC

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

THE CHURCH HOUR—10 a.m. to 12.30 p.m.

10.0: Announcements.

10.5: Studio Music.

10.30: This morning's news from the "Sunday Sun," "Sunday Times," and "Truth;" British Official Wireless Press.

10.45: Musical Items.

11.0: FROM ST. MARK'S CHURCH OF ENGLAND, DARLING POINT—Morning Service. Preacher, Rev. P. A. Mcklem.

12.15: FROM THE STUDIO—Studio Music.

12.30: CLOSE

AFTERNOON PROGRAMME—3 to 4.30.

3.0: FROM TARONGA ZOOLOGICAL PARK, by special arrangement with the Park Trustees, a description of the Zoo and a programme of Band Music.

4.30: CLOSE.

EVENING PROGRAMME—6.50 to 10.30.

6.0: "A CELEBRITY RECITAL, arranged by Madame EVELYN GRIEG.

4.30: AN ADDRESS by HOWARD CARR.

"Joy as a National Asset."

6.50: ORGAN MUSIC.

7.0: FROM THE CENTRAL METHODIST

MISSION, LYCEUM HALL—Evening Service.

Preacher, Rev. H. C. Foreman M.A.

Choirmaster, Mr. V. W. Peterson, B.A.

S.E.C. Organist, Miss Constance Bardsley.

L.T.C.L.

Anthem, "Lift Up Your Heads" (Handel).

Introit, "Jesu, Stand Among Us."

Invocation

Hymn 102, "My Heart and Voice I Raise."

Prayer.

Hymn, 122, "Hark, the Herald Angels Sing."

Lesson, Luke 21-15.

Solo, "The Light of the World" (Weatherly), H. Leslie Piper

Prayer.

Offering and Anthem, "For Unto Us a

Child is Born" (Handel)

Sermon, "Crowded Out," Rev. H. C.

Foreman, M.A.

Hymn 130, "Cradled in a Manger Meekly."

Benediction and Vesper.

Hymn 763, "Master, Speak, Thy Servant

Heareth."

8.30: FROM THE STUDIO—A concert pro-

gramme arranged by G. Vern Barnett, in

association with members of the Sydney

Male Choir, conducted by Christian Helle-

mann, who will contribute Christmas Carols

and other choral items.

10.0: MEDITATION MUSIC.

10.30: CLOSE: NATIONAL ANTHEM.

2BL

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

MIDDAY SESSION—10.55 to 3 p.m.

10.55: Announcements.

11.0: FROM THE PETERSHAM CONGRE-

GATIONAL CHURCH: Morning Service,

conducted by Rev. A. P. Doran.

Invocation and Lord's Prayer.

Hymn: "O Worship the Lord."

Psalm 72.

Lesson.

Hymn: "Ye Fair Green Hills."

Talk to young folk.

Hymn: "Around the Throne of God"

Prayer.

Anthem.

Hymn: "Come all Ye Faithful."

Sermon: "WHAT THE GLAD TIDINGS

MEAN"

Hymn: "Hark the Herald."

Benediction.

12.15: FROM THE STUDIO: Musical items.

12.30: News from "The Sunday News," "Sun-

day Times" and "Truth."

12.38: A specially arranged programme of

instrumental music.

2.15: "Cheer-up" Session conducted by Uncle

Frank.

2.45: Austradio Musical Reproduction.

3.0: Close down.

LATE AFTERNOON—4.30 to 6 p.m.

4.30: FROM THE CAPITOL THEATRE—

Knight Barnett and Wilfrid Thomas in a

specially arranged programme of organ

and vocal Items.

KNIGHT BARNETT at the organ—

(a) "Peer Gynt Sulte No. 2" (Grieg).

(b) "I Love Thee" (Grieg).

WILFRID THOMAS, Basso—

"The Great Awakening" (with organ ac-

companiment).

KNIGHT BARNETT at the Organ—

(a) "Kiss me again" (Victor Herbert).

(b) "Oh, Sweet Mystery of Life" (Victor

Herbert).

(c) "Fleurette" (Victor Herbert).

(d) "Gipsy Love Song" (Victor Herbert),

by request.

WILFRID THOMAS, Basso—

(a) "Before the Cross" (La Forge).

(b) "In Summer-time on Bredon" (Peel).

(With Organ Accompaniment).

KNIGHT BARNETT at the Organ—

(a) "Love Boat" (Brown).

(b) "An Old Indian Love Song" (Keith-

ley).

(c) "Where Lotus Lilies Bloom" (Elllott).

(d) "The Song I Love" (Conrad).

WILFRID THOMAS, Basso—

(a) "Star of Eve," from the Opera "Tann-

hauser" (Wagner).

(b) "When the King went Forth to War"

(Koenemann).

KNIGHT BARNETT at the Organ—

(a) "Songs my Mother taught me"

(Dvorak).

(b) "Oriental Romance" (Rimsky-Kors-

kov).

(c) "Wine, Women, and Song" (Strauss).

EVENING SESSION—6 to 10 p.m.

6.0: For Children in Hospital—Session con-

ducted by Uncle Steve, assisted by Aunt

Goodie and Cousin Marjorie.

6.50: Organ Music.

7.0: FROM STRATHFIELD PRESBYTER-

IAN CHURCH: Evening Service conducted

by Rev V. C. Bell.

Organ.

Invocation.

Hymn.

Lesson.

Solo: MRS. V. C. BELL

Hymn.

Lesson.

Hymn.

Prayer.

Announcements.

Anthem.

Hymn.

Sermon: REV. V. C. BELL.

Hymn.

Benediction.

8.30: RELAY FROM 3AR, MELBOURNE.

NOTE: At 9 o'clock the weather informa-

tion for the man on the land will be given.

10.0: NATIONAL ANTHEM. CLOSE.

2GB

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

10.0: Music from Studio. 10.15: Organ

Music from St. Alban's Church, Regent St.,

Sydney. 10.30: Morning Service from St.

Alban's Church. 12 noon: Music from Stu-

dio. 12.30: Close down. 3.0: Musical Ses-

sion. 5.30: Children's Session, by Uncle

George. 7.0: Lecture from St. Alban's

Church. 7.35: Lecture from Adyar House.

8.20: SACRED CONCERT: Miss Ruth

Pearce Jones, Pianist. 8.28: Miss Beatrice

Kendrick, Contralto. 8.35: Mr. Austin Punc-

h, Baritone. 8.42: Mr. Gregory Valentine, Vi-

olinist. 8.50: Miss Gladys Abbin, Soprano.

8.57: Miss Ruth Pearce Jones, Pianist. 9.5:

Miss Beatrice Kendrick, Contralto. 9.12: Mr.

Austin Punc, Baritone. 9.19: Mr. Gregory

Valentine, Violinist. 9.35: Close down.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra, Sydney (Wavelength, 303 Metres).

EVENING SESSION.

8.0: Music, from Catholic Studio.

8.15: Instruction by Rev. Father T. Walsh,

S. J.

6.35: Orchestral Music.

7.0: Evening Devotions from St. Mary's

Cathedral.

7.55: Music.

8.0: Overture, "Dance of the Hours."

8.10: Vocal and Instrumental Concert.

10.15: Close down.

Interstate Programmes, Sun., Dec. 22

3LO

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

MORNING SESSION.

10.0: Melbourne Observatory time signal. 10.1: Musical reproduction. 10.20: Express train information. British official wireless news: items of interest. 10.30: Bell of St. Paul's Cathedral. 10.45: Musical reproduction. 11.0: Morning service from Scots' Church, Collins Street, Melbourne. Preacher, Rev. Dr. W. Borland, M.A.; sermon, "The First Nowell"; anthem, "There were Shepherds" from "The Messiah." 12.30: Close down.

AFTERNOON SESSION.

3.0: Pleasant Sunday Afternoon from Wesley Church Central Mission, conducted by Rev. J. M. Cain. Speaker, Rev. Dr. McCallum; subject, "The Message of Christmas to the World"; soloist, Miss Elsie Watkins. 4.30: Close down.

THE CHILDREN'S CORNER.

6.0: "Brother Bill." Birthday greetings by Billy Bunny.

EVENING SESSION.

7.0: Syd. Exton, tenor—"Be Thou Faithful Unto Death" from "St. Paul" (Mendelssohn), with 'cello obligato by Frank Johnstone. 7.3: Frank Johnstone, 'cello, "Air and Gavotte" (Handel). 7.7: Syd. Exton, tenor—"Had You but Known" (Denza). 7.10: Myra Montague, piano—"Waltz in A Flat" (Chopin). 7.15: Captain N. Carter will speak on—"Through Persia with Dumesterforce." The Political Situation in 1917. 7.30: Frank Johnstone, 'cello—"Air" from "Nina" (Pergolesi). "Meditation" (Widor). 7.35: Syd. Exton, tenor—"Ave Maria" (Kahn), with 'cello obligato by Frank Johnstone. 7.37: Frank Johnstone, 'cello—"Scherzo" (Van Goens). 7.40: Myra Montague, piano—"Lieder Ohne Worte, No. 14" (Mendelssohn). 7.43: Syd. Exton, tenor—"Requiem" (Homer), with 'cello obligato by Frank Johnstone. "Linden Lea" (Williams). 7.46: General T. A. Blamcy, O.B., C.M.G., D.S.O., Chief Commissioner of Police—"Traffic Control from the point of view of the Traffic Men."

NIGHT SESSION.

8.0: Musical ensemble presented by Hamilton Weber, Mus. Bac., and his all Australian orchestra. 10.20: News session. 10.30: God Save the King.

3AR

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

MORNING SESSION.

11.0: Service from Independent Church, Collins Street, Melbourne. Sermon, Rev. A. Penry Evans.

MIDDAY SESSION.

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

AFTERNOON SESSION.

4.30: "For Unto Us a Child is Born," from "The Messiah" (Handel), Collegiate Choir. 4.34: "Angels" (Massenet), Lew White, organ. 4.36: "Rosanna" (Granier-Dole), Dan Brien, tenor. 4.42: "On Wings of Song" (Mendelssohn), Albert Spalding, violin. 4.46: "Oh Little Town of Bethlehem" "The Infant Jesus," Collegiate Choir. 4.52: "Goin' Home," from "The New World Symphony" (Dvorak), Brunswick Concert Orchestra. 4.55: "Night Before Christmas" (recital), Ernest Hare. 4.58: "Silent Night" (Gruber), Florence Eston and male chorus. 5.1: "Kreuzer Sonata" (Beethoven), Huberman, violin. Schultz, piano. 5.25: "Adeste Fideles," Frank Nunn and male chorus. 5.28: "Largo" (Handel), Lew White, organ. 5.31: The week's good cause, goodwill towards animals, Mr. A. T. Latham, secretary V.S.P.C.A. 5.48: "Prelude in G Sharp Minor" (Rachmaninoff), "Nocturns" (Hoffmann), Joseph Hoffmann, piano. 5.52: Xmas hymn, "Three Kings," Collegiate Choir. 5.55: "Ave Maria" (Schubert-Wilhelm), Albert Spalding, violin. 5.58: "Holy Night" (Adam), Florence Eston and male trio. 6.1: "Quartette in G Minor" (Debussy), New York String Quartette. 6.15: "Shepherd's Xmas Song," Collegiate Choir. 6.20: Request numbers. 6.45: What's on the air to-night? 6.47: St. Paul's Cathedral bells.

EVENING SESSION.

7.0: Service from Wesley Church, Lonsdale Street, Melbourne; sermon, Rev. Irving Benson.

NIGHT SESSION.

8.30: A short recital of the works of Margaret Sutherland. Songs—"A Lament," "Arab Love Song," "The a Marigold," Currie Cairnduff. Sonata for piano and violin—Professor Bernard Heinze, violin, Margaret Sutherland, piano. Two songs for violin and voice—Professor Bernard Heinze, violin, Currie Cairnduff. Rhapsodie for two pianos—Miss Margaret Sutherland, Miss Mary Bellieu. 9.10: Herold Kyng, baritone—"The Laughing Cavalier" (Coventry), "Give a Man a Horse he can Ride" (O'Hara). 9.17: Anton Mullner, zither. 9.22: Isis Williams, soprano—"Ocean, Thou Mighty Monster." 9.28: Anton Mullner, zither. 9.34: Herold Kyng, baritone—"The Pirate" (Hueter) "The Blind Lover" (Keyes). 9.41: Mabel Nelson, piano—"Rhapsodie in B Minor" (Brahms), "Prelude in G Minor" (Rachmaninoff). 9.51 Isis Williams, soprano—"At the Well" (Hagerman), "Devotion" (Strauss). 9.58: Weather. 10.0: God Save the King.

4QG

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

MORNING SESSION.

11.0: From St. Andrew's Morning Service. 12.15: Close down.

AFTERNOON SESSION.

3.15: From the Botanic Gardens, band concert. 4.30: Close down.

EARLY EVENING SESSION.

6.0: An hour for little listeners.

NIGHT SESSION.

7.0: From St. Andrew's Presbyterian Church, children's service. 7.30: Evening service; concert by the Brisbane Municipal Concert Band. 9.30: Close down.

5CL

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

MORNING SESSION.

10.45: Carillon of bells from the Adelaide Town Hall. 11.0: Service from St. Bartholomew's Church, minister, Rev. E. L. Harvie; organist, Mr. Frank Bowden. 12.10: From 5CL studio, British Official Wireless news. 12.15: Close down.

AFTERNOON SESSION.

3.0: Chimes. 3.1: Pleasant Sunday Afternoon Service from Maughan Methodist Church; items will be given by the Moonta Harmony Choir. 4.0: Close.

EVENING SESSION.

6.5: Chimes. 6.1: Children's happy moments; birthday greetings, correspondence, songs, and stories by "Boy Blue." 6.15: "The Bird Lady" and Her Choir will entertain the children. 6.45: Church choir numbers. 7.0: G.F.O. chimes. 7.1: Senior Birthday League greetings. 7.2: Service from Maughan Methodist Church; minister, Rev. Samuel Forsyth; organist, Mr. M. Finlay.

NIGHT SESSION.

8.20: From 5CL Studio, Lady Mayoress's distress message; announcements. 8.30: From the Regent Theatre, Malcolm Reid and Co.'s special concert; Frank Roberts, Wurlitzer organ, "The Lost Chord," "Roses of Picardy." 8.39: Norman Morphett, tenor, selected. 8.43: Helene Fisher, violinist, "Minuet" (Mozart), "Melody in G Major" (Dawes). 8.50: The Madrigal Singers. 8.57: Harry Berry, cornetist. 9.4: Phyllis Everett, contralto. 9.8: Beryl Alford will tell the story of "The Birth of Christ." 9.18: Frank Roberts, Wurlitzer organist, "Poet and Peasant" (Supple). 9.26: Gordon Hele, baritone, "You Are Passing Hence" (Sullivan). 9.30: Helene Fisher, violinist, "Berceuse" (De Grassi), "Tambourin" (Rameau-Kreisler). 9.37: The Madrigal Singers. 9.44: Harry Berry, cornetist. 9.51: Linda Wald, soprano, "Nightfall at Sea" (Phillips). 9.55: News. 10.0: Close down.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 435 Metres).

MORNING SESSION.—10.40: Sporting resume. 10.50: News service. 11.0: Church service, Wesley Church. 12.30: Musical reproduction. 1.0: Close.

AFTERNOON SESSION.—3.0: Chimes. 3.1: "Messiah," broadcast from Queen's Hall, Perth, conducted by Harry Vowles. Soloists: Gladys Edwards, Iris Parker, R. E. Buchanan, and Charles Fighlins. Chorus of one hundred voices from city and suburban choirs, assisted by Metropolitan Orchestral Society. Chorus master, E. S. Craft. 6.0: Close down.

EVENING SESSION.—6.30: Chimes. 6.31: Children's special Christmas session, conducted by Uncle Bus and Uncle Charlie, assisted by Tiny Tots Choir. 7.30: Church service, "St. George's Cathedral," 8.45: Special musicale, arranged by Bert Howell, broadcast from Ambassadors Theatre, including assisting artists: Ambassadorian's Orchestra, Les Waldron at the console of the grand organ, Elizabeth Curwen, mezzo soprano, Charles Stephen, tenor. 10.30: Close.

7ZL

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

11.0: Morning Service from St. David's Cathedral, Hobart. 12.15: Close down. 3.30: From the studio, a programme arranged by the Pleasant Sunday Afternoon Association. 4.30: Close down. 6.15: Children's chorus singing (conductor, Trevor M. Morris). 7.0: Evening service from Memorial Congregational Church, Hobart. 8.30: Transmission from the City Hall, Hobart. 9.30: A band concert by the Derwent Concert Band. 9.45: News session. 9.50: Close down.

Home Set Builders!

ELECTRIFY YOUR PRESENT SET FOR £9/10/-

Or build your own Electric Set by the SIMPLICITY "3" method for £14/3/9.

Wiring diagram, subpanel layout diagram, and full particulars simply expressed may be obtained from any Radio store for the asking

4 GANG CONDENSER

Each section fitted with trimmer.

57/6

DRESNER SHORT-WAVE KIT

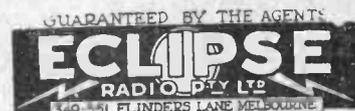
with world-wide reputation complete with tuning and reaction condenser and choke.

32/6

SUBURBAN RADIO DEALERS.

We have now arranged to finance our radio sets for you. We take all risk of bad debts and collection. Ask for our representative to call and explain details.

Wholesale Only.



32 Clarence St., Sydney. 'PHONE, B2002.

Local Programmes, Monday, December 23

2FC

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

EARLY SESSION—7 to 8.15 a.m.

- 7.0: "Big Ben" and Meteorological Information for the man on the land.
- 7.3: This morning's news from the "Sydney Morning Herald."
- 7.8: Austradio Musical Reproduction.
- 7.45: Mails and Shipping.
- 7.48: What's on to-day.
- 7.50: Children's Birthday Calls.
- 8.0: Music from the Studio.
- 8.15: CLOSE.

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

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

THE LUNCH HOUR—1 to 2.30 p.m.

- 1.0: Lunch Hour Music.
- 2.0: Stock Exchange, second call.
- 2.2: A Glance to the afternoon "Sun" and "News."
- 2.7: Studio Music.
- 2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.

- 2.30: A PIANOFORTE RECITAL.
- 2.45: MODERN BALLADS.
- 3.0: NATURE'S WONDERS—J. R. King-horne will tell of "Homes without Hands."
- 3.15: G. AUSTIN BLACKIE, Tenor—(a) "Mary of Argyle" (Nelson). (b) "I Know of Two Bright Eyes." (c) "Myra."
- 3.22: "The Turkish Hills" (Chutsoe).
- 3.27: MUSIC GRAVE and GAY.
- 3.30: FARMER'S DANCE BAND.
- 3.42: G. AUSTIN BLACKIE, Tenor—(a) "One Little Hour" (Sharpe). (b) "Dream Boat" (Novello).
- 3.49: FARMER'S DANCE BAND.
- 4.0: JEAN ARMSTRONG will tell of "Christmas in Shanghai."
- 4.15: FARMER'S DANCE BAND.
- 4.28: Stock Exchange, third call.
- 4.30: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

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

THE EVENING PRESENTATION—8 to 11.30 p.m.

- To-night we are featuring Walter George's Revue, together with the National Broadcasting Orchestra, conducted by Fred. White. Through 2BL Service the Debate, 1830 v. 1930, which will be adjudicated by Sir Benjamin Fuller, will prove of wide interest. There is a programme of Band Music by the Mosman Band; popular ballads by Oliver King, basso; Goodie Reeve in "Something Different"; sidelights on life by the Laughing Philosopher; and Jack Dempsey, popular pianoforte numbers.
- 8.0: THE NATIONAL BROADCASTING ORCHESTRA, conducted by Fred. White, will play "Orpheus in the Underworld."
- 8.5: THE MIRTH QUAKERS introduce themselves.



Dismal Desmond, who has a few dismal moments in the 2FC programme to-night.

- 8.8: ROWELL BRYDEN sings "Long Ago in Alcala."
- 8.11: A DRAMATIC EPISODE, "The Sequel" The Wife—Bertha Beaumont. The Lover—Wilfrid Thomas. The Husband—Walter George. Scene—Balcony of the Hotel of St. Moritz.
- 8.16: DISMAL DESMOND in one of his dismal moments.
- 8.21: THE MIRTHFUL PAIR—Meredith and Maude Stewart.
- 8.31: BERTHA BEAUMONT in Snappy Songs, assisted by THE MIRTH QUAKERS.
- 8.34: THE NATIONAL BROADCASTING ORCHESTRA, in an Orchestra Novelty—"In a Music Shop."
- 8.39: WALTER GEORGE and DISMAL DESMOND have a slight argument.
- 8.44: ALFRED WILMORE sings "Lohita."
- 8.47: Messrs. GEORGE, MEREDITH, and DESMOND tell of a Wonderful Island.
- 8.50: IVY DAVIS and the MIRTH QUAKERS.
- 8.54: "Love in a Garden" mentioned by BERTHA BEAUMONT and WALTER GEORGE.
- 8.57: A London Incident of the Thames Embankment. She—Ivy Davis. He—Walter George.
- 9.1: WILFRID THOMAS sings "The Sergeant-Major on Parade."
- 9.5: ENSEMBLE—Opera in Ragtime by the Mirth Quakers.
- 9.27: BERTHA BEAUMONT protests that his "Rigoletto" shall not be turned into jazz.
- 9.12: THE COUNTRY MAN'S WEATHER SESSION—(a) New South Wales Forecasts. (b) Interstate Weather Synopsis.
- 9.14: THE NATIONAL BROADCASTING ORCHESTRA plays "Hunkatin."
- 9.17: THE MIRTH QUAKERS in a merry Ensemble, "O, Doris."
- 9.21: DISMAL DESMOND is still dismal.
- 9.27: BERTHA BEAUMONT and the MIRTH QUAKERS.
- 9.30: IVY DAVIS and DISMAL DESMOND enjoy a joke.
- 9.35: SI MEREDITH explains.
- 9.40: INSTRUMENTAL DUET, "Excelsior." Cornet—Carl Oberdorf. Trombone—S. Vasco.
- 9.44: A few merry moment with Si Meredith and Walter George.
- 9.42: IVY DAVIS and MIRTH QUAKERS.
- 9.52: MAUDE STEWART talks of the troubles of this world.
- 9.58: ALFRED WILMORE singe "Carissima."
- 10.1: THE MIRTH QUAKERS talk.

