The A.C. MODERN 2

How Not to Build the 1930 SUPER-HETERODYNE

A SCALE MODEL AEROPLANE

A new all-electrically operated instrument for the reception of broadcast programmes and reproduction of recorded music.

A Dynamic Speaker is built into a cabinet of outstanding beauty.

Hear it at all Authorised Radiola Dealers and Distributors.

Amalgamated Wireless (Australian) Ltd.
RADIOKES 1930 SUPERHETERODYNE COIL KITS

The 1930 Superheterodyne, as published in "Wireless Weekly," has created quite a stir among those fans who are in search of a "super" set.

As usual, Radiokes products are specified for this, the greatest Receiver of the year.

This is no mere chance; but from long experience Radio designers have learnt that Radiokes components are reliable, efficient and consistent, and they can safely use and recommend same. Does this mean nothing to you?

Radiokes Shielded R.I. Coil Kit for 1930 Superheterodyne.

Both types A.C. and D.C. These R.F. units represent the latest and best possible developments in coil construction, enclosed in beautifully lacquered aluminium shields, with terminals easy of access, for quick wiring.

Price of R.F. Coil Kit, as illustrated, £3/15/- per kit.

Radiokes Shielded Tuned Intermediate Frequency Transformers

These have been produced in kits of three shielded units similar to instrument illustrated on right. These Transformers are constructed with air-core windings to W.W. specifications, tuned with correct size condenser, and screened by aluminium can designed and finished to match the R.F. kit illustrated above. Packed in kits of three units. Price per kit, £3/15/-.

RADIOKES WIRE-WOUND VITREOUS RESISTORS

For the "C" Bias requirements of this Superhet.

These resistance units are accurately and robustly constructed to stand high voltages, comparatively large currents and abnormal heat. They are made in most useful sizes and are equipped with solder lugs for wiring and insulated brass mounting brackets. This makes for easy assembly.

Centre Tapped Filament Type, 10-20, 50 and 75 ohms 2/6 each
Centre Tapped Vitreous Type, 900 ohms 4/- each
Plain Resistor Vitreous Type, 10,000 ohms 6/6 each
Voltage Dividing Resistor, 4 voltage taps 8/6 each

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For housing your Superheterodyne or your pet receiver already giving service, but for which you have not yet procured a suitable cabinet. These cabinets are beautifully finished in two-tone ripple lacquer, and come to you in knock-down form. Special sizes on application. Standard size, 12 x 19 x 8 in. Price, £2 7/6.

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PHILIPS "BABY GRAND" LOUD SPEAKER, £3/10/-

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*Build it by following our simple Back-of-Panel Chart. When you have completed it we will check and test Free of Charge.*

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<tr>
<th>Item</th>
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<td>Bakelite Panel, 18 x 6</td>
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<td>Diora Bakelite Ver. Dial</td>
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<td>2 Monarch Special Audio Transformers</td>
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<td>6 Engraved Terminals and Strip</td>
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<td>3 National Center Tap. Resistances</td>
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<td>2 1mf. 1000v. Condensers</td>
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<td>1 UX 171 Super Power Valve</td>
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**NO FIELD CURRENT, NO HUM**

**INCLUDES OUTPUT FILTER**

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

**COMBINE THE ALL ELECTRIC THREE DESCRIBED ABOVE WITH THIS WONDER UNIT, AND SEE BACK AND REALISE THE ULTIMATE IN 3-VALVE RECEPTION.**

**HOOK ON A PICK-UP (BLUE SPOT, 47/6). IT WILL MAKE YOUR OLD GRAMOPHONE LOOK SICK, YOU WILL ENJOY ELECTRICAL REPRODUCTION OF YOUR FAVOURITE RECORDS.**

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EWART CHAPPLE
ANNOUNCER.

MISS RUTH FURST
(COOKING SESSIONS)
AS SHE POSSIBLY LOOKS.

James and John pay a visit to 2FC.
A page from "Wireless Weekly" issue dated 22nd November, 1920, featuring an article titled "Down Here" by James, discussing life down in the tropics and the challenges faced by expatriates trying to understand local culture and customs. The article mentions Shakespeare, Goethe, Malher, Grieg, Beethoven, Brahms, Schubert, Wagner, and other classical musicians. It also touches on the use of "Wireless Weekly" and the broadcasting of drama in the tropics. The text is written in a lively, conversational style, reflecting the author's experiences and observations. The page includes a small illustration at the top with the title "Between You Me and the Microphone."
A MAN asked me: “Where do you get all your jokes?” I told him I write them all myself. He said, “Then you’re older than you look.”

Of course, it wasn’t true. All my life I’ve been a kind of search party for jokes. Novels are the best field.

Novelists are only human beings, and I have yet to meet the man who hasn’t at least one pet joke. So you can always be sure of finding a good joke in a novel, because the novelist takes his first opportunity and puts his own pet joke into the mouth of one of his characters. Literary people may be interested to hear that I view the ever-increasing output of new and racy fiction with equanimity.

I have also been helped in my search for new ideas and formulas by appreciative listeners, who send me countless good stories, many of which are from my own repertoire. My grateful thanks.

Some, and let me say candidly, not many, of my stories are from my own brain; but if you object to even such a humble statement, I will not press the point.

They have pointed out (“They” being all my listeners) that humor on the air is different from stage humor, because it denies the comedian God’s greatest gift to comedians—a funny face. This is quite true. People who have seen me on the concert platform often tell me they miss my face on the wireless, and when I tell them that is just as well, as I never did like superannuated tomatoes. I began to talk about the degenerating influences of modern civilization. However, it is quite true of the radio audience as of any other kind of audience that you must adapt your stories specially for the occasion.

Here is a story of a typical English style—

"Oh, doctor! Can’t SOMETHING be done?"

"I can do Absolutely Nothing." (laughs.)

"Well, doctor?"

"I can do Absolutely Nothing." (laughs.)

"The child opened his eyes at this point and said Absolutely Nothing! That is a story which is no good for broadcasting; it is too subtle. It requires a good deal of thought, and if everyone has a set like mine they will be too busy trying to catch what’s coming between, and won’t have any time to ponder over what’s gone before.

The best subject for humor on the air is the commonplace. The greatest radio joke is unquestionably John Henry, of ZLO, London. He talks into his wireless set, his wife, the washing on the line (because England’s climate is cold—there would scarcely be sufficient material for one song on Australian clothes lines). My own experience is that a joke told about your wife is always certain to get a laugh—in a hall, that is—one reason being that at smokers and lodge functions nearly all the audience are married men who have made the gathering an excuse to GET OUT. This kind of thing:

When I was a young and happy man I used to take the wife—we weren’t married—out to the theatre. Used to go round to her place, and wait by the front gate from half-past seven until she came down. Used to see her shadow crossing and re-crossing the window blind; wished I had the courage to go in. It’s just the same now, only much later, of course.

That is quite a common-place feeling—something everyone understands, although perhaps it isn’t quite suitable for broadcasting. But it illustrates the kind of humor. A prolific laugh-getter, specially suitable for broadcasting, is the joke about some aliment, excluding wives and mothers-in-law, such as the story of THE POOR MAN WITH APPENDICITIS.

He was operated on—very successful operation—sewn up, doing splendidly, and the doctor called. "How’re you getting on?"

"Good oh!"

"Sorry to tell you we’ll have to operate again. We left a pair of scissors inside."

They operated again—very successful operation—got everything sewed up, doing splendidly. The doctor called. "How’re you getting on?"

"Good oh. Doc. Reckon I’ll be up next week, doc."

"I wouldn’t be too sanguine. Afraid we’ll have to operate again—left a sponge inside."

They operated again—very successful operation—got the sponge. Just started to sew him up when he came out of the chloroform. "En, doc. I wouldn’t worry about sewing it up—put on a button and button it up." That is one of my most successful stories.

People don’t have to think about it, and the humor piles itself up with each gruesome repetition. Generally, though, the best kind of story for broadcasting is a short, pithy affair—two sentences, if possible, like the one I begin this article with (which, of course, has been well aired): or the two married friends who meet. "You should know my mother-in-law—she’s an angel! Lucky devil!" However, you heard that some time ago.

I think it is much easier to get humor over the air with two or more people. The second person can laugh at the joke and thus indicate the point—I am quite serious; you don’t know what a hard job it is to put humor over the air. A great help in the future will be the sound effects that can be used as backgrounds for one-man sketches.

I find that people most appreciate my extemporaneous stuff at outside shows and hospital concerts and soldiers’ concerts, where you can get great fun while announcing song titles, or from some topical subject. I’ve cracked some damnable jokes; but people shrieked with laughter at the time, because they suited the situation.

It is a peculiar thing, too, that people who listen in their sitting-rooms to broadcasts from halls and hospitals seem to appreciate these horrible apologies for humor as much as the people sitting before me. I think this is because they are drawn, by the laughter of the crowd, into the crowd itself, and thus participate in its moods, and this is a good thing, for wit, in its highest sense, is often cruel, and always exacting on the mind; but pure, animal laughter conduces to good health.

So much for that, or so much for so little. The backbone, maltray, and so on of the radio comedian, entertainer, and so on is the..."
WIRELESS WEEKLY

FRIDAY, 22nd November, 1929

A.B.C. WOMEN’S ASSOCIATION SESSION

Conducted by Miss Gwen Varley

Programme for week commencing Friday, November 22, and ending Thursday, November 28.

SPEAKERS AND THEIR SUBJECTS.

SUNDAY, NOVEMBER 25.

10.40: “Can You Swim?” by Miss Gwen Varley. Miss Varley will illustrate the value of swimming from the point of view of exercise and safety, both for adults and children. Successful swimming classes to be held on week-day mornings at Coogee, Balmain, and Lavender Bay. Professional coaches are employed in each class. Also a business clubs’ club will commence on Monday, December 2, at the new women’s baths at 6:30 p.m. Over 100 women learned to swim last season through the swimming classes organised by Miss Varley.

10.50: “Home Confectionery.” by Priscilla (Mrs. L. C. Norton). Priscilla is one of the most popular speakers for the A.B.C. Women’s session, and has many ardent disciples in town. I am following her expert advice in sweet making.

MONDAY, NOVEMBER 26.

10.40: “Camping at Christmas Time,” by Miss Gwen Varley. Following the advice of Miss Varley last Christmas time, many listeners came in campers to various camping spots she advised over the air, and letters of appreciation and delight flowed in. This year Miss Varley is making a study of the essentials for camp life only in order to help those who are novices in camping.

10.50: “Some Outstanding Women in Europe,” by Mrs. E. F. Proud. Mrs. Proud, who is going on a world tour, will introduce to her listeners some of the remarkable women of the British Isles and the Continent she met. As a leader in the Feminist Club she had many introductions to women of note.

TUESDAY, NOVEMBER 27.

10.40: “A Talk from our Health Bureau,” by Miss Gwen Varley. These health talks by Miss Varley are among the most popular of her daily sessions. Hundreds of women write in asking for practical advice and exercise to reduce their weight, strengthen weaknesses, etc. Miss Varley serves a very direct need for many women.

10.50: “Thrift Talk, Some Economical Suggestions,” by Miss Janet Mitchell. This talk was so much appreciated, given by Miss Mitchell two weeks ago, that many mothers have requested another similar talk. Miss Mitchell gives advice on how to cater for school children’s lunches with variety and nutrition.

WEDNESDAY, NOVEMBER 28.

10.40: “Tennis Coaching,” by Miss Gwen Varley. At least 500 members of the A.B.C. Women’s Association Tennis Clubs tune in. Miss Varley’s regular talks on tennis coaching, Tuesdays and Thursdays are the A.B.C. Women’s Tennis Clubs day in most of the suburbs, and the theory they have received over the air is deemed to be put into practice by her ardent tennis followers.

10.50: “Fashion Talk.” Colors we love. Beige. By Mrs. L. Brittain. Some women have proved their complete faith in Mrs. Leslie Brittain’s advice on the air for dress when they have appeared at A.B.C. functions wearing a dress made exactly as instructed on the air—colors, pattern, shoes, hat, even down to the hosiery. Many women write into Mrs. Brittain for advice in dress, which she gladly gives.

THURSDAY, NOVEMBER 29.

10.40: “Entertaining at Holiday Time,” by Miss Gwen Varley. Many novel and helpful tips for the entertainers. Miss Varley’s advice is welcomed by the woman who will entertain during summer vacation in the city or country.

10.50: “Modern and Antique Furniture Contrasted,” by Miss R. Wilson. Miss Wilson, who has had years of considerable experience in the study of interior decoration and art, will contain a series of very interesting talks, which are of special interest to the woman who studies her home from the artistic viewpoint.

CONTINUING her series of talks on our famous actresses, Miss Agnes St. Clair will give an entertaining sketch of the life of Sarah Siddons, who in the early part of the eighteenth century was acknowledged to be the greatest actress of her time. In these days of high salaries for star artists it is interesting to learn that Sarah Siddons was engaged by David Garrick to appear at Drury Lane Theatre at a salary of 65 per week. 

ABBEY WHITEHEAD, the young Australian baritone, who has recently returned from England, will be on the air from SLO on November 25. He will be remembered that this young vocalist was specially commissioned by Dame Nellie Melba to go to Europe, where he made a very favorable impression. He terminated a successful engagement at Drury Lane to return to Australia, but hopes to further his continental studies during the coming year.

UNDER the Linden Tree,” a musical feature relating to the life of Schubert will be given from SLO on November 25, and will include some familiar melodies. Possibly there is no more romantic story than the life of this master musician, who died at the age of 33, and had composed over a hundred melodies before he was 19, and who, being too poor to buy manuscript paper, wrote his music on a sugar bag. “Under the Linden Tree” has been specially written for the audiences in Ireland, who are tuned in on the series, “Incidents in the Lives of Great Musicians,” for broadcasting.

BEATRIX OAKLEY will make a return visit to SLO on November 25. Miss Oakley’s talks on Hollywood have been very popular and her series of “The Old Time Nighties,” and has made several successful concert tours of Victoria. She gained the Melba Scholarship last year.

NORMAN BLAND and his partner will be on the air from SLO on November 25. Miss Oakley’s talks on Hollywood and Miss Varley’s tennis talks are among the most popular pieces of humor which will be quite new to listeners. They appear as “Almost Gentlemen.”
We have been criticized quite frequently for consistently failing to make sufficiently elaborate claims for the apparatus we describe and discuss. Because we do not say that the latest two-valve set will bring to Japan, some folks get the idea that it must be quite a bit of a washout.

Apparently they have been in the habit of taking all published claims about radio sets with a pinch of salt. Consequently they find our claims, when salted, most unimpressive. From the very start we have endeavored to be sincere and reasonable in all statements, and for that reason we have been unable to make any definite promises whatever.

Looking back through the "Wireless Weekly" file we find that with one exception our statements of receiver performance could be so much be considered extraordinary or even unusual. The exception, of course, is the 1930 Super-Het. Whether all our claims are discounted by about 50 per cent. or not we do not know, but it appears quite clear that many enthusiasts thought we were talking through the back of our neck when we said the things we did say about the Super. A great many of them built the set just the same, but long before they had it correctly adjusted they apparently decided that their expectations had been fulfilled.

In several cases which we have investigated personally the owners of the receivers were quite delighted with them until we pointed out some missing bias resistors or by-pass condensers which had held the amplifier down to about half that possible! For the possible benefit of enthusiasts who are in doubt about the matter we will say again that in our opinion, the original model of the 1930 Super has greater overall gain, more desirable selectivity, and better musical reproduction possibilities than any receiver we have yet handled. And we say that after having operated the set under a variety of conditions for about two months.

Our experiences with the receiver and our interest in the heavy correspondence concerning it have been a splendid object-lesson. From it we think we have learned quite a lot about the psychology of the home-builder of radio sets. From it we have gained many ideas on "How Not to Write Articles for Set-Builders."

The fundamental difficulty is that enthusiasts will not read the article describing the set they are attempting to build. They look around for some statement of what the set will do, and if it suits them they make a wild mental grab at the circuit. Nothing the authors say to matter. We have run into many instances where the super was built and put into operation with the sole guidance of the circuit diagram and the list of parts. And when the sets failed to operate their builders did not worry to look through the articles—they merely wrote, telegraphed, or telephoned in to the office to ask why.

The unsuccessful builders with whom we have come in contact include chiefly follows who have built many sets before and who consequently thought that their experience made it unnecessary to look at anything but the circuits. As far as we can judge, the successful sets have been built almost exclusively by enthusiasts with definitely limited experience, who proceeded cautiously and digested every word of the instructions before making a start.

Our first suggestion for the owner of Supers which do not perform in the way we described is to turn up the milliampere meter and see just what are the essentials. As far as we can judge, the successful sets have been built almost exclusively by enthusiasts with definitely limited experience, who proceeded cautiously and digested every word of the instructions before making a start.

The1930 Super Heterodyne, we consider, is capable of a better performance than any other set available in Australia to-day. At the same time, it can be a miserable failure if it is not built and adjusted with care. We can predict nothing but trouble under any of the following conditions:

1. If the set-builder, irrespective of how many other sets he has built, will insist on building the receiver from the circuit without reading the two articles and understanding them fully.

2. If the builder fails to grasp the purpose of the various components and yet attempts to use his own judgment in the selection of parts.

3. If the would-be super-het. owner does not make quite certain that the coils for the set are wound exactly in accordance with the directions given.

4. If he fails to select a battery eliminator which is capable of supplying at least 200 volts at 45 milliamperes and a filament supply transformer which will serve all valve filaments at their rated voltage.

5. If the builder, without a very detailed knowledge of just what he is doing, changes the layout of the apparatus, or uses a wooden base-board with the wiring above it.

6. If the enthusiast will not adhere to the instructions given concerning the placement of by-pass condensers and resistors, and will permit unfettered supply leads to cause hither and thither across the outfit.

7. If the intended distance conqueror declines to adopt the adjustment procedure specified, and adopts instead the old-time cut and try hash method.

It is quite impossible to mention all the makes of components which would serve in a particular role, but we must be understood that it is only in rare instances that components of one make cannot be replaced by another providing the electrical characteristics are similar. A study of the article usually will provide some idea of just what the components are to do, and what rating is necessary, and nothing much more than common sense is then necessary to make a selection from apparatus available on the market. Let us refer to the original circuit, and see just what are the essentials.

Such items as valve socket and leads, the panel and base-board are inconsequential. Just so long as they are mechanically sound they will serve. By-pass condensers such as the "0.4µ" are more important. Some types are wound from long strips, with connections at one end. They are unsatisfactory for by-pass work at radio frequency. Aside from this, the condensers may have
The coupling coil L7 may be connected in for near-by stations. Coupling will be found to result in broad tuning and in lowered signal strength. Their correct connections cannot be obtained from the circuit diagram—a fact which has caused consternation for us.

Importance of Coils

Of the greatest importance are the coils used in the receiver. In this connection we would explain that we are not responsible for non-delivery of any material interest in any coil presently available on the market. Many readers apparently think we have. We fully appreciate the importance of the coil question, and for this reason they may be even of the grid-lead type, which has caused much worry for us. Again, this is not of very great importance. The resistors R1 and R3 are a different story. They also carry the plate current, and should be wire wound, but their resistance rating is quite critical. Their correct connections cannot be obtained from the diagram, a fact which has caused consternation for us.

Operating Voltages

We cannot see any reason why the receiver should operate with full effectiveness if an eliminator incapable of supplying at least 200 volts at 65 milliamperes is used. Just because an eliminator is of good make or highly priced it is not necessarily suitable for the work. Many of the well-designed and highly-finished eliminators are capable of supplying only 150 or 180 volts, and then only at a load of 20 or 30 milliamperes. They are highly satisfactory when operated in the manner intended by the manufacturers, but they are entirely unsuitable for a receiver of this particular type.

The Oscillator Coil

The oscillator coil unit is of the greatest importance. In the first place, the plate and grid coils must be connected in the correct direction, otherwise there will be no oscillation, and complete silence in the receiver. Providing the coils are wound in the same direction, the correct connection can be determined simply by examination assum ing that the winding is started at the grid end of L6. The start of L5 will go to the plate and grid leads of the plate and grid of the oscillator. L5 should therefore be of the grid-wound type, and all filament tops or bottoms of the grid-lead type. The starter therefore will be quite normal in every other respect we would suggest that attention be paid to the coils. L4 and L2 should merely be of the size necessary to permit tuning over the broadcast band. If they are of incorrect size the only result will be that the set will be impossible to tune. Many of the coil constants in this receiver, and we do not see why the receiver should operate if the coils are not wound to the sizes they should be with the directions given in the receiver description. L5 should be taken with some of the coils but not if a clear understanding is not had of their why and wherefore.

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THE misfortune of bodily violence is not confined to men, as recent assaults and vitriollings show.

Social conditions, conventionalities, lack of opportunity, and natural physical disadvantages combine to place women at the mercy of the violently disposed.

The opportunity of defending herself by the various ways that man has contrived is practically denied to woman.

Not altogether, however, since the introduction of Jiu-Jitsu, which is not beyond the capabilities of woman as are other forms of self-defense, a chance is afforded to reduce, if not to destroy, the physical inferiority to violently disposed man.

Jiu-Jitsu, depending as it does almost entirely upon technical skill, as opposed to sheer brute strength, is peculiarly adapted to women. It is not denied that any woman who has become thoroughly acquainted with Jiu-Jitsu there would I like to insert a word of caution for the credulous against advertisements which profess to transform the body at night prowlers or house-breakers. The opportunity of defending herself by the practice of the art induces grace of carriage, suppleness of the body, and lightness of movement without fear of hardening and coarsening the muscles, and thereby spoiling the slim contours that the fairer sex desire.

To get the victim, however, into such a position that these holds can be obtained, or to defend oneself until the opportunity is presented to use them, requires certain strength.

Many very keen enthusiasts will declare that, correctly performed and correctly timed, the requisite strength required is no greater than that required to move one's own arm, head, or foot, as the case may be. This is true, to a certain extent, and may well be demonstrated in exhibition matches; but in an actual encounter when a assailant is excelled, and attack and every means is open to accomplish his object, the desirability of waiting the precise opportunity for any particular trick may be very doubtful. If one of these opportunities do not occur, another will, declares the enthusiast. But we have yet to see it practically demonstrated that when no limit is placed on an assailant's actions the cleverness, simple moves of Jiu-Jitsu are invariably successful.

Jiu-Jitsu, however, is eminently a science of defense, a chance is afforded to reduce, if not to destroy, the physical inferiority to violently disposed man.

As I said before, the Japanese art is not perfect, because we are not perfect; and it is an exaggeration to declare that muscular force is required, but there are a large number of holds which may be performed with considerable effort—and, therefore, well within the powers of the assailant, which constitute Jiu-Jitsu. A certain amount of muscular force is required, but there are a large number of holds which may be performed with considerable effort—and, therefore, well within the powers of the assailant, which constitute Jiu-Jitsu. A certain amount of muscular force is required, but there are a large number of holds which may be performed with considerable effort—and, therefore, well within the powers of the assailant, which constitute Jiu-Jitsu.

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This Week's
Programme Personalities

Wally Baynes, Comedian

WALLY BAYNES, who will broadcast from 2FC on Tuesday, November 26, has made his greatest successes in comedy. He was brought up in the atmosphere of the theatres, but left the profession to enter the Navy. Later he came to Australia, and has been playing in comedy and vaudeville ever since. He has toured on the Tivoli circuit and with several costume comedy companies, besides taking the leading humorous parts in comic opera. Since his first broadcast four years ago in a concert at the Sydney Town Hall, Wally Baynes has been constantly "on the air." "The fact that a radio audience cannot see you makes a great difference in comedy work," he said "especially with a face like mine." (Exhibited).

Vincent Aspey, Violinist

COMMENCING his musical career at the age of nine Mr. Vincent Aspey quickly adapted himself to the violin, and at the age of 11 he played before the Governor-General, Lord and Lady Jellicoe, at a reception given to them at Huntly, New Zealand.

Mr. Aspey, who has not yet reached his 21st year, won the 1925 Gold Medal for the open solo violin championship at Auckland. After winning this medal he received some very helpful advice from the famous violinists, Zimbala and Heifetz, who heard him play their own compositions.

Mr. Aspey came to Sydney 18 months ago to study at the Conservatorium of Music, under Mr. Gerald Wallen for violin, and Mr. Alfred Hill for chamber music, gaining a distinction for both subjects at the 1928 examination.

During the visit of the William son—Melba Grand Opera Company he played obbligati to the songs of the well-known tenor, Angelo Minibelli, at his farewell concerts held at the Town Hall and Her Majesty's. He is a member of the National Broadcasting Company's Orchestra and has done a great deal of radio casting both in Sydney and New Zealand. Mr. Aspey recently won the violin championship at the Radio Eisteddfod, and intends to go to Europe very shortly to complete his studies.

THE fascinating subject of stamp collecting will be discussed from 3LO by Mr. C. R. Franklin on November 30, when rare specimens and first prints will be described. This hobby is possibly one of the most popular amongst boys of all ages, for, apart from the sheer joy of adding to the collection, it is a great link with the history and geography of other countries. Mr. Franklin is a recognised authority on his subject, and his talk will be of more than passing interest.

AN ODE ON MR. COOPER

O tell me where the lirios grow?
Or where the spindles blue.
Or the red rose
Or fancy double-dyed;
Or where cheery Rhododendron beds are wild—
There dawl the calm Cooperian Muse reside.
He tames the wild, far-away sky
Where shadowy branches, swaying high,
Murmer and sigh;
And soft lawn greens
He bounds with joyful borderings clipped clean.
Sad express, or the elate's dandy sheen.

Years go round
Seasons flow,
One by one
Come and go,
One and two
Co., and then
These and four
And round again.

Enter Spring, with the blackbird's note
And a clean white shirt, and a brown new coat;
And the lasters date, and the poets pole
And the early sweet peas;
And deciduous trees
And—(others like these)
Say, Oh, Mr. Cooper, if you please.
We are amusing here and there
So please take care
That we don't get cold in the cold night air!

The ripe bud blossoms; the big bumble bees
Buzz while the blossoms are scattered by the breezes
And the sun looks down
With a hot, red strain
On the burgeoning fruits
And keep Mr. Cooper busy waterin' the roots.
And Summer comes on, and Summer goes by
And the hat winds pass, and the soft winds sigh,
And Autumn creeps with a tearful eye
And ruelling feet, 'neath a greying sky:

And the bulbs hop out
Into the ground
And begin to sprout
Without a sound
And flower at last
In the Winter rain
Till Winter's past
And once again
The lovers dole
And the poets pole
And Spring sings in through a blackbird's throat.

It's years since I've seen
The red sun rise
It's years since I've winked
In a Daisy's eyes
Can a Rose be blue?
I am not quite sure.
So I'm not quite sure.
If this poem's true.
I've too much to do.
You will realise,
To worry over suns
Or Dianas' eyes.
I just surmise
That a Rose is blue,
And I let Mr. Coo.

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FANTASTIC short opera will be relayed to ZBL from 3AR on November 28. "The Woman Who Laughed at Faery" is the fourth of a series of 13 operas by the Australian composer, Fritz Hart, who is the director of the Australian Civic Orchestra. Shamus, Mary, the Faery, and Mr. Murphy are played by the original cast, in a musical role, being taken by Miss Hazel O’Connell.

The motif tunes are not "Irish folk songs, although they are ticking, to be appreciated most. Mary’s song without words and "I Have a Pig with White Feet," both contain the life of the folk song. If the theme were a true opera, it would have a whimsical beauty that is reminiscent of the "Land of Heart’s Desire," but the actors must always walk quickly lest they overlook the step of fairy and make the opera merely comic.

The Countess is a curious tale of a roguish fairy and a hero from outer space. The fairies are endowed with all the attributes of the great English composers. The Countess, as with all heroes, is most cunning. She is the most effective portions of the opera.

It seems almost a pity that the fairy is doomed to defeat, for Shamus, the lover, is a mere fool who calls a poor figure beside the enchanting siren voice. Mr. Murphy will utter the crooked tongue," as poor Shamus calls him.

There is no spell laughter cannot break, as is the basis on which the opera rests, and the floating heroine is saved by the hero’s mother, who laughs the spells to nothing.

Fritz Hart’s opera "THE Wo-
THE concert by the Sydney Madrigal Society at the Conservatorium on Wednesday, November 27, at 8.30 p.m., will be broadcast by 2BL.

The artists will include members of the Sydney Madrigal Society’s Choir, Mr. T. H. Totty, conductor, Miss Margaret Chalmers (soprano), Mr. C. M. McKnight (baritone), and Mr. T. H. Kelly (tenor), and Sonia Chostakovitch (Russian tenor), who will be heard in three Russian numbers.

Maddlars to be sung include “Come Now, Ye Malcontents” (Clement), “Alas, What Hope of Speeding” (Wilbye), this for four voices. “Ho, Who Comes Here?” (Morley), “Dream Pediars” (Collin Taylor), to be sung by four female voices and chorus for three female voices.

A BRIGHT and entertaining talk will be given from 3LO when “The Story Teller” will recall a few moments with Mark Twain. There is a story of how Mark Twain, who in private life was Samuel Clemens, chose his nom de plume. On one occasion, when in New York harbor, he became interested in some men who were loading a boat with casks of wine. As each case was lowered into the hold the clerk kept tally, calling out the numbers in turn. “Mark One,” “Mark Two,” and thus as the second one was lowered into the hold, the pen name of one of our greatest humorists was created.

FRED TREFWEIGHT, meio-soprano, will be heard from 3LO on November 28 in a selection of bright numbers.

A PINE Scottish programme has been arranged at 3LO in honor of St. Andrew’s Day, and many popular radio artists will contribute to the mirth and melody. Violet McIver, who has made many successful appearances at the Queen’s Hall, London, in connection with the Royal Scottish Society, will contribute violin solo; and the Balloraths, under the direction of George Walker, will be heard in Scottish song and story. Mr. Walker is a Scots comedian of much experience: he has broadcast in England, South Africa, and New Zealand, and on more than one occasion has been called upon to depute for his famous countryman, Sir Harry Lauder. Jessie Blackadder of Scotch airs, will sing some of the familiar melodies.

MR. CHARLES NICIC, tenor, who will appear from 2FC on Wednesday, November 27, is a newcomer to the microphone. He has been broadcasting for a number of years, and also appeared from the principal stations in Riga, North Russia. Mr. Nicis is a student of the Conservatorium of Riga, where he graduated with honors.

QUINT and very amusing are some of the letters received by Goodie Reeves, otherwise known as “Auntie Goodie.” Last week a letter from a lady who travelled from the country especially to consult her on the subject of face creams, rubbed against one from a parrot—yes a parrot—who wished Auntie Goodie to broadcast his views on cages during the children’s season.

Sheaves of them from the participants in Auntie Goodie’s “Good Deeds” competition during the children’s session. Auntie Goodie to broadcast his talk on Saturday, November 23. Le Brun Brown (soprano) and Mr. Frank Bohan (tenor).


A YOUNGER SET TENNIS CHAMPIONSHIPS will be held on Saturday, November 23, at 9 a.m. at the Royal Prince Alfred Park courts, near Central Railway. Events;—Senior girls’ doubles championship, 14 and over; junior boys’ doubles championships, 13 and under; junior boys’ doubles championships, 13 and under.

In future the weekly programmes specially arranged by Professor Bernard Heinz will be broadcast by 3LO on Sunday nights. Professor Heinz, in a recent talk broadcast by 3LO said he hoped to stimulate musical interest, and to extend the movement for better musical appreciation by introducing the best “classical” music into programmes made up largely of modern music and popular numbers. Professor Heinz hopes to arrange the programmes so that the latter class of music will lead up to and when the appetite for the “classical” numbers.

Professor Heinz.
Lindbergh's
"SPIRIT OF ST. LOUIS"
Built to Scale

Complete details of the famous trans-Atlantic monoplane for model builders

If you are enthusiastic about aeroplanes, no matter whether you have ever flown in an aeroplane or tried to build an aeroplane model, your imagination took you across the Atlantic when Charles A. Lindbergh flew the "Spirit of St. Louis" from New York to Paris. You took off with him; you battled fog and aleet with him; you landed at Paris 33 hours later in a corner of Le Bourget, and leaped from your cramped seat to warn the souvenir-seeking mob away.

But not so many of you, even in imagination, lived through those months when Lindbergh, a mail flyer on leave, studied navigation, lived through those months when Lindbergh started out to find a 'plane that would carry him across the ocean he outlined certain requirements that it must meet. He knew definitely to what kind of a ship he was to be the mechanical half of "We." Even if you read of that less thrilling but deeply interesting time, even if you actually tried to build a model of the famous ship, you could not quite manage it. Detailed information about the "Spirit of St. Louis" was not available. Now, through the courtesy of the Ryan Airlines and Donald Hall, its chief engineer, you can build an accurate scale model of the specially designed Ryan monoplane that Lindbergh flew. The model described in this article duplicates exactly in detail and proportion the original "Spirit of St. Louis."

To build your model you must follow carefully the drawings accompanying this article. Use any material you wish—it is not necessary for your model to fly to be eligible for the national contest. Carve it out of solid wood or shape cardboard into a fuselage and wings—that part of it is up to you. If you are especially skilful you may be able to make a balsa and Japanese tissue ship that will fly, but you will have to use your own ingenuity to do that. In any event, follow the drawings.

The drawings, as you will see, have been scaled down for a 24-inch wing-span model. All dimensions are given in inches to make the task simpler for the builder. Using these drawings and with the help of the photographs the builder can construct an exact duplicate of the first New York-to-Paris plane.

Maybe you did not know that when Lindbergh started out to find a 'plane that would carry him across the ocean he outlined certain requirements that it must meet. He knew definitely to what kind of a ship he would be willing to trust his life. He told the manufacturers that he wanted a monoplane powered with a simple Wright J-5-C engine (the improved Whirlwind); that the ship should be able to take off with plenty of power reserve when loaded with 400 gallons of gasoline; and that the pilot's seat should be located behind all of the fuel tanks for safety in case of a forced landing.

In order to meet the specifications the Ryan Airlines, when approached by Lindbergh, decided to design a new 'plane rather than try to adapt the standard Ryan M-2. That is why it may be said that there is only one of St. Louis" than in the standard monoplane. Moreover, the ribs are set nearer together—they are 11 inches apart from centre to centre. The ailerons are farther in from the wing tips, and smaller. For the wing section the designer chose the Clark Y, and the wing tips are shaped like the upper curve of the section. (The tip in the top drawing makes this easier to understand.)

Because of the increased wing span, and to ensure greater safety, the landing gear was strengthened and the two wheels were set farther apart.

All these changes were enough to make the special 'plane very different from the standard, but the most unusual change was made in the location of the pilot's seat. In the special plane the seat was placed in the rear part of the fuselage, rather than in the front, and behind the special gasoline tanks. In order to enable the pilot to see ahead of his ship a small periscope was installed. This periscope was placed in the left side of the fuselage, and it was so made that it could be drawn in when not needed.

If you follow the drawings you can reproduce with absolute accuracy every detail of the "plane Lindbergh helped to design. He kept in close touch with the building of his 'plane, as you should know, from the time it was nothing but a mass of lines on a drawing board until he stepped inside to take it aloft on its first test flight.

The front view shows you the motor, the Wright Whirlwind J-5-C, and the Standard Steel propeller. Just behind the engine is a 33-gallon oil tank, which also serves as a fire


"Spirit of St. Louis." No other ship is quite like it. Lindbergh's ship, for one thing, has a fuselage two feet longer than the standard Ryan. The fuselage is built of steel tubing, and is covered with fabric. Another difference appears in the wing-span, which is 10 feet greater in the "Spirit
The "N" stands for "U.S., Registered," the "X" for "Experimental," and the "211" is the registration number issued by the U.S. Department of Commerce.

This symbol appears on the top of the right wing and the underside of the left wing, as well as on the tail. The name is painted on the nose of the ship just behind the motor. Aluminium is the color of the entire ship except for the markings, which are black.

If you are careful you may be able to make your scale model of the "Spirit of St. Louis" fly, although it is virtually impossible to make flying scale models of some large airplanes. Lindbergh's airplane carries its wing far back in order to support the extra fuel tanks, so a very lightly-built and strongly powered ship, slightly weighted in the nose, probably can be made to take off.

However, as far as the contest is concerned, it makes no difference whether your model flies or not. Appearance is the criterion, so you may use any material you like.

JOIN THE M.A.C.A.
Aeroplane model building and flying is the best way to become air-minded. WIRELESS WEEKLY has arranged with the Model Aeroplane Club of Australia to enrol boys without charge. Simply fill in the coupon below and send it to the M.A.C.A., c/o WIRELESS WEEKLY, Phillip Street, Sydney. Send the coupon now. If desired the M.A.C.A. Badge will be forwarded for 1/-, post free.

MODEL AEROPLANE CLUB OF AUSTRALIA,
c/o National Broadcasting Company,
Market Street, Sydney.
I wish to enrol in the M.A.C.A., sponsored by WIRELESS WEEKLY.

(Your name printed clearly.)

Age
Town
State

Address

Please forward Club Badge, for which I enclose Postal Note for 1/-.
(Cross out if not required.)
SHORTEWAVE NOTES

Since my last notes were written, the receivers are having the usual troublesome "barren" periods. Notwithstanding this, it can be said that not a single station has been received that could not be tuned in and heard, the reception of some overseas stations being quite loud and clear. In the early mornings I have again heard the foreign station previously reported on about 30 metres, but no English announcements were made. However, it was put on the air by KDKA and heard equally well back in Australia.