- 10.5: Messrs. ROWEL BRYDEN, WILFRID THOMAS, and ALFRED WILMORE, in a Vocal Trio.
- 10.10: ENSEMBLE—Au Revoir by the MIRTH QUAKERS. "Lift Up Your Face in the Sunshine."
- 10.15: Announcements.
- Late Official Weather Forecast.
- 10.20: CEC MORRISON and HIS BAND, in Dance Music.
- 11.30: CLOSE.
- NATIONAL ANTHEM.

2BL

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

OPENING SESSION—8.15 to 11 a.m.

- 8.15: G.P.O. Chimes and Announcements.
- 8.16: Music for every mood.
- 8.20: Meteorological data for the country.
- 8.45: Mails and Shipping Information.
- 8.50: Memory Melodies.
- 9.0: This Morning's Story.
- 9.30: A Musical Interlude.
- 9.40: British Official Wireless Press.
- 9.45: New Music.
- 10.5: News from "The Sydney Morning Herald"
- 1.10: Austradio Musical Reproduction.
- 10.40: THE AUSTRALIAN BROADCASTING COMPANY'S WOMEN'S ASSOCIATION, conducted by Miss Gwen Varley.
- 11.0: G.P.O. Chimes. Close Down.

MIDDAY SESSION—12 Noon to 2.30 p.m.

- 12.0: G.P.O. Chimes and Announcements.
- 12.2: A Pianoforte Recital.
- 12.30: LUNCH MUSIC.
- 1.0: Afternoon news from "The Sun" and "News."

- 1.5: Studio Music.
- 1.15: Memory Melodies.
- 1.45: A Pianoforte Recital.
- 2.10: Austradio Musical Reproduction

AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.

- 2.30: Business Efficiency Talk.
- 2.45: Radio Rhythm.
- 3.0: MARY STEVENS and HILDA GRACE, Entertainers—(a) Song "The Lilac Tree" (Gartlan). (b) Ukulele Duet, "Carolina" (Heywood). (c) Vocal Duet, "How About Me" (Berlin).
- 3.10: Music and razz.
- 3.25: A Pianoforte Recital.
- 3.40: A New Song.
- 3.45: MICHAEL SAWTELL will tell of "Books and the Bush."
- 4.0: Memory Melodies.
- 4.10: MARY STEVENS and HILDA GRACE, Entertainers—(a) Solo, "Maybe, Who Knows?" (Tucker). (b) Novelty Piano Solo, "Phantasy on Side by Side" (Long).
- 4.20: New dance numbers.
- 4.30: An Old Ballad.
- 4.35: Radio Rhythm.
- 4.45: The Trade Hour—Demonstration Music.
- 5.45: Weather Information. Close Down.

THE DINNER HOUR—6.15 to 7.55 p.m.

- 6.15: DINNER MUSIC BY CEC MORRISON AND HIS BAND.
- 6.45: THE BOYS' AERO CLUB, conducted by Norman Lyons.
- 7.5: The Country Man's Market Session—Wool, Wheat, Stock, Farm Produce, Fruit and Vegetable Markets.
- 7.20: DINNER MUSIC BY CEC MORRISON AND HIS BAND.
- 7.45: Austradio Musical Reproduction.
- 7.55: What's on the air to-night?

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

- Our debate to-night, "1830 v. 1930" centres round a much-discussed question, "The Merits of the Old Days" v. "The Much-maligned Demerits of Modern Life." The Mosman Band are also contributing to our programme.
- 8.0: THE MOSMAN BAND.
- 8.15: GOODIE REEVE in "SOMETHING DIFFERENT."

- 8.30: OLIVER KING, Basso—
 (a) "Beware of the Maidens" (Day).
 (b) "The Pride of Tipperary" (Lockhead).
 8.37: TO-NIGHT'S DEBATE—
 "1830 v. 1930."
 For Victorian Women: Mrs. Emily Bennett
 and Miss B. Phillips.
 For Modern Women: Mrs. A. Littlejohn and
 Mrs. Kenneth Street.
 Sir Benjamin Fuller will adjudicate.
 9.9: THE MOSMAN BAND.
 9.27: Weather Information for the man on
 the land.
 9.30: OLIVER KING, Basso—
 (a) "The Arrow and the Song" (Balfe).
 (b) "Nothin' But Love" (Bond).
 (c) "Billy Boy."
 9.37: NEW LAMPS FOR OLD.
 9.47: JACK DEMPSEY in Piano Novelties.
 9.57: THE MOSMAN BAND.
 10.7: JACK DEMPSEY in further Piano Novelties.
 10.14: THE MOSMAN BAND.
 10.25: Late News from "The Sun" and
 "News"
 Late Weather Forecast.
 10.30. NATIONAL ANTHEM.
 CLOSE.

2GB

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

Day Sessions as usual (see Friday).

8.0: Miss Molly Long, Contralto. 8.7:
 Symphony Orchestra. 8.15: Mr. Cecil Houghton,
 Tenor. 8.22: Violin Solos. 8.30: Mr.
 Jack Win and Mr. Heath Burdock, Humor.
 8.35: Miss Elsie Peerless, Soprano. 8.45:
 Address. 9.0: Weather Report. 9.1: Sym-
 phony Orchestra. 9.10: Miss Molly Long,
 Contralto. 9.20: Violin Solos. 9.30: Mr.
 Jack Win and Mr. Heath Burdock, Humor.
 9.35: Mr. Cecil Houghton, Tenor. 9.45:
 Symphony Orchestra. 9.50: Miss Elsie Peer-
 less, Soprano. 10.0: Instrumental Music.
 10.30: Close down.

2UW

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

Midday Session as usual.

EVENING SESSION—5.30: Children's
 Hour. 6.30: The Meccano Club. 8.45: Close.
 7.0: Request numbers. 7.45: Radio Talk by
 Mr. E. Homfray. 8.0: Band Concert. 9.0:
 Music and request items. 10.30: Close down.

2KY

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

Day Sessions, as usual.

EVENING SESSION.

7.0: Musical interlude.
 7.15: Dance music.
 7.30: Request numbers.
 7.45: Militant Women's Group.
 8.0: Evening Programme from Bebarfeld's
 New Studio.
 Overture.
 8.8: Tenor solos—Mr. A. Hillman
 8.15: Dance music.
 8.30: Request numbers.
 8.45: Soprano solos—Miss Wright.
 9.0: Novelty numbers.
 9.10: Request numbers.
 9.30: Dance music and Novelty numbers.
 10.0: Closing announcements.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra,
 Sydney (Wavelength, 295 Metres).

EARLY MORNING SESSION.

7.15: Orchestral and Vocal Breakfast Time
 Music.
 8.0: Clock and Chimes.
 8.30: Weather Forecast. Close down.



Give an "Ever-Ready" Dry Battery
 or Lamp or Torch this Xmas. The
 most appreciated and most practical
 of all gifts.

Because of their
 long life, com-
 plete reliability
 and
UNEXCELLED
 economy, you
 will find
"EVER-READY"
RADIO
BATTERIES
 supreme for all
 requirements.



Obtainable from all good radio dealers!
 Full particulars and prices, and FREE "Ever-Ready" coloured
 pamphlet, from:

N.S.W. Wholesale Distributors:

THE EVER-READY CO. (Gt. Britain), LTD.,
 163 Pitt Street, SYDNEY

Interstate Programmes, Monday, December 23

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 331 Metres).

EARLY MORNING SESSION

7.0: Melbourne Observatory Time Signal. 7.1: Broadcasting news. 7.3: Physical exercises to music. 7.30: Musical interlude. 7.40: Mail notices. 7.43: What's on to-day? 7.45: Market reports. 7.53: Weather forecast. 7.55: "The Age" news service. Cable news service (copyright: Sun-Herald News Service and Australian Press Association). 8.0: Melbourne Observatory Time Signal. 8.1: Arrival times of express trains. 8.7: Musical interlude. 8.15: Close down.

MORNING SESSION

10.30: Current happenings in sport, by Mel. Moris. 10.45: "Australio" musical reproduction.

FRIDAY ST. PAUL'S CATHEDRAL.

11.0: The Euboean service of Frederick Waldgrave, Archbishop of Melbourne. Anthem: "The Spirit of the Lord is Upon Me" (Elixir). Te Deum: Stanford in C.

FROM THE STUDIO

12.15: "The Age" news service. Cable news service (copyright: Sun-Herald News Service Ltd. and Australian Press Association). British Official Wireless News. Cotton and wool reports. Newmarket stock sales—Associated Stock Station Agents' official report. 12.30: Close down.

MIDDAY SESSION

1.0: Melbourne Observatory Time Signal; meteorological data; weather forecast for Victoria, New South Wales, South Australia, and Tasmania; ocean forecasts; river reports; rainfall data. 1.15: Comments on the day's news.

LUNCHEON SPEECHES

1.30: Transmission from Constitutional Club luncheon.

EDUCATIONAL SESSION.

2.0: Travel sketches in Europe: Origins of festivals. Miss Frances Fraser. 2.15: Musical interlude. 2.20: Homes throughout the Ages—Dr. Loftus Hills, D.Sc. 2.35: Musical interlude. 2.40: Our Australian Writers—F. Wilmott. 2.55: Musical interlude. 3.0: Melbourne Observatory time signal.

THE RADIO MATINEE.

3.0: Paul Jecale and his band—"Broadway Baby Dolls" (Clarke). "In a Kitchenette" (Dublin). 3.5: "When Dull Care" (Traditional). "Little Blue" (Diack). 3.12: Bruce Wile—(Traditional). (arr. Lane Wilson). Songs at the piano. 3.23: Paul Jecale and his band—"Love Thrill" (Bryan). "Mother's Boy" (Green). 3.30: Norman Leslie, comedian, will entertain. 3.37: Claude Jecale, baritone—"Annie Laurie," harp accompaniment by Guy Stavordale. 3.41: Jenn Brunton, contralto—"The Little Old Garden" (Hewitt). Jecale and his band—"Outside" (Flynn). "Piccolo I am a Roamer" (Mendelssohn). "The Jolly Miller" (Old English), arr. Quilter. 4.0: A musical sketch presented by Norman Leslie and his partner. 4.10: Bob Adams, trumpet—Leslie and his partner. 4.15: Jacob Bond. 4.21: Paul Jecale and his band—"I'm More Than Sunday" (Waller). "Clementine" (Cremer). 4.30: Acceptances and barrier positions for V.A.T.C. races at Caulfield on Thursday, December 26. 4.35: Close down. During the afternoon progress scores of cricket match, S.A. v. N.S.W. at Adelaide Oval, will be broadcast as they come to hand.

THE CHILDREN'S CORNER.

5.45: Opening chorus by Humpty and Dumpty. 5.48: Humpty and Dumpty, with Father Christmas pack his bag of toys. 5.55: Children's singing. 6.0: Time chimes. 6.1: Studio Light Orchestra in novelty numbers. 6.19: Billy Bunny has a Christmas story for the little ones. 6.18: Humpty and Dumpty are still here. 6.25: Birthday greetings. 6.35: Musical interlude.

EVENING SESSION.

6.40: Public school life and sport, Mr. E. C. H. Oberator. 6.55: Musical interlude. 7.0: Melbourne Observatory Time Signal. 7.1: Countryman's session. 7.25: The latest in patent—Computing appliances, Mr. C. A. Deane. 7.40: News service. 7.45: A talk on melodey by Horace Perkins, Mus. Bac. 8.0: Time signal.

NIGHT SESSION.

8.0: Christmas Smoke Concert. Royal Victorian Liedertafel. Part 1. "The Town Hall. Conducted by J. Sutton Crow; pianist, Lindsay Biggin. Part 1: Part song—"Ring Out, Wild Bells" (Fletcher), Royal Victorian Liedertafel. Baritone solo—"A Farewell Toast" (Schubert). Mr. W. A. Bossence. Violin solo—"Fugue in A Major" (Furuberg), Mr. Cecil Parkes. Carols—(a) "Sleep, Holy Babe" (Dykes), (b) "The Manger" (Thorne) (Steggall). Choir of boys and Royal Victorian Liedertafel. Tenor solo—"Paradise" (Meyerbeer), from "Africana," Mr. N. H. Christensen. Cantata—"King Olaf's Christmas" (Tenor solo, Mr. N. H. Christensen; baritone solo, Mr. A. Bossence, and Royal Victorian Liedertafel. Interval.

8.15: From the studio: A talk of interest—How the Early Melbourneans spent Christmas, by Mr. C. R. Long.

8.20: From the Town Hall, Part 2. Carol—"Christmas Bells" (Sir F. Bridge), choir of boys and Royal

Victorian Liedertafel. Baritone solo—"Five and Twenty Sallorners (Coleridge Taylor), Mr. W. A. Bossence. Violin Solo—"An Old French Folk Song," "Zepherino" (arr. Seidel, Bonelli). Mr. Cecil Parkes. Unaccompanied part songs—(a) "Cradle Song" (MacDowell), (b) "Moonlight" (Specker), Royal Victorian Liedertafel. Tenor solo—"The Sun God" (James), Mr. N. H. Christensen. Carols—(a) "Good King Wenceslas" (Traditional), boy soloist and Mr. P. McFarlane; (b) "Wassail Song" (Traditional), Royal Victorian Liedertafel. 10.30: News session. 10.40: Paul Jecale and his band—Song and syncopation. 11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 444 Metres).

MORNING SESSION.

8.14 to 11.0: Set Friday.

MIDDAY SESSION AS USUAL.

AFTERNOON SESSION.

2.30: Orchestral, Cleveland Symphony Orchestra. 2.34: Raydon Ricketts and Bonelli. 2.37: Violin, Frederick Fradkin. 2.40: Duet, Bernard and Robinson. 2.43: Orchestral, The A and P. Gypsies Orchestra. 2.46: Soprano, Clare Dux. 2.49: Band, Brunswick Military Band. 2.52: Entertainers, Jones and Hare. 2.55: Saxophone, Rudy Widofoft. 2.58: Comedian, Harry Richmann. 3.1: Request numbers. 3.20: Food and cookery—Ice cream and sundaes, Miss Kathleen Benningfield. 3.35: Musical interlude. 3.40: You garden—The care of your summer seedlings, Mr. H. Brunn. 3.55: Musical interlude. 4.0: Wanderings through the Empire—A true Scotch Christmas, Miss Doreen Berry. 4.15: Musical reproduction. 5.0: Chimes. 5.1: Musical reproduction. 5.30: Weather. 5.45: Close down.

EVENING SESSION.

6.15: Dinner music. 7.20: What's on the air tonight? 7.25: Sporting results. Acceptances and barrier positions for the V.A.T.C. races at Caulfield on Thursday, December 26.

NIGHT SESSION.

7.30: Transmission from the Exhibition—Reception and concert to the new Archbishop of Melbourne. Speakers: The Vicar General, Bishop of Gippsland, Hon. J. K. Merritt, Mr. J. E. James, the Archbishop. Musical programme: hymns by a mixed choir of 900, selections by the Returned Soldiers' Band.

9.45: National Broadcasting Orchestra—March, "Heroique" (Saint-Saens).

10.0: Comedy. We are now crossing over to "Goanna Gully," where they are holding a "Back to Goanna Gully Week." The festivities will open with a concert in the little red school house, and there are sure to be some humorous incidents when the stay-at-home residents exchange ideas with the returned prodigals.

10.15: Weather and news. 10.25: National Broadcasting Orchestra—Oriental Interlude, "In the Snow." 10.30: God Save the King.

4QG

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

Day sessions as usual.

NIGHT SESSION.

8.0: The Rhythm Rascals, entertainers. 8.10: The Anglo Male Quartette, "To the Death" (Wheeler). "The Little Dustman" (Bruhn). 8.19: Jill Manners (soprano), "Sylvia." 8.23: Mick Solomon and His Banjo. 8.28: Dick Pike (bass), "The Border Ballad" (Cowan). 8.32: The Rhythm Rascals, syncopators. 8.35: C. R. Kolb (tenor), "Brown Bird Singing" (Wood). 8.40: Jill Manners (soprano), "Lullaby" (Scott). 8.50: Harry Borradaie, entertainer. 9.0: Metropolitan weather forecast. 9.1: Dick Pike and C. R. Kolb, vocal duet, "Tell Her I Love Her So" (De Fay). 9.5: W. H. Davis (cornetist), "Wings of the Morning" (Smith). "Fancy Free" (Quartet). 9.14: The Anglo Male Quartette, "Poor Little Lamb" (Parks). 9.18: The Rhythm Rascals, entertainers. 9.34: A recital of electrically-reproduced records. 10.0: News. Close down.

5CL

Central Broadcasters Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 169 Metres).

During the day descriptions of the cricket match, South Australia v. New South Wales, will be given. Otherwise, day sessions as usual (see Friday).

NIGHT SESSION.

8.0: Chimes. 8.1: Programme review and announcements. 8.10: Walter Barratt and His Maison Masters of Melody. 8.20: Harold Tideman, baritone, "Glorious Devon" (German). 8.24: Walter Barratt and His Maison Masters of Melody.

8.34: Beryl Counter, mezzo-soprano, "Love's Old Sweet Song."

8.38: Harold Barratt and His Maison Masters of Melody.

8.48: Walter Tideman, baritone, "Windy Nights" (Stanford).

8.52: Walter Barratt and His Maison Masters of Melody.

9.0: Chimes. 9.1: Meteorological information, including semi-phenomena.

9.2: Overseas grain report. 9.3: Announcements.

9.5: The very last appearance of Captain Donald and more who will conclude his talks, entitled "Feats of the Mighty."

9.15: Walter Barratt and His Maison Masters of Melody.

9.25: Beryl Counter, mezzo-soprano, "Hindoo Song."

9.29: Walter Barratt and His Maison Masters of Melody.

9.39: Harold Tideman, baritone, "Mulleeteer of Malagar" (Troters).

9.43: Walter Barratt and His Maison Masters of Melody.

9.53: Beryl Counter, mezzo-soprano, "The Little Banquet" (Novello).

9.57: Walter Barratt and His Maison Masters of Melody.

10.3: Harold Tideman, baritone, "Hinton, Dinton, and More (Holiday)."

10.7: Walter Barratt and His Maison Masters of Melody.

10.15: News, etc. 10.30: Request numbers.

11.0: Close down.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 435 Metres).

Day sessions as usual.

EVENING SESSION.—8.0: Chimes. 8.1: Zita Kalkmoff, cellist. 8.10: Special engagement of famous English vocalist, Elizabeth Curwen. 8.18: Audrey Dean, pianoforte solos. 8.26: Elizabeth Curwen, mezzo soprano. 8.34: Zita Kalkmoff, cellist. 8.42: Elizabeth Curwen, mezzo soprano. 8.50: Robert Gibson, saxophonist. 8.57: Announcements. 9.0: Tony Robert, entertainer at piano. 9.7: A Yuletide story, by Charles Schwab. 9.27: Robert Gibson, saxophonist. 9.34: Tony Robert, entertainer at piano. 9.41: W. Hopkins, flautist. 9.48: Audrey Dean, pianoforte solos. 9.55: W. Hopkins, flautist. 10.2: Special hour of happiness music (reproduced). 10.49: Weather. 11.0: Close down.

7ZL

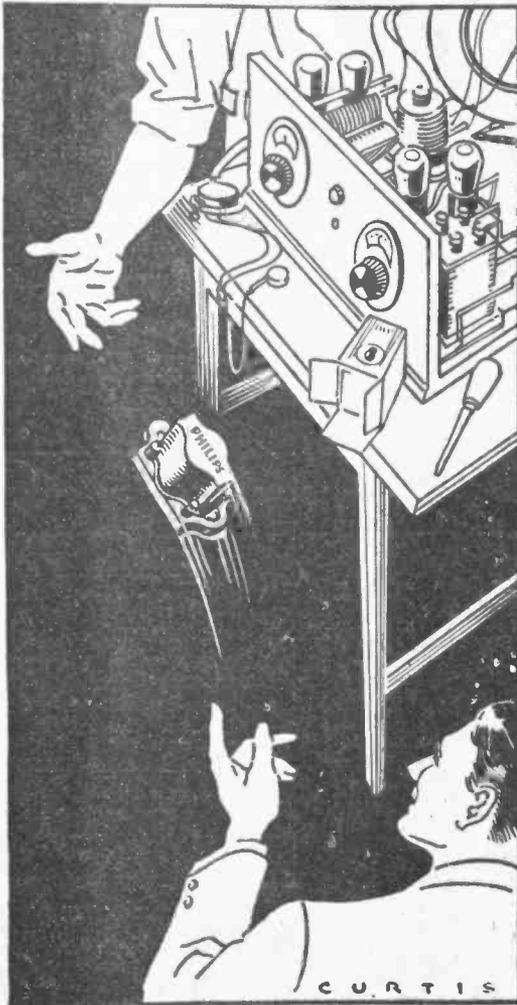
Tasmanian Broadcasters Pty., Bursary Bldg., Elizabeth Street, Hobart (Wavelength, 516 Metres).