KDKA and RA97.

The special anniversary transmission from KDKA was received at excellent strength, and it was rather a novelty to hear 2ME transmitting a message of congratulation, which was put on the air by KDKA and heard equally well back in Australia. A two-way conversation has been heard several times on about 23 metres.

In the early morning I have again heard the special anniversary transmission from KDKA, which was put on the air by KDKA and heard equally well back in Australia.

LEARNING THE MORSE CODE

Dear Sir,—Here is the Phillip's code for learning the Morse alphabet. You will note that it is all geographical, as of course it should be.

Say each of the geographical names here given very slowly, dividing into correct syllables. When a syllable consists of one or two letters memorise it as representing the Morse sign or letters, as representing the Morse station.

Visualise the abbreviations, P.I. (Philippine Islands), A/asia (Australia), and S.A. (South Africa), and apply the Morse sign to the abbreviation according to its length.

As the letter X when commencing a word in English is given the sound of Q, it would be confusing to use it in code of this kind. The difficulty has been partially overcome by spelling the letter, taking a slight liberty with the name Exeter, and then using it in connection with the river of that name, viz., the Exe or Exe.

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ALARM.

BEAUTIFUL.

CIRCUMSTANTIAL.

DOMINIE.

E.

FILIBUSTER.

GLASS-GRINDER.

H.

I.

JAPAN VARNISH.

KISS ME QUICK.

LEGITIMATE.

M.

NAVY.

O.

PRONOUNCE PLAINLY.

QUICK TO CHEW THE HITE.

RECEIVER.

T.W. (VICKT).

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RECEIVER.

T.W. (VICKT).
WHAT WILL CO-ORDINATION MEAN?

THE news that the Australian Broadcasting Company has appointed a Commonwealth Superintendent as a preliminary to the complete co-ordination of its services when 4QG and 5CL are absorbed in a month or two, is welcome news to listeners.

It would seem to indicate that an effort is to be made to widen the scope of the individual stations to include the best features of the others. This was the original plan of the original Government which declared in favor of the ABC.

One of the difficulties under the plan of reduced payments to the Broadcasting Company has been the provision of longer hours on less money. The longer time on the air is the air more expensive, or the less concentrated the good items. Without questioning the necessity for being longer on the air than previously, this had to result in either a general all-round reduction in the quality of the programmes, or a reduction in the company's probable profits. The company claims that it has been in the profits.

However, the exchange of complete programmes between the various stations by means of relays should remedy to some extent either the company's profits or the programmes have it as you will. The money spent by, say, 2FC, on an afternoon programme could also serve Brisbane, and the expense saved on the 4QG items would be spent on better evening programmes. That is, of course, if the O.P.O. authorities make the cost of the relays a reasonable one.

Another aspect of the possibilities of relays is the wider variety of items and artists which may be provided. Only too well the majority of listeners in New South Wales, anyway, know the qualities—excellent or otherwise—of the artists who broadcast through 2FC and 2BL. Now refreshing, perhaps, to have new voices from Adelaide or Brisbane.

But the chief danger of this co-ordinated service lies in its chief advantages. The stations in New South Wales and Victoria have lost much of their attractive individuality. Co-ordination is likely to destroy this altogether.

If it means that stations are to re-broadcast each other's programmes at regular intervals, then each must assume the personality of the other at certain periods, and to an inter-State listener tuning in 3LO will be much the same as tuning in any other station; little that is fresh will be offered.

The remedy, of course, lies in the appointment of separate programme managers—preferably men untrained under present station management— who will infuse some clear-cut personality into what remains of the station programmes for them to arrange. To do it successfully, they would have to be more dictators given a free hand in all matters of presentation and procedure.

How far this would be possible would depend on the ability and purpose of a Commonwealth Superintendent.

SCOTT ALEXANDER says he is cosmopolitan, for he has been everywhere, lived in practically every country of the world, and has met nearly everyone worth meeting. He is a character actor of note, and has played opposite such artists as Mrs. Brown Potter and Kyrie Bellew; whilst he has also been associated with the late Sir Henry Irving. Mr. Alexander is very interested in radio plays and is producing one, entitled "Clinking Glasses," by Cudlinton Hall, through 2BL on November 22.

BALANCED PROGRAMMES

New Scheme of A.B.C.

I N their efforts to please the million radio listeners in Australia, the Australian Broadcasting Company is developing with considerable success the scheme for balanced programmes and co-ordinated services. No longer are the programmes broadcast from 3LO and 3AR as high-class concerts, but as high-class radio productions, including:

(a) Special radio musical comedies.
(b) Theme programmes with effects.
(c) Radio revues, in which the items are "housed-up," so to speak, with specially written announcements and patter.
(d) "Melange" programmes or radio "shows" of comedy, dance music, classical items and whatnot, carefully selected and balanced, and presented with appropriate effects.

The old order of things has passed, and the Australian Broadcasting Company was quick to realise it and to adopt new methods of production.

The daily mail received at 3LO is the best possible barometer for ascertaining the likes and dislikes of listeners, and for detecting "storm" centres. During the last few weeks the general tone of the letters indicates that the new programmes are giving almost universal satisfaction.

The company is extending this balanced programme scheme, and it is expected that there will soon be an interstate exchange of programme themes between the various stations, especially when the company takes over 4QG and 5CL in January next.

SECRET OF THE RADIO INDUSTRY—5

Measuring wavelengths according to international agreement at Geneva.
One Listener's Opinion

Dear Sir,—For some time past I have been making exhaustive tests with the object of finding out which broadcasting station operating in New South Wales is received the best in the metropolitan areas, from the point of view of modulation.

My receiver is a five valve Browning-Drake with a pitch-pull attenuator, and is capable of an undistorted output of approximately two watts. I say this because I want my readers to know that I appreciate superior letters and I mean the same thing. It seems to be a question of locality. Virtually every station has a group of listeners who speak of modulation as being inferior in the station to that given by 2FC. If one station has a continuous noxious feature, it should be finished by that station on account of difference of reception.

I wish to congratulate the A.B.C. on the magnificent annual fee of 12s. 6d. I consider, M.A., Dr. Loftus Hills, and others of this type. Apart from the interesting subjects they offer, their treatment on the King's English is a lesson to other public speakers, and of great educative value to us all, serving to counteract the corruption and the nasal use of words adopted by various public entertainers. We are like parrots, we imitate the pronunciation of words given by those people who, by virtue of their positions, we regard as authorities. In this regard, announcers have become national teachers on the correct way of speaking and pronunciation.

In reply to a recent query about the choice in selection by those stations.

The article by Cap. A. A. Chisholm ("W.W.", October 19) states that 2FC and 8LJ would be possible for these stations to change over each week, their times of starting and finishing. 2BL to start at 7 a.m. and 2FC at 7.15 a.m. would be a better plan. While 2FC becomes distorted, 2BL and 3AR are the best stations, they are loud and clear. My set is a five valve Stewart Warner, with an A.B.C. eliminator.

Seeing that various localities favor the respective stations 2FC and 2BL, it would be possible for these stations to change over each week, their times of starting and finishing. 2BL to start at 7 a.m. and 2FC at 7.15 a.m. also a change over on Sundays. This would enable a large number of listeners to hear the gramophone recital each evening, and on Sundays for one week, and those locals that hear 2BL best would have a chance to the programme usually given by 2FC. If one station has a continuous noxious feature, it should be finished by that station on account of difference of reception.

I wish to congratulate the A.B.C. on the magnificent annual fee of 12s. 6d. I consider, M.A., Dr. Loftus Hills, and others of this type. Apart from the interesting subjects they offer, their treatment on the King's English is a lesson to other public speakers, and of great educative value to us all, serving to counteract the corruption and the nasal use of words adopted by various public entertainers. We are like parrots, we imitate the pronunciation of words given by those people who, by virtue of their positions, we regard as authorities. In this regard, announcers have become national teachers on the correct way of speaking and pronunciation.

Instead of relays on Sunday nights, I am sure a recent request of gramophone records would be more appreciated, provided there is a large enough number to keep pace with the demand. How is it that correspondents praise the B.C.S. and condemn the B.B.C., or is it that they do not like the programme given by the B.C.S. and prefer the programmes given by the B.B.C.?
THE WIRELESS QUESTION AND ITS ANSWER

Which Set Should I Buy or Build?

You Don't Know Because There are so Many From Which to Choose

WELL! LET US ANALYSE THE QUESTION

1. Do you want a set which makes a noise like a broken-down gramophone?
   NO

2. Do you want a set that will cost a small fortune to operate?
   NO

3. Do you want a set which will be always breaking down and cost pounds for repairs? (Most cheap sets do this.)
   NO

4. Do you want a set which brings in two or more stations at the same time to spoil your entertainment?
   NO

5. Do you want a set which confines you to local stations, when for the same or less money you can buy or build a set that will bring in interstate stations?
   NO

6. Do you want a set which will make a big hole in your banking account?
   NO

7. Do you wish to be sure, under guarantee, of avoiding all the above disadvantages?
   YES

Then the Set You Require is Our Guaranteed RENOWN THREE (with 5-Valve Performance)

This Truly Wonderful Set was Specially Designed by us to Guarantee all the Most Critical Could Desire.

BATTERY OPERATED

KIT OF PARTS, £6 13/2
ACCESSORIES FROM £5 9/6

ALL ELECTRIC MODEL

KIT OF PARTS COMPLETE, £20 5/.
INCLUDING PHILIPS POWER PACK.

"Yours for Lower Prices and Service that Satisfies" —

THE ECONOMIC RADIO STORES

FREE ENQUIRY COUPON—
25 ROYAL ARCADE, SYDNEY

Please mail more details re item No. . . . . in your Advt. 22/11/29.

NAME
ADDRESS

126A PITT STREET, SYDNEY
(near King St.)
PHONE, Mo139.

13 UNION STREET, NEWCASTLE
(off Hunter St. West)
PHONE, NEW 1622.

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

CORNER CHURCH & MACQUARIE STS., PARRAMATTA
PHONE, UW 9601.

25 ROYAL ARCADE, SYDNEY
(near Palace Theatre)
PHONE, Mo6139.
As a general rule, the characteristics of the indirectly heated or "a.c." type valves are more desirable than those of the battery types. This means that an indirectly heated type often would give better results in even a battery set if the heater were run from the accumulator. Of course, the filament consumption would be high, but this could be tolerated in some cases. When we change over the "Modern 2" for a.c. operation we are able to take advantage of the better characteristics of the indirectly heated screen-grid valve and we are also able to use a power valve which is big enough to provide real reproduction—a power valve which would take far too much plate current to be operated from batteries.

In converting my own receiver for a.c. operation I did considerable work comparing different types of valves and different combinations of them and in the circuits I show three possible arrangements. I will discuss them in turn.

The circuit given in figure 1 shows one satisfactory way of converting the set. An indirectly heated screen-grid valve is used as the detector and a 4-volt power valve in the second socket. Both are supplied from the same filament winding, the cathode of the first valve being connected to the filament winding centre-tap.

The construction of the set is very similar to the d.c. model, and for this reason intending builders of the receiver should make a study of last week's article. The chief differences are in the use of a UX type valve socket for the detector and in the provision of a 50,000 ohm potentiometer in place of the two plate midget at the left side of the panel. The midget is no use any more since short-wave reception will not be satisfactory with a.c. supply. The Lewcos broadcast coil unit AM5 and base remain the same. Other similar items are the tuning condenser, regeneration condenser, the resistances R2 and R3 and the condenser C5. The differences in the circuit can be seen by comparing it with that printed last week.
The Parts Required

Panel of Aluminium or bakelite. Stn. 4 style. Bonding, tin. 6 sets.
V.-One Philips 2304 screen-grid valve, or equivalent. Two stage valve. 6V6 or UX 218. Power valve (see circuit).
L.-Shunt, 400.000 ohms. homemade, can be a.c. rectifier. One UX and one UV type rectifier, Pilot. C1.-Advance Condenser, variable condenser. C2.-Advance Condenser, small fixed condenser.
C3.-Advance Condenser, small fixed condenser. C4.-Advance Condenser, small fixed condenser.
C5.-Advance Condenser, small fixed condenser. R1.-500,000 ohms. fixed resistor.
R2.-One Pilot or 50,000 ohm potentiometer.
R3.-One Pilot or 50,000 ohm potentiometer.
R4.-10,000 ohms. fixed resistor.
R5.-One 600,000 ohms. fixed resistor.
R6.-One 600,000 ohms. fixed resistor.
R7.-One 600,000 ohms. fixed resistor.
R8.-One 600,000 ohms. fixed resistor.
R9.-One 600,000 ohms. fixed resistor.
R10.-One 600,000 ohms. fixed resistor.
R11.-One 600,000 ohms. fixed resistor.
R12.-One 600,000 ohms. fixed resistor.
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R14.-One 600,000 ohms. fixed resistor.
R15.-One 600,000 ohms. fixed resistor.
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R18.-One 600,000 ohms. fixed resistor.
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R20.-One 600,000 ohms. fixed resistor.
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R30.-One 600,000 ohms. fixed resistor.
R31.-One 600,000 ohms. fixed resistor.
R32.-One 600,000 ohms. fixed resistor.
R33.-One 600,000 ohms. fixed resistor.
R34.-One 600,000 ohms. fixed resistor.
R35.-One 600,000 ohms. fixed resistor.
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R42.-One 600,000 ohms. fixed resistor.
R43.-One 600,000 ohms. fixed resistor.
R44.-One 600,000 ohms. fixed resistor.
R45.-One 600,000 ohms. fixed resistor.
R46.-One 600,000 ohms. fixed resistor.
R47.-One 600,000 ohms. fixed resistor.
Correspondence

Dear Sir,—I notice some correspondents’ remarks re RA97; in my opinion the call is an ordinary DX fan's. I think in my previous letters I mentioned the reception of RA97 from Fiji (not a regular DX station) on 640 a.m. and 2300. I have also heard RA97 on 3580 metres. This station is quite new. I have heard RA97 at 25 metres, but as far as I can tell, this is a harmonic of the 10 metre fundamental.

I note with interest the schedule for ORZ, Viena. I have frequently heard a station on about 45.4 (a little above 2KZRFM) but it continues often until after midnight, so I suppose it is not ORZ2. The language sounds like Dutch, and Socrabaja is frequently mentioned. I would be glad to compare notes with any other reader who could help me to identify this station.

On Saturday, June 15, on about 48 or 49 metres, I heard a station, 3XC, broadcasting a programme. The announcer mentioned that it was a British Dominion station, but that it was a British Dominion station, but did not say which Dominion. Closed down at 4.30 a.m. I would like to know something about this and someone else this station was heard well during the evening.

I noticed "Short-wave Cranks" log here is none.

Victoria: 3HR, 3LM, 3BM, 3UZ, 313Y, 3RA, 3MR, 3EL, 3GT, 3EF, 3MJ, 3RN, 3ES, 3EM, 3EX.

Fiji: "Deejay" (South Australia). 

Philippines: KZRM, PCJ.

Germany: DHC.

The above stations have all been heard on telephones since February, and I will be glad to send reports to any of the above stations who request them. Many hundreds of Morse stations have been heard, including FL (Paris), and the "Southern Cross," which was heard the day before it was transmitted. The QRA of this ham is: -

England: 2GJ, 2GR, 2WJ, 2DY, 2WC, 2JZ, 2WU.

I have heard another just below 5CL on 10 metres. I have heard RA97 on 3580 metres, but I have not had call sign yet. I heard another just below 5CL on 10 metres. When I received them they were advertising something about heavy duty "B" batteries. This was about 10.30 p.m. (Did not get call sign of this station last night, 22.10.30). I heard a foreign station on about 36 metres, when you say received. He stopped here on this wave-length, and then he shifted up about five metres, and the same thing went on and forth for some time, and eventually closed down. Time received 10 p.m. to about 10.15 p.m. He was not a Jap. My log is now 5XK, KHJ, KGO, and WLL.—Yours, etc.

Dear Sir,—I wish to join the very select band of super enthusiasts of DX. I am really a terible liar; so I think you might allow me to relate my performances. How is this for reception:—All the stations ever mentioned by your DX hams have since wireless was invented by Mr. Stein, plus a terrible number not yet received by anyone else than myself—all on one single valve. My set has a secret circuit (quite different absolutely, Mr. Hull), so I cannot give it here. But I may say the valve trouble (owners of paltry power) is a wonderful repair for house lamp, which burnt out one night in the bathroom. I soldered six or seven prs to the brass collar, and broke the glass in doing it; but sticking plaster is a wonderful repair for the glass so as to save inter-action, which would, of course, made the lamp, come in. Some of the plaster to the seal across the opening in the insulator. To ordinary DX fans this may seem foolish, but my one-lunger is so tremendously powerful that this must be done, or life would be impossible for the neighbors at midday. My father is almost quite deaf since listening to to my set owing to the tremendous volume, so much that he has to use his set now to hear anything coming to his deafness. I back my one-valve against anything in existence. On Tuesday, Monday, I got deep signals from a new station. The call number was H something IL. I could not get the complete call-sign owing to the tremendous volume, but someone called Nick was speaking, and I noticed a horrible smell of burning. Can any ham tell me what station this is? I often eat at home when I put in move time on the valves that are used? I think is should. I have discarded all leads, condensers, aerial and earth wires, batteries, and rheostats on my set in order to prevent too many distant stations coming in, and I have changed the crystal, so I am unable to preen. I hope this will tone down the signal strength considerably. Can any ham (and ears) best this?—Yours, etc.

H. T. LLOYD.

KGO and WLL.

All Round the Globe

Dear Sir,—The writer is very keen on the hopping of the transatlantic DX stations and has in possession DX cards from PCJ, KGO, and the present waiting word from Manila, Pittsburgh, Schenectady, Siberia, Africa, and Siam, also a number of "scalps" of Australian amateurs.

The following information might be of use to you. In connection with KGO and Manila: KGO call sign, WIXN, W.L., 22.34m. power 5000 watts, time of transmission 12.30 to 4.00 p.m. Eastern stations Monday, Tuesday, Wednesdays, Fridays, which corresponds with 6.30 to 10 a.m. Sydney time on Monday, Thursday, and Saturdays.

There is a German station situated at Nauen, north of Berlin, which is received here at good strength at 3 p.m. on Monday afternoons, the wavelength is 28.22m., power 14kW.

The latest information from PCJ is that the Australian programme, which is received here at 2 to 4 p.m. on Saturdays, is sent at their end at 4 to 6 a.m. Greenwich time; they also sent me the following schedule:—

- Thursday, from 18.30 to 23.00 GMT.
- Friday, from 9.30 and 18.30 GMT.
- Saturday, from 6.30 and 18.30 GMT.

Last week I have been receiving Manila and Slan at a very low power, but I noticed that Manila on Monday and Tuesday nights broadcast on 4m. and Thursday and Fridays on a wavelength of 24m.; this is something quite new.

I logged a station in Morocco last week, call sign AIN, W.L., ASM, testing with gramophone record—strength 15 to 6 on phons.

Trusting that this information will be of use to you, and wishing you every success for the future.

Yours etc.,

DONALD PATerson.

Mainly.

On James’ Wave-length.

Dear Sir,—I note that in "Wireless Weekly" (Nov. 1) a reader signing himself "Deejay" (South Australia), asks for the address of JPH. The QRA of this ham is: —

Mr. R. Jardine, 234 Buckley Street, Essen—Victoria.

Now, as regards your controversy over DX On one of your last letters I have received the following stations:—

VY2KR, 2HG, 2KY, 2PB, 2GK, 2E, 2DL, 2CL, 2AG, 2CL, 3AX, 3AR, 3LK, 3JR, 3UZ, 313Y, 3EK, 3RF, 3V, 3ZL, 3KL, 3SK, 3RB, 3VL, 3WJ, 3ZL, 3RK, 3WU.

AMERICA: KPON, KIY, KIY.

INDIA: 7CA.

JAPAN: 7CA.

The only stations from the above list that were on short waves when I tuned them in are:—2PB, 2E, 2CL, 2AG, 3AX, 3AR, 3LK, 3JR, 3UZ, 313Y, 3EK, 3RF, 3V, 3ZL, 3KL, 3SK, 3RB, 3VL, 3KL, 3WJ, 3ZL, 3RK, 3WU, 3JE.

Ogabe Point.

Dear Sir,—I cannot help expressing the performance of my "Three Valve Receiver." In my previous letters I mentioned the reception of the American stations in the broadcast station at 1500 and 1600, and then—KGO and WLL. Cincinnati. The first time I received WLL was on 14.10.29, and then I was about R4. This is what the announcer said.—"WLL, Cincinnati, the time is one minute to 7," and then he advertised the new Crossley Radiogram Receiver in walnut cabinet; he played a couple of texts, and I got the name of one, and since I have had this station several times now, sometimes I have heard him giving market reports some time after 10 p.m., where I have heard RA97 this station is about 425 metres, just above 2YA.

I have heard RA97 on 25 metres, but, as far as I can tell, this is a harmonic of the 10 metre fundamental.

June 22, 1929.

R. J. MURPHY.

WLL.
A SET IS ONLY as good as its component parts allow.

Therefore, the basis of perfect reception is only formed with the adaptation of really high-grade parts.

Emmco’s Radio Products are embodied in a most comprehensive range of some 200 parts, which are positively unsurpassed by any imported make; each and every part is covered by the usual Emmco Guarantee.

Remember the basis of perfect reception—Emmco Radio Parts.

Made By Electricity Meter Mfg. Co. Ltd.

Sole Factory Representatives:

Manufacturers Products Pty. Ltd.
Sydney. 137 Clarence St., Phone BW1328
Melbourne. Sugden Place, Phone F2355

A SOCKET POWER SUPPLY
PRICE £12 12/-
Taking Curves of Radio Receiver Performance

As far as we are aware, there does not exist in Australia a set-up suitable for taking a complete set of curves of the performance of a receiver. As a result, all of us—even the radio manufacturers themselves—must judge the performance of a set chiefly by listening to it. The taking of receiver performance curves in America has now become quite general, and a standard method of presenting the curves has evolved. The curves and the method of taking them has recently been discussed in simple language by P. S. Lucas in "Radio," and because of the interest and value of his explanation, we reprint some portions of it.

"The practical value of performance curves for the dealer, salesman, or service man," states Mr. Lucas, "is that they enable him to tell the inquirer just exactly what may be expected of that set in the way of sensitivity, selectivity, and fidelity. Every experienced merchant knows that a reputation for accuracy is one of the most important values of a set, and, as a result, every manufacturer and dealer is keenly interested in the performance of his competition. These facts form the basis of the belief that performance curves are required by the Radio Manufacturers Association, is comprised of the broadcast station at any particular height of the receiving antenna. To test the height of the receiving antenna, the test set, which was test set, which was connected to its input. A vacuum tube voltmeter was connected to the output of the receiver and calibrated at one point, to indicate 50 millivolts (mv), and the receiver was tuned to 600 kc (600 meters). The oscillator in the test set, which was modulated to simulate the modern high-clas broadcast station, was adjusted to 600 kc also, and was set at 1 millivolt. Then the sensitivity control of the receiver was adjusted so that the output meter read the prescribed 50 mv, this being the standard established by the Radio Manufacturers' Association.

"The frequency of the oscillator was then changed to 1000 kc., the receiver being left untouched. Due to the fact that the two instruments were now out of tune, the output of the receiver dropped slightly. The input was increased until the output was back to 50 mv, a reading of the input was taken and plotted on a line 1 kc to the left of the zero line.

"Other points were taken at 2, 3, 5, 10, 15, 20, 25, and 30 kc above resonance, then similar readings were taken below resonance. When points had been plotted up to 30 kc each side of the zero or resonance line with the receiver unchanged a line was drawn through the dots and the 600 kc curve in figure 1 took form.

"The next step is to tune both the receiver and oscillator to 1000 kc, set the sensitivity control of the receiver, so that an input of 1 millivolt (mv) will produce an output of 50 milliwatts from the receiver, and repeat the process of plotting. The curve for 1400 kc is obtained in the same manner.

"The 600 kc selectivity curve shows how much greater must be the field strength of an interfering station at some frequency off resonance to cause interference with the selected signal; or how much interference will cause at any frequency off resonance. Suppose the interfering station is in the adjacent channel, 610 kc. Here the curve crosses the 10 kc positive line, i.e., 610 kc. on the horizontal line marked 36 mv, which means that the interfering station on 610 kc. must have a field strength of 36 millivolts to cause 100 per cent. interference, or to be heard with the same volume as the 600 kc station. Following the curve out still farther it will be noted that a station on 620 kc will require 270 millivolts field strength, or 270 times as much is required by the chosen station.

"After discussing the significance of these selectivity curves and telling of their relationship to the ability of the receiver to respond to the higher audio frequencies, Mr. Lucas proceeds to discuss sensitivity.

SENSITIVITY CURVES.

"The standard of sensitivity, as defined by the Institute of Radio Engineers and chosen by the Radio Manufacturers' Association, is the number of microvolts per meter (mv/m)

Fig. 2. Sensitivity curve of the same receiver.  

FIDELITY CURVES

"Fidelity curves are measured in audio frequency (cycles per second of the musical scale), and decibels (db)." Because of all, it appears that the human ear can detect between two sounds. As an illustration, average conversation has 10,000 times the energy of the faintest audible sound; yet to the ordinary human, this is only 40 sound units louder. This conversation then indicates a gain or increase over the faint sound of 40 db. If an airplane motor, the plurr of which is just perceptible to a distant listener, the sound energy is 1,000,000,000 times greater; yet to the person in the 'plane it sounds merely 100 sound units louder than to the distant listener. The gain is 100 db.

"To be able to understand the fidelity curve it is not necessary to be able to work problems in logarithms. Suffice it to say that a difference in 10 db between middle C and any other note does not make a great difference in the quality of tone reproduction. A loss of 20 db is more serious, while a 30 db loss indicates that the frequencies so reduced are pretty much out of the picture. The 1000 kc curve in Fig. 3 is a sample of a fair fidelity curve. In this case the bass was slightly emphasised with respect to the middle frequencies, and the high notes begin to drop off at about 1000 cycles. At 2000 cycles a loss of almost 4 db is noted; at 4000 cycles the loss is 8 db, and at 6000 cycles the volume drops a total of 11 db, just past the point where it begins to be noticeable. In this receiver, then, the critical ear should be able to detect a very slight attenuation at 4000 cycles. If the best the ordinary ear could do would be to perceive the fact that the tones, especially in the human voice, begin to 'tail off' in a more faithful receiver. This is due to the fact that the fullness of a musical tone is dependent upon the harmonics of which it is comprised. These, being on the higher frequencies, of course, have been reduced in strength."
Upon the battery depends the quality of your radio reception. The sturdy strength of the Clyde gives it long life—the purity of materials used ensures a steady stream of non-fluctuating power into the filament of your radio valves.

MORE POWER TO YOU WITH A CLYDE

CLYDE FOR CARS RADIO & HOME LIGHTING

Clyde Batteries for Cars, Radio and home-lighting are made by THE CLYDE ENGINEERING CO. LTD., GRANVILLE, N.S.W., largest makers of storage batteries in Australia.

OBTAINABLE AT ALL RADIO DEALERS AND GARAGES.
Recitifiotion
In Transmitters

KAD and pro are not satisfactory for re-use as auxiliary electrodes in an aluminium rectifier that has an organic solution, but they work well with a basic solution or with the dilute baking soda solution. A carbon electrode will be satisfactory if an organic rectifier solution such as citrate, acetate, or tartarate is used.

In the construction of electrolytic rectifiers, only the above two points must be considered for safety. In the case of our example, 12 jars were required. We should allow at least another jar, making the total 11 jars.

Now glance at Fig. 1. You will note that this arrangement allows us to make use of the centre tap. Each arm of the rectifier has the total secondary voltage across it, i.e., 500 volts, since 500 volts is supplied either side of the centre tap. Therefore each arm must have 11 jars in it. In the arrangement was shown that one arm only carried the total voltage, then only 11 jars would be required.

THEORY OF OPERATION.

It is interesting to pause here for a moment, and see how this centre tap allows us to obtain 500 volts.

The d.c. is, of course, continually reversing its polarity. Those who haven't heard this much by now should give up as a bad job. Now, at the moment that the top connection is positive, the other end will be negative to the extent of 1000 volts. The centre tap is negative to the extent of 500 volts. The point is then the negative to the extent of 500 volts. The point is then 500 volts above the bottom leg and the centre tap.

If one arm was used and the centre tap disregarded as in Fig. 2, current would only flow in one direction, by removing the negative half cycle. That means that the rectifier (top arm) will allow the current to pass along this leg, but no current will pass along the bottom leg, since this portion is negative. When the half-cycle is completed, the other end of the transformer secondary becomes positive. The top connection will then be negative to the extent of 1000 volts, and the bottom leg and centre tap positive. The current will then pass through the rectifier. Therefore 500 volts will flow for an instant between the bottom leg and the centre tap.

If only one arm were used and the centre tap disregarded as in Fig. 2, current would only flow when that end of the transformer secondary connected to the rectifier was positive. Thus there would be a gap or break in the half-cycle whilst the end was negative. This is known as half wave rectification. That shown in Fig. 1 is full-wave rectification, because a flow of current is obtained on each half-cycle.

Now often it is only possible for us to obtain a transformer with no secondary tap, and we get over the trouble here by using that known as the bridge rectifier. This is treated in the A.R.R.L. Handbook, and in other. Placing the lamps in parallel, of course, reduces the resistance. This procedure should be followed until the rectifier will withstand the full voltage.

One can easily find the resistance of any lamp he has if he knows the wattage. W equals VA (EI), therefore if the voltage is 240, and the wattage 10, the current will be 10/240 or 0.04; 1600, or 1-26th amp. From this we can find the resistance by Ohm's Law - R equals E over I. If the same type lamps are used, the resistance can be decreased in even steps until it is only a few ohms, when the lamps may be removed from circuit.

The jars must not be allowed to heat, as the film on the aluminium commences to break down at 120 degrees F. If there is sparking, the rate must be reduced by in any way possible, until sparking ceases. This is all that is required for safety.

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FIG 1

FORMING

One must be very careful indeed when forming the rectifier, for more careful than when performing the "Proving Radio" experiment. If you remember what was said then, you will know that there is almost a dead short across the transformer secondary when the circuit is closed, and the current will be quite high until the film is partially formed.

A resistance, or bank, or lamps should be placed in series with the input to the power transformer. If one lamp is placed, as shown in Fig. 4, the lamp will get dimmer and dimmer as the load is taken up by the rectifier, and larger lamps or more lamps can then be placed in parallel with the rectifier.

It is stated: "In the bridge connected rectifier the secondary delivers, say, 500 volts, two rows of, say, 12 jars each being in parallel across the secondary, 24 jars total. There are four groups of six jars each."

A good filter has already been discussed in theory: we will now look to the practical side. Further forming should be suspended until the jars have cooled off. It was mentioned that pure aluminium must be used. Unless the aluminium is pure it will not form. Impure aluminium shows no rectifying action, and the gaseous film forms as soon as the jars are connected to the source.

Now glance at Fig. 1. You will note that this arrangement allows us to make use of the centre tap. Each arm of the rectifier has the total secondary voltage across it, i.e., 500 volts, since 500 volts is supplied either side of the centre tap. Therefore each arm must have 11 jars in it. In the arrangement was shown that one arm only carried the total voltage, then only 11 jars would be required.

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Music.....by the World's Greatest Masters.....Flawlessly Re-created in Your Own Home.....Beyond Your Most Fanciful Dreams....

Make a modern electrical reproducing musical instrument out of your phonograph. You can do so in a moment, simply by replacing your phonograph tonearm with the Toman Super Pick-up. Then, connect the cord provided to your radio...and you're ready to play all your favorite records right through the speaker of your set—electrically, with beautiful tone, and with as much volume as you like.

The Toman Super Pick-up

Greater Volume Finer Tone Added Beauty

Easily mounted on your phonograph...

Connected in an instant to your radio.

MAGNAVOX DYNAMIC X-CORE SPEAKER UNIT

(240 Volts A.C.)

7½in. CONE, PRICE £7/15/-. For use with all types of Sets or Amplifiers where 210-240 Volts A.C. house lighting current is available. Standard plug is supplied with Cord fitted with "ON" and "OFF" Switch.

Carries Lifetime Guarantee of Original Standard of Performance

Wholesale and Retail Distributors for Toman Pick-ups and Magnavox Speakers.

Mick Simmons Ltd.

Headquarters: Haymarket, Sydney

Friday, 22nd November, 1929

WIRELESS WEEKLY

Mulching the Soil

(By G. W. Cooper, who speaks on gardening from 7BL every Saturday morning at 10.45.)

Many of my correspondents to 7BL during the last three years have asked the meaning of "mulching the soil." A few remarks on this may help everyone engaged in tilling the soil, especially the cottage and villa gardens of Sydney and suburbs.

Nature is the real guide to all successful growers of fruit, flowers, and vegetables. Take the forest. Its magnificent timber, undergrowth, and scrub, where there is at the slightest help from mankind. Does it

Why is it that trees and plants do so well, and, in a great many cases, better there than where they are cultivated by man? The principal reason why trees and plants flourish in the bush is that the surface soil has been mulched (protected, as it were), with a layer of decayed leaves (leaf mould), trimmings, etc., for centuries past.

Sometimes a burn fire comes along and burns everything up, leaving only ash, which contains potash and other valuable fertilizers, so that with the first rain there is a wonderful growth of seedlings of all descriptions, all fed from the surface soil mulched by decayed leaves, etc. It is this mulch which protects the soil from the drying winds, hot sun, and heavy rains, which would sour the soil of all its goodness if it were not for Nature's protecting coat of decayed vegetation.

In a cottage or villa garden everything of the shape of a green leaf is religiously dug out until the soil is comparatively bare of everything. Of course, this must be done to enable you to cultivate your favorite flowers, vegetables, and plants to perfection.

Here is the opportunity for man to be guided by Nature to protect artificially the surface of his garden, as Nature protects her plants of the forest. Decayed leaves are the hardest to procure, especially as tree roots; the expansion of the suburbs means fewer trees and less leaf mould where formerly there were plenty. The easiest material to use is cow manure. If old, it may be used for anything, no matter how tender the plants may be. If new, this manure may be used on most plants, but for ferns and sub-tropical green cow manure is a little strong. It is quite safe to use on all established vegetables and flower plots and fruit trees. As a mulch, a couple of inches thick is about right for general use. Horse manure, if sifted, is a good protection for seed beds, put on just thick enough to dust the surface; while for seedlings, one inch thick makes a nice mulch; for established seedlings and vegetables, a two-inch mulch will do.

After six or eight weeks another inch can be added, as if this disappears, another inch or two can be given in a couple of months. Money is always well spent in mulching the surface with manure—it keeps the soil cooler, and it conserves the moisture in the soil, a great thing where water is scarce. In fact, it water is to be had in summer time mulching is absolutely necessary. Not only does mulching conserve the moisture in the soil, but prevents heavy rains scouring the soil, and lessens the effect of wind on the surface soil, but it feeds the soil from the surface in the natural way. On all soils that become sticky when wet, mulching the whole year round is best, so that in damp weather the feet do not compact the soil too much; also, it will not stick to your boots, providing the mulch is thick enough. Sandy soils also should be mulched the whole year round.
Sheep manure, two inches thick. Is the best of all manures for mulching dahlias and Japanese Iris. The finest dahlias I have ever grown were in Alexandra Gardens, Melbourne, and these were mulched with sheep manure. This was dug into the sub-soil in winter and the following December the dahlias were planted and mulched with sheep manure on the surface.

In conclusion, I was first taught the value of mulching as a boy thirty-five years ago in Melbourne, by my father. He has practiced mulching for the past fifty-nine years in Melbourne and is still going strong in that city.

Mr. Cooper's moral being "Go thou and do likewise". But whether he promises a concomitant longevity to enthusiastic mulchers or not is a matter between the reader and Mr. Cooper. "W.W." makes no such guarantee. — Ed.

Light Socket Regulation

The following warning in connection with wireless apparatus is quite safe, and is connected in a permanent manner, or through an improper manner by inexperienced persons. When constructing electrical apparatus intended for connection to the house lighting mains, the following points should receive careful consideration:

• The apparatus must be wired and connected in a permanent manner, or through a proper outlet.

• All flexible conductors used for connection to the supply must be of a grade and type suitable for use on 240-volt installations.

• The 240-volt terminals must be completely protected from accidental contact.

• Where the cases are of metal, they must be connected to earth with a stout wire having proper terminals at each end. This is most important.

• Transformers intended for connection to the house lighting mains must be properly designed for their purpose with independent primary circuits and the covers and frames must be effectively connected to earth.

• Anyone who purchases an "all electric" set made by a reputable maker can be assured that these points have been properly seen to it; the manufacture of the set, and if the connection to the house installation is by standard means, and the frame of the set connected to earth, there is no possible risk involved in the operation of the set.

"NEATH Oriental Skies" is the title of a musical programme to be given from 8.30 on November 27. Humor will be provided with "Fun in Harren," while in more serious vein the delightful song cycle, "In a Persian Garden," will be introduced. The Oriental legend that forms such a fitting setting for the cycle will also be given, and many popular artists will contribute to a most enjoyable entertainment.