Day sessions as usual. 8.0 p.m.: Clock. 8.1: Record recital. 8.15: From the studio, a concert programme, arranged by Madame Helen George. 9.30: News session. 9.45: Record recital. 10.1: Close down.

OWING to exigencies of space the review of the new tariff schedule on radio sets and parts will be published next week. The humorous adventures of "A Peculiar Wireless Set" will also be postponed to a later issue.

Christmas Problems

THE problems that are presented for solving in entertainment at Christmas time are many and diverse—consist mainly in suitable variations from the accepted main features of fare and fun. A wealth of bright ideas is given in the Christmas issue of the "Woman's Budget" for giving an extra attractiveness to dainties, decorations, and gifts. An elaborate dinner can be planned with no chance of failure at any point from the careful details given. The setting in which festivities take place will be the brighter for the adoption of some of the charming decorative suggestions, and those who take a pleasure in the personal element in presents will appreciate the chances that are opened for them in lists of useful little gifts that they can make at home. All the customary features that make this magazine a mine of information and a fund of entertainment are present in this specially enlarged number, which is on sale at all book-stalls and newsagents for threepence.



"Here!"

"Look out!"

"Got it! My word, it's jolly light for a transformer."

"Yes, I dropped in and bought it on the way here. I thought it would be ideal for this new set as it doesn't take up much space. Besides, it has all the advantages of the big jobs and a few more."

"Um—well I know it's got silver and nickel windings and a special core and it just remains to be proved whether the makers got away with the size."

"No need to worry on that point—it's a Philips."

(Interval of three minutes).

"By Jove, you're right. All the 'highs' and 'lows' and what punch!"

27/6



PHILIPS
for better radio

Local Programmes, Christmas Eve

2FC

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

- EARLY SESSION—7 to 8.15 a.m.**
 7.3: "Big Ben" and Meteorological information for the man on the land.
 7.3: This morning's news from the "Sydney Morning Herald."
 7.8: Austradio Musical Reproduction.
 7.45: Mails and shipping.
 7.48: What's on to-day?
 7.50: Children's Birthday Calls.
 8.0: Music from the Studio.
 8.15: CLOSE.
MORNING SESSION—10.30 a.m. to 12.30 p.m.
 10.30: Announcements.
 10.32: A.B.C. Racing Observer.
 10.45: HORACE WEBER AT THE GRAND ORGAN.
 11.0: HOUSEHOLD HELPS—Hints to Housewives by Miss Ruth Furst.
 11.10: CABLES (Copyright)—A.P.A. and Sun-Herald News Service.
 11.15: MORNING DEVOTION.
 11.30: Austradio Musical Reproduction.
 11.53: British Official Wireless Press.
 12.0: "Big Ben." Stock Exchange and Metal Quotations.
 12.5: MRS. M. E. PULSFORD speaking on "Child Psychology—The Greedy Child—the aftermath of Christmas."
 12.20: Mid-day weather forecast and weather synopsis. Special produce market session for the man on the land supplied by the State Marketing Board.
 12.30: CLOSE.
 NOTE: Progress results of the Cricket Match, South Australia v. N.S.W., at Adelaide, will be given as received.
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.
 2.30: THE LIGHT ORCHESTRA.
 2.42: NELL JUDGES, Soprano.
 2.49: MURIEL LANG, Cellist—"Air" (Bach).
 2.56: REV. F. H. RAWARD will speak on "Washington, U.S.A."



Dulcie Blair, violinist, playing to-night at 2FC studio

- 3.11: INSTRUMENTAL TRIO—Fred Whalfe, piano. Dulcie Blair, violin. Muriel Lang, cello.
 3.18: THE LIGHT ORCHESTRA.
 3.28: DULCIE BLAIR, Violinist—(a) "Londonderry Air" (arr. Kreisler). (b) "Slavonic Dance in E Minor" (Dvorak-Kreisler).
 3.38: NELL JUDGES, Soprano.
 3.45: THE LIGHT ORCHESTRA.
 4.0: THE STORYTELLER TELLS A TALE—A Window in Suburbia—"The Ghost."
 4.15: THE LIGHT ORCHESTRA.
 4.28: Stock Exchange, third call.
 4.30: CLOSE.
EARLY EVENING SESSION—5.45 to 7.55 p.m.
 5.45: Children's "Good-night" Stories told by Aunt Willa, assisted by Cousins Gwen and Clarice.
 5.46: Now all the Aunts and Uncles are going to wish you a HAPPY CHRISTMAS. Look who's here!—The Hello Man, Aunt Eily, The Farmyard Five, Aunt Goodie, Cousins Gwen and Clarice, and Aunt Willa.
 5.45: Dinner Hour Music by the Light Orchestra
 7.20: A.B.C. Sporting Service.
 7.25: Special Country Session. Stock Exchange Resume. Markets. Weather Forecast. Late news service from the "Sun" and "News." Truck Bookings.
 7.58: To-night's Programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.

- A real Christmas programme to-night—a Pantomime, under the capable direction of Lew James, "Sinbad the Sailor." At 8 o'clock Christmas messages will be given from the Studio by prominent men in the Political and Ecclesiastical life of the community. 2BL has the Feature and Presentations from the State Theatre, the Mirth Quakers in Past and Furious Fun and Folly.
 8.0. CHRISTMAS MESSAGES from prominent men in the Political and Ecclesiastical life of the Community.
 8.15. A CHRISTMAS PANTOMIME, "SINBAD THE SAILOR." Directed by Lew James.
 9.0. THE COUNTRY MAN'S WEATHER SESSION—(a) "New South Wales Forecasts." (b) "Interstate Weather Synopsis."
 9.2: SECOND ACT OF "SINBAD THE SAILOR."
 10.15: Announcements.
 10.20: FROM THE HOTEL AUSTRALIA—Cec. Morrison's Dance Band.
 11.30: CLOSE.
 NATIONAL ANTHEM.

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 355 Metres).

- OPENING SESSION—8.15 to 11 a.m.**
 8.15: G.P.O. Chimes and Announcements.

- 8.16: Music for every mood.
 8.40: Meteorological Data for the country.
 8.45: Mails and Shipping Information.
 8.50: Memory Melodies.
 9.0: This Morning's Story.
 9.30: A Musical Interlude.
 9.40: British Official Wireless Press.
 9.45: New Music.
 10.2: News from the "Labor Daily."
 10.5: News from the "Sydney Morning Herald."
 10.10: Austradio Musical Reproduction.
 10.40: THE AUSTRALIAN BROADCASTING COMPANY'S WOMEN'S ASSOCIATION, conducted by Miss Gwen Varley.
 11.0: G.P.O. Chimes. Close Down.
MIDDAY SESSION—12 noon to 2.30 p.m.
 12.0: G.P.O. Chimes and Announcements.
 12.2: A Pianoforte Recital.
 12.30: LUNCH MUSIC.
 1.0: Afternoon News, from "The Sun" and "News."
 1.5: Studio Music.
 1.15: Austradio Musical Reproduction.
 1.30: A Pianoforte Recital.
 2.0: Half-an-hour with Silent Friends.
AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.
 2.30: FRANK BOTHAM, Baritone—(a) "Young Dietrich" (Henechell). (b) "Come and Trip It" (Handel).
 2.37: A. PODINOVSKY, Violinist—(a) "Barcarolle" (Tschalkowsky). (b) "Chant d'Automne" (Tschalkowsky).
 2.45: A Pianoforte Recital.
 3.0: ROMANO'S DANCE ORCHESTRA, under the direction of Bennie Abrahams.
 3.12: FROM THE STUDIO—FRANK BOTHAM, Baritone—(a) "Out Where the Big Ships Go" (Hewitt). (b) "Charming Chloe" (German).
 3.19: ROMANO'S DANCE ORCHESTRA, under the direction of Bennie Abrahams.
 3.30: FROM THE STUDIO—A. PODINOVSKY, Violinist—(a) "Dudziarz Mazurka" (Wienlowski). (b) "Romance from Second Concerto" (Wienlowski).
 3.37: A Modern Ballad.
 3.45: REV. R. B. LEE, B.A. will speak on "The Spirit of Christmas."
 4.0: ROMANO'S DANCE ORCHESTRA, under the direction of Bennie Abrahams.
 4.12: FROM THE STUDIO: Modern Music.
 4.19: ROMANO'S DANCE ORCHESTRA, under the direction of Bennie Abrahams.
 4.30: FROM THE STUDIO—A Pianoforte Recital.
 4.45: The Trade Hour—Demonstration Music.
 5.45: Weather Information. Close Down.
THE DINNER HOUR—6.15 to 7.55 p.m.
 6.15: DINNER MUSIC by the LIGHT ORCHESTRA.
 6.45: THE GIRL GUIDES' CLUB, conducted by Miss Gwen Varley.
 7.5: The Country Man's Market Session—Wool, Wheat, Stock, Farm Produce, Fruit and Vegetable Markets.
 7.20: DINNER MUSIC, by the LIGHT ORCHESTRA.
 7.45: Austradio Musical Reproduction.
 7.55: What's on the Air To-night?
TO-NIGHT'S PRESENTATION—8.0 to 10.30 p.m.
 To-night's programme from 2BL offers the overture and stage presentation from the State Theatre. There is dance music by the Hotel Australia Dance Band. Christmas Carols, a talk on "The Dickens Trail in London," by S. H. Bowden, new comedy novelties, violin solos.
 Through 2FC Service Christmas Greetings from our Leading Citizens at 8 p.m., followed by the Studio Production of "Sinbad the Sailor," directed by Lew James.
 8.0: FROM THE STATE THEATRE—Overture by Will Prior and his Orchestra, with Price Dumlavy at the Grand Organ.
 8.7: FROM THE STUDIO—HARMONY FOUR, Vocalists—(a) "When the Great Red Dawn is Shining" (A.B.C.). (b) "Tell Her I Love Her So" (De Paye). (c) "Song of Songs" (Mova).
 8.14: THE TIBBETI, Entertainer—
 8.21: COLSTON CARTER, Piano Novelties—(a) "Meditation" (Sims).

Radiair

Have Your
 OLD SET CONVERTED
 Into a
 GENUINE ALL-ELECTRIC
 MACHINE.

No Batteries or Accumulator
 required any longer. Converting
 is your last expense.

WE DO THE CONVERTING FOR
 3-valve 4-valve 5-valve
 £10 £11 £12

Note the Only Address:

The **RADIAIR WIRELESS CO.**,
 114 Castlereagh Street,
 Near Market Street.
 Phone, M2037.

"EXCELTRON"

B ELIMINATORS £3 15 0
 A CHARGERS £3 0 0
 A.B.C. POWER PACKS. £5 10 0
 Usually sold £8 to £12—Sold direct from
 factory to you, hence these low prices. Fully
 guaranteed, 12 months. Installed Free. Easy
 Terms. Mail Order, add carriage. EXCELTRON
 ELECTRICS, 54 Oxford Street, Sydney.

- (b) "Scrambles" (Reinherz).
- (c) "Dainty Miss" (Barnes).
- 8.28: FROM THE STATE THEATRE—
Price Dunlavy at the Grand Organ.
- 8.40: FROM THE STUDIO—
HARMONY FOUR, Vocalists—
Carols: "Adeste Fideles."
"The First Nowell."
"Christians Awake."
- 8.50: DULCIE BLAIR, Violinist—
(a) "Melody" (Kreisler).
(b) "Deutscher Tanz" (Dittersdorf).
- 8.57: S. H. BOWDEN will tell of "The Dickens Trail in London."
- 9.10: THE HOTEL AUSTRALIA DANCE BAND.
- 9.22: FROM THE STATE THEATRE—
Stage Presentation.
- 9.34: FROM THE STUDIO—Weather Information for the man on the land.
- 9.36: MISS AMY OSTINGA, Contralto—
"The Birthday of a King" (Neidunger).
MOLYNEUX PHILLIPS, Tenor—
"Serenade" (Pierne).
- MISS DAISY MANGAN, Soprano—
"The Nightingale's Trill" (Ganz).
- 9.43: COLSTON CARTER, Novelty Pianist—
(a) "Noel" (Gardiner).
(b) "A Few Moments at the Piano" (Alter).
(c) "Lolita Caprice Espagno" (Chaminade).
(d) "Kitten on the Keys" (Conroy).
- 9.50: TED TURELL, Entertainer.
- 10.0: DULCIE BLAIR, Violinist—
(a) "Chanson Indone" (Rimsky-Korsakoff).
(b) "Bolero" (Bohm).
- 10.7: FROM THE HOTEL AUSTRALIA—
The Hotel Australia Dance Band.
- 10.25: Late Weather Forecast.
- Late News from "The Sun" and "News."
- 10.30: NATIONAL ANTHEM. CLOSE.

2GB

Theosophical Broadcasting Station, 29 Bligh St., Sydney (Wavelength, 316 Metres).
Day Sessions as usual (see Friday).
8.0: XMAS EVE PROGRAMME; Miss Kathlene Cracknell, Contralto. 8.7: Symphony Orchestra. 8.15: Mr. Clement Hosking, Baritone. 8.22: Symphony Orchestra. 8.30: Miss Barbara Russell, Soprano. 8.37: Mr. Heath Burdock, Xmas Recital. 8.52: Miss Kathlene Cracknell, Contralto. 9.0: Weather Report. 9.1: Symphony Orchestra. 9.10: Mr. Clement Hosking, Baritone. 9.20: Violin Solos. 9.30: Mr. Heath Burdock, Xmas Recital. 9.45: Symphony Orchestra. 9.50: Miss Barbara Russell, Soprano. 10.0: Instrumental Music. 10.30: Selections from Handel's "Messiah." 11.0: Carols from the Manor, Mosman. 11.30: Midnight Mass, from the Chapel of St. Alban, Mosman. 12.30: Close down.

2UW

Radio Broadcasting, Ltd., Palling's Building, Ash St., Sydney (Wavelength, 267 Metres).
Midday Session as usual.
EVENING SESSION.—5.30: Children's Hour. 6.30: Close. 7.0: Request numbers. 8.0: Xmas Carols. 9.0: Comments on Foreign Affairs by Mr. J. M. Prentice. 9.10: Music. 10.30: Close.

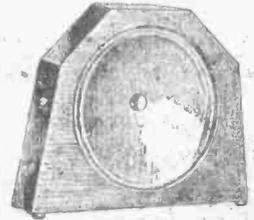
2KY

Trades and Labor Council, Goulburn St., Sydney (Wavelength, 280 Metres).
Day Sessions, as usual.
EVENING SESSION.
7.0: Musical interlude.
7.10: Turf topics. How they should run tomorrow, MR. GEO. DAVIS.
7.45: Request numbers.
8.0: Evening Programme from Bebarfald's New Studio—
SPECIAL XMAS EVE PROGRAMME.
9.0: SPORTING FEATURE, presented by TOOTH AND CO., LTD., KENT BREWERY, from the ringside of McHugh's Leichhardt Stadium. Results of early events and full description of main 15-round event, by MR. HEBERT BEAVER.
9.40: Dance music from the Studio.
10.0: Closing announcements.
On WEDNESDAY, DECEMBER 25, and THURSDAY, DECEMBER 26, 1929, 2KY STATION is closed down, owing to Public Holidays.

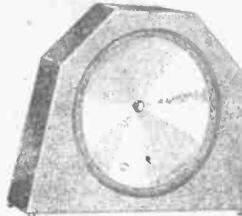
2UE

Broadcasting Station 2UE, Everett Street, Maresbra, Sydney (Wavelength, 293 Metres).
Same as Friday.

**"BROWN"
LOUD SPEAKERS
RE-CREATE THE
LIVING ARTIST**



BROWN MASCOT MODEL



BROWN S.P.



BROWN DUCKLING MODEL

- Prices:
THE MASCOT £4/10/-
THE S.P. MODEL £3/15/-
THE DUCKLING £1/15/-

If you wish to hear the broad-cast in your home as it is played in the studio, the Brown range of Loud Speakers will more than fulfil expectations. No matter how good your set, it will be bettered by a Brown.

The DUCKLING, the S.P. MODEL, and the MASCOT are three very popular models in the Brown range of Loud Speakers. Their appearance and performance is worth more than the figure we list them at. They have a pedigree which few speakers can claim—British and best, demanding your attention.

For Further Particulars Write for Catalogue W.W.B.

The Brown "Vee" Unit

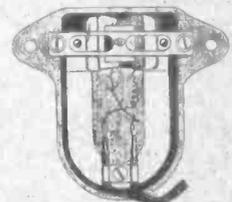
The New Brown "Vee" Unit emphasises neither the high nor low notes, but gives a real pleasurable reproduction all round, much superior to the moving coil. The Brown "VEE" Unit will absolutely surprise you in its quality of reproduction.

PRICE, complete with diaphragm 55/-



BROWN "VEE" UNIT

Front-view Showing Internal Arrangement of Brown "Vee" Unit



NOYES BROS

- (SYDNEY), LIMITED. (MELBOURNE) PTY. LIMITED.
Sydney, 115, Clarence Street
Newcastle, 11, Watt Street
Brisbane, Perry House
Perth, J.R.W. Gardam & Co
Melbourne, 495, Bourke Street
Adelaide, 119, Pirie Street
Hobart, 36, Argyle Street
Launceston, 59, George Street

Interstate Programmes, Christmas Eve

3LO

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

EARLY MORNING SESSION

As usual. MORNING SESSION

As usual. MIDDAY SESSION

As usual. THE EDUCATIONAL SESSION

2.0: Stories from the Operas, Miss Lucy Ahon. B.A. 2.15: Musical Interlude. 2.20: A Tea Planter's Christmas, Mr. A. Downs. 2.35: Musical Interlude. 2.40: A Talk in French, M. Th. Rouel. 2.55: Musical Interlude. 3.0: Time signal.

THE RADIO MATINEE

3.0: Hawthorn City Band (conductor Alfred Paxton). "Irwel Springs" (Greenwood). "Harvest Moon" (Picquard). 3.10: Percy Rogers (bass-baritone). "Five and Twenty Sail Men" (Coleridge-Taylor). "Whalin' Up the Lachlan" (Fritz Hart). 3.17: A Piano Recital by Horace Perkins, Mus. Bac. "Prelude in G Minor" (Rachmaninoff). "Gavotte and Variations" (Rameau-Leschetzky). "Le Cou Cou" (Daquin). "West Finnish Dance" (Palmgren). "Bridal Procession" (Grieg). 3.23: Phyllis Dickenson (soprano). "Early One Morning" (Old English). "I Attempt from Love's Sickness to Fly" (Purcell). 3.40: Hawthorn City Band. "Veronica" (Greenwood). "Russian Cradle Song" (Kreiss). 3.50: Ted Nelson. Songs and Sketches at the Piano. 3.57: Hawthorn City Band. Cornet Solo. "Cornet King" (Greenwood). 4.0: Phyllis Dickenson. "Fleeting" (Ryder). "The Star of Bethlehem" (Hawthorn City Band). "Reflections" (Borodini). 4.13: Percy Rogers (bass-baritone). "The Oopsy Trail" (Galloway). "When the Sergeant-Major's on Parade" (Longstaff). 4.20: Ted Nelson. Songs and Sketches at the Piano. 4.25: Hawthorn City Band. "Machine-gun Guards" (Marchali). 4.30: Acceptances and barrier positions for the Ascot Race on Saturday, December 28. 4.35: The Star of Bethlehem. The afternoon progress scores of the cricket match. S.A. v. N.S.W. at Adelaide Oval, will be broadcast as they come to hand.

THE CHILDREN'S CORNER

4.45: Birthday Greetings by Bobby Bluegum, 6.1: Studio Light Orchestra. "The Squirrel Dance." 6.6: "Up the Chimney." A Christmas Fantasy, produced by "Bobby Bluegum." Cast: Dorothy, Norma Lambert, Elsie, Eileen O'Leary, Ernest, Irene Trevaszki, Flasiadka, the Fireplace Fairy, "Clever Clarence," A Fairy, Pearl Murdoch, Santa Claus, "Bobby Bluegum," Max, the Foreman of Santa Claus' factory, Freda Northcote, Bingo, the Police Force of Santa Claus Land, Olive Snaw, Dog Bingo, "Ector; Dog Bingo, "Orace, Fairies and Workmen. Time, the night before Christmas. Place, Santa Claus Land. 7.20: Countrymen's Session. 7.40: News service. 7.45: The official opening of the Mordialloc Carnival by the Prime Minister, Right Hon. H. Scullin, M.H.R.