E V E R-R E A D Y
Portable Electric Searchlight

Substantially constructed of brass and finished in best nickel plate, this greatest of the wonderful "Ever-Ready" range of Lamps and Torches will surprise and please you when first you use it.

Specially designed reflector, projecting a spotlight beam without distortion, can be focussed for observation of distant objects or general illumination. Focussing is effected by turning the octagonal reflector head, shaped to prevent torch from rolling when laid down. Ball and slide switch for intermittent or permanent light. Ends carry a ring for hanging purposes and contains a spare bulb. Obtainable from all electrical and radio houses. Models range from 2/9.

Wholesale Distributors:
THE EVER-READY CO. (Gt. Britain) LTD.
163 Pitt Street, Sydney

PRICE:
(with battery complete)
No. 2202 - 17/9
Length 6½
No. 2203 - 19/9
Length 10½
No. 2204 - 24/6
Length 15½

E V E R-R E A D Y
LAMPS & TORCHES
YOU can prove it by fitting your battery-operated set, all-electronic set, American Receiver, or whatever radio you use with a complete set of Philips Valves. You'll be surprised at the extra punch and greater fidelity you'll get with these wonder tubes.

A.C.

THE 4-VOLT SERIES

<table>
<thead>
<tr>
<th>Type</th>
<th>Purpose</th>
<th>M/grid.</th>
<th>Price</th>
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<tbody>
<tr>
<td>E106</td>
<td>Audio</td>
<td>3</td>
<td>3</td>
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<tr>
<td>E115</td>
<td>Gen. Pur.</td>
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<td>2</td>
</tr>
<tr>
<td>E125</td>
<td>Spec. Det. 1st Audio</td>
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<td>50</td>
</tr>
<tr>
<td>E125</td>
<td>R.F.</td>
<td>55</td>
<td>55</td>
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<tr>
<td>E125</td>
<td>Pentode</td>
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A.C. or D.C.

SUPER POWER SERIES

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<thead>
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<th>Type</th>
<th>Purpose</th>
<th>M/grid.</th>
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<tr>
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<td>Power Amplifier</td>
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<tr>
<td>E95</td>
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D.C.

THE 4-VOLT SERIES

<table>
<thead>
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<th>Type</th>
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<td>A115</td>
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<td>1.5</td>
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<tr>
<td>A125</td>
<td>R.F.</td>
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<td>0.5</td>
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<td>A145</td>
<td>R.F. Screen Grid</td>
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<td>0.15</td>
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<td>A155</td>
<td>R.F. Screen Grid</td>
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<td>A165</td>
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<td>A195</td>
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<tr>
<td>A200</td>
<td>High Grade Power</td>
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</tr>
<tr>
<td>A215</td>
<td>Pentode</td>
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THE 6-VOLT SERIES

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<td>A120</td>
<td>R.F.</td>
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<tr>
<td>A130</td>
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<tr>
<td>A140</td>
<td>R.F. Screen Grid</td>
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<tr>
<td>A150</td>
<td>Pentode</td>
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<tr>
<td>A160</td>
<td>Power</td>
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<td>A190</td>
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<td>0.1</td>
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<tr>
<td>A200</td>
<td>High Grade Power</td>
<td>0.15</td>
<td>0.15</td>
</tr>
</tbody>
</table>

*To be obtained by means of Ped D.C. power valves that are suitable of
The ideal valves for American radio receivers are now made by Philips. These tubes have a higher standard of efficiency and a longer life than any previous types—you will note their efficiency when you fit a new set, and their long life when you have had more than satisfactory service.

If you will write us, giving particulars of your receiver, we will be pleased to tell you the correct valves to use in each socket.

**AMERICAN REPLACEMENT SERIES**

<table>
<thead>
<tr>
<th>Type</th>
<th>Purpose</th>
<th>Amp. Factor</th>
<th>$M$-cand. (Shunt)</th>
<th>Price</th>
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<tbody>
<tr>
<td>F199</td>
<td>R.F. 1st Audio</td>
<td>9.0</td>
<td>1.5</td>
<td>55/-</td>
</tr>
<tr>
<td>F209</td>
<td>Det.</td>
<td>3.0</td>
<td>2.0</td>
<td>27/-</td>
</tr>
<tr>
<td>C003</td>
<td>Super Power</td>
<td>3.0</td>
<td>2.0</td>
<td>15/-</td>
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<tr>
<td>1504</td>
<td>Full Wave Rectifier</td>
<td>—</td>
<td>—</td>
<td>36/-</td>
</tr>
<tr>
<td>1540</td>
<td>Half Wave Rectifier</td>
<td>—</td>
<td>—</td>
<td>45/-</td>
</tr>
<tr>
<td>F08</td>
<td>Super Power</td>
<td>3.0</td>
<td>2.1</td>
<td>25/-</td>
</tr>
</tbody>
</table>

Philips now make a special valve series for American A.C. Receivers

Corner Clarence and Margaret Streets, Sydney, N.S.W.
Local Programmes, Friday, November 22

**2FC**
Australian Broadcasting Company, Ltd., Market St., Sydney, New South Wales.

**EARLY SESSION**—To 8.15 a.m.

**MORNING SESSION**—8.30 to 11.30 a.m.

**AFTERNOON SESSION**—2.30 to 5.45 p.m.

**AFTERNOON ENTERTAINMENT**—2.30 to 6 p.m.

**THE LUNCH HOUR AND AFTERNOON SESSION**

**OPENING SESSION**—From 8 to 11 a.m.

**FAIRY TALES**

**MID-NIGHT SESSION**—From 11 to 1 a.m.

**FAIRY TALES**—From 8 to 11 p.m.

**MICROPHONES**

**CLOSING SESSION**

**COMING EVENTS**

**NEXT WEEK SPECIAL PORTABLE SET NUMBER**

**HOW TO BUILD A 4-VALVE SET TO TAKE ON VACATION.**
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**To Local Programmes**

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<th>Program</th>
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<tr>
<td>FRIDAY, NOVEMBER 27.</td>
<td>6.30</td>
<td>BROADCASTING STATION 50 Bigh St., Sydney (Wavelength, 316 Metres).</td>
</tr>
<tr>
<td></td>
<td>7.00</td>
<td>Happy Hour with Uncle Jack.</td>
</tr>
<tr>
<td></td>
<td>7.30</td>
<td>Mrs. Alice.</td>
</tr>
<tr>
<td></td>
<td>8.00</td>
<td>Hawaiian steel guitar.</td>
</tr>
<tr>
<td></td>
<td>8.30</td>
<td>Mrs. GRAY.</td>
</tr>
<tr>
<td></td>
<td>9.00</td>
<td>Mrs. V. J. Stelzer.</td>
</tr>
<tr>
<td></td>
<td>9.30</td>
<td>Mrs. W. J. Stelzer.</td>
</tr>
<tr>
<td></td>
<td>10.20</td>
<td>Music.</td>
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<tr>
<td>SUNDAY, NOVEMBER 25.</td>
<td>6.30</td>
<td>Radio Movie Club session.</td>
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<tr>
<td></td>
<td>6.30</td>
<td>Music.</td>
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<td></td>
<td>7.00</td>
<td>Orchestra on the Ringside.</td>
</tr>
<tr>
<td></td>
<td>7.30</td>
<td>Ring.</td>
</tr>
<tr>
<td></td>
<td>8.00</td>
<td>Mrs. V. J. Stelzer.</td>
</tr>
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<td></td>
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<td>10.00</td>
<td>Music.</td>
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**To Interstate Programmes**

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<td>10.20</td>
<td>Music.</td>
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<td>SUNDAY, NOVEMBER 25.</td>
<td>6.30</td>
<td>Radio Movie Club session.</td>
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<td>6.30</td>
<td>Music.</td>
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<td>7.00</td>
<td>Orchestra on the Ringside.</td>
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<td>7.30</td>
<td>Ring.</td>
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<td>8.00</td>
<td>Mrs. V. J. Stelzer.</td>
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<td>Mrs. W. J. Stelzer.</td>
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<td>10.00</td>
<td>Music.</td>
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**2KV**

Trade and Labor Council, Sydney (Wavelength, 316 Metres).

**MORNING SESSION**

10.00: Time to ring the clock. 10.05: Calls and announcements. 10.10: Calls and announcements. 10.15: Calls and announcements. 10.20: Calls and announcements. 10.25: Calls and announcements. 10.30: Calls and announcements. 10.35: Calls and announcements. 10.40: Calls and announcements. 10.45: Calls and announcements. 10.50: Calls and announcements. 10.55: Calls and announcements. 11.00: Calls and announcements. 11.05: Calls and announcements. 11.10: Calls and announcements. 11.15: Calls and announcements. 11.20: Calls and announcements. 11.25: Calls and announcements. 11.30: Calls and announcements. 11.35: Calls and announcements. 11.40: Calls and announcements. 11.45: Calls and announcements. 11.50: Calls and announcements. 11.55: Calls and announcements.

**2UE**

Trade and Labor Council, Sydney (Wavelength, 316 Metres).

**MORNING SESSION**

10.00: Time to ring the clock. 10.05: Calls and announcements. 10.10: Calls and announcements. 10.15: Calls and announcements. 10.20: Calls and announcements. 10.25: Calls and announcements. 10.30: Calls and announcements. 10.35: Calls and announcements. 10.40: Calls and announcements. 10.45: Calls and announcements. 10.50: Calls and announcements. 10.55: Calls and announcements. 11.00: Calls and announcements. 11.05: Calls and announcements. 11.10: Calls and announcements. 11.15: Calls and announcements. 11.20: Calls and announcements. 11.25: Calls and announcements. 11.30: Calls and announcements. 11.35: Calls and announcements. 11.40: Calls and announcements. 11.45: Calls and announcements. 11.50: Calls and announcements. 11.55: Calls and announcements.

**CLIMAX**

**The Battery that Lasts Longer**

You won't know what you are missing in radio enjoyment, and the secret of how much of your Battery Money you can save by their longer life, until you install Climax.

- **30 Volts, 8/-**
- **45 Volts, 12/-**
- **All Sizes for Torchies**
  - **45-V. Heavy Duty**
  - **4.5 Volts, 12/-**
- **15 Volts, 6/-**

Radio Dealers, Write for Attractive Proposals and Special Discounts.

**Radio Batteries for Torchies**

The next time you order torch batteries, see they are "CLIMAX." You will be rewarded with a steadier, brighter, and serviceable, than you have ever had before.

- **Double Cells, 3 volts, 1/4:**
- **Triple Cells, 4 volts, 1/4:**
- **Flat Cells, 4 volts, 1/4:**

Radio Dealers, Write for Attractive Proposals and Special Discounts.
**Interstate Programmes, Friday, November 22**

**3LO**
Australian Broadcasting Co., 1040 Royal St., Melbourne (Wavelength, 515 Metres).

- 7.0: Melbourne Observatory Time Signal. 7.0: Melbourne Tradesmen's Choral Society — 'The Village Blacksmith.'
- 7.15: Melbourne Trade Fitters' Union Chorus — 'The Bluebell Weave.'
- 7.30: Melbourne University Choral Union — 'Blest Be the Man.'
- 7.45: "The Two Wags" — ten minute sketch.
- 8.0: Collingwood Club Band—"Gala." "Aga Khan." 8.15: "Erie Welsh will speak on To-Morrow's Eton Turf Club Races.
- 8.20: "Return of Far East Air Races"
- 9.0: Melbourne Observatory Time Signal.
- 10.0: "Meteorological gossip."

**3AR**
Australian Broadcasting Co., 1040 Royal St., Melbourne (Wavelength, 515 Metres).

- 7.0: Melbourne Observatory Time Signal. 7.0: Melbourne Tradesmen's Choral Society — 'The Village Blacksmith.'
- 7.15: Melbourne Trade Fitters' Union Chorus — 'The Bluebell Weave.'
- 7.30: Melbourne University Choral Union — 'Blest Be the Man.'
- 7.45: "The Two Wags" — ten minute sketch.
- 8.0: Collingwood Club Band—"Gala." "Aga Khan." 8.15: "Erie Welsh will speak on To-Morrow's Eton Turf Club Races.
- 8.20: "Return of Far East Air Races"
- 9.0: Melbourne Observatory Time Signal.
- 10.0: "Meteorological gossip."

**5CL**
Central Broadcasting Co., 1287 Melbourne High Street, Altona (Wavelength, 600 Metres).


**6WF**
Australian Broadcasting Co., Ltd, Wellington Road, Scoresby (Wavelength, 465 Metres).

WIRELESS WEEKLY

Safet Ives of IV a dio A.C. RADIOTRONS.

RADIOTRON EY27 is a General Purpose Valve which permits A.C. operation, it acts as Detector, Bass, Treble, and first stage Audio Frequency Amplifier.

RADIOTRON OXUS is a full valve Rectifying Valve for use in all-electric Sets operating from Alternating current.

RADIOTRON UX211 is a half wave Rectifying Valve. Full rectification is obtained by using two of these Radiotrons.

When you buy RADIOTRONS you buy with safety . . . buy with the knowledge that they are the accepted standard valves for A.C. Radio . . . that they were the first A.C. Valves to be made, and that they are used and recommended by the world’s leading manufacturers of Radio Sets. Such well-known sets as Stromberg Carlson, Atwater Kent, Majestic, Crossley, Radiola, King Quality, Fada, are all designed for use with Radiotron Valves. They are tested and initially equipped with Radiotrons, and the makers specify Radiotrons for replacement.

Radiotrons are, therefore, the real safety valves for your set.

Obtainable at all good Radio Dealers.

AUSTRALIAN GENERAL ELECTRIC
93-95 CLARENCE STREET, SYDNEY.

RCA Radiotron
**Local Programmes, Saturday, November 23**

**2FC**

**EARLY SESSION**—7 to 8.15 a.m.
- 7.0: "Big Ben" and Meteorological information.
- 7.3: This morning's news from the "Daily Telegraph Portrait.
- 7.8: Austral radio 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**—10.30 a.m. to 12.30 p.m. and the AFTERNOON SESSION.
- 10.30: Announcements.
- 10.32: A.B.C. racing observer.
- 10.43: Studio music.
- 11.0: HOUSEHOLD HELPS: week-end suggestions by Sue Ruth Post.
- 12.0: "Big Ben": Stock Exchange, and metal quotations.
- 12.15: Studio music.
- 12.20: Midday weather forecast and weather synopsis.
- 12.50: FROM WARBWICK FARM: Description of the A.J.C. Meeting in the running.
- 1.0: "Big Ben": Stock Exchange, and metal quotations.
- 1.15: Studio music.
- 1.20: Midday weather forecast and weather synopsis.
- 1.25: Note the Programme and request numbers.
- 2.0: "Big Ben": Stock Exchange, and metal quotations.
- 2.45: CLOSE.

**EVENING SESSION**—6.30 to 7.30 p.m.
- 6.30: Request hour. 8.0: Musical programme and request numbers.

**THE DINNER HOUR**—6.15 to 7.55 p.m.
- 6.15: DINNER QUARTET.
- 6.30: "THE CAPTAIN" to his Comradios.
- 6.45: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA, conducted by Cec Morrison.
- 6.50: FRANK RYAN, comedian—"The Workshop" (Burnaby).
- 7.0: DOROTHY STEVEN, popular vocalist—"Tons of Humor" (Ryan).
- 7.15: BASIL RYE, baritone—"Song of the Wage Earner" (Breville-Smith).
- 7.20: BASIL RYE, baritone—"The Workshop" (Burnaby).
- 7.30: BASIL RYE, baritone—"Song of the Wage Earner" (Breville-Smith).
- 7.45: "The Workshop" (Burnaby).

**THE SYDNEY CRICKET GROUND—**

- 10.30: Description of the match in play.

**2BL**


**OPENING SESSION**—8.15 to 11 a.m.
- 8.15: G.P.O. chinese and announcements.
- 8.16: Music for every mood.
- 8.45: Austral radio musical reproduction.
- 8.48: Meteorological data for the country.
- 8.45: Mails and shipping information.
- 8.50: Memory melodies.
- 9.0: This morning's story.
- 9.20: A musical interlude.
- 9.30: British official wireless press.
- 10.0: News from the "Daily Telegraph Portrait.
- 10.10: Austral radio musical reproduction.
- 10.20: Mr. G. COOPER, Park Superintendent of City Parks, will give a talk on "Gar".
- 10.30: Description of the match, England v. New South Wales.

**MIDDAY SESSION AND AFTERNOON SESSION**—12 to 6 p.m.
- 12.0: FROM THE SYDNEY CRICKET GROUND—
  - Description of the match, England v. New South Wales.
- 1.15: FROM THE STUDIO—
  - Austral radio musical reproduction.
- 2.0: FROM THE SYDNEY CRICKET GROUND—
  - Description of the match in play.

**THE DINNER HOUR**—6.45 to 7.55 p.m.
- 6.45: "THE CAPTAIN" to his Comradios.
- 6.50: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA, conducted by Cec Morrison.
- 7.00: "The Captain" (Roberts).
- 7.15: BASIL RYE, baritone—"Song of the Wage Earner" (Breville-Smith).
- 7.20: BASIL RYE, baritone—"The Workshop" (Burnaby).
- 7.30: BASIL RYE, baritone—"Song of the Wage Earner" (Breville-Smith).
- 7.45: "The Workshop" (Burnaby).

**THE SYDNEY CRICKET GROUND—**

- 10.30: Description of the match in play.

**2GB**
Thomson's Broadcasting Station, 39 Bligh St., Sydney (Wavelength, 255 Metres).

- 3.0: Musical session. 7.00 frequent hour. 8.0: Musical session. Close down.

**2UW**

- 3.30 p.m.: Children's Hour, conducted by Uncle Jack. Close. 7.0: Musical pro-
  gramme and request numbers. 10.30: Close.

**2KY**

Trades and Labor Council, Goulburn St., Sydney (Wavelength, 200 Metres).

- 6.0: Young children's birthday calls, request numbers, and kiddies entertainment. 10.0:
  A.Y.U.T. JEMIMA and UNCLE BERT.

**THE WINTER'S NIGHT**—

- 7.0: Musical interlude. 7.5: Birthday calls.
- 7.15: SPORTING FEATURE—Turf topics, how they ran to-day. 7.30: Request numbers.
- 10.30: Closing announcements.

**2UE**
Broadcasting Station R.E.E., Everett Streeet, Manoora, Sydney (Wavelength, 250 Metres).

**EARLY MORNING SESSION**—6.30 to 7.00 p.m.

**THE WINTER'S NIGHT**—

- 7.0: Musical interlude. 7.3: Birthday calls.
- 7.15: SPORTING FEATURE—Turf topics, how they ran to-day. 7.30: Request numbers.
- 10.30: Closing announcements.

**2UE**

Broadcasting Station R.E.E., Everett Street, Manoora, Sydney (Wavelength, 250 Metres).

**EARLY MORNING SESSION**—6.30 to 7.00 p.m.

**THE WINTER'S NIGHT**—

- 7.0: Musical interlude. 7.3: Birthday calls.
- 7.15: SPORTING FEATURE—Turf topics, how they ran to-day. 7.30: Request numbers.
- 10.30: Closing announcements.

**2UE**

Broadcasting Station R.E.E., Everett Street, Manoora, Sydney (Wavelength, 250 Metres).

**EARLY MORNING SESSION**—6.30 to 7.00 p.m.

**THE WINTER'S NIGHT**—

- 7.0: Musical interlude. 7.3: Birthday calls.
- 7.15: SPORTING FEATURE—Turf topics, how they ran to-day. 7.30: Request numbers.
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**2UE**

Broadcasting Station R.E.E., Everett Street, Manoora, Sydney (Wavelength, 250 Metres).

**EARLY MORNING SESSION**—6.30 to 7.00 p.m.

**THE WINTER'S NIGHT**—

- 7.0: Musical interlude. 7.3: Birthday calls.
- 7.15: SPORTING FEATURE—Turf topics, how they ran to-day. 7.30: Request numbers.
- 10.30: Closing announcements.

**2UE**

Broadcasting Station R.E.E., Everett Street, Manoora, Sydney (Wavelength, 250 Metres).

**EARLY MORNING SESSION**—6.30 to 7.00 p.m.

**THE WINTER'S NIGHT**—

- 7.0: Musical interlude. 7.3: Birthday calls.
- 7.15: SPORTING FEATURE—Turf topics, how they ran to-day. 7.30: Request numbers.
- 10.30: Closing announcements.
**Radio Banners**

FOR DISCRIMINATING CONSTRUCTORS

21 x 7 x 3-1/2 Mahogany

3/3

Vernier Dials to match above

3/6

Geared Vernier Dials

2/2

Alpha Vernier Dials

4/6

Diora Vernier Dials

3/6

Continental .0005 S.L.F. Condensers

7/6

Sonor S.L.F. Condensers, all capacities

5/9

Electro Wire

2/-

Superior Wire

4/3

Crystal Sets

19/6 and 29/6

Blue Spot Speaker Units

24/- and 35/-

For Value and Service—

**Radio Chain Stores**

29 ROYAL ARCADE, SYDNEY
Local Programmes, Sunday, November 24

2FC

THE CHURCH HOUR—10 a.m. to 12.30 p.m.
10.0: Announcements.
10.3: Studio Music.
10.45: Musical items.

EVENING SESSION—6 to 10 p.m.
6.0: Open for Children in Hospital. Conducted by Uncle Steve, and assisted by Aunt Edith and Cousin Mayfair.

12.0: FROM ST. STEPHEN'S CHURCH: Morning service conducted by Rev. A. P. Doran. Organist: Mr. Gregory Valentine. Conducted by Uncle Steve, and assisted by Aunt Edith and Cousin Mayfair.

12.30: CLOSE.
Radio Set Builders!

We can show you increased profits and lines that lead to more business.

Eclipse Radio

not only stock all standard lines, but can offer exclusive and guaranteed goods that will show you better returns.

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 fi

chris Wasley Weekly

Page Thirty-Seven

Radio Set Builders!
Local Programmes, Monday, November 25

2FC
Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 651 metres).

EARLY SESSION—9 to 8:15 a.m.
7.15: This morning’s news from the “Morn- ing Guardian.
7.20: Auto Musical Production.
7.25: Mails and shipping.
7.30: Children’s birthday calls.
8.0: Music from the Studio.
8.15: Close.

MORNING SESSION—8:10 to 12:30.
10.32: A.B.C. Racing Observer.
10.45: HORACE WEBER at the GRAND ORGAN.
11.15: MORNING DEVOTION—From 11.30 to 12.30 the programme will be transmitted from the Radio Show, 1929, from Home State Shopping Block.
11.30: Austradio Musical Reproduction.
11.45: Overture, “Bohemian Girl” (Balfe).
12.30: Midday weather forecast and weather specials, produce market session in Sydney, supplied by the State Marketing Board.
12.45: THE LUNCH HOUR AND AFTERNOON SHOW SESSION.
12.45: Lunch hour music.
12.5: A piano at the “news” 2.0: Stock Exchange, second call.
2.2: FROM THE SYDNEY CRICKET GROUND: Description of the Match.
2.4: A musical interlude (Schubert, transcribed).
4.29: Stock Exchange, third call.
4.30: Close.

LATE EVENING SESSION—8:45 to 7:54.
5.45: Children’s “Goodnight” Stories, told by Miss Ruth Burst.
6.40: Metropolitan data for the country.
6.45: Mails and shipping information.
6.50: Memory Melodies.
7.0: This Morning’s Story.
7.15: A Musical Interlude.
7.30: British Official Wireless Press.
7.45: News.
8.0: Music from the “Daily Guardian.
8.15: THE AUSTRALIAN BROADCASTING COMPANY’S WOMEN’S ASSOCIATION—Conductors, Miss Gwen Varley.

MIDDAY SESSION—12 to 2.30 p.m.
12.0: FROM THE SYDNEY CRICKET GROUND: Description of the Match.
EAGLE. N. S.W.: in play.
9.0: From the STUDIO—HORACE KEATS.
Plaint—(a) “Minuet” (Lemmon).
(b) “Fascination” (Lemmon).
(c) “Spring Song” (Lemmon).
4.7: THE 2FC INSTRUMENTAL TRIO.
(b) “Nocturne in G Flat” (Lardelli).
(c) “Ophelia” (Schubert, transcribed). 4.29: Stock Exchange, third call.
4.30: Close.

MORNING SESSION—8:15 to 11 a.m.
8.15: G.P.O. Chimes and Announcements.
8.20: Symphony Chorus.
8.25: Symphony Orchestra.
8.30: Mr. Jack Win and the Matthew’s Quartet.
8.35: Miss Dorothy Stacey, soprano.
8.40: Mr. Leslie Herford, baritone.
8.45: Miss Proctor will speak on “Color Schemes.”
10.0: This Morning’s Story.
10.15: FROM THE STUDIO—Presentations.
11.0: CLOSE. "NATIONAL ANTHEM.”

2BL
Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 303 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: Symphony Orchestra.
8.25: Symphony Chorus.
8.30: Symphony Orchestra.
8.35: Symphony Chorus.
8.40: Mr. John Win and the Matthew’s Quartet.
8.45: Miss Proctor will speak on “Color Schemes.”
10.0: This Morning’s Story.
10.15: FROM THE STUDIO—Announcements and late weather forecast.
11.0: CLOSE. "NATIONAL ANTHEM.”

2GB
Therapeutical Broadcast Station, 29 Bligh St., Sydney (Wavelength, 293 Metres).
10.00 to 11.45. Dr. H. T. Smith. 11.45 to 2.30. 5:15 to 8:0. as usual.
5:15: Children’s session by Uncle George. 7:00: Music. 7:30: Feature story. 8:0: OLD- TIME PROGRAMME 8:0: Symphony Or- chestra.
8.0: M. Revolution. 8.15: Symphony Or- chestra.
8.21: Violin solos. 8:30: Mr. Jack Win and Mr. Heath. Burdoo. 8:35: Miss Dorothy Stacey, soprano. 8:45: Address. 9:0: Weather for the day. 9:10: Miss Grace Bayville, contralto. 9:20: Mr. Heath. Burdoo. recital. 9:30: Miss Dorothy Stacey, soprano. 9:45: Instrumental music. 10:00: G.P.O. Chimes.

2UW

MIDDAY SESSION, 12.30 to 14.00; EVEN- ing Session, 15.30 to 8:0. as usual.
5:45: Radio talk by Mr. R. Homfray.
7:45 p.m.: Radio talk by Mr. E. Homfray.
8:0: Wagnerian recital. 9:0: Comments on foreign affairs by Mr. J. M. Prentice. 9:15: Music and request numbers. 10:30: Close.

2UE
Broadcasting Station 2UE, Maroubra. Sydney (Wavelength, 391 Metres).

EARLY MORNING SESSION only. No even'ng sessions.

Friday, 22nd November, 1929
RAISE THE STANDARD OF RECEPTION

fit a D.E.L. 410

Osram Valve

Low Power Consumption

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

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

Put it in your set for better results.

BRITISH GENERAL ELECTRIC CO., LTD.
Head Office and Public Showrooms: 104-114 Clarence Street, Sydney.
Sales Agents at Brisbane and Hobart.
Interstate Programmes, Monday, November 25

WIRELESS WEEKLY

Three Counties, Monday, November 25

3LO

Australian Broadcasting Co., 1234 Russell St., Melbourne, (Waveband, 481 Metres).

EARLY MORNING SESSION.

7.45 to 8.00 (see Friday).

MORNING SESSION.

8.20 to 10.00: All Weather.

EDUCATIONAL SESSION.


VARIETY MATINEE.


EVENING SESSION.


4QG

Queensland Government Radio Service, Brisbane.

MORNING SESSION.

4.00: Announcement. 4.10: "The Children's Music Corner", conducted by "The Jingle Boys".

EVENING SESSION.

8.0: "The Tiptop "Choral Society" and the Queensland Choral Society, conducted by "The Jingle Boys".

LOST

JEWEL RADIO SET ANALYZER.

Model 219. In black case, size about 12in. x 9in. x 4in. Lost from Sutton Service, Cycle. Finder will be rewarded on returning to

SUTTIONS, LTD.,

390 George Street, Sydney.

TRANSFORMERS

A.B.C. Eliminator Transformers.

1. "B" Eliminator Chokes, 30-Henries, 5 each.
2. Special Transformers wound to specification.
3. Rotary Convertors for all Purposes.

F. T. S. O'Donnell, Griffin Co., Ltd.

BUILD YOUR OWN SUPERHETRODYNEx

For Sale. Cheap.—1 Superhetrodyne. Kit consisting of 3 Intermediates, 1 Detector, 1 Filter and Oscillator Coil Also 3 Special Transformers wound to specification, 1 Loom. 2 Audio Transformers. 1 A.W.A. 1 Enamelled. The lot, £4-10/-.

320 Brook Street

LITTLE COOGE
HERE'S the most remarkable Radio Set ever produced—the Cossor Melody Maker. It has 1000 miles range. It has "knife-edge" selectivity. It will cut out local stations like magic, and bring you the programme you want to hear. Never before has such a powerful and efficient Receive been obtainable at anything like its modest price. The Cossor Melody Maker is so simple that you can build it yourself. No wireless knowledge is necessary—no sawing—no drilling—no soldering—it's as simple as Meccano. Get to know all about this amazing new Receiver—mail the coupon.

World's Lowest Priced Screen-Grid Receiver of Advanced Design

NAMES OF DISTRIBUTORS:
Harringtons, Ltd., George Street.
 Manufacturers Products, Clarence Street.
 Bloch and Gerber, York Street.
 Fox and MacGillivray, York Street.
 W. G. Watson, Ltd., Clarence Street.
 Martin De Launey, Ltd., Clarence Street.
 Humphreys, Ltd., York Street.

Lyall Willis and Co., Ltd., Billiter House, London (Eng.).
SYDNEY REPRESENTATIVES:
JONES and JOSEPH, LTD., 235 CLARENCE ST., SYDNEY.
Local Programmes, Tuesday, November 26

2FC

**EARLY SESSION**—7 to 8.35 a.m.

7.00: Big Break and Australian National Information.
7.35: Music from the Studio.
8.15: CLOSE.

**MORNING SESSION**—8.35 to 12.30

8.35: The Australian Broadcasting Dance Orchestra.
8.50: Harrison White, Banjo Solos—(a) "March to the Jolly Coppersmith" (Peter, arr. White). (b) Selection, "Firedance Memories" (arr. White).
8.58: The Australian Broadcasting Dance Orchestra.
9.10: Wally Baynes, Comedian.
9.15: Announcements, Late Official Weather Forecast.
9.30: The Australian Broadcasting Dance Orchestra.
9.35: CLOSE.

**LUNCH HOUR**—12.30 TO 1.30 P.M.

1.00: Lunch Hour.
1.20: Address.
1.30: Music from the Studio.
1.35: Announcement.
1.50: Studio Music.
2.00: Address.
2.10: Studio Music.
2.15: G.P.O. Chimes.
2.20: Miss Gladys Bell, baritone.- "Non Je Ne Vais Pas Chanter" (Nicola Pignone).
2.25: Gladstone Bell, baritone.- "Serenade" (Schober).
2.30: The Malolo Concert Orchestra.
2.40: Constance Soprano, "I Know Where I'm Goin'" (Old Irish).
2.45: "Lass with the Delicate Air" (Arne).
3.00: The Malolo Concert Orchestra.
3.05: Announcements.
3.10: "Rainbow Rebellion" (Shaefer).
3.15: "The Cuckoo Clock" (Shaefer).
3.20: "The Lost Clock" (Shaefer).
3.25: "Cranberry" (Schubert).
3.30: "Cranberry" (Schubert).
3.35: "The Cloths of Heaven" (Dunhill).
3.40: "The Art of Song Writing." prepared by M. H. Ellis.
3.45: Australian musical reproduction.
3.50: J. Knight Barnett at the Wurlitzer.
4.00: Close down.

**MIDDAY SESSION**—12.30 TO 3.30 P.M.

1.15: G.P.O. chimes and announcements.
1.20: Music for every need.
1.25: Meteorological data for the country.
1.30: Main and shipping information.
1.35: Memory melodies.
1.40: This morning's story.
1.45: National Anthein.
2.00: News from the "Daily Guardian.""Non Je Ne Vais Pas Chanter" (Nicola Pignone).
2.05: Gladstone Bell, baritone.- "Serenade" (Schober).
2.10: Studio music.
2.15: "English Symphony No. 4" (Dunhill).
2.20: "The Lass With the Delicate Air" (Arne).
2.25: Studio music.
2.30: Studio music.
2.35: G.P.O. Musical reproduction.
2.40: Studio music.

**AFTERNOON ENTERTAINMENT**—3.30 TO 6 P.M.

3.30: Australian musical reproduction.
3.35: During the afternoon items will be transmitted from the Sydney Cricket Ground. Description of the match. England v. New South Wales.
3.45: Instrumental music.
3.50: Studio music.
4.05: From the Studio—A talk on "Electric Appliances." prepared by M. H. Ellis.
4.10: Australian musical reproduction.
4.15: J. Knight Barnett at the Wurlitzer.
4.20: Studio music.
4.25: Close down.

2BL

**OPENING SESSION**—4.15 TO 11 A.M.

4.15: G.P.O. chimes and announcements.
4.20: Music for every need.
4.25: Meteorological data for the country.
4.30: Main and shipping information.
4.35: Memory melodies.
4.40: This morning's story.
4.45: National Anthein.
5.00: News from the "Daily Guardian.""Non Je Ne Vais Pas Chanter" (Nicola Pignone).
5.05: The Malolo Concert Orchestra.
5.10: "Rainbow Rebellion" (Shaefer).
5.15: "The Cuckoo Clock" (Shaefer).
5.20: "The Lost Clock" (Shaefer).
5.25: "Cranberry" (Schubert).
5.30: "Cranberry" (Schubert).
5.35: "The Cloths of Heaven" (Dunhill).
5.40: "The Art of Song Writing." prepared by M. H. Ellis.
5.45: Australian musical reproduction.
5.50: J. Knight Barnett at the Wurlitzer.
5.55: Studio music.
6.00: Close down.

**SESSION**—4.15 TO 11 A.M.

5.00: "Serenade" (Toselli).
5.05: "Vol Che Sapete" (Mozart).
5.10: "The Bee" (Schubert).
5.15: "Waiata Maori" (Alfred Hill)."Waiata Poi" (Alfred Hill).
5.20: "Waiata Maori" (Alfred Hill)."Waiata Poi" (Alfred Hill).
5.25: "The Cloths of Heaven" (Dunhill).
5.30: "The Art of Song Writing." prepared by M. H. Ellis.
5.35: Australian musical reproduction.
5.40: J. Knight Barnett at the Wurlitzer.
5.45: Studio music.
5.50: Close down.

**SESSION**—5.30 TO 8.00 P.M.

6.00: "Lass With the Delicate Air" (Arne).
6.05: Studio music.
6.10: "Lass With the Delicate Air" (Arne).
6.15: Studio music.
6.20: Studio music.
6.25: Studio music.
6.30: Studio music.
6.35: Studio music.
6.45: "The Art of Song Writing." prepared by M. H. Ellis.
6.50: Australian musical reproduction.
6.55: J. Knight Barnett at the Wurlitzer.
7.00: Studio music.
7.05: Close down.

**SESSION**—5.30 TO 8.00 P.M.

6.00: "Lass With the Delicate Air" (Arne).
6.05: Studio music.
6.10: "Lass With the Delicate Air" (Arne).
6.15: Studio music.
6.20: Studio music.
6.25: Studio music.
6.30: Studio music.
6.35: Studio music.
6.45: "The Art of Song Writing." prepared by M. H. Ellis.
6.50: Australian musical reproduction.
6.55: J. Knight Barnett at the Wurlitzer.
7.00: Studio music.
7.05: Close down.

2UF

**Radio broadcasting, Ltd., Paddington, Ash St., Sydney (Wavelength, 280 Metres).**

**MIDNIGHT SESSION**—12.30 TO 4.30.

**EVENING SESSION**—3.50 TO 8.00, as usual.

8.00: Recital of songs by Ton dei Monte. 9.00: Comments on foreign affairs by Mr. J. M. Prentice. 9.10: Music and request numbers. 10.30: Close.

2UW

**Radio Broadcasting, Ltd., Paddington, Ash St., Sydney (Wavelength, 280 Metres).**

**MIDNIGHT SESSION**—12.30 TO 4.30.

**EVENING SESSION**—7.00 TO 8.00, as usual.

7.00: Musical interlude. 7.10: Sporting feature—Tur- toons, how they should run to-morrow. Mr. GEO A. DAVIS. 7.30: Recruit numbers. 8.00: Australian orchestral selections. 8.10: Women's Information Roundup. 8.25: Baritone. 8.30: Mr. HOGGINS. 8.35: Piano solos. Mr. HANCOCK. 8.40: Music and request numbers from the Studio. SPORTING FEATURE, from the ringside of 'N'Hugh's Leich- tin Stadium, round the tracks and full description of 15 rounds event. 8.50: Studio music. 10.00: Closing announcements.

2UF

**Broadcasting Station, 28 Wood Street, Maroubra, Sydney (Wavelength, 293 Metres).**

Same as FRIDAY.
LEVENSON'S FOR RADIO'S GREATEST BARGAINS

Just Arrived 200,000 ohm wire-wound variable Resistances for Eliminators or Volume Controls, 11/6 value, now 8/-; 500,000 ohm, 12/6 value, 8/6.