NIGHT SESSION

8.5: National Broadcasting Orchestra. Overture. "The Children's Overture" (Quilter). 8.15: The A.B.C. Carols. "The Star of Bethlehem" (Adams). "The Gift" (Behrend). "Ave Maria" (with cello, organ, and chorus) (Schubert). "Nazareth, solo and chorus" (Gounod). 8.25: description of the Christmas Shopping Scenes in the Victoria Market. 8.40: National Broadcasting Orchestra. Suite. "Monsieur Beaucaire" (Rosse). 8.50: Cecil E. J. Williams will speak on "The Man in Grey." 9.0: From Spencer Street Railway Station. "The Man in Grey" himself. 9.5: From the Studio. "Scrooge," adapted from Charles Dickens' "A Christmas Carol," by J. G. Buckstone. Characters: The Ghost of Jacob Marley, J. Howlett Ross; Ebenezer Scrooge, Maurice Dudley; Bob Cratchit, this Clerk, H. M. Hill; Fred Wrayland (his Nephew), Frank Hatherley; Mr. Middlemark, Chas. R. Dymon; Mr. Worthington, Frank Hatherley; Mrs. Cratchit, Mrs. Maurice Dudley; Cratchley; Mrs. Cratchit, Mrs. Maurice Dudley; Belinda, Peter, Tiny Tim (the Cratchit Children), Marjorie Rennon, Miriam Mullin, Dorothy Vale, Dorothy Hutchings, the boy Scrooge, Dorothy Vale; Fanny (his sister), Marjorie Rennon, Fredrick, by Maurice Dudley. Scene: Office of Ebenezer Scrooge. Time: A foggy, frosty Christmas Eve. Appropriate Carols by the A.B.C. Singers. 9.45: A Descriptive Scene from Spencer Street Railway Station. Departure of the Christmas Trains. 9.55: From the Studio. Carol Singing by the A.B.C. Carol Singers. Christmas Greetings. 10.12: National Broadcasting Orchestra. "All on a Christmas Morning" (Amers). "A Christmas Bury" (Holland). 10.20: "The Fairy Bells," played by Dave Morrison. 10.30: News Session. 10.40: Paul Jeacle and his Band. Christmas Novelty Number. 12.0: The A.B.C. Singers. Selections from "The Messiah" (Handel) and Carols. 12.10: God Save the King.

3AR

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

MORNING SESSION AS USUAL

MIDDAY SESSION AS USUAL

AFTERNOON SESSION

2.1: Orchestra. Grand Symphony Orchestra. 2.6: Tenor, Carl Martin Gehms. 2: Chorus, Betty Union of Teachers' Chorus. 2.16: Orchestra, L'Opera Comique Orchestra. 2.20: Soprano, Emmy Bettendorff. 2.24: Bands, Massed Military Bands. 2.27: Bartone, William Fassbender. 2.30: Piano, Adam

Carroll. 2.36: Comedy, North and South. 2.39: Bands, Massed Military Bands. 2.42: Vocal trio, Three Australian Boys. 2.45: Trumpet, Tom Dorsey. 2.48: Comedy, North and South. 2.51: Opera, Carl, Harry Rosset's Orchestra. 2.54: Bartone, William Fassbender. 2.57: Piano, Victor Lane. 3.3: Request numbers. 3.20: The Baby's Christmas—Matron Moreland, of the Tweddle Babies' Hospital. 3.35: Musical interlude. 3.40: The lure of the Red-Red Map, Miss M. Punshon. 3.55: Musical interlude. 4.0: The latest fashions, Madame La Mode. 4.15: Musical reproduction. 5.0: G.P.O. chimes. 5.1: Musical reproduction. 5.30: Weather. 5.45: Close.

EVENING SESSION

6.15: Dinner music. 7.30: What's on the air tonight? 7.32: Sporting results. 7.35: Latest musical releases. 8.0: Chimes.

NIGHT SESSION

8.1: A debate—"Is Smoking Injurious?" Mr. Clarence Weaver will talk the affirmative, Dr. Loftus Hills, D.Sc., the negative. 8.15: Paul Jeacle and his band—"Kalamazoo" (Gumbel), "South Wind" (De Sylva). 8.21: Claude Jeacle, baritone—"Waltz Medley," with harp accompaniment. 8.35: Dorothy White, comedienne—Song and comedy. 8.34: Paul Jeacle and his band—"Mean to Me" (Tark), "Fashionette" (Glogan). 8.44: Horrie Sheehan, trumpet—"Castles in the Air" (Smith). 8.44: Dorothy White, comedienne—Song and comedy. 8.54: Bob Libbis, trombone—"Evening Star" (Wagner). 9.0: Special Christmas music by the Hawthorn Citadel Band. Chorus: "Woody and the Lamb." 9.14: Three carols—"Christians Awake," "While Shepherds Watched," "Holly," Band. Glee: "Hail, Sniling Morn," male choir. Grand selection: "Gems from the Masters," Band. Quartette (vocal): Selected, male voices. "Star of Bethlehem," Band. Conductor H. V. Stevens. Excerpts from "The Messiah" (Handel), Mr. Bruce Small (band accompaniment). Chorus: "Lift up your Heads," Band. "The Carol," "The First Noel," "As with Gladness Men of Old," Band. Glee: "Hark, the Herald Angels Sing," male choir. Meditation: "Adeste Fideles," Band. Quartette (vocal): Selected, male voices. Chorus: "Hallelujah," Band. 10.30: God Save the King.

4QG

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

DAY SESSIONS AS USUAL

NIGHT SESSION

(Announcers: Humphreys and A. V. James.) CHRISTMAS EVE. 6.0: A short Christmas Session for little listeners, conducted by Canon D. J. Garland, assisted by the children of St. Barnabas' Church of England, Red Hill. 8.30 p.m.—FROM THE STUDIO: A Christmas Pantomime for the Children, written and produced by Harry Humphreys, featuring the combined bedtime storytellers of 4QG: The Sandman, J. Tyson, Percy; Uncle Ben, L. L. Read; Little Miss Brisbane, Mavis E. McFarlane; Bebe, Hilda Woolmer; Bunty, Margaret A. McFarlane; Grandfather, W. H. Lister; Grandmother, Winifred Adamson; Mrs. Gladys Coking; Pete, Harry Collins. Music by the Studio Orchestra (conductor, Alf. Featherstone).

SESSION FOR THE COUNTRY LISTENERS

7.30 p.m.: Late afternoon news; late weather information; Time Signals. 7.45 p.m.: "Your Holiday Photographs," by Mr. F. L. South (Manager, Koahks, Ltd.). 8.0 p.m.: The 4QG Concert Orchestra (conductor, Erich John)—"Christmas Overture" (Riesenerfeld), Hugh Olive (tenor)—"And the Angel Said" (Grant), 4QG Concert Orchestra—"Dream of Christmas" (Kempster), Fanny (soprano)—"Christmas Song" (Ambrose). Mr. A. K. Chapman will talk on—"The Star of Bethlehem." Monument and Harrow, the argumentative pair. The 4QG Concert Orchestra (conductor, Erich John)—"The Musical Box," "The Box of Soldiers." Monument and Harrow—"Goodwill Towards Men." 9.0 p.m.: Metropolitan Weather Forecast.

9.1 p.m.: Holiday road information for motorists. Officially supplied by the R.A.C.O. 9.10 p.m.: The 4QG Concert Orchestra—Christmas Suite, Part I. Waltz, "Dancing Doll" (Poldini); "March of the Toy Soldiers" (Fuelek); Hugh Olive (tenor)—"Winter Chimes" (Suits); The 4QG Concert Orchestra—Christmas Suite, Part II. "Punch and Judy's Aerial Act" (Hammond); "Dance of the Gollwogs" (Rendy); A Christmas Carol in the form of a radio adaptation of Dickens' "Christmas Carol" (arranged and produced by Harry Humphreys). Cast: Ebenezer Scrooge and Jacob Marley, Harry Humphreys; Fred (Scrooge's nephew), Charles Cowan; Fred's wife, Mrs. Robt. Bell; Ghost of the Past, Stan. Ballinger; Ghost of the present, Will Farrell; Ghost of the future, J. Gentleman collector, Charles Cowan; Bob Cratchit, S. Ballinger; Fezziwig, Harry Collins; The Child, Will Farrell. Scene 1: Scrooge and Marley's Counting House on Christmas Eve. Scene 2: Scrooge's Chambers—"The Visit of Marley's Ghost." Scene 3: Scrooge's Chambers at 1.0 p.m.—"The Visit of Marley's Ghost." Scene 4: Scrooge's Chambers—"The Visit of the Ghost of the Present; Fred's Party." Scene 5: Scrooge's Chambers—"The Visit of the Ghost of the Future; Scrooge's Reclamation." Scene 6: All's well that ends

well. Incidental music by the Studio Orchestra. 9.30 p.m.: Radio adaptation of Charles Dickens' "Christmas Carols."

11.0 p.m.: News supplied by the Metropolitan Dailies. Weather Information.

DANCE MUSIC

10.45 p.m.: From the Trocadero, Roy Baird and his Trocadero Orchestra.

CAROLS

11.15 p.m.: From the Studio—Double Male Quartette (conductor, Tom Muller)—"Adeste Fideles" (Hammer). Tom Muller (elocutionist)—Monologue, "Christmas Bells." Double Male Quartette—"Hark the Herald Angels," "We have seen His Star in the East." J. P. Cornwell (bass)—"The Holy Child" (Adams). Double Quartette—"Nazareth" (Gounod), (Soloist, Ernest Harper), Francis Lane (contralto)—"The First Noel" (Traditional). J. P. Cornwell (bass)—"Star of Bethlehem" (Adams). Double Male Quartette—"Silent Night" (German air). "We wish you all a Merry Christmas." 12.0 (midnight): Christmas greetings to all from 4QG.

ST. STEPHEN'S CATHEDRAL

MIDNIGHT MASS

The Solemn Midnight Mass will be played from St. Stephen's R.C. Cathedral. 12.0 (midnight): From St. Stephen's Cathedral, Midnight Mass. 1.15 a.m. (approx): Close down.

5CL

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

During the day descriptions of the Interstate cricket, South Australia v. New South Wales, will be given. Otherwise, sessions as usual (see Friday).

NIGHT SESSION

8.0: Chimes. 8.1: Programme review and announcements. 8.10: Holden's Silver Band (conducted by Mr. O. Sumner). 8.20: Rita Watson, contralto, "A Visit from the Moon" (Dunhill), "Softly Awakes My Heart" (St-Saens). 8.25: Jean Finlay, pianiste, "Ballade in G Minor" (Chopin). 8.34: Holden's Silver Band (refrains to be sung by Gertrude May and James Riley). 8.44: James Riley, tenor, "Thank God for a Garden" (Del Riego). 8.48: Solo by a member of the band. 8.53: Rita Watson, contralto, "Ring, Bell, Ring" (Dunhill). 8.57: Jean Finlay, pianiste, "Valse Caprice" (Cyril Scott). 9.1: Meteorological information, including semi-weather. 9.2: Overseas grain report. 9.3: Announcements. 9.5: Holden's Silver Band. 9.15: Linda Ward, soprano, "Over the Mountains" (Quilter). 9.18: Holden's Silver Band. 9.28: Rita Watson, contralto, "A Summer Night" (Thomas). 9.33: Holden's Silver Band (refrains to be sung by Gertrude May and James Riley). 9.43: Jean Finlay, pianiste, "London Bridge" (Balfour Gardiner). 9.47: Solo by a member of the band. 9.52: Linda Ward, soprano, "Love's Young Dream" (Thomas Moore). 9.58: Instrumental number. 10.0: James Riley, tenor, "O Lovely Night" (Landon Ronald). 10.5: Holden's Silver Band. 10.15: News, etc. 10.29: Recordings. 11.0: Close down.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 435 Metres).

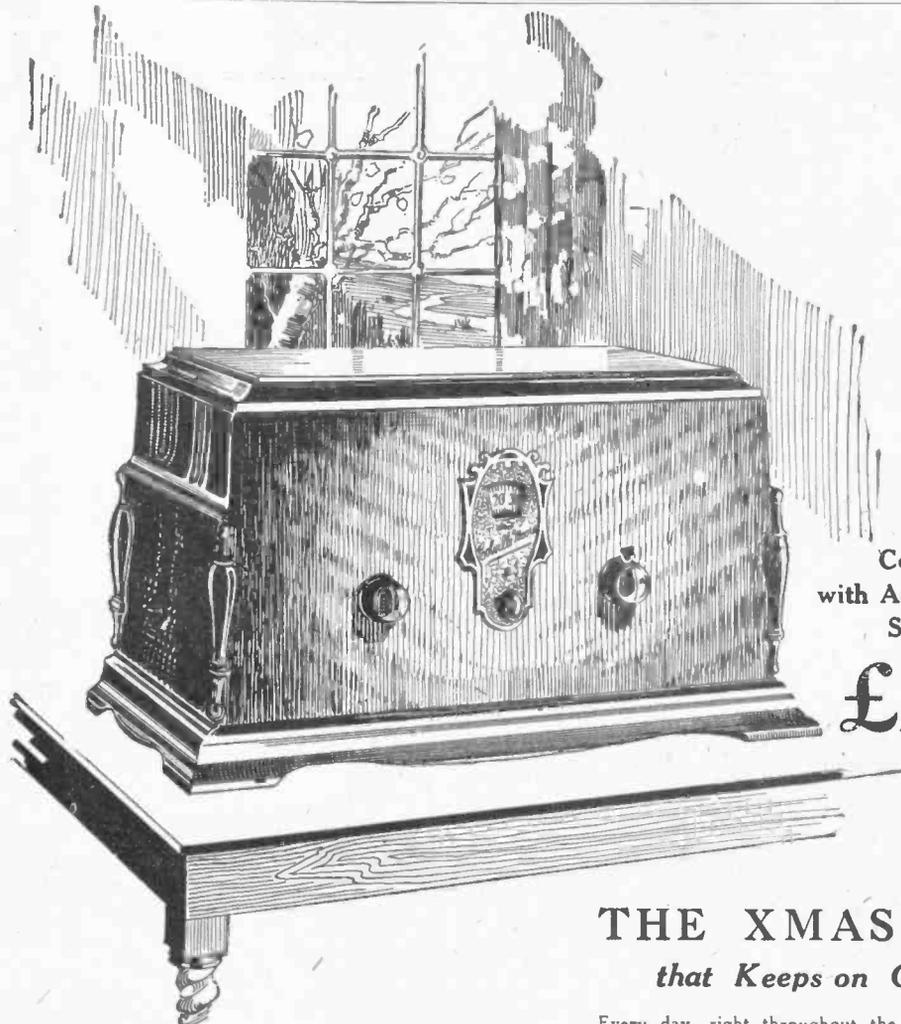
DAY SESSIONS AS USUAL

EVENING SESSION—Special Christmas Eve programme. 8.0: Chimes. 8.1: Ambassador's Theatre Symphony Orchestra, conducted by Bert. Howell. 8.7: Les Waldron at the console of the Wurliizer organ. One-act play, presented by the Radio Players. 8.25: Margaret Sharp, violinist. 8.42: One-act play, presented by the Radio Players. 9.2: Margaret Sharp, violinist. 9.9: Stage presentation from Ambassador's Theatre. 9.30: "Scrooge" (a scene from Dickens), declaimed by Harley Edwards. 9.40: A.B.C. Instrumental Ensemble. 9.55: A scene from Dickens, declaimed by Harley Edwards. 10.5: A.B.C. Instrumental Ensemble. 10.20: Christmas Carols by St. George's Cathedral Choir. 10.30: A.B.C. Instrumental Ensemble. 10.45: Christmas Carols by St. George's Cathedral Choir. 10.55: A.B.C. Instrumental Ensemble. 11.10: Christmas Carols by the choir of St. George's Cathedral. 11.20: A.B.C. Instrumental Ensemble. 11.35: Christmas Carols by St. George's Cathedral Choir. 11.48: Yuletide music (reproduced). 11.58: A.B.C. Christmas greetings to the people of W.A.

7ZL

Tasmanian Broadcasters Pty., Bursary Bldg., Elizabeth Street, Hobart (Wavelength, 518 Metres).

Day sessions as usual. 8.0 p.m.: Chimes. 8.1: Sonora recital. 8.15: A programme of dance music with the Discus Dance Ensemble (interspersed with 10 numbers). 8.20: News session. 8.40: Dance numbers. 9.52: Slumber music. 10.0: G.P.O. clock chimes the hour. 10.1: Close down.



Complete
with Amplion Cone
Speaker

£29

THE XMAS GIFT
that Keeps on Giving!

Every day, right throughout the coming years — here is entertainment for the whole family. And at little cost.... a small deposit and easy weekly payments.

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

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

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

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

DEMONSTRATIONS IN YOUR OWN HOME WITHOUT OBLIGATION

COLVILLE MOORE WIRELESS SUPPLIES LIMITED

Phones, 82261, B4594.

4 and 10 ROWE STREET, SYDNEY

Local Programmes, Christmas Day

2FC

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

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

- 10.30: Announcements.
 10.32: Austradio Musical Reproduction.
 11.0: FROM THE CENTRAL METHODIST MISSION, LYCEUM HALL, Christmas Morning Service.
 12.0: FROM THE STUDIO, Austradio Musical Reproduction.
 12.20: Midday weather forecast and weather synopsis, 12.30: Close.

THE LUNCH HOUR—1 to 2.30 p.m.

- 1.0: Lunch Hour Music, by the Light Orchestra.
 2.0: A glance at the afternoon "Sun" and "News."
 2.2: A Musical Interlude.
 2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.

- 2.30: FROM THE ARCADIA THEATRE, CHATSWOOD, Organ Recital by Nicholas Robins—
 (a) "Triumphal March" (Lemans).
 (b) "The Holy City" (Adams).
 (c) "Meditation" (Ave Maria) (Gounod).
 2.45: FROM THE STUDIO, ROGER JONES and ANNE LUCIANO, Vocal Duets—
 (a) "Our Little Home" (Coates).
 (b) "Give Me One Rose to Remember" (Gray).

- 2.53: FROM THE ARCADIA THEATRE, CHATSWOOD, Organ Recital arranged by Nicholas Robins—
 (a) "Sunday Morning at Glion" (Bendel).
 (b) "Nazareth" (Gounod-Martin).
 (c) "Noel" (Telma).

- 3.8: FROM THE STUDIO, ANNE LUCIANO, Soprano—
 "Full Moon" (Woolmer).

- 3.15: FROM THE ARCADIA THEATRE, CHATSWOOD, Organ recital arranged by Nicholas Robins—
 (a) "Bells Across the Meadows" (Ketelbey).
 (b) "Sincerity" (Clarke).
 (c) "O Divine Redeemer" (Gounod).

- 3.30: FROM THE STUDIO, ROGER JONES, Baritone—
 "Mary, My Mary" (Leslie).

- 3.37: FROM THE ARCADIA THEATRE, CHATSWOOD, Organ Recital, arranged by Nicholas Robins—
 (a) "Christmas Carols."
 (b) "The Sacred Hour" (Ketelbey).
 (c) "The Hallelujah Chorus" from "Messiah" (Handel).

- 3.52: ROGER JONES and ANNE LUCIANO, Vocal Duets—
 (a) "Homeward to You" (Coates).
 (b) "Pagan Love Song" (Brown).

- 4.0: FROM THE STUDIO, A CELEBRITY RECITAL, arranged by MADAME EVELYN GRIEG.
 4.30: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55

- 5.45: Children's "Good-night" Stories, told by the "Hello Man," assisted by Uncle Ted and "Sandy."

- 5.45: Dinner Hour Music, by the Light Orchestra.

- 7.20: A MUSICAL PROGRAMME, arranged by MADAME EVELYN GRIEG.

- 7.45: C. PRICE CONIGRAVE will speak.

THE EVENING PRESENTATION—8 to 11.30

Our Christmas Night Concert Programme, instead of being broadcast from the Studio, will be taken from the Central Methodist Mission, Lyceum Hall. Through 2BL Service, a special Christmas ghost story, written for broadcasting by Scott Alexander, will prove a big attraction. There are also Vocal Quartet numbers, Old World Instrumental Music, Novelty Items.