BUILD LEVENSON'S 4.C. ALL ELECTRIC-3 RADIO.
Illustrated booklet, 1/- Free with Parts.
It's So Simple to Build.
All Parts (high-grade) 6/19/4
Parts for A.R.C. Pack 6/7/1
Value and Becrafting Tube 6/19/8
Cables for same, special design 35/.

BUILD LEVENSON'S 2-VOLUME PORTABLE SET.
The Simplest You Could Build.
Everything needed, including Cabinet and Speaker, Batteries, Chart, etc. 27/17/6.

BUILD LEVENSON'S "A" BATTERY CHARGER.
It's So Simple.
All Parts Supplied with Simple Design 5/-
You can Build it In 10 Minutes.

Battery Cable, 7-way, yard 1 3
15/- Like-a-Flash, Heavy Duty 15 volt B BATTERIES.
5/- Value.
Never a complaint In 10 shipments.

De Jur Battery Strips 2 9
AMPLON A.R. 8 LOUD SPEAKER.
List Price, 90/-
MY PRICE, 15/-.
Value, Just Half 15/.
Watts In 1 In 110 VOLTS, METERS, 11/6 British Built For British People.

Silver Knight R.F. Choke 5 6
LINEN ENGLISH COMPONENTS.
100-volt B Batteries 22/6
90-mil. R Batteries 12/6
Linen Gramophone Pick-ups 12/6
Linen Audio Transformers 12/6
Linen Super Audio 12/6
Linen 5-mag. Grid Leaks 5/-
Linen R.F. Chokes 6/9
Linen Loud Speaker Unit 3/.

Grid Leaks 1/.
Grid Condensers, .00025 1 6 WITH CLIP.
Send 3d in stamps for Illustrated Catalog and Bargain Bulletin.
4/- Conversion Fuses enclosed.

JUST ARRIVED.
AMERICAN SPEED VALVES.
Nothing to Equal Them.
210 1/2/6 221 1 6
210A 9/1/6 221A 7/6
210B 7/6 222A 10/6
210C 10/6 300-A 21/6
210H 9/1/6 300-A 1/4
Formo Transformers, 18/- Now 12 6

AUDIO TRANSFORMERS.
Brian Electric, American, 21/- Now 12 6
A.C.C. Continental 17 6
WELL-KNOWN MAKES.
11/- Value 19/-
7-6 11/6-
11/- 11/6-
10/- 10/6-
5/- 5/6-
2/6 3/6-

Pressor Transformers, 21/- Now 12 6

Battery Cables, 5-way 2 6
VERNIER DIALS.
Adele De La Rue 3 6
Dials, 6/-
Like a Flash Wonderful Movement
OTHER WELL-KNOWN MAKES.
1/- Value 5/-
5/- 5/-
1/- Small Type 5/-
De Jur, Illuminated Dial 12/-
Preferred Dials, Bakelite 7/-
Plus Bakelite Dials 7/-

Solder Sets 2-

Cat's Whiskers, pkt., assorted, 1/-
DE JUR GRANDPHONE PICK-UP.
NOW £2 15/-
With Adapter and Tone Control.
TONE ARM, 15/- Extra.

High-grade Crystals 1 2-
STROMBERG-CARLSON Crystals
EACH LIST PRICE.
NOW EX. ONLY A LIMITED NUMBER TO SUPPLY.

R.U.F. Semi-fixed Crystals, 6 6 4/6

BELL-RINGING TRANSFORMERS.
Baron Large Capacity, Just Landed, 17/-

200,000 ohm Resistances 8/-

COIL KITS.
Harman Talk Tube 4/3
Benjamin Coil Kits 10/6
Peter-White De Jure 3-Coil Tuners 15/-
De Jure Brevet-Drive R.R. Best Mode 9/6
Mars 1-coil Kits 4/6
Silver Knight Short-wave Kits 10/6
Kodan Tunes 10/6
Radiator Panel 4d to 6d each
Fakele Panel 1/6 to 1/3 each
Silver Knight Panel, twin wide 6d each

Talking Tape Aerial, coil 5 6

A BARGAIN BASED UPON
83 G.A.M.P. OR VARIABLE
COMPONENTS.
Mounted with Illuminated Dial and Ratchet.
Worth 14/-, NOW 8/-.

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NEAR LYEHEUM THEATRE.
BRANCH: 86A PITT STREET.
MAIL ORDERS.—We are the largest Mail Order Radio Goods Distributors in Australia. Satisfaction and Service assured. Goods forwarded V.F.P.

LEVENSON'S RADIO.
THE PALACE OF WIRELESS.

AC. ACCESSORIES.
Like-a-Flash Heavy Duty, A.C. Eliminator .20.
Heavy Duty, Double Chokes, 5/-.
Variable Condensers, 4/-, 4/-.
Metal Tubs, for Standard, 4/-.
Charts supplied with parts.

20ft. Speaker Cords 2/3

BUILD YOUR OWN CONE SPEAKER.
Linnen Speaker Units, 15/6.
Wires for Cone Speaker Building, 1/-.
Cone Paper, ready made, 1/6.
Continentacone Speaker Units, 13/6.
Blue Spot Dials, 25, 35.

Electron 1000ft. Aerials 2/.

VARIABLE CONDENSERS.
English Ball-bearing Condensers, 1000 16/6.
Condensers, 1000, 2000, 3000, 12/-, 12/-.
Over 5000 Assorted Variable Condensers, all
capacities varying from 1000.
Original Price 10/10 to 11/-.
Simple Charts, 5d. Free with Parts.
Anyone could Build three Units.
For Sets over 3 Volts.

Cables, 1/.

0 to 1 amp. Meters 3/6
JUST TO HAND.
DIAG SNAPS IN HIGH-GRADE ACCUMULATORS.
4 VOLTS 6 VOLTS.
VALUE VALUE.
NOW NOW.
Both made in Hard Rubber Unbreakable 1 Unit.
Covers.

Balkite Trikcle Charges 30/-

HERE'S VALUE.
Amplon A.R. In Loud Speakers, Wooden Flare.
E5 5/ List Price. NOW 3/6.
Each Tested and Guaranteed.

Midget 5-valve Coil Kits 5/-

LEVENSON'S OWN 100-VOLT TEST.
BY PASS CONDENSERS.
1 mfd. 2 mfd. 3 mfd. 4 mfd. 5 mfd. 6 mfd.
Extra Heavy Type, 5/-.
Kit of 3 Pancake Coils 3/-

MAGNET 1000 OHM PROFESSIONAL HEADPHONES.
35/ List Price. NOW 1/8.
Each tested and Guaranteed.

Push-pull Switches 1/-

GEOPHONIC LOUD SPEAKERS.
This is a Bargain.

Amsco Twin .0005 Condensers 7/6
And Now—THE “LEWCOS”
A.M.5 Coil for the “MODERN” A.C.2

And Now—THE “LEWCOS”
A.M.5 Coil for the “MODERN” A.C.2

A.M.5.
“Lewcos” Coil for Broadcast Wave-lengths.

The Modern A.C.2, described in this issue of “Wireless Weekly,” incorporates the “LEWCOS” A.M.5 coil, covering the broadcast wave-lengths. The resistance to high frequency currents and their self-capacity is much lower with the A.M.5 than with any other similar type of coil. This accounts for the exceptional and proved efficiency of the A.M.5. Its engineering construction and rugged strength enable it to be handled without fear of damaging.

“Lewcos” A.M.5 Coil, Price ..... 17 6
Standard 6-pin Base ..... 3 6 extra.

Other “Lewcos” Products
“Lewcos” Winding Wires. All gauges, in distinctive cartons.
“Lewcos” Glazite Connecting Wire.
“Lewcos” Frame Aerial Wire.
“Lewcos” Binocular Coils.
“Lewcos” Screened Coil Units.

“Lewcos” Fixed Potentiometer
This latest addition to the famous “Lewcos” range of radio products has been specially designed to control reaction of broadcast receivers. With this potentiometer there is no violent breaking into oscillation. Reception is smoothed out and improved.

Price ..... 9/6

“Lewcos” High Frequency Choke
THE IDEAL JOB FOR SHORT-WAVE SETS.

Designed to clear up reception and to prevent instability of the audio amplifier. There is no howling with the “LEWCOS” HIGH FREQUENCY CHOKE. Particularly recommended for use with screened grid receivers. May be fitted easily to your present broadcast receiver.

Price ..... 12/6

“Lewcos” Wavetrap
Overcomes interference in broadcast reception. It is easily fitted, being simply placed in the circuit between aerial and the aerial terminal on the receiver. Its operation is simple; merely adjust the small variable condenser to cut out the unwanted station.

Price ..... 22/6

“Lewcos” Short-wave Coils
Lowest loss principles. Secondary wound, with silk insulated copper strip. Ribbed former
A.M.S. 2, 15 to 25 metres. 15/-
A.M.S. 4, 25 to 45 metres, 15/-
A.M.S. 9, 40 to 90 metres, 15/-
A.M.S. 25, 90 to 250 metres, 15/-
2.0: "Big Ben" and meteorological information for the man on the land.
2.15: Austradio Musical Reproduction.
2.50: Children's birthday calls.
2.60: Music from the Studio.
3.0: Close.

MORNING SESSION—10.20 to 12.30.
10.30: Announcements.
10.40: G. R. ORCHISON will broadcast a talk on the "state of the State." (Sydney). Disposal Liquidators.
11.0: Austradio Musical Reproduction.
11.15: MORNING DEVOTION—From 11.30 to 12.30 the programme will be transmitted from the Radio Show. 1929.
11.15: ORGAN.
11.20: Disposal Liquidators.
11.30: "Big Ben." Stock Exchange, and general sporting talk by O. Ear Lind.
11.35: NEWSPAPERS FROM THE STATE SHOPPING BLOCK.
11.45: A unique chance of obtaining the latest types of English (Osram) and Continental potassium "gas-filled" cells, conducted by Will Prior.
12.0: Radio Rhythm.
12.15: FROM THE ORIENTAL. Sydney Simpson's Syncopaters in the music room.
12.30: CLOSE. NATIONAL ANTHEM.

2FC
Australian Broadcasting Company, Ltd, Market St., Sydney (Wavell St, 33 Metres).

EARLY SESSION—7 to 8.15 a.m.
7.0: "Big Ben" and meteorological information for the man on the land.
7.20: This morning's news from the "Daily Guardian."
7.45: "Big Ben." Stock Exchange, and general sporting talk by O. Ear Lind.
7.50: Children's birthday calls.
7.60: Music from the Studio.
8.15: Close.

WIRELESS WEEKLY
Friday, 22nd November, 1929

Local Programmes, Wednesday, November 27

NEXT WEEK

SPECIAL PORTABLE SET NUMBER
of "Wireless Weekly"
HOW TO BUILD A 4-VALVE SET TO TAKE ON VACATION

2.0: A glance at the afternoon "News." 2.15: Studio music.
2.30: Announcements.
THE RADIO MATINEE—2.30 to 4.30 p.m.
NOTE—Race results from Rosebery will be transmitted as received.
2.30: Radio Rhythm.
2.40: BERENSPORD HALLET, Popular Vocalist—
(a) "Sheep Valley" (Hartley). (b) "My Mother's Eyes" (Baer).
2.45: HILDA CROSS, Novelist—
(b) "Dancing Shadows" (Goldin). (c) "Caterina Jaques" (Romano).
2.50: A MODERN MEMORY.
2.55: BERENSPORD HALLET, Popular Vocalist—
(b) "I Used to Love Her in the Moonlight" (Florio).
3.0: "My Dear" (Kahn).
3.15: MODERN MUSIC.
3.20: DOOROTII BENOBI, Contraltoro—
(a) "Little Brown Cottage" (Dickson). (b) "Land of the Lullaby" (Browne).
3.25: SONGS OF THE DAY.
3.30: HILDA CROSS, Novelist—
(a) "Humorous Rose" (Nunavum). (b) "Scruffel" (Smith).
3.35: DANCE NUMBERS.
3.40: DOOROTII BENOBI, Contraltoro—
(a) "If I built a World for You" (Lehmann). (b) "Dreaming of Home" (Besly).
3.45: RADIO RHYTHM.
4.11: MONA DEUTZER, Violinist—
(a) "Tarentelle" (Traetta). (b) "Humoresque," (Davies).
4.15: MODERN MUSIC.
4.25: FROM THE STUDIO—Mona Drutcher, Contralto—
(a) "Aria" (Vivaldi). (b) "Song, Lord Italia" (Trotta).
4.35: FROM THE STUDIO—Mona Drutcher, Contralto—
(a) "Aria" (Vivaldi). (b) "Song, Lord Italia" (Trotta).
4.45: FROM THE STUDIO—Mona Drutcher, Contralto—
(a) "Aria" (Vivaldi). (b) "Song, Lord Italia" (Trotta).
5.0: FROM THE ORIENTAL. Sydney Simpson's Syncopaters.
5.05: FROM THE ORIENTAL. Sydney Simpson's Syncopaters in the music room.
5.15: FROM THE ORIENTAL. Sydney Simpson's Syncopaters in the music room.
5.30: CLOSE. NATIONAL ANTHEM.

PHOTO-ELECTRIC CELLS
Disposal Liquidators
Stock
BRAND NEW STOCK STILL IN BOND.

A unique chance of obtaining the latest types of English (Osram) and Continental potassium "gas-filled" photo-electric cells UNDER COST PRICE.

Stock of cells as above recently landed, condition and quality guaranteed perfect, as used by leading manufacturers of Talkies and Television. New special offer.

Immediate delivery, terms 5 per cent cash. Credit for 20 cells or more special discount on application.

KINEMA PRODUCTS LIMITED,
Waison House, 9 Bligh Street.
SYDNEY

Piano solos, Emil Hynes—
(a) "Serenade in B Flat." (b) "Polichinelle." song—
(a) "The Harvest of Sorrow." (b) "The Crib Bedding of Spring." Piano solos—
(a) "Melodie in E." (b) "Humoresque."Ơ
8.1: THE COUNTRY MAN'S WEATHER SESSION—
(a) New South Wales forecasts. (b) Interstate weather synopsis.
8.3: MONA DRUTCHER, Contralto—
(a) "To the Forest" (Tschaikowsky). (b) "I Came with a Song" (La Forge). (c) "Two Little Magpies" (Well). 
8.10: FROM THE STATE THEATRE—PRICE DUNLAVY AT THE GRAND ORGAN.
8.15: FROM THE STUDIO—CHARLES NICHOLSON—
(a) "Aria" (Vivaldi). (b) "Song, Lord Italia" (Trotta).
8.45: FROM THE STUDIO—Mona Drutcher, Contralto—
(a) "Aria" (Vivaldi). (b) "Song, Lord Italia" (Trotta).
9.15: FROM THE STUDIO—Mona Drutcher, Contralto—
(a) "Aria" (Vivaldi). (b) "Song, Lord Italia" (Trotta).
9.45: FROM THE STUDIO—Mona Drutcher, Contralto—
(a) "Aria" (Vivaldi). (b) "Song, Lord Italia" (Trotta).
10.15: FROM THE ORIENTAL. Sydney Simpson's Syncopaters in the music room.
10.30: CLOSE. NATIONAL ANTHEM.

2BL
Australian Broadcasting Company, Ltd, Market St., Sydney (Wavell St, 33 Metres).

OPENING SESSION—8.15 to 11 a.m.
8.15: O.P.O. chimes and announcements.
8.30: Music for every mood.
8.40: Meteorological data for the country.
8.45: Mails and shipping information.
8.50: Memory Melodies.
9.00: This Morning's news from the "Ballroom." 
9.30: Music from the "Hello Man." assisted by Uncle Ted
9.40: FROM THE STUDIO—Mona Drutcher, Contralto—
(a) "Aria" (Vivaldi). (b) "Song, Lord Italia" (Trotta).
10.00: FROM THE BALLROOM OF THE ORIENTAL. Sydney Simpson's Syncopaters.
10.15: FROM THE STUDIO—Announcements.
10.30: Late official weather forecast.
11.00: CLOSE. NATIONAL ANTHEM.

11.30: SONGS OF THE DAY.
12.00: O.P.O. Chimes and Announcements.
12.30: LUNCH MUSIC
1.00: Afternoon news from the "Evening News." 1.30: Studio Music. 
1.50: Women's Interest Talk—GOODIE REEVIE will give "Aids to Personality." 2.00: Austradio Musical Reproduction.
2.30: J. KNIGHT BARNETT at the "Wurlitzer." 2.15: Studio Music.

AFTERNOON ENTERTAINMENT—1.30 to 3.45 p.m.
1.30: Dr. Harold Norrie will speak on "Outstanding Personalities in Australian History," and his subject this afternoon will be "BURKE AND WILLS." 1.45: RADIO RHYTHM.
2.00: DURING THE AFTERNOON ITEMS WILL BE TRANSMITTED FROM THE RADIO SHOW—HER FROM THE STATE SHOPPING BLOCK.
2.30: JAMES WALKER, Pianist—"Chromatic Fantasy Piece and Pode in D Minor" (Bach).
3.15: SONGS OF TO-DAY.
3.30: RAIMUND PECHTSCH, Violinist—"Hungarian Rhapsody." 3.45: MODERN DANCE MUSIC.
Friday, 22nd November, 1929

3.45: C. PRICE CONIGRAVE will speak on "Dirk Hartge and Shark's Bay."
4.0: JAMES WALKER, Pianist—
(a) "Bee's Wedding" (Mendelssohn).
(b) "Polonaise in A Flat" (Chopin).
4.7: MELODY MEMORIES.
4.17: RAIMUND PECHOTSCH, Violinist—
"Caprice" (Raimund Pechotsch).
4.24: RADIO RHYTHM.
4.45: The Trade Hour—Demonstration Music.

THE DINNER HOUR 6.15 to 7.55 p.m.
6.15: DINNER QUARTET.
6.45: THE BOYS' RADIO CLUB. conducted by Mr. Norman Lyons.
7.20: DINNER MUSIC.
8.0: FROM THE CONSERVATORIUM OF MUSIC -
CONCERT BY THE SYDNEY MADRIGAL SOCIETY -
Assisting Artists:
T. H. Kelly's Instrumental Trio.
Senia Chostiakoff. Tenor (late of the Don Cossack Choir).
9.0: FROM THE STUDIO—
Weather information for the Man on the Land.
Announcements.
9.10: FROM THE CONSERVATORIUM OF MUSIC—
CONCERT ARRANGED BY THE SYDNEY MADRIGAL SOCIETY.
10.0: FROM THE STUDIO—
GRAHAM KENT will talk on 'Bridge.'
10.15: A MUSICAL ITEM.
10.25: Late News from the "Evening News." Late Weather Forecast.
10.30: NATIONAL ANTHEM. Close.