- 8.0: ESTONIAN SYMPHONY ORCHESTRA—
 "Egmont" (Beethoven).
 8.7: MARGARET JAMES, Soprano—
 (a) "O Flower Divine" (Haydn Wood).
 (b) "If I Were a Lark" (Clutsam).
 8.14: ALEXANDER HMELNITSKI, Pianist—
 (a) "Nocturne in F Sharp" (Chopin).
 (b) "Polonaise in A Flat" (Chopin).
 8.26: DOROTHY NALL, Monologues—
 (a) "Gardening" (Barnett),

- (b) "Song of Sixpence."
 8.33: ESTONIAN SYMPHONY ORCHESTRA—
 (a) "Largo" (Handel).
 (b) "Reve Angelique" (Rubinstein).
 8.46: KENNETH HUNT, Tenor—
 (a) "Farewell in the Desert" (Adams).
 (b) "Sigh No More, Ladies" (Aiken).
 8.53: MISCHA DOBRINSKI, Violinist—
 (a) "Midnight Bells" (Hemberger-Kreisler).
 (b) "Spanish Serenade" (Chaminade-Kreisler).
 (c) "From the Canerake" (Gardner).
 9.0: MONA DEUTSCHER, Contralto—
 (a) "The Gift" (Behrend).
 (b) "O Night of Stars and Splendour" (Thompson).
 9.7: FROM THE STUDIO, COUNTRY MAN'S WEATHER SESSION—
 (a) New South Wales forecast.
 (b) Interstate weather synopsis.
 9.12: FROM THE LYCEUM, ESTONIAN SYMPHONY ORCHESTRA—
 "Alessandro Stradelle" (Fiotow).
 9.20: KENNETH HUNT, Tenor—
 (a) "Adelaide" (Beethoven).
 (b) "Tis the Day" (Leoncavallo).
 9.27: DOROTHY NALL, Monologues—
 (a) "Nobody Knows What I Know" (Burchell).
 (b) "A Digger's Tale" (Dennis).
 9.34: MISCHA DOBRINSKI, Violinist—
 (a) "Hymn to the Sun" (Rimsky-Korsakov).
 (b) "Russian Carnival" (Wienlawski).
 9.41: MONA DEUTSCHER, Contralto—
 (a) "Laugh and Sing" (Drummond).
 (b) "On the Day I Get to Heaven" (Lehmann).
 9.48: ALEXANDER HMELNITSKI, Pianist—
 (a) "Rhapsody No. 6" (Liszt).
 (b) "Thousand and One Nights" (Strauss-Goldstein).
 9.59: MARGARET JAMES, Soprano—
 (a) "You in a Gondola" (Coningsby-Clarke).
 (b) "When the Birds Do Sing" (Hilda Wilson).
 10.6: ESTONIAN SYMPHONY ORCHESTRA—
 (a) "Berceuse"—Cradle Song (Jarnefelt).
 (b) "Pilgrim's Chorus"—from "Tannhauser" (Wagner).
 10.15: FROM THE STUDIO—Late weather and announcements.
 10.20: CEC MORRISON AND HIS BAND in a Programme of Symphonic Dance Music.
 11.30: NATIONAL ANTHEM.

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 338 Metres).

OPENING SESSION AND MIDDAY SESSION

- 9.0: This Morning's Story.
 9.30: A Musical Interlude.
 10.5: News.
 10.10: Austradio Musical Reproduction.
 10.40: THE AUSTRALIAN BROADCASTING COMPANY'S WOMEN'S ASSOCIATION, conducted by Miss Gwen Varley.
 11.0: HIGH MASS FROM ST. MARY'S CATHEDRAL.
 12.15: FROM THE STUDIO: Lunch Music by the LIGHT ORCHESTRA.
 1.0: Afternoon News.
 1.5: Austradio Musical Reproduction.
 1.30: A Pianoforte Recital.

AFTERNOON SESSION—2.0 to 5.45 p.m.

- 2.0: CHRISTMAS DAY IN THE AUSTRALIAN BUSH—
 We go a picnicking—Mum, Dad, Mary, Yuki, John, Grandfather, Uncle Frank, and Uncle Harry—Somewhere up the Hawkesbury River.

- 4.45: CEC MORRISON AND HIS BAND.
 5.45: Close Down.

THE DINNER HOUR—6.15 to 7.55 p.m.

- 6.15: Dinner Music by the LIGHT ORCHESTRA.
 6.45: THE BOYS' RADIO CLUB, conducted by Mr. Norman Lyons.
 7.5: A Talk by WILFRID BLACKET, K.C.
 7.20: Dinner Music by the LIGHT ORCHESTRA.
 7.45: Austradio Musical Reproduction.
 7.55: What's on the air to-night.

- TO-NIGHT'S PRESENTATION—8 to 10.30
 Christmas would not be Christmas without its "Scrooge," and to-night Scott

Alexander takes Dickens's imitable character; songs by the A.B.C. Male Quartette, a unique trio of Antique Music; in lighter vein—popular items contributed by May Webster and Paul Daly; and numbers by the Newtown Brass Quartet will complete a popular offering.

- 8.0: NEWTOWN BRASS QUARTET.
 8.8: A.B.C. MALE QUARTET—
 (a) "Outside" (Flynn).
 (b) "There's a Rainbow Round my Shoulders" (Jolson).
 (c) "Drifting and Dreaming" (van Alstyne).
 8.18: CHRISTMAS CAROLS—
 "Scrooge's Christmas Day."
 8.58: THE ANTIQUE TRIO—Instrumentalists playing Old World melodies upon old world instruments.

- Dulcitone—MADAME EVELYN GRIEG.
 Treble Viol—MISS VETA WAREHAM.
 Viol da gamba—Mr. KEITH KENNEDY.
 (a) Trio—"Favorite Air of Louis XIII." (Arr. Ghys).
 THE ANTIQUE TRIO.
 (b) Dulcitone Solo—"Prelude," from Suite XIV. (Handel).
 MADAME EVELYN GRIEG.
 (c) Viol da Gamba solo—"Minuet" (Stanley).

- KEITH KENNEDY.
 (d) Trio and Voice—"A Song of Old London" (Oliver).

- MADAME EVELYN GRIEG and TRIO.
 (e) Treble Viol Solo—"Ronde" (Mozart-Kreisler).
 MISS VETA WAREHAM.

- (f) Trio—"Adagio" from Trio No. 1 (Haydn); "Gipsy Rondo" from Trio No. 1 (Haydn), by request.

- THE ANTIQUE TRIO.
 9.13: MAY WEBSTER and PAUL DALY, Entertainers—

- (a) "Didn't I?"
 (b) "Somebody Somewhere" (Berlin).
 (c) "One Can't be too Careful" (West).

- 9.23: NEWTOWN BRASS QUARTET.
 9.31: Weather Information for the Man on the Land.

- 9.33: A.B.C. MALE QUARTET—
 (a) "Little Brown Baby" (Low).
 (b) Solo—"Matinata" (Tosti).

- "Pale Moon" (Lovan).
 Mr. NORMAN ELLIS.

- 9.43: THE ANTIQUE TRIO, Instrumentalists—"Christmas Carols."
 9.58: MAY WEBSTER and PAUL DALY, Entertainers—

- (a) "At the End of the Lane" (West).
 (b) "The Hollow of the Hill" (Plong).
 (c) "Hunting" (West).

- 10.8: NEWTOWN BRASS QUARTET.
 10.18: A CELEBRITY ITEM.

- 10.25: Late News from "The Sun" and "News." Late Weather Forecast.
 10.30: "NATIONAL ANTHEM."
 CLOSE.

2GB

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

Day Sessions as usual (see Friday).

- 8.0: POPULAR XMAS PROGRAMME: Miss Mary Neal, Contralto. 8.7: Band Selections. 8.15: Mr. Charles Smythe, Basso. 8.22: Symphony Orchestra. 8.30: Miss Gladys Verona, Soprano. 8.37: Mr. Jack Win and Miss Nora Windle in a Xmas Sketch. 8.47: Band Selection. 8.52: Miss Mary Neal, Contralto. 9.0: Weather Report. 9.3: Symphony Orchestra. 9.15: Mr. Charles Smythe, Basso. 9.25: Cello Solos. 9.35: Mr. Jack Win and Miss Nora Windle in a Xmas Sketch. 9.45: Band Selections. 9.50: Miss Gladys Verona, Soprano. 10.0: Dance Music. 10.30: Close down.

2UE

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

(Day sessions as usual)

EVENING SESSION.

- 7.15: Orchestral Dinner.
 7.59: Programme Announcements.
 8.0: Clock and Chimes.
 8.1: Overture, "Il Trovatore" Selections.
 8.10: Orchestral and Vocal Concert, including Christmas Carols.
 10.15: National Anthem. Close down.

(2KY and 2UW off the air.)

F109

F209

C603

F704

I560

I562

**LONG LIFE
PHILIPS TUBES
FOR YOUR
AMERICAN**

FOR your American A.C. Radio
(any make, any model) there's
a complete set of Philips Valves
only put into production after a
year of research and a thousand
exacting tests.



The tubes we talk of are the Philips
American Replacement Series, sturdy
dependable "Miniwatts" which are
kith and kin to the famous Philips
Pentodes and Screen Grid Valves.

PHILIPS

for better radio

Interstate Programmes, Christmas Day

3L0

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

CHRISTMAS DAY

"PEACE ON EARTH, GOODWILL TO MEN."

10.30: Bells from St. Paul's Cathedral, 10.45: Morning Service from St. Paul's Cathedral, Melbourne. Special Christmas Sermon by His Grace the Archbishop of Melbourne, 11.45: A Recital of Christmas Music, 12.30: Close down.

CHRISTMAS DAY PROGRAMME

3.0: The Collingwood Citizens' Band (Conductor, F. C. Johnston) March, "St. Elmo," two Christmas Carols, "Christians Awake," "Hark the Herald Angels Sing," 3.10: The Premier Four—"Adeste Fideles," "Hymn of Home," Jack Bannon, tenor—"Peter Noel" (Neumeier), 3.17: Jessie Smith, "cello—"Kol Nidrei" (Bruch), 3.27: Dawn Harding, mezzo-soprano—"A Christmas Song" (Adams), "Carol of Jesus Child" (Hughes), 3.34: The Collingwood Citizens' Band—"Sacred Souvenir," 3.44: The Premier Four—Moran Hillford, baritone—"Ave Maria" (Cooper), The Quartet—"O, Lovely Night" (Landon Ronald), Organ Recital, A. E. H. Nickson, F.R.C.O.—"Pastorale," "Fantasia on Two Christmas Carols" (Gullmont), (a) "Conzoncia e Maria Vergina" (Bossi), (b) "Shepherd's Song," 3.55: Dawn Harding, mezzo-soprano—"Slumber Song" (Reger), "King Wenceslas" (Traditional), 4.13: Joan Smith, "cello," "A Keltic Lament," 4.20: Collingwood Citizens' Band—"The Holy City," 4.30: Close down.

THE CHILDREN'S CORNER

5.45: A Special Programme by Freda Northcote and her Pupils—"Christmas Time," Opening chorus, "Christmas Boxes," "The Company," Solo, "The Story that Santa Claus Told," Irene Trevasik, Solo, "Christmas Bells," Gloria Smith, Recitation, "Talking to Santa Claus," Magic Flute, Solo "A Christmas Story," Hill, Brooks, Duets, "Silly Night, Holy Night," Al. Brooks and Freda Northcote, Recitation, "A Christmas Story," Pearl Muir, Huff, Solo, "The Holy Child," Al. Brooks, "Tunele," "O Come All Ye Faithful," 6.15: "Little Miss Kookaburra" and Mr. Morrison.

EVENING SESSION

6.45: Rev. R. O. Nicholls will speak on "The Spirit of Christmas," Choral Music, 7.0: Philharmonic Choir (Conductor, F. C. Johnston), "Mass in G Major" (Schubert), 7.30: "The Spirit of Christmas," Fairy Play for Children of all ages. Program by Winifred Moverley, Dramatic Personae: The Cross Old Man of G. Mr. Harold Millane; Mrs. Perkins, Miss Winifred Moverley; Molly, Nancy Burke; The Star Fairy, Edna Swyny; The Dream Fairy, Valma Lindsay; The Spirit of Christmas, Kara Harkness; Eveleen May, Gladys Poppina, Scene: The Study of the Cross Old Man.

SPECIAL CHRISTMAS NIGHT PROGRAMME

8.0: Collingwood Citizens' Band (conductor, F. C. Johnston)—March, "At Eventide," overture, "Baby-Don," 8.10: A.B.C. Carol Singers—Choral music.

PIANO RECITAL

8.18: Viva Högabate Clara—Piano—"Ballede in G Minor (Chopin), "Rococo" (Palmer), 8.28: Merna Stewart, soprano—Elizabeth's "Song of Greetings" from "Tannhauser" (Wagner), "Ave Maria" (Gounod), 8.35: Collingwood Citizens' Band—Selection, "Christmas Time," 8.45: J. Alexander Browne, baritone—Recitative, "Thus Saith the Lord," "But Who May Abide" from "The Messiah" (Handel).

VIOLIN RECITAL

8.52: Miss Elise Steele—"Sonata in D Major" (Handel), Spanish Songs and Dances (De Falla, arr. Kochanski), 9.12: Merna Stewart, soprano—"Songs My Mother Taught Me" (Dvorak), "The Greatest Wish in the World" (Teresa del Riego), 9.19: Collingwood Citizens' Band—"Mozart's Twelfth Mass" (9.29: The Story of the Carol, told by J. Howlett Ross, illustrated by A.B.O. Carol Singers, 9.49: Viva Högabate Clara, piano—"Waltzes in B and E" (Brahms), "Trot" (sleigh ride) (Tschakowsky), "La Campanella" (Liszt), 10.0: J. Alexander Browne, baritone—"The Holy City" (Stephen Adams), "The Star of Bethlehem" (Stephan Adams), 10.7: Collingwood Citizens' Band—Cornet solo, "The Lost Chord," Handel's "Largo," 10.15 "The Fairy Bells of Christmas," played by Dave Morrison, 10.31: Items of interest.

3AR

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

Morning session as usual; 11.0: Special Christmas Service, from Wesley Church, Lonsdale Street, Melbourne; preacher, Rev. F. W. Boreham; subject, "A Christmas Message."

MIDDAY SESSION

12.30: A studio programme of specially selected reproduced music.

AFTERNOON SESSION

1.30: "Jerusalem" Choir of R.M. Chapels Royal, 1.33: Chorale, "Sleepers, Awake" (Bach), "Christ Come to Jordan" (L. Dreyer, organ, 1.38: "Abide With Me" (Liddle), Gall-Curci, organ, 1.45: "Holy Child," John McCormack, tenor, 1.48: "Evening Bells," H.M. Royal Air Force Band, 1.52: "Be-

hold the Lamb of God" ("The Messiah"), Royal Choral Society, 1.56: "March on a Theme of Handel" (Gounod), A. Meale, organ, 2.0: An original Christmas story, by Rev. W. Bottomley, 2.15: "Harvest Home," Bells of Bourneville, 2.18: "Just For To-day," John McCormack, tenor, 2.21: "Pas des Cymbales," H.M. Royal Air Force Band, 2.25: "There Shall a Star," Choir of H.M. Chapels Royal, 2.28: "Nearer, My God, to Thee," Creators's Band, 2.32: "O Rest in the Lord," from "Elijah" (Mendelssohn), Essie Ackland, contralto, 2.36: "Pilgrim's Song of Hope" (Battiste), Arthur Meale, organ, 2.40: "Hallelujah Chorus" (Handel), Royal Choral Society, 2.45: A Christmas by the Seaside, Miss Hattie Knight, 3.0: Close down.

EVENING SESSION

4.30: "Holy Night" (Noel), "Silent Night" (Noel), Selon Orchestra, 4.36: "Old Jim's Christmas Hymn" Peter Dawson, baritone, 4.39: "Savoy Christmas Melody," Reginald Foot, organ, 4.42: "Sweet Christmas Bells," Minster Choir, "The Awakening," from "The Christmas Carol," "Scrooge," Bransby Williams, recital, 4.49: "Festive Medley," Reginald Foot, organ, 4.52: Selection of Christmas Hymns, Westminster Central Hill Choir, 4.55: "Seth's Chorus," Philadelphia Symphony Orchestra, 5.4: "Auld Lang Syne," Peter Dawson, baritone, 5.7: "Christians Awake," G. Whitaker-Wilson, organ, 5.10: "Hail, Singing Morn," St. Swithin's Choir, 5.13: "Lead, Kindly Light," Creator's Band, 5.17: "Oh, For the Wings of a Dove," Master E. Lough and Choir, 5.21: "While Shepherds Watched Their Flocks," G. Whitaker-Wilson, organ, 5.24: "Oh, Come All Ye Faithful," Madame Schumann-Heink, soprano, 5.27: Recital, "Sydney Carton's Farewell," from "The Tale of Two Cities," Bransby Williams, 5.31: "Nearer, My God, to Thee," Peter Dawson, baritone, 5.34: "Jesu Bambino," "Nazareth," Peter Dawson, baritone, 5.40: "Evening Bells," "The Day Thou Gavest," "It Came Upon the Midnight Clear," The Bells of Bourneville, 5.45: "Christmas in My Heart," Master E. Lough and Choir, 5.49: "Sleep On, Beloved," Coldstream Guards Band, 5.52: "Hear My Prayer," Master E. Lough and Choir, 5.58: "Abide With Me," All People that on Earth do dwell, Coldstream Guards Band, 6.0: "Christmas," from the Gilt Memorial Salvation Army Home, special Christmas Service, An hour for the music-lover, 7.0: Dorian Trio, Trio in B Flat (Beethoven), 7.45: "Christmas in My Heart," Master E. Lough and Choir, 7.25: Jean Hamblinton, contralto, "In Questa Tomba" (Beethoven), "A Legend" (Tschakowsky), 7.32: Dorian Trio, Sarabande (Handel), "The Gypsy Rondo" (Haydn), 7.42: Jean Hamblinton, contralto, "A Roundel of Rest" (Cyril Scott), "Morning" (Henschel), 7.50: Dorian Trio, "Elegie" (Arensky), "Spanish Dance" (Moskowsky).

NIGHT SESSION

8.0: Mabel Nelson, piano, a recital from the older masters, a special programme by studio reproduction, 8.5: Excerpts from "Mass in B Minor" (Bach), by the Royal Choral Society, Now it is only to be heard in concert performances, 8.32: "Scrooge," adapted from: Charles Dickens's "A Christmas Carol," by J. O. Buckstone, Characters: Jacob Marley, J. Howlett Ross, Ebenezer Scrooge, Maurice Dudley; Bob Cratchit (his clerk), H. M. Hill; Fred Wayland (his nephew), Frank Herleyer; Mr. Middlemark, Chas. R. Dyson; Mr. Worthington, Fred Herleyer; Mrs. Cratchit, Mrs. Maurice Dudley; Scrooge's sweetheart, Mrs. Maurice Dudley; Martha, Marjorie Renno; Belinda, Miriam Mullin; Peter, Dorothy Vale; Tiny Tim, Dorothy Hutchinson; the boy Scrooge, Dorothy Vale; Fanny (his sister), Marjorie Renno. Produced by Maurice Dudley. Office of Ebenezer Scrooge, A Foggy, Stylish Christmas Eve. Appropriate carols by the A.B.C. Carol Singers, 9.12: A studio reproduction of "Quartette in D Major" (Georg Franck), by the Virtuoso String Quartette, "Piano Lento, Allegro, Scherzo, Vivace, Larghetto, Finale, Allegro Molto, Presto," 9.38: Weather, 10.0: God Save the King.

4QG

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

MORNING SESSION

11.0: From the St. Stephen's Cathedral—Morning service, 12.0 (noon): Close down.

NO AFTERNOON TRANSMISSION

EARLY EVENING SESSION

6.0: A Session for the children, conducted by "Little Miss Brisbane."

NIGHT SESSION

ST. ANDREW'S PRESBYTERIAN CHURCH. A Christmas service from St. Andrew's Presbyterian Church, Organist and choir-master, R. Dalley Scarlett, Mus. B. 7.10: Organ Prelude—"Offertoire on Two Christmas Themes" (Gullmont), "Christmas Night" (Merkel), "Pastoral Symphony" (Handel), 7.30: Christmas Reflections from "Messiah" and Anthem—"Adeste Fideles," Invocation, Hymn 20, "Hark the Herald Angels Sing," Lesson, Quartette,

"O Little Town of Bethlehem" (Walford Davis), Prayer, Anthem, "This Day Christ was Born" (Sweetlick), Hymn No. 129, "It Came Upon the Midnight Clear," Intimations and Offertory, Anthem, "For Unto Us" (Handel), Sermon, "Scrooge's Christmas Day," Preacher, Rev. Norman S. Mills, B.A., Prayer, Anthem, "Nazareth" (Counold), Hymn 31, "O Come All Ye Faithful," Benediction, Carols: "What Child is This?" "Good King Wenceslas," "The First Noel," Organ postlude, "Fantasia on Traditional Carols" (R. Dalley-Scarlett), 8.45 (approx.): Close down.

5CL

Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 469 Metres).

MORNING SESSION

10.30: G.P.O. chimes, 10.31: A special Christmas service, from Flinders Street Baptist Church; minister, Rev. Donovan Mitchell; organist, Mr. Lawrence Haggitt, 12.0: From the studio, British Official Wireless news, Close down.

AFTERNOON SESSION

2.0: During the afternoon a description of the Inter-State cricket match, South Australia v. Queensland, will be given, interspersed with musical numbers from the studio; Parlophone recordings, 5.0: G.P.O. chimes, Close down.

EVENING SESSION

6.30: Chimes, 6.31: 5CL Bluebird Girls' Club, entertainment by "The Bird Lady," 7.15: Senior and Junior Birthday League greetings, 7.18: Mr. P. H. Nicholls and Miss Bessie Francis will entertain you, 7.40: Boy Scouts' Corner, an address to Boy Scouts.

NIGHT SESSION

7.55: A pianoforte recital by Tom King, 8.10: Community singing by the Apollo Radio Choir, 8.20: The Steiner Trio, "Christmas Medley" (Kesteven), 8.30: Community singing by the Apollo Radio Choir, 8.40: Guido Giacchino, 'cellist, 8.50: Community singing by the Apollo Radio Choir, 9.0: The Steiner Trio, "Serenade" (Herbert), 9.10: Frank McCabe, baritone, "De Profundis" (Martini), "Nazareth," 9.17: Lizette Foglia, violinist, "Japanese Sunset" (Deppen), "Triangular Dances" (Bond), 9.24: Community singing by the Apollo Radio Choir, 9.34: The Steiner Trio, "Petite Suite" (Masson), 9.44: Frank McCabe, baritone, "Great Awakening" (Kramer), 9.48: Guido Giacchino, 'cellist, 9.55: Frank McCabe, baritone, "Queen of Angels," 9.57: The Steiner Trio, "In My Dream Garden" (Raynes), "Gavotte" (Fletcher), 10.7: Vocal number, 10.15: News service; British Official Wireless news, 11.0: Close down.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 435 Metres).

12.00 (midnight): Midnight Mass, broadcast from St. Mary's Cathedral, 2.30 a.m.: Close down. MORNING SESSION—10.30: Christmas greetings to the people of W.A. by his Excellency Sir Wm. Campion, K.C.M.G., D.S.O. T.D. 10.37: Austradio musical reproduction, 10.40: The chimes of St. George's Cathedral, 1.0: Church service broadcast from St. George's Cathedral, 12.15: Austradio musical reproduction, 12.30: Close down.

AFTERNOON SESSION—3.0: Programme of celebrity artists, world-famous orchestras (reproduced). MORNING SESSION—10.30: Christmas greetings to the people of W.A. by his Excellency Sir Wm. Campion, K.C.M.G., D.S.O. T.D. 10.37: Austradio musical reproduction, 10.40: The chimes of St. George's Cathedral, 1.0: Church service broadcast from St. George's Cathedral, 12.15: Austradio musical reproduction, 12.30: Close down.

AFTERNOON SESSION—3.0: Programme of celebrity artists, world-famous orchestras (reproduced). MORNING SESSION—10.30: Christmas greetings to the people of W.A. by his Excellency Sir Wm. Campion, K.C.M.G., D.S.O. T.D. 10.37: Austradio musical reproduction, 10.40: The chimes of St. George's Cathedral, 1.0: Church service broadcast from St. George's Cathedral, 12.15: Austradio musical reproduction, 12.30: Close down.

7ZL

Tasmanian Broadcasters Pty., Bursary Bldg., Elizabeth Street, Hobart (Wavelength, 816 Metres).

11.0: Christmas Morning Service from Memorial Congregational Church, Hobart, 12.15: Close down. 3.30: A Christmas programme of vocal and instrumental items, by the leading international artists, specially arranged by Paton's Music Warehouse, 4.30: Close down, 6.15: Children's Corner, with Berna Southey Brammhall, 7.15: Recorded music, 7.20: Southey Brammhall, 7.25: Recorded music, 8.0: Transmission from St. David's Cathedral, Hobart, Carol service, 9.0: From the studio, A Christmas-time programme, arranged by James Counsel, 9.6: News session, 10.0: G.P.O. clock chimes the hour, 10.1: Close down.

LEVENSON'S RADIO THE BIG VALUE WIRELESS STORES OFFER MORE STARTLING SNAPS

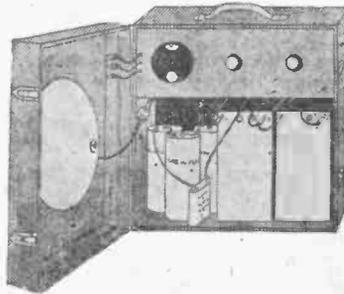
"Quam" Variable Condensers
 .00035, .0005, 35/- value, 6/6.
 Glass Pyrex end-plates, and 4-inch polished Bakelite Dial, with knob.

BREMER TULLY
High-grade Variable Condensers
 17/6. NOW, .00025, .00035, 7/6; .0005, 8/6.
 Excellently finished and made.

Don't keep on Buying "B" Batteries.
Build Your Own Eliminator
 A Child could.
 Everything supplied, £2/8/6. Simple Chart Free—New Improved Type Transformer included.

JUST ARRIVER. A FEW ONLY
 German Cone Cabinet Loud Speakers.
 Price abroad same as ours.
 £4/4/-.
 Selected by authorities for instalment in the Graf Zeppelin's recent world trip. Come and hear it.

BUILD LEVENSON'S 1930 3-VALVE
Portable Radio ANY CHILD COULD



Simple Illustrated Booklet, 6d., Free with Parts.
 Everything needed. Cabinet, Speaker, Batteries.

£7'17'6 You Can Build it in Less Than 1 Hour.

Since we placed this Little Wonder Set before the public, hundreds have built it and swear by its performance—any novice can build it inside 80 minutes.

We build any Cabinet, Metal or Wood—Floor or Table Model—to order. Let's quote you. Coils and Transformers Built to specifications.

COIL KITS.
 Pancake Coil Kits, 3 for ... 3/-
 Midget Neutrodyne, 13/6. Now 5/-
 Renown Coil Kit ... 10/6
 Reimartz Tuner ... 4/9
 De Jur Inter-State 3-coil Tuner ... 15/-
 De Jur B.-Drake, 1930 Kit . 22/6

VERNIER DIALS.
 Diora Midget ... 3/-
 Preferred Metal ... 2/3
 Preferred Bakelite ... 3/6
 Emmco Metal ... 3/-
 Alpha De Luxe ... 6/6

ACCUMULATORS.
 Hard Rubber Cases, 1 Unit.
 4 volt, 50/- . Now ... 30/-
 6 volt, 70/- . Now ... 50/-
 Well Known Maker.
 2 Years' Guarantee.

SWITCHES.
 Marco Filament Switch ... 2/-
 De Jur ... 2/3
 R.U.F. Crystal Detectors.
 Panel Mount ... 6/6
 Baseboard ... 4/6
 Guaranteed.

TRANSFORMER SNAPS.
 S.C.O. Continental Transformers, 12/6; Snap in well known Transformers, 10/6, 12/6, 15/-, 25/-.
 These represent big reduction off List Prices. A.C. Transformers, 35/-, for ABC Eliminators.
 Double Chokes, 25/-; 50 Henry Chokes, 8/6; Voltage Dividers, 8/6

Build Levenson's
ALL-STATION CRYSTAL SET.
 All Parts Cost 28/6.
 Cabinets, 7/6 extra.
 The Greatest Crystal Set Yet.
 Charts 6d. Free with Parts.

LISSEN AUDIO TRANSFORMERS, 12/6.
 Lissen Super Audio Transformers, 24/-; Lissen R.F. Chokes, 6/9; Lissen 2-meg. Grid Leaks, 1/6; Lissen Speaker Unit, 13/6; Lissen Cone Speaker Reeds, 1/-.

PICK-UPS.
 Lissen Pick-up ... 15/-
 De Jur Pick-up, with Tone Control Box and Adaptor ... £2/12/6
 Tone Arm, 12/6 extra.
 Blue Spot Pick-up ... 55/-

B.T.H.
 British Made Valves, U.K. and V.T. Bases, 2, 4, and 6 volt series, 13/6, 22/6. NOW 6/6. Like-a-Flash Valves, U.K.201A, 6 volts, 6/6; U.X.199, 4 volts, 4/6. Special power or detector, 6 volt, 10/-.
 Cleartron U.K. Base Special Detector Valve 22/6. NOW, 10/6.

HEADPHONES
 Elsemann's 4000-ohm Headphones, 25/- NOW 10/6. A few pairs only. "Para" Lightweight Headphones, 12/6. Magnus Professional Headphones, 35/- . NOW 17/6. Brandes, 19/6; Trimms, 19/6; Beteco, 19/6; Emmco, 21/-.

Remler RESISTANCE COUPLED Amplifiers.
 3-stage, 30/- . NOW ... 10/6
 2-stage, 26/6 NOW ... 8/6
 Bremer Tully Twin Condensers, .0005, 38/6. NOW ... 13/6

WHY NOT BUILD YOUR OWN A.C. ALL-ELECTRIC 3 RADIO?
 It's so easy, simpler than a Battery Set. No batteries. No accumulators. No hum. No worry or trouble. We supply everything needed for £15/5/4. Simply explained. Illustrated booklet, 1/- . Free with parts.

PORTABLE CABINETS
 for 4 or 5 valve sets, 45/-;
 smaller type for 3 or 4 valve sets, 39/6.
 Speaker Units for same with cone paper, 15/-.

Bremer Tully Vernier Dials, 15/- . NOW 4/- . Perfect Action.	Electron Insulated All Copper Aerials 100ft., 2/6. English Electron Aerials, 2/-.	Amplion AR19. Loud Speaker, £6/10/- . NOW 50/-.	Brass plate "Compact" Variable Condensers .00035, 10/6. NOW, 4/9	Silver Knight Short Wave Coil Kit ... 27/6	Wire-wound resistances, for volume control or eliminators, 200,000 ohms, 8/-; 500,000 ohms, 8/6.
Bremer Tully Short Wave Kit, £4, NOW £2.	Amplion AR23 Loud Speaker. Large Oak Flare. £9/9/- . NOW, £4.	Amplion AR88 Loud Speaker, 90/- . NOW 45/-.	English Reaction Condensers .0001, 1-hole mount, 5/6.	Just Landed. English Coil Winders. Wind your own Coils ... 32/6	Loewe Gramophone Pick-ups, 27/6.

Send now for Catalogue, Free. To be issued early in New Year. Levenson's Handbook and Catalog. 160 pages, 1/- coupon enclosed worth 4/- . Send stamps now, and we will mail you yours when ready.

LEVENSON'S RADIO
 THE PALACE OF WIRELESS.
226 PITT STREET, SYDNEY
 Branch: 86A Pitt Street, between Hunter Street and Martin Place.

Special attention to Mail Orders. Satisfaction assured. Your wants forwarded V.P.P. System. You pay your local Post Office on receipt of goods.

Local Programmes, Boxing Day

2FC

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

MORNING SESSION AND AFTERNOON SESSION.

- 10.30: Announcements.
 10.32: A.B.C. Racing Observer.
 10.45: Austradio Musical Reproduction.
 11.15: MORNING DEVOTION
 11.30: Austradio Musical Reproduction.
 12.5: A MORNING STORY.
 12.20: Midday weather forecast and weather synopsis.
 12.30: Studio Music.
 12.50: FROM RANDWICK—Description of the A. J. C. Meeting in the running.
 NOTE.—Progress Results of the Cricket Match, South Australia v. Queensland, played at Adelaide, also Victoria v. Queensland, at Melbourne.

During the afternoon a musical programme will be broadcast from the Studio between the races.

- 4.55: FROM THE STUDIO—Late Sporting Results.
 4.45: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Children's "Good-night" Stories, told by Aunt Goodie.
 6.45: Dinner Hour Music, by Cec. Morrison and his Band.
 7.20: A.B.C. Sporting Service.
 7.25: Special Country Session. Weather Forecast. Late news from the "Sun" and "News."
 7.58: To-night's Programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.

We are featuring a play to-night by the Strollers and the Mirth Quakers are also with us in Holiday Spirit. Music Lovers will appreciate a more serious side of our Programme in Orchestral Selections by the National Broadcasting Orchestra. 2BL is on popular lines—the Weekly Sound Film Feature, new sketches, Novelty Mouth Organ and Saxophone Solos, Song Groups, and in the later half of the Programme Orchestral selections.

- 8.0: THE NATIONAL BROADCASTING ORCHESTRA.
 8.12: THE MIRTH QUAKERS—They have enjoyed themselves—now they are going to make you enjoy yourself.
 8.42: THE NATIONAL BROADCASTING ORCHESTRA.
 8.54: WILFRID THOMAS, Basso—Two Seasonable Art Songs,
 (a) "The Monkey's Carol" (Stanford).
 (b) "New Year Song" (Mallinson).
 9.1: THE COUNTRY MAN'S WEATHER SESSION—
 (a) "New South Wales Forecasts."
 (b) "Interstate Weather Synopsis."
 9.3: THE STROLLERS in a Radio Play.
 9.33: HOTEL AUSTRALIA DANCE BAND.
 9.45: WILFRID THOMAS, Basso—
 (a) "Nina" (Pergolesi).
 (b) "Thou'rt Like a Lovely Flower" (Schumann).
 (c) "Sea Gipsy" (Head).
 9.52: CELEBRITY ITEMS.
 10.2: HOTEL AUSTRALIA DANCE BAND.

- 10.15: Announcements.
 Late Official Weather Forecast.
 10.20: HOTEL AUSTRALIA DANCE BAND.
 11.30: Close.
 NATIONAL ANTHEM.

2BL

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

OPENING SESSION—9 to 11 a.m.

- 9.0: This morning's Story.
 9.30: A Musical Interlude.
 9.40: British Official Wireless Press.
 9.45: New Music.
 10.2: News from the "Labor Daily."
 10.5: News from the "Sydney Morning Herald."
 10.10: Austradio Musical Reproduction.
 10.40: THE AUSTRALIAN BROADCASTING COMPANY'S WOMEN'S ASSOCIATION, conducted by Miss Gwen Varley.
 11.0: G.P.O. Chimes. Close Down.

MIDDAY AND AFTERNOON SESSIONS—12 Noon to 5.45 p.m.

- 12.0: G.P.O. Chimes and Announcements.
 12.2: LUNCH MUSIC by LIGHT ORCHESTRA.
 1.0: Afternoon news from the "Sun" and "News."
 1.5: Austradio Musical Reproduction.
 1.30: A Pianoforte Recital.
 2.0: NOTE.—During the afternoon sporting descriptions will be given, and in the intervals a musical programme from the Studio.
 5.45: Close Down.

THE DINNER HOUR—6.15 to 7.55 p.m.

- 6.15: DINNER MUSIC by CEC. MORRISON and his Band.
 6.45: Girl Guides' Club, conducted by Miss Gwen Varley.
 7.5: THE A.B.C. Sporting Service.
 7.20: DINNER MUSIC by CEC. MORRISON and his Band.
 7.45: Austradio Musical Reproduction.
 7.55: What's on the air to-night.

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

We offer our listeners to-night the overture and presentation from the Capitol. There are songs by Alfred Wilmore, Fred. Bluett, Australia's own Comedian; Palmistra, the Wizard of the Piano; comedy numbers, an interesting talk, and selections by the National Broadcasting Orchestra.

- 8.0: FROM THE CAPITOL THEATRE—Horace Sheldon and the Capitol Theatre Orchestra, with Knight Barnett at the Wurlitzer.
 8.7: FROM THE STUDIO, ALFRED WILMORE, Tenor—
 (a) "Two Roses" (Gilberte).
 (b) "I Wept, Beloved" (Hue).
 (c) "She Rested by the Broken Brook" (Coleridge-Taylor).
 8.14: FRED. BLUETT, Australia's Own Comedian.
 8.25: PALMISTRA, the Wizard of the Piano.
 8.32: FROM THE CAPITOL THEATRE—Knight Barnett at the Wurlitzer.
 8.50: FROM THE STUDIO, CAPTAIN LYWOOD ROBERTS tells of "The Low Veldt of South Africa."
 9.5: THE AHAD DUO, Instrumentalists—
 (a) "Three O'clock in the Morning" (Terriss).
 (b) "Neapolitan Nights" (Kerr), by request.
 9.12: WILLIE SHINE in witty bits and pieces.
 9.20: A Xylophone Solo.
 9.30: Weather information for the man on the land.
 9.32: FROM THE CAPITOL THEATRE—Stage Presentation.
 9.39: FROM THE STUDIO—ALFRED WILMORE, Tenor—
 (a) "Wings of Night" (Watts).
 (b) "Ah! Sweet Mystery of Life" (Herbert).
 9.52: PALMISTRA in further Ivory Intricacies.
 9.59: WILLIE SHINE tells more funny stories.

- 10.7: THE NATIONAL BROADCASTING ORCHESTRA.
 10.25: Late News from the "Sun" and "News."
 Late Weather Forecast.
 10.30: NATIONAL ANTHEM. CLOSE.

2GB

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

- Day Sessions as usual (see Friday).
 8.0: BOXING DAY PROGRAMME; Miss Heather Kinnaird, Contralto. 8.7: Symphony Orchestra. 8.15: Mr. William Green, Tenor. 8.22: Violin Solo. 8.30: Miss Doris Orr, Soprano. 8.37: Symphony Orchestra. 8.45: Miss Heather Kinnaird, Contralto. 8.52: Pianoforte Solos. 9.0: Weather Report. 9.3: Address. 9.15: Mr. William Green, Tenor. 9.25: Symphony Orchestra. 9.35: Mr. Jack Win and Mr. Health Burdock, Humor. 9.40: Miss Doris Orr, Soprano. 9.50: Violin Solos. 10.0: Instrumental Music. 10.30: Close down.

2UW

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

- EVENING SESSION—5.30: Children's Hour. 6.30: Close. 7. Request numbers. 8.0: Some Xmas Memories. 9.0: Comments on Foreign Affairs by Mr. J. M. Prentice. 9.10: Music and request numbers. 10.30: Close.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra, Sydney (Wavelength, 295 Metres).

- EARLY MORNING SESSION.
 7.15: Breakfast Time Hour Orchestral Music.
 8.0: Clock and Chimes.
 8.1: Orchestral Music.
 8.30: Weather Forecast. Close down.
 EVENING SESSION.
 6.30: Wendy's Hour with the Children, and Birthday Greetings.
 7.15: Orchestral Dinner Music.
 7.55: Announcements and news from the "Sun."
 8.0: Clock and Chimes.
 8.1: Overture, "Faust."
 8.10: Orchestral and Vocal Selections.
 10.15: Close down.

MICROPHONE WANTED

suitable for public speaking amplifier. Must be good and cheap. Write, giving description and price to

THOMPSON & WILSON
 MOREE, Box 321.

ON Saturday night, December 21, "The Messiah" (Handel) will be broadcast by 3LO by relay from 2FC (Sydney). The production will be by the Welsh Choral Society

A BIG Christmas outing to the Zoological Gardens has been arranged by 3LO for Saturday, December 21, and the thousands of listeners to the Children's Hour entertainers will have an opportunity of meeting and actually talking to their beloved "Billy Bunny," "Bobby Bluegum," "Miss Kookaburra," "Plain Peter," "Clever Clarice," and Paul Jeacle's Jokers. Admission will be by ticket, which may be procured upon application to 3LO, enclosing a one penny stamp for reply, and letters must be marked "Zoo Outing."

THE Royal Victorian Liedertafel will hold their Christmas concert at the Town Hall on Monday night, December 23, and a special programme, which will be broadcast by 3LO, has been arranged, including Christmas carols and part-songs, and the delightful cantata, "King Olaf's Christmas."

Transformers and Chokes FOR ALL ELECTRIC SETS.

Power Pack Transformers, for ABC Eliminators 22/8 each.
 30 Henrie Choke Coils, at 5/- each.
 Power Pack Transformers for all requirements, built to any specification.
 Large stocks of Motors, all sizes for all voltages. D.C. and A.C. Current. Generators. Variable Resistances, etc., for all Wireless Plant Equipment.
 Battery Chargers for Garages, and Service Stations. Made in 6, 12, and 24 Battery Sizes.

F. T. S. O'Donnell, Griffin & Co., Ltd.,
 M2991. 51-53 DRUITT ST., CITY.



Raise the standard of Reception

In your

**5 VALVE
NEUTRODYNE**

with these **Osram
Valves**

IF your set uses this popular circuit, change over now to Osram, using this range of valves. Each has its special function, each is the best fitted to perform its particular part in perfect reception.

MADE IN ENGLAND

	1st R.F.	2nd R.F.	Det.	1st Audio.	2nd Audio.
4-volt	DEL. 410	DEL. 410	DEL. 410	DEL. 410	DEP. 410 or P425
6-volt	DEL. 610	DEL. 610	DEL. 610	DEL. 610	DEP. 610 or P625A

These Valves in the last stage enable your set to operate the latest type of loudspeakers.

Ask for them by number, and say OSRAM

Your "B" Batteries last longer when used with "Osram Valves."

Ask your dealer for the Osram Valve Guide, free on request.

Advertisement of the British General Electric Co., Ltd., Magnet House, 104-114 Clarence Street, Sydney. Branches at Newcastle, Melbourne, Adelaide, Perth, and N.Z. Cities. Sole Agents at Brisbane and Hobart.

Interstate Programmes, Boxing Day

3LO

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

BOXING DAY—MORNING SESSION

10.30: Musical reproduction. 10.45: Current Happenings in Sport by Mel. Morris. 11.0: Musical reproduction. 11.30: From the Melbourne Cricket Ground, description of Sheffield Shield cricket match, Victoria v. New South Wales, at the Melbourne Cricket Ground. From the Studio. 12.1: Musical reproduction. 12.15: News service. 12.30: Close down.

MIDDAY SESSION

1.0: Time signal. 1.15: Musical Interlude.

AFTERNOON SESSION

1.27: Description of Shoobra Hurdle Race, 2 miles 65 yards, at V.A.T.C. races, at Caulfield, by Mel. Morris. 1.35: Musical Interlude. 1.45: Description of Sheffield Shield cricket match, Victoria v. New South Wales, at Melbourne Cricket Ground. 2.25: Description of Juvenile Stakes, furlongs, V.A.T.C. races, at Caulfield, by Mel. Morris. 2.35: Description of Sheffield Shield cricket match, Victoria v. New South Wales, at Melbourne Cricket Ground. 3.00: Description of Christmas Handicap, 4 furlongs, V.A.T.C. races, at Caulfield, by Mel. Morris. 3.10: Description of Sheffield Shield cricket match, continued. 3.35: Description of Malvern Handicap, one mile, V.A.T.C. races, at Caulfield, by Mel. Morris. 3.45: Description of Sheffield Shield cricket match, continued. From the Studio. 4.0: Musical interlude. 4.10: Description of Hopetoun Handicap, 1 mile 3 furlongs, V.A.T.C. races, at Caulfield, by Mel. Morris. 4.20: Description of Sheffield Shield cricket match, continued. 4.35: Description of Koorngang Welter, seven furlongs, V.A.T.C. races, at Caulfield, by Mel. Morris. 4.55: Description of Sheffield Shield cricket match, continued. 5.0: Stump scores. During the afternoon results of the Penhurst, Woodnag, Mildura, Bungaree, Kerang, Colac, and other races and sports meetings will be broadcast as they come to hand, also progress reports of cricket match. S.A. v. Queensland, at Adelaide Oval.

THE CHILDREN'S CORNER

6.5: Opening chorus by "Bobby Bluegum" and "Clever Charlie." 6.8: A Story for the Little ones by "Bobby Bluegum." 6.13: The Children's News Bulletin. 6.16: "Bobby Bluegum" and "Clever Charlie" in a Holiday Pot-Pourri. 6.22: Birthday greetings by "Bobby Bluegum." 6.40: Musical interlude.

EVENING SESSION

6.45: Swimming—"Don'ts" for Bathers, Les Uren. 7.0: Countryman's Session. 7.25: Travel Sketches in Europe—Rome and Romance, Miss Frances Fraser. 7.40: News service. 7.45: Our Radio Service to Listeners, Mr. E. K. Love.

NIGHT SESSION

8.0: J. and G. "The Confidential Two." "Something Old and Something New, Something Borrowed and Something Blue."

8.15: You will hear the outstanding personality or question of the week.

SPECIAL BOXING NIGHT DANCE PROGRAMME.

8.30: Paul Jeacle and His Band—Popular Dance Numbers.

8.40: Jack Kearns, Comedian, will cogitate.

8.53: Paul Jeacle and His Band—Dance music.

8.53: Phyllis Dickinson, soprano—"Spring Dropped a Song into My Heart" (Beatrice Fenner).

8.55: Paul Jeacle and His Band—Dance music.

9.6: Moran Hilford, basso—"Why" (Stonham).

9.9: Paul Jeacle and His Band—Dance music.

9.19: Etta Bernard, contralto—"Himemom's Love Song" (James).

9.23: Paul Jeacle and His Band—Dance music.

9.33: Jack Kearns, comedian, will agitate.

9.36: Paul Jeacle and His Band—Dance music.

9.46: Phyllis Dickinson, soprano—"I've Been Roaming" (Horn).

9.50: Paul Jeacle and His Band—Dance music.

10.0: Moran Hilford, basso—"Counting the Stars Alone" (Murray).

10.3: Paul Jeacle and His Band—Dance music.

10.13: Etta Bernard, contralto—"Tip Toe" (Carew).

10.18: Paul Jeacle and His Band—Dance music.

10.28: News session.

10.36: Phyllis Dickinson, soprano, Selected.

10.40: Paul Jeacle and His Band—Dance music.

10.46: Etta Bernard, contralto—"All Joy Be Thine" (Sanderson).

10.50: Paul Jeacle and His Band—Dance music.

11.0: Jack Kearns, comedian, will ruminate.

11.5: Paul Jeacle and His Band—Latest and Brightest Dance Music.

11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 414 Metres).

Morning session as usual.

Middy session as usual.

AFTERNOON SESSION

2.30: Orchestral, Louis Katzman and His Concert Orchestra. 2.38: Baritone, John Charles Thomas. 2.36: Band, Vesella's Italian Band. 2.32: Comedian, Ed. Smalle. 2.42: Orchestra, Jules Herbeux's Palmier House Orchestra. 2.45: The Races and Peoples of the World, by Mr. H. J. G. Esmond. 3.0: Studio Light Orchestra, suite, "Summer Days" (Costes). 3.10: A comedy sketch, "The Gent and Agent, a music hall comedy (George Elton) characters, Arthur (clerk to Messrs. Buck and Wing, variety agents), Cecil Fitzjames (a would-be artist), Lotte de L'Ormi (a variety artist). 3.25: Austin Anderson, entertainer, piano, "The Races and Reckmannoff's 'Prelude.'" 3.35: Studio Light Orchestra, "Selection of Wilfred Sanderson's Popular

Songs." 3.45: Thomas George, baritone, "Rip Van Winkle" (Carroll), "The Wonder Dream" (Lawyer). 3.52: Studio Light Orchestra, "L'Arlesienne" (Bizet), song "Parade" (Tosti). 4.4: Iza Crossley, soprante, "Is Izzy Azzy Wozzy," "The Sun is at my Window." 4.11: Studio Light Orchestra, selections from "The Student Prince" (Romberg). 4.21: Austin Anderson, pianist, "Mr. and Mrs. Flannigan." 4.30: Bertha Jorgensen, violin, "Meditation" from "Thais" (Massenet). 4.38: Thomas George, baritone, "Farewell in the Desert" (Adams), "Sylvia" (Speaks). 4.45: Studio Light Orchestra, selection from "The Arcadians" (Monckton). 5.0: Chimes. 5.1: Musical reproduction. 5.30: Weather. 5.45: Close down.

EVENING SESSION

6.15: Dinner music. 7.30: What's on the air to-night? 7.32: Sporting results. 7.35: Latest musical releases. 8.0: G.P.O. chimes.

NIGHT SESSION

8.1: The Odd Men Out, converse on that king of games, cricket, with Jack Ellis. 8.15: National Broadcasting Orchestra, "Three Dream Dances" (Coleridge-Taylor). 8.25: Alan Adcock, entertainer, songs at the piano. 8.35: Marie Jackson, mandolin, "Vaise" (Rummel), "Jenny Jones" (Parry). 8.41: Winifred Mitchell, soprano, "The Tryst" (Sibelius), "Opera With His Lute" (Gluck). 8.48: "The Gates of Bagdad," a story from the "Arabian Nights," with incidental music by Frederick Hall, a well-known Australian composer, played by the National Broadcasting Orchestra. 8.58: Comedy sketch, "A Trip Down the Bay," Dad, Mum, and the Kiddies go down the Bay for a blow and they get it. Hear the band: fun with the fishing party; and in the sandwiches, Dad and Mum decide there is no place like home. 9.28: Marie Jackson, mandolin, "Medley of English Dances" (arr. Moffatt), "Song of the Volga Boatmen" (arr. Moffatt). 9.44: Winifred Mitchell, soprano, "Lilacs" (Rachmaninoff), "At Night" (Rachmaninoff). 9.51: Studio Light Orchestra, suite, "A Kiss for Cinderella" (Rosse). 10.1: Weather; news. 10.12: Alan Adcock, entertainer, songs at the piano. 10.20: National Broadcasting Orchestra, selections from "The Cabaret Girl" (Kern). 10.30: God Save the King.

4QG

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

Early Morning Session (as usual); no morning transmission; no midday transmission; Afternoon Session as usual; Early Evening Session as usual.

NIGHT SESSION

(Announcer: A. V. James.)

8.0: The Studio Orchestra—Selection, "The Chocolate Soldier" (Strauss).

8.6: Annie Adams (soprano)—"What's in the Air To-day" (Eelen). 8.12: Harry Collins (entertainer).

8.23: Golding, the Cigarette Box Musician.

8.30: Ernest Harper (baritone)—"King of the Night" (Houghton).

8.35: The Studio Orchestra—Valse, "Barcelona Beauties" (Hilthred).

8.40: Winifred Haslam (contralto)—"Love's Rhapsody" (Harold).

8.44: E. Jackson (cornetist), accompanied by the Studio Orchestra.

8.50: Ernest Harper (baritone)—"Lighterman Tom" (Squire).

8.54: Mrs. Williams and Carl Hansen—Violin and Clarinet interlude, "Mauresque Caprice" (Boccalini).

9.0: Metropolitan weather forecast.

9.1: Harry Humphreys, in a rime sketch—"Mrs. Odden and Mrs. Jackson." 9.18: Riders and positions for Trocadero Orchestra in dance numbers.

10.0: News; Weather. Close down.

5CL

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

AFTERNOON SESSION

During the afternoon a description of the interstate cricket match, Queensland v. South Australia, will be given. 12.6: Special late selections for Caulfield races. 12.3: Probable starters and selections for races at Caulfield and to-day 12.15: News, etc. 12.35: Cheltenham, riders and positions for Birkenhead Hurdle Race, about two miles and a quarter. 12.50: Running description of the Birkenhead Hurdle. 1.15: Riders and positions for Glenville Handicap, five furlongs. 1.30: Running description of Glenville Handicap. 1.55: Riders and positions for Christmas Handicap, six furlongs and a half. 2.0: Resume of Cheltenham race results. 2.10: Running description of Christmas Handicap. 2.35: Riders and positions for the Cheltenham Stakes, one mile and one furlong and 40 yards. 2.50: Running description of the Cheltenham Stakes. 3.0: Resume of Caulfield and Cheltenham race results. 3.15: Riders and positions for Jumpers' Flat, one mile and a half. 3.30: Running description of Jumpers' Flat Race. 3.45: Riders and positions for Semaphore Hurdle, one mile and one furlong and 40 yards. 4.1: Resume of Caulfield and Cheltenham race results. 4.10: Running description of the Semaphore Welter. 4.35: Riders and positions for Exeter Three-year-old Handicap, one mile. 4.60:

Running description of Exeter Three-year-old Handicap. 4.55: Resume of Caulfield and Cheltenham race results.

EVENING SESSION

6.0 to 7.20: As usual. 7.0: Dr. G. H. Wright, M.A.: A presentation of the series of Literature Talks. 7.35: Under the auspices of the Junior Red Cross Association, a member of the league will speak. 7.45: Mr. A. M. Whittenbury, hints to poultry-breeders.

NIGHT SESSION

8.0: Chimes. 8.1: Programme review and announcements. 8.10: A presentation of the opera, "Il Trovatore," in which the following artists will take part, Marcelle Berardi, Dino Felardi, Malcolm Jones, Collett, Fred Guster, Ann Young, Bert Woolley, and chorus; explanatory remarks by Bessie Francis; music by the studio trio. 8.0: Meteorological information, including semaphore tides. 8.2: Overseas grain report. 8.3: Announcements. 8.8: Continuation of the opera "Il Trovatore." 10.15: News service, including a resume of Port Adelaide and Caulfield race results. 10.30: Modern dance recordings. 11.18: Close down.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 435 Metres).

Day sessions as usual.

EVENING SESSION—(During the evening description of the events at the inaugural meeting of the W.A. Trustring Association will be broadcast. 8.0: Chimes. 8.1: R.S.L. Band. 8.11: Reuben Betts, crooning baritone. 8.15: R.S.L. Band. 8.25: Reuben Betts, crooning baritone. 8.29: R.S.L. Band. 8.39: Reuben Betts, crooning baritone. 8.43: R.S.L. Band. 8.53: Unclassified, relayed by Basil Kitch, 8.15: R.S.L. Band. 9.23: Beryl Scott, entertainer at piano. 9.30: R.S.L. Band. 9.40: Reuben Betts, crooning baritone. 9.44: Beryl Scott, entertainer at piano. 9.57: Musical reproduction. 10.59: Weather report. 11.0: Close.

7ZL

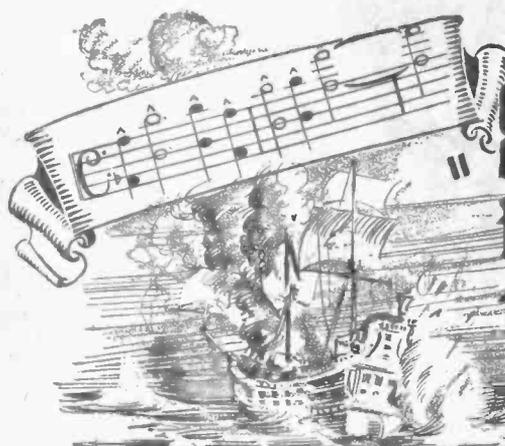
Tasmanian Broadcasters Pty., Bursary Bldg., Elizabeth Street, Hobart (Wavelength, 516 Metres).

During the day descriptions will be given of the interstate cricket match, Victoria v. Tasmania, also the V.A.T.C. races, run at Caulfield, Victoria, 11.30 a.m.: Record recital. 11.34: Midlands weather forecast. 11.35: Adelaide Eniger will speak on "Houshold Hints." 11.50: Record recital. 11.55: Tasmanian stations' 9 a.m. weather report. 12.0: G.P.O. clock chimes the hour. 12.1 p.m.: Shipping information; mail notices; Housewives Guide. 12.8: Record recital. 12.30: "Mercury" news service; announcements. 12.40: Record recital. 1.30 "lose down. 3.0: G.P.O. clock chimes the hour. 3.0: Record recital. 3.4: Weather information. 3. Record recital. 4.15: A representative of the Child Welfare Association will speak on "Holidays." 4.30: Close down. 6.15: Children's Corner, with "Uncle David" and "The Story Line." 7.10: Record music. 7.30: News session. 7.40: Under the auspices of the "Come to Tasmania" Organisation, L. Norman will speak on "Holiday Time in Tasmania." 7.50: Syd. Jones will speak on "Cricket activities." 8.1: Record recital. 8.15: A Columbia recital, including latest releases, specially arranged by Findlay's Music Warehouse. 9.30: News session. 9.30: Record recital. 10.1: Close down.

GENERAL T. A. BLAMEY, Chief of Police, will give a talk from 3LO on December 22 on "Traffic Control from the Point of View of the Traffic Man."

AN amusing play, "The Lunatics," will be given from 3LO on December 28 by the well-known actor, Brandon Cremer, assisted by his gifted daughter Gertie, who will be remembered as the delightful little Tityl of "The Blue Bird." The scene takes place during a ball arranged at a lunatic asylum, where patients and guests mingle freely, and all sorts of amusing complications ensue.

Mr. Cremer is well known on the Australian stage, has performed in England, America, and South Africa, and was responsible for the production of "Sweet Nell of Old Drury" three years ago, which proved a great success. At the invitation of the Tasmanian Government, he has made a series of moving pictures of the island, and on his return to Melbourne is devoting his attention to broadcasting.



"England expects
that every valve
will do its duty"

**MULLARD
A.C. VALVES**
do their duty.

To-day, as in Nelson's day, the Empire is beset with competition from without. Then, it was armed aggression—to-day it is commercial competition—and the famous signal, "England Expects" . . . is still the watch-word of Mullard.

Those who use Mullard Valves are always sure that Mullard will never "let them down."

DO
YOUR
DUTY



*Mullard Loud Speakers
speak volume of quality.*

Ask your Dealer for Booklet
describing Mullard Valves and
Speakers, or write

A. BEAL PRITCHETT (Aust.), LTD.
17 Parker Street, Sydney, or
150 Queen Street, Melbourne.

A14-29

G&G

Mullard
THE MASTER VALVE

You Eliminate Trouble—When You Eliminate Batteries
WALLACE IMPROVED KITS
 (With Power Transformer—No Bell Ringers)

FOR THREE VALVES.
 B Kit, 59/6.

FOR FOUR VALVES,
 B and C Kit, 75/-.

FOR FOUR AND FIVE VALVES.
 B Kit.

(With Proper Rectifying Valve—No Cheap Receiving Valves Used), 67/6.

FOR ANY SIZE SET AT ALL.
 B and C Kit, Full-wave, 280 Type.

(Will supply 200 volts to set), £6/17/6.

B TRANSFORMERS.
 300 volt, half-wave 25/-
 600 volt, full-wave 30/-
 With or Without Filament Winding.
 Look for the Red Guarantee Label.



A.C. FILAMENT WINDING
 added to any of these kits, thus making them complete AB or ABC Packs, for further 5/-.

Plain diagrams supplied. They can be Assembled by Anyone.

Why Not Build it During the Holidays?
 Cost of assembly, equal to commercial job, 5/-.
 But Whether You Build the Eliminator, or Whether We Build it—Results are Guaranteed.

SURPRISING ELIMINATOR BARGAINS.
 4 mfd. condensers, 5/-; 2 mfd., 3/-; 1 mfd., 2/-; .5 mfd., 2/-. All tested 650 volts.
 100,000 ohm variable resistors, 4/6; 2 and 3 ohm Centralab Rheostats, 3 amp., 1/-; variable, tapped C resistors, 3/6; 30 henry chokes, 10/6.

SAME DAY SERVICE
 for
 Country Clients.

WE GIVE SERVICE AND ADVICE

THE WIRELESS SHOP

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

Money Back
 Guarantee.

Two Doors from George Stret, opp. Q.V. Markets.

ESTABLISHED 8 YEARS. 'PHONE, MA3343.

Wireless Weekly

**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.

13/-

SUBSCRIPTION FORM

To the Editor, “Wireless Weekly,” Box 3366PP, G.P.O.

Please forward “Wireless Weekly” for a period of
 for which I enclose for
 (Add Exchange to Country Cheques.)

NAME

ADDRESS

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

Adding Grid Bias to Existing Receiver

G.B.H. (Wagga).—"Please tell me how to add grid bias to my set, circuit of which is enclosed."

Answer: As you have not mentioned the valves you are using, look up manufacturer's instructions regarding amount of grid bias to be used. If this is 44 volts, a single 44-volt battery will be O.K. If more than this, two batteries should be connected in series, i.e. plus of one to negative of the other. As many batteries as are required can be connected in series. If you are using a power audio requiring more than 134 volts (three 44-volt batteries in series), it would be a better plan to use a small "B" battery. A light duty "B" battery will serve the purpose admirably, since practically no current is taken. Disconnect the leads that make contact with the F negative terminals of your transformers. Now, from the first transformer carry a lead to the grid bias battery at its correct position. This is found by calculating the negative voltages from the positive terminal. The other F negative lead is then taken to its correct negative tapping on the "C" battery, the plus terminal of which is connected to A minus.

W.L.W. (Coosue).—"I have a Marco Four, using Emeco 'B' eliminator and four-volt accumulator, also 9 volts 'C' battery. I am living almost below 2BL's aerial, and I built the flour-duster wavetrap published in 'Wireless Weekly.' This helps me considerably. What I want to know is if I can use a screen grid valve in the r.f. stage, and if it will broaden tuning of the set?"

Answer: The screen grid valve can be used as suggested. It will have the effect of broadening the tuning on account of the greater amplification.

(2) "Does the screen grid Marco contain more than one screen grid valve? If so, how many?"

Answer: The circuit of a Marco containing one screen grid valve was published in queries columns in response to many requests. The Marco using two stages of screen grid radio frequency was published in a recent article.

(3) "If I put in a screen grid valve, do I have to alter wiring of my set?"

Answer: Yes. The screen grid stage should be shielded from the rest of the set, and the shield earthed. The only additional lead will be from the screen grid. See circuit. It may be advisable to by-pass some of the leads, and details of by-pass condensers are marked on the circuit or given in the article.

(4) "Will my eliminator and accumulator do just the same?"

Answer: Yes, these will be O.K.

H.D. (Queensland).—"Thanks very much. See below."

GENERAL.—Mr. H. Dodds, Thorn Street, Ipswich, Queensland, writes: "I have the following back numbers of 'Wireless Weekly,' which may be obtained by anyone wanting same by sending request and postage to above address:—1927, February 4, 18, 25; March 11, 16, 25; April 1, 8, 15, 22, 29; May 6, 13, 20, 27; June 3, 10, 17; July 1, 8, 22, 29; August 5, 12, 19, 26; September 2; October 7, 14, 21, 28; November 4, 18, 25; December 2, 9, 16. 1928: January 6, 13, 20, 27; February 3, 10, 17, 24; March 2, 9, 16, 23, 30; April 6, 13, 20; May 4, 11, 18, 25.

W.F. (Victoria).—Valve, socket, baseboard, panel, 0005 mid. condenser, .00025 mid. condenser, two tuning dials, three-inch diameter former, 1/4lb. 24-gauge D.C.C. wire, battery terminals, 45-volt "B" battery, "A" battery to suit valve, jack, plug, earphones, aerial wire, insulators.

A.G.R. (Casino).—"I have a six-valve King set, on which I can get all interstate stations. As a matter of fact, I have received 40 stations, but I cannot get the set to oscillate. I am using wet A and B batteries and no C battery. The valves are five A609 and a Philips' 815 in the detector socket. The batteries are well charged. I would be pleased if you could tell me the cause of set not oscillating. I find 'Wireless Weekly' the best radio book I have ever read."

Answer: The King radio sets are neutrodynes, and these are not supposed to oscillate. What you may have at one time mistaken for oscillation may have been something else. You are getting good reception, and oscillation is the last thing you should wish for. Thanks for your kind remarks.

Radio Information Service

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

H. W. McQ. (Punchbowl).—"I wrote to you some time ago enclosing several queries and a description of an exponential horn I made some years ago, but, having received no answer to date, I am repeating."

Answer: The only other letter received from you was one in which you asked us to advise Mr. Lindstroms, of Mosman, that you had a copy of "Modern Wireless" containing circuits of the receivers he required. This advice appears in queries this week.

(2) We should be pleased to receive particulars of your horn; and also of the superheterodyne you mention.

(3) "What is wrong with some of your readers buying exponential horns?"

Answer: We suppose they've discovered that this type of horn can be very O.K.

(4) The Amplion unit, old style, with cast-iron case, makes a good unit for an exponential horn. Personally, have not tested any other units, and Mr. Calvin A. Walters, who designed the exponential horn recently treated, also uses this unit.

(5) Sorry cannot make comparisons between the six loud-speakers mentioned, even by number. It is largely a matter of finance. The speakers vary in quality slightly, but they are all good.

(6) The double placing of the condenser was treated in Mr. Hull's articles on the superheterodyne. You are referred to these articles, where the subject is treated in greater detail than could be managed here. It is a matter of selective input and high intermediate frequency.

J.C.H.W. (Port Moresby).—"It should be a simple matter to build this set in the cabinet mentioned. Do not cram components, however. You could use a sub-panel for such items as fixed condensers, chokes, etc."

W.C. (Marrickville).—"I recently constructed a receiver comprising detector and i.f. stages, the latter by resistance coupling. The circuit is the usual Reinhart with one exception. I had recourse to a three-coil Silvertone tuner, which allowed loose coupling of the aerial. Even with this refinement 2KY spread itself over ten degrees on the dial. I also had to cut the reaction coil down to ten turns, as it was so fierce. The quality and volume are all that could be desired."

Answer: Do not use more than 25 or 30 volts on the plate of the detector valve. As regards selectivity, you might try a midge variable condenser in series with your lead-in (near the set), and keep your earth as short as possible.

A.J.D. (Burwood).—"Could you answer for me through your query columns a question regarding my loud-speaker. It is a bass-driven horn type. The trouble is it rattles, especially when there is a piano playing, but only on certain notes. It is a very good speaker otherwise."

Answer: More than likely the trouble is not in the speaker at all, but in the audio side of your receiver, which may have too small a power valve. It may be, however, that something has worked loose inside the speaker, and you should look there. The speaker, of course, is a very old model.

W.E.D. (Carlton).—"See recent 'Beginners' Number' of 'Wireless Weekly.'"

(2) "The valve I am using is of the type that does not light up, and as I do not see or hear of any of these could you tell me if I am using an antique type?"

Answer: You have not mentioned the name of the valve or the markings on it, so we are unable to advise on this score. However, the valve need not be ancient because the filament has no visible glow. Many types of good valves have a glowless filament.

(3) "Will it be necessary to alter my coil if I add another valve?"

Answer: No. If you add an r.f. stage another coil (in addition) will be required. If you add an audio stage no additional coils will be required, but a transformer will be necessary.

(4) "Which is the best kind of valve, one that lights up, or one that does not?"

Answer: The lighting up of a valve filament does not necessarily have an effect on the efficiency of the valve.

(5) "What valve should I use when I add the other to my set? Should I use one the same as I have now or one that lights up?"

Answer: You should have advised the name of the valve in use. Until this is done regret cannot tell you which valve to use. Write again, advising whether you desire to add an r.f. or an audio stage, name of valve, type, "A" battery, etc., and, if possible, send circuit of set.

"RADIO BUG" (Milbon's Point).—"I have a two-valve set, using Philips' valves A415 and A409. I can get all the following stations on the speaker:—

2PC, 2BL, 2QB, 2UE, 2KY, 2UW. The following are received faintly on speaker:—3AR, 3LO, and 4QG. Also heard, 7ZL, 2YA, 5CL, VK2JC, and the Waverley Radio Club. Could you tell me what station is almost on 3LO's wavelength? When the whistle from 3LO is tuned out I can hear the whistle from the other station."

Answer: The other station is JOCK, a Japanese station on 370 metres (only one metre from 3LO's wavelength).

(2) VK2JC is C. J. Hawthorne, "Coota," View Street, Concord, N.S.W.

(3) "What causes 2KY and 2UW to be heard faintly when the set is reading on 95, when their respective positions are 43 and 38 respectively."

Answer: If the dial reads back to front, they could be harmonics of these stations.

(4) "Is the above a good log for a two-valve?"

Answer: Yes, very.

(5) Try a .0001 fixed condenser in series with the aerial.

(6) Thanks for kind remarks.

E.S. (Hurstville).—"Read the article. Details for winding the coils were given. The articles were written for your information, not for our amusement!"

N.B. (Bathurst).—"What is the best length and height of an aerial?"

Answer: Usually about 75 feet, including lead-in. Height about 35 to 50 feet.

(2) If smaller wire was wound on a two-pole alternating current dynamo, would it increase the voltage?"

Answer: The use of smaller wire, i.e. lighter gauge wire, would not affect the voltage. It is the number of turns that affect the voltage. More turns could be put in the same space with the smaller wire.

(3) "Would it be practice to rectify the current and use it for exciting its own field magnets?"

Answer: Yes. This is done in some machines by means of a commutator. Most small alternators have a permanent magnet field or use a separate source of d.c.

(4) "If an aerial was pointing at right angles to a station, would the strength of the signal be weaker than if it was pointing toward the station?"

Answer: Yes. It is generally understood that the pick-up is greater when the lead-in end of the aerial points towards the station being received.

ENGLISH BARE (Lismore).—"Please advise voltage of the valves in use. If these are four-volt, as is suspected, use for rectemch Philips' A415 detector, and the same valve for the audio stage."

W.M. (Newcastle).—"No doubt you have seen the portable receiver recently published. This will fit in with all your requirements admirably."

CANENLY (Belmore).—"Move primary coil further away from secondary by cutting through the celluloid former."

W.T.H. (Croydon).—"1/22 enamel covered copper wire length, 73ft., including lead in. Height, 30 to 50 ft. There are many types of eliminators cheaper than the one you mention. They are advertised frequently in this paper. Suggest you look up the last half-dozen back numbers."

QUERY COUPON

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

Send Radio Information Service, 6150 230th St., P.O. Sparbury, Ill.

Do not enclose the accompanying queries in this coupon in order to indicate that I am a bona-fide reader.

Do not write to W.E.H.U.L.Y. The Radio Information Service Department.

G.A. (Wellington, N.Z.)—"I built the two-valve short-wave receiver as recently described in Wireless Weekly, and have obtained an extra valve. I have checked the working over a dozen times, and everything is in order there, but the set persists in bringing in stations on the broadcast band—and I get every station in the neighbourhood very loud and clear, so clear, to surmise me, for static has made our large set almost unworkable of late. Stations such as 3UZ and 2CB fairly roar in, and I hear dozens of Morse stations and AM twice I have heard both on 42 metres. When building the set I had to rely on the local radio stores for parts, and as they in the article have mentioned, they have also could not supply many of the makes recommended and I used as a Pilot transformer and Radiokes coil kit and condensers. I have also had to substitute a Phillips 209X as detector and A415 as amplifier in lieu of valves recommended. Can you give me a clue as to the whereabouts of the trouble?"

Answer: Radiokes' coil kit includes a coil that tunes from 60 metres to about 150 metres, and another that covers the amateur and broadcast bands. Evidently you are using this coil. It is also possible that you may be listening to the broadcast stations on their harmonics, since 2CB's and 3UZ's harmonic is particularly strong on the 60-metre band coils.

R.H. (Hay)—"I have a five-valve Premier electronic battery set which recently was struck by lightning, thus damaging the transformer. My electric radio racket on 200-600 metre aerial coils I have tried Sydney and Melbourne for a new one or to have the old one done up, but nothing can be done. Could you advise me where I could make anything suitable in this set, and how, when I could get a new one? If unable to help in this regard, would you kindly put a little paragraph in your paper, as some reader may have one. **Answer:** Regret that I cannot help you, and are therefore unable to assist. The paragraph requested is published below. If no reader can help you in this regard, suggest you forward the coil to us, together with a complete copy of the wiring diagram. We may be able to help you regarding the re-winding. We shall not, of course, be responsible for safe transit of the coil. See below.

GENERAL—Mr. R. Hurley, Orson Street, Hay, N.S.W., wishes to know if any reader can advise him where he may obtain one of the coils referred to in his query. The coil was originally supplied, inquirer is willing to pay cost and postage.

A.B.C. (Wellington)—"Will my 'B' eliminator give a greater output in milliamperes using a 250-volt instead of a 213, which was originally fitted? The eliminator has been tapped to give about 150 volts with a bias suitable for a 171A valve. Is it possible to increase this voltage to about 250 or 255, also to increase the output in milliamps?"

Answer: In all probability it would be necessary to re-design the whole of the eliminator in order to get the increase in voltage, etc. Probably condensers with a higher working voltage would be necessary also. As frequently mentioned in these pages, such questions as relate to commercial products should be addressed to the firm concerned, since they should of course, know their own products better than we.

(2) "Does it matter mixing the breed in valves, as I am using three Osram D.E.L. 510, PM6D, 201A and 171A? I should like to use an Osram P625A in the last stage, as the set is a very powerful commercial product."

Answer: Providing the characteristics of the replacement valves coincided with those of the previous valves, there is no harm in using valves of various makes.

(3) "Does a P625A suit a Magnavox speaker of the 80 type?"

Answer: The characteristics of this valve make it quite suitable.

(4) "Can you tell me if there is an easy way to attach a gramophone pickup to set other than taking detector valve out each time?"

Answer: Yes, by connecting a two-point jack to the grid and filament of the detector valve and plugging pickup in here.

(5) If all queries were acknowledged as received we should have no room for answering them.

G.V.C.J. (Mayfield)—"Try a .002 fixed condenser across the telephones or loud-speaker."

G.W.C. (Burradoo)—"I have made up the Countryman's one-valve set, 'Improved Circuit.' Can you tell me how to adapt into a Pulling 3000 power unit? Emco transformer do?"

Answer: Circuits of one and two valve amplifiers suitable for the Countryman's one-valve receiver have been published in this paper a number of times. If you look up back numbers and read queries columns you will find schematic diagrams, back of panel diagrams, wiring in words, etc., etc. The transformer will be O.K.

N. BO' B. (Alexandria)—"I desire to feed the filaments of the valves in my amplifier with raw a.c. Kindly tell me if my wiring is correct for same?"

Answer: As far as you have progressed the wiring is right to be certain extent. However, you will probably be encountering with loud a.c. when you use a.c. on the first audio valve (three electrodes). A better proposition would be to use an a.c. valve in this stage, say an E415. You have not "centred-tapped" the filaments. You will see details of this in the circuit in this issue.

(2) "What would happen if I stepped up the 240-volt light-power through a transformer to 1900 volts, and fed this into my Pulling 3000 power unit? Would the full wave rectifier be capable of handling the voltage thus produced, or would the whole eliminator go 'West' altogether?"

Answer: The transformer would not go West. It would go up—in smoke. In the first place, the condensers in the filter would not stand up to the voltage. The maximum rating is about 500 volts. Again, the transformer would commence to sizzle, and a beautiful column of blue smoke, accompanied by

a most disheartening odor, would be followed by sudden darkness and, unless you blow.

As requested, your good wishes were passed on. In reply Mr. Hull says "Thanks."

L.F.C. (Camble)—"I desire to thank you for your kind assistance through the query columns. Your remarks enabled me to rectify the trouble in about three minutes, whereas my local dealer quoted me £5/10/ to repair the set."

Answer: Thanks.

(1) "Greatly satisfied by my success, I intend building a simple one-valve set as a Christmas present for my boy. Would you please recommend a receiver suitable? I have all back numbers for five years." **Answer:** Suggest the Countryman's one-valve receiver.

A.O. (South Australia)—"Will you please give me a description of a valve for a four-valve receiver, using one r.f., one detector, and two audios." **Answer:** R.F. E435, detector E424, first audio E415 last audio UX245.

(2) "Also combination for a three-valve set, detector, and two audios." **Answer:** As per answer to question 1, but without the E435.

(3) "What ohm variable resistance would I require to drop 150 volts at 20 mls down to 120 volts?" **Answer:** A fixed resistor of 1500ohms would give you the desired voltage drop. If you desire to use a variable resistor, the total resistance will depend on the use to which it is to be put. If the voltage must be variable from 120 to 150 volts, a 1500 ohm variable resistor would be O.K.

W.A.B. (Paddington)—"I have a Marco Four (not a Marco). Batteries tested on good meter, found O.K. When high notes are reached, set is awful to listen to. Low notes O.K. B speaker on hand. **Answer:**—O.K. Also when I get 4QG or 3LO they come in just like a person with a marble in his mouth. What's cause? I've tried to make this letter as short as possible." **Answer:** Sounds like incorrect bias, a poor output valve, or poor transformers. Change one of the transformers for another of different make. The hollow effect on distant signals probably due to use of excessive reaction.

H.D.B. (Tullamore)—"Can't understand why you don't like the valves mentioned. They are personal favorites. If anything was wrong with you had, it was probably your own fault. The other valves mentioned have a much higher filament consumption. In any case, you cannot recommend any particular valves unless you state what voltage 'A' battery you intend using. Doubt whether you'll get the daylight reception mentioned—on two valves. Night reception is possible. Particulars re aeriels have been published many times in queries. See remarks to W.T.B. (Croydon), a couple of queries back.

V.B. (Bathurst)—"Regret we cannot supply detailed information to any but licensed amateurs. If you get your set, and send us copy of your QSL card cancelled, we shall be pleased to do as you suggest. In any case, it is evident from your letter that even were the information given, you would not have enough detail to proceed."

C.G.P. (Mosman)—"There are a variety of methods. One is to use a condenser with a breakdown voltage of about 500 v. in series with one of the main leads. Another is to use a copper plate insulated from a metal chassis, i.e., a capacity aerial. There is a slight hum on an electric receiver at all times, and the use of the above mentioned method may make this stronger. The earth is usually a capacity one, though the eliminator is indirectly earthed through one side of the mains. Many of the sets are directly earthed."

R.D. (Adelaide)—"Use the Radiokes 00005 mfd. variable midget condensers. We do not reply by post."

S.S. (Geelburn)—"A high-grade amplifier was treated only a few weeks ago. Yes, the microphone could be used in place of the gramophone pick-up."

S.J. (Queensland)—"I have a screen grid valve and methode which have given me the ghost. Filaments are intact. Have tested with four-valve battery and a voltmeter in series. Can valves be repaired at reasonable cost?" **Answer:** The valves have probably lost their emission through overloading or faulty use. You may be able to rejuvenate them by giving the treatment recently described in these columns.

S.H. (Cremorne)—"The two pages of matter forwarded are useless, since there is nothing that will help us calculate the current consumption. This question was treated in detail through queries column a few weeks ago, and if you look up back numbers you will find it is a simple matter to have pulled to pieces yourself, and this will save you writing again."

T.W.F. (City)—"Enclosed you will find the layout of a Reinartz one-valve set which I bought, plus, etc., from a firm in town. I have followed the chart they gave me with it as closely as possible, but I can't even get a whisper out of the set, which I have pulled to pieces and rebuilt. I know the circuit by heart now. It is soldered, and there are no loose joints. I have taken the set to the firm from whom I bought the parts, but got no satisfaction. They would be very glad if you would forward any suggestions regarding the set. I'm all stewed up."

Answer: The fault is probably with the valve or with your method of connecting up the batteries. Have the valve tested, and see that joints which have been soldered are not "wet joints," that is, that good electrical contact is made. Pull the joints sharply to see if they are tight.

P. (Keisington)—"Remove five turns from secondary."

A.G.R. (Victoria)—"Yes, the resistance coupled stage can be added to the transformer coupled. The primary resistance should be 100,000 ohms. The secondary should be 10 megohm. The capacity of the coupling condenser could be .006 mfd."

T.G. (Rezele)—"Re the Go-Getter. How can I cure hand-capacity? I have already got aluminium plates behind condensers on panel. These are connected to earth. It seems to make matters worse, if anything. At certain parts of the tuning condenser's movement, I get a bang and rattle, as though the secondaries were loose. This is not so, as I have tested condensers and found them O.K. You put me right about reaction, so now have a go at the next question. If you can put me right I'll take my hat off to you, as I have had a couple of 'experts' to look at the set, but they never did any good. Thanks for past services."

Answer: You do not mention whether or no the rotor-plates of the condenser are connected to the aluminium shield. Assume they are, and make the alteration or addition. Try a .002 fixed condenser across the telephones. This often helps hand-capacity in a short-wave receiver. Do not leave the earth if earth is connected, but the contact is a good one, at both ends. A poor earth will make hand-capacity very bad. If necessary, place an aluminium shield over the coils. Re the plating condenser, there is not much doubt about that. Dust, etc., getting between the vanes will cause this noise, which sounds like a direct short-circuit in the telephone. Stop reading when the voltmeter and battery are used. The remedy is to clean away the dust from the vanes of the condenser with a piece of silk. If pipe cleaners or other material is used, tiny bits of dirt may be left behind. It may, of course, be a broken pigtail connection which makes intermittent contact when the plates reach a certain position.

BLAPELL (Queensland)—"Can I use the three electrode valves with an A.B.O. Eliminator?"

Answer: Yes, if it is really an "A.B.O. Eliminator" and not a "B" and "C" eliminator, with a transformer. It will be necessary, however, to use a device for supplying battery-operated valves with current obtained from the house mains.

(2) "What work does an audio transformer do in a set?"

Answer: Simply, it permits audible signals to be amplified by providing a coupling between the audio valve amplifiers.

(3) "What is neutralisation?"

Answer: It is the object of neutralisation to prevent oscillation. The Neutrodyne is a receiver which does not oscillate. Neutralisation refers to the method of accomplishing prevention of oscillation. You must understand that it is a very difficult matter to explain these things to one who has never seen the thing. The subject of radio is so thorough an explanation would require a detailed story of inter-electrode capacity, and many other like subjects.

"RENEW" (Amamoor)—"Could I use a Reinartz coil in a Renew? Would there be any difference in volume?"

Answer: Yes, the coil could be used, since the Renew is a Reinartz preceded by an absorption wavetrap. It will be necessary, however, to connect the Renew circuit, to tap the primary of the coil every tenth turn for that part of the wavetrap.

W.A.S. (Fairfield)—"I have an a.c. three-valve set with the circuit as shown in diagram. I wish to know would it be possible to attach a stage of r.f. screen grid for occasional long distance reception? I want to make use of an A442 valve, and the B supply may be used. It would be most convenient for me to use a four-volt accumulator to heat the filament of the A442. Please give circuit of an r.f. unit."

Answer: As the set is all-electric, would advise use of the E442 instead of the A442, doing away with the battery altogether. This could be used, however, if desired. The circuit is a straight-out Reinartz, and a stage of it would be most suitable. A Marco Four circuit of which, using screen grid valve, was published in queries recently. The circuit of a screen grid booster unit (r.f.), was made the subject of a recent article.

G.M.R. (South Australia)—"Valve bases are too small for broadcast band coils if they are a 2% efficient. The best plan is to mount a former 2 1/2 inch diameter on a 1/2 inch diameter core of 60 turns on it for your broadcast band secondary. The two-inch diameter former mentioned will require 75 turns, approximately. Yes, an eliminator can be used. The circuit will not have to be altered."

E.C. (Sans Souci)—"What is a Leyden Jar used for?"

Answer: A Leyden Jar is used to store up electricity, and to expend it when the contacts are closed. It acts in precisely the same way as a fixed condenser. It is one . . .

(2) "Can d.c. be changed to a.c.?" **Answer:** Yes. In "Proving Radio" and "Amateur Proficiency" details were briefly discussed.

(3) "Can static be reduced? If so, how?" **Answer:** See the heading query published December 5.

J. McC. (Muswellbrook)—"Could you send me a copy of the circuit of the Bunting Drake (1927)? I pulled my set to pieces to overhaul, but in the meantime lost the circuit."

Answer: Yes, on receipt of stamps value 4d. (2) "I constructed the Countryman's One, and found it great. It is a 2000 power unit. I have received 2YA, 1YA, JOAK, JODK, and my log comprises 22 stations."

Answer: Glad to hear of your good reception.

E.L. (Cheltenham)—"Either there is a short inside the receiver, or your battery switch is faulty. You could not use better valves as regards consumption."

Three New Radiotrons



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 .06 AMPS.
 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
(Australasia) Ltd.

"Wireless House,"
 47 York Street, Sydney

Queensland Distributors:
J. B. CHANDLER & CO.,
 45 Adelaide Street, Brisbane.

Genuine

Radiotron



XMAS!

What more appropriate time could we wish for than Xmas, to introduce Astor's newest Electric Receiver. The little Astor Electric. This new unit radio achieves all round perfection of performance. It is permanent and trouble-proof. It is completely auto Electric — no batteries — simply plug into nearest light or power point.



A Xmas present for the family! Imagine the surprise if you had one installed without their knowing it. A small deposit will place the Little Astor in your home right away. Easy payments from 8/10 per week. Hear it for yourself.

£26
Complete

The Little ASTOR ELECTRIC RADIO



Demonstrations from any Astor Dealer or
AMPLION A/SIA LTD., 53 YORK ST., SYDNEY