WIRELESS WEEKLY

THE IGRANIC L.F. Transformer Type "J"

THE IGRANIC L.F. Transformer type "J" has been developed to meet the demand for a low frequency transformer which, while being of small dimensions comparatively light in weight and so very reasonably priced, is thoroughly efficient in performance. The D.C. Resistance of the primary winding is of a very low value, so that there is no appreciable voltage drop in the anode circuit of the valve, and voltage is therefore applied to the anode of the valve.
We can assert with confidence that the performance of this transformer is definitely better than any transformer of similar size and price. Supplied in two ratios, 3:1 and 6:1.

SOYES BROS

SYDNEY), LIMITED. (MELBOURNE) PTY.LIMITED.
Sydney, 110, Clarence Street
Melbourne, 493 Bourke Street
Newcastle, 5, Watt Street
Adelaide, 119, Pirie Street
Brisbane, 4, Perry House
Hobart, 56, Argyle Street
Perth, J.W.Gardam & Co.
Launceston, 59 George Street
PUBLIC WARNING!

Our Distinctive Boxes are Your Safeguard

SUBSTITUTES cannot give such good results as the true Electron Aerial, so make sure that you get the genuine article—insist on buying Electron wire and Superial, Electron's Super Aerial, in our distinctive boxes only.

Electron products are world-famous. No other Aerials are made by the same process, or with the same scientific regard to detail. Some Aerials are offered to deceive, made to look like Electron, coiled like them, but avoid deception. Do not buy another Wire made to look or sound like Electron or Superial, that cheats you of something you prize—look at the name and the distinctive box.

Our Aerials are insulated throughout their length, and being protected, cannot collect verdigris. Each one is a complete Aerial and lead-in. No separate lead-in, insulators, or other costly accessories are necessary, and even a mast need only be used if desired.

There are two kinds; Electron Wire in the square box (white and blue), and Superial, Electron's Super Aerial, with exceptionally heavy vulcanised insulation and packed in an oblong box, printed red and orange.

PRICES:

SUPERIAL ...................... 4/6
ELECTRON WIRE .................. 2/9

If unable to obtain, write, enclosing remittance, to one of the following sole agents:

- The Chartres Trading Co., Remington House, Liverpool Street, SYDNEY.
- Canada Cycle & Motor Agency, C.C. Creek and Adelaide St, BRISBANE.
- La & Hanson Electrical Co., Ltd., in William Street, MELBOURNE.

Proprietors:

12.0: "Big Ben": Stock Exchange. and Metal
12.30: CLOSE.
12.20: Midday weather forecast and weather
12.0: G.P.O. Chimes and Announcements.
9.30: A Musical Interlude.
9.25: Late Official Weather Forecast.
9.10: Request numbers.
9.0: Mr. William Green, tenor.
8.18: Humorous interlude.
8.10: Tenor solos, Mr G. Mason.
8.30: "Libyan" by Fritz Hart's Australian
8.2: News from the "Daily Guardian.'
8.1: Announcement:
8.0: Mr. William Green, tenor.
7.50: Memory Melodies.
7.55: What's on the air tonight?
7.45: Austradio Musical Reproduction
7.30: Hawaiian steel guitar selections.
7.5: Birthday calls.
7.0: Musical interlude.
6.45: THE GIRLS' RADIO CLUB, conducted by Miss Gwen Varley.
6.15: DINNER QUARTET.
6.0: Closing announcements.
5.10: Story Hour.
5.0: Closing announcements.
4.7: MELODY MEMORIES.
4.45: The Trade Hour—Demonstration Music.
4.4: "The Woman Who Laughed at Faery"
4.3: Latest news from Melbourne
4.24: RADIO RHYTHM.
4.17: GWEN ROBSON, Pianist—
4.7: MELODY MEMORIES.
4.5: CABLES' Copyright.
4.3: Latest news from Melbourne
4.2: News from the "Daily Guardian.'
4.15: "The New Germany.
4.10: THE 2FC INSTRUMENTAL TRIO.
4.0: ANNIE HUGHES Entertainer—
3.5: The Country Man's Market Session -
3.3: PHYLLIS BATEMAN. Violinist—
3.53: ETHEL MULLER, Contralto—
3.31: GWEN ROBSON. Pianist—
3.3: PHYLLIS BATEMAN. Violinist—
3.10: THE 2FC INSTRUMENTAL TRIO.
3.0: Children's Birthday Calls.
2.30: THE 2FC INSTRUMENTAL TRIO.
2.28: Stork Exchange. third call.
2.18: Symphony Orchestra. 8.50: Mr. Jack
2.1: News from the "Daily Guardian.'
2.0: Stock Exchange, second call.
1.30: A.B.C. Chimes and Announcements
1.20: ANNE HUGHES, Contralto—
1.0: Mr. William Green, tenor.
0.7: Symphonic Orchestra. 8.50: Mr. Jack
0.5: "Dreaming' (Schumann).
0.4: "Minuet a la Cour" (Niemann)
0.3: "Prelude No. 22" (Chopin).
0.2: Mr. Tom Harrison, bassoon.
0.1: Instrumental music.
0.0: "Prelude No. 21" (Chopin).
9.0: Musical interlude.
8.50: FROM THE STUDIO: THE COUNTRY
8.45: Mails and Shipping Information.
8.30: "Libyan" by Fritz Hart's Australian
8.25: News from the "Daily Guardian.'
8.20: "The New Germany.
8.10: Tenor solos, Mr G. Mason.
8.0: Mr. William Green, tenor.
7.50: Memory Melodies.
7.55: What's on the air tonight?
7.45: Austradio Musical Reproduction
7.30: Hawaiian steel guitar selections.
7.5: Birthday calls.
7.0: Musical interlude.
6.45: THE GIRLS' RADIO CLUB, conducted by Miss Gwen Varley.
6.15: DINNER QUARTET.
6.0: Closing announcements.
5.10: Story Hour.
5.0: Closing announcements.
4.7: MELODY MEMORIES.
4.45: The Trade Hour—Demonstration Music.
4.4: "The Woman Who Laughed at Faery"
4.3: Latest news from Melbourne
4.24: RADIO RHYTHM.
4.17: GWEN ROBSON, Pianist—
4.7: MELODY MEMORIES.
4.5: CABLES' Copyright.
4.3: Latest news from Melbourne
4.2: News from the "Daily Guardian.'
4.15: "The New Germany.
4.10: THE 2FC INSTRUMENTAL TRIO.
4.0: ANNIE HUGHES Entertainer—
3.5: The Country Man's Market Session -
3.3: PHYLLIS BATEMAN. Violinist—
3.10: THE 2FC INSTRUMENTAL TRIO.
3.0: Children's Birthday Calls.
2.30: THE 2FC INSTRUMENTAL TRIO.
2.28: Stork Exchange. third call.
2.18: Symphony Orchestra. 8.50: Mr. Jack
2.1: News from the "Daily Guardian.'
2.0: Stock Exchange, second call.
1.30: A.B.C. Chimes and Announcements
1.20: ANNE HUGHES, Contralto—
1.0: Mr. William Green, tenor.
0.7: Symphonic Orchestra. 8.50: Mr. Jack
0.5: "Dreaming' (Schumann).
0.4: "Minuet a la Cour" (Niemann)
0.3: "Prelude No. 22" (Chopin).
0.2: Mr. Tom Harrison, bassoon.
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COLUMBIA Radio Batteries greatly improve the reception of all sets from the very finest to the smallest, least expensive ones. They are powerful, long lasting, economical.

Always insist upon Columbia. Obtainable at all first class dealers.

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ELLIS & COMPANY (Aust.) Ltd.
36-38 Bourke Street
Melbourne, Vict.
**WIRELESS WEEKLY**

**Friday, 23rd November, 1934**

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**3LO**

Australian Broadcasting Co., Ltd., 220 Russell St., Melbourne (Wavelength, 311 Metres).

**EARLY MORNING SESSION**

7.0 to 8.0 A.M. 
**MIDNIGHT SESSION**

10.0 to 12.0 A.M. 

**SPORTING AND EDUCATIONAL**

1.30: Description of Trial Handicap, vs. Upminster. Bendigo Race, by Eric Welch.

3.30: Description of Bendigo races, one mile, Bendigo Reas, by Eric Welch.

6.00: Description of Melbourne races, Bendigo Reas, by W. Harry Wiles.

**SPEAKER OF THE DAY**

9.15: Dr. John Charles Thomas, Tenor, Charles Wellman.

10.17: Dr. John Charles Thomas, Tenor, Charles Wellman.

11.15: Dr. John Charles Thomas, Tenor, Charles Wellman.

**GOVERNMENT'S VIEW**

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**SPORTING AND EDUCATIONAL**

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12.15: Description of Melbourne races, Bendigo Reas, by W. Harry Wiles.

**AMUSEMENT SESSION**

11.45: Musical Interlude.

9.15: Musical Interlude.

12.45: Musical Interlude.

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**3AR**

Australian Broadcasting Co., Ltd., 163 Russell St., Melbourne (Wavelength, 444 Metres).

**MORNING SESSION**

8.30 to 9.30 A.M.

**MIDNIGHT SESSION**

11.0 to 12.0 A.M.

**SPORTING AND EDUCATIONAL**

2.15: Band, Various Select Bands, 2.25. Baradine, John Moore, Conductor.


**AMUSEMENT SESSION**

9.45: Comic Recitation, Miss Hattie Knight.

11.45: Comic Recitation, Miss Hattie Knight.

12.45: Comic Recitation, Miss Hattie Knight.

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**6WF**

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 103 Metres).

**SPORTING AND EDUCATIONAL**


**AMUSEMENT SESSION**

12.45: Comic Recitation, Miss Hattie Knight.

2.45: Comic Recitation, Miss Hattie Knight.

4.45: Comic Recitation, Miss Hattie Knight.

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**The "TEFAG" Electromagnetic Super Cone Speaker**

The "TEFAG" Electromagnetic Super Cone Speaker will improve the reproduction from your set, reproducing that rich, mellow tone that everyone will enjoy. Brings the artist right into your home. Gives perfect reproduction on all Electric or Battery operated Sets.

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**Interstate Programmes, Thurs., Nov. 28**

**3LO**

Australian Broadcasting Co., Ltd., 1290 Russell St., Melbourne (Wavelength, 311 Metres).

**EARLY MORNING SESSION**

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4.45: Comic Recitation, Miss Hattie Knight.
The Fallacy of Electric Sets

Most people think it's a hopelessly expensive job to make a set all-electric.

WE WANT TO PROVE THAT THIS IS WRONG!

IF you have a Three-valve Battery Set
we'll Electrify it, completely eliminating
A, B, and C Batteries, for .... £6/15/
and guarantee the results.

IF you have a Four-valve Set, we'll Electrify
it for .... £7/15/
guaranteeing the results.

Or, BUILD the WALLACE A.B.C. PACK
YOURSELF.
A.B.C. Pack, 95/, plus
A.C. Valve and Socket, 30/, equals
Complete Job .... £6/5/
For Three-valve Sets.

Then there are the WALLACE B
ELIMINATOR KITS .... 59/6
for Sets up to three valves.
With DU10 Rectifying Valve .... 67/6
For four and Five Valve Sets.

A.B.C. Transformer (with windings, for
A.C. VALVES) ................. 32/6
600-volt Power Transformers, for UX280
Full-wave Rectifiers ............. 30/
Power Transformers, for 201A or DU10
Rectifiers, 300 volts ............. 25/
UX280 Rectifying Valves, Full-wave,
guaranteed. Will deliver over 200 volts to
set ................. 25/

100,000 ohm Variable Resistors, for
Detector or Radio Tap ............. 4/6
30 Henry, 100 Milliamp. Chokes 10/6
Voltage Dividers, for Eliminator Output
Tappings, 18,000 ohms ............. 5/6
4 Mfd. Hydra Condensers ........ 6/9
2 Mfd. ............................ 4/
500 Volt Test.

NOTE.—We will give 2/6 for discarded
bell transformers, upon the purchase of
any of our power transformers. Elimina-
tors using bell ringers have been con-
demned by the City Commissioners.

SAME DAY SERVICE
FOR
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“THE WIRELESS SHOP”
Miss F. V. Wallace, 6 Royal Arcade, Sydney,
THE OLDEST RADIO FIRM IN TOWN.
ESTABLISHED 8 YEARS. PHONE, MAMS.
Two doors from George Street, opp. Q.V. Markets.

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“WIRELESS WEEKLY” gives you the complete
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station in Australia a week in advance in addition
to topical news and articles and a technical con-
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issues), 6/- post free.
CAN A REALLY RELIABLE & MODERN “B” BATTERY ELIMINATOR BE BUILT FOR LESS THAN £3/3/0?

IF IT COULD WE WOULD HAVE IT

HOWEVER, ONE CAN BE BUILT CHEAPLY, AND WE NOW OFFER YOU THE GUARANTEED NEW IMPROVED ECONOMIC "B" ELIMINATOR KIT: £3-3-0

Specially Approved by the Electricity Department.

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
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<tr>
<td>It has a specially designed Power Transformer.</td>
<td>Complicated Earthing System.</td>
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<tr>
<td>It has a special Philips Rectifying Valve at 15&quot;.</td>
<td>Old-fashioned Bell Transformer.</td>
</tr>
<tr>
<td>It will deliver up to 180 volts.</td>
<td>Hum.</td>
</tr>
<tr>
<td>Voltage can be regulated to suit your Set.</td>
<td>Alterations to Set.</td>
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It costs 3/6 more, but it is definitely better. And isn’t it worth 3/6 to be assured of guaranteed satisfaction?

Economic Radio Stores
25 ROYAL ARCADE, SYDNEY

And at
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UNION STREET,
NEWCASTLE;
PARRAMATTA.

Please mail more details re your advt. 22/11/29.

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ADDRESS

announce
Two New Power Packs

By PILOT—World's Greatest Producer of Radio Parts!

Pilot leads in A.C. set development, and these two new Power Packs more than ever ensure the greatest sales for those sets which are Pilot built.

K.111E is a complete A.B.C. Power Pack for 171A Tubes (240-220-200 volts A.C.). The direct current output is thoroughly filtered, and will cause no noticeable hum in the loud speaker.

List Price, £9/10-.

K.112C is a complete A.B.C. Power Pack for 245 Tubes (220 and 240 volts A.C.). This model was specifically designed to supply filament and plate current for the popular 245 tube, and set builders will quickly notice the improved performance of this power pack.

List Price, £13/10-.

Harrington's
386 GEORGE STREET, SYDNEY.
Phone, Mason.
Wholesale Warehouse: 213 Clarence Street, Sydney.
BRANCHES ALL STATES AND NEW ZEALAND.
Checking Interference From Power Mains

J.B.R.—Strathfield, writes: "I have had a well-known 6-valve set installed in my house, with an indoor aerial, but find it very susceptible to static, as the expert tells me is most probably due to some local interference. If this static is due to local interference, why is it not noticeable on 2PC, while on 12A it is as bad, as 12A is of a different type, and would not pick up all stations very much worse? On 12A stations it is as bad.

Answer: The fact that the interference is absent when 2PC is being received, but very serious when Intermediate reception is attempted, proves that it is not the fault of the aerial, and probably is due to the set to 2PC. The signals from that station are so strong that you have to reduce the sensitivity of the receiver in order to get them at reasonable volume. With the receiver operating in this non-sensitive condition, the interference is not so visible, even if it is so very much weaker than the 2PC signals.

The other stations are farther away, and therefore the interference doesn't get noticed in order to receive them, the receiver has to be repitched in order to receive them. This increases the intensity of the set (by manipulating the volume control), and this may account for the difference in the intensity of the interference. The signals from other stations would appear to get stronger at the same time, as they are on the same wavelength as the interference, and when the set is made very sensitive, it is not so noticeable on the Intermediate stations it is in a condition to amplify everything, including the local

America almost all power companies have a group of radio men on their staff, whose only work is to deal with power leak interference with a directional receiver. The company discovers the source of the interference is readily located. Should the power lines of a number of companies take some action in the matter of cleaning up leaks and by-passing the faults in the street wiring.

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General: Mr. J. Scott, Loam Street, Dalby, Queensland, writes: I can supply almost any number of "Wireless Weekly" from December 1937 to date. Any reader requiring the following numbers is requested to write to the audance. Thanks. Mr. Scott.

General: Mr. C. O. Quinton, "Quimov", 16 Seix Avenue, Hurlstone Park, writes: I have the following copies of "Wireless Weekly" available: May 6, 7, 10, 11, 20, 21, 28, 29, 31. June 4, 5, 6, 7, 14, 15, 21, 22. July 6, 7, 13, 14, 20, 21, 27. Aug. 7, 8, 14, 15, 21, 22, 27, 28. Sept. 7, 8, 14, 15, 21, 22, 27, 28, 29, 30. Oct. 5, 6, 7, 14, 15, 21, 22. Nov. 5, 6, 7, 14, 15, 21, 22. Dec. 6, 7, 14, 15, 21, 22. Jan. 6, 7, 14, 15, 21, 22. Feb. 6, 7, 14, 15. (Thanks, Mr. Quinton.)

Answer: We welcome constructive criticisms. The sarcastic and destructive variety is merely acknowledged.

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Answer: Would you kindly favor this receiver, it is not good now. It is very sensitive outside, with a very loud volume, it is a good receiver, but find it very susceptible to static, which is due to local interference, why is it not noticeable on 2PC, while on 12A it is as bad, as 12A is of a different type, and would not pick up all stations very much worse? On 12A stations it is as bad.

Answer: An untuned i.f. coil is made to cover the whole of the broadcast band. The effect of this to broaden the tuning considerably. Usually such an amplifier is preceded by a highly sensitive input which would be most unsatisfactory for broadcast reception.

(4) The receiver will probably be better on short waves than long waves, for reasons explained above, and also since the filter is too high for the longer waves.

(5) Tuning will probably be broad above 250 metres and narrow below.

(6) A suitable metal cabinet can be obtained from the Primo or the Science House, and will have several uses. No trouble. We are pleased to assist.

"Oscillos Luck" (Queensland): My set is Niv, and the only way to reduce it would be to use an ordinary condenser and a battery operated amplifier. Would be pleased to receive particulars of such an apparatus. Your measurements are O.K.

J.E.M. (N.Q.): "The 1935 superhet" should like to know if a 4-ketone receiver can be used in the Science House receiving set to construct a superhet. You are the agent for the amplifier, sold from the "Science House".

General Request: inquiries for particulars of a superhet receiver battery operated sound and remote to J.E.R. above.

奎尤球询

如果你在无线节目中与收音机或其它电子设备有困难，可以用奎尤球询服务。“奎尤球询”是无线听众的“问答”栏目。你可以通过该栏目得到帮助，了解最新的无线信息和设备。如果你有无线设备的使用问题，或者需要了解新的无线技术和产品，都可以通过奎尤球询来咨询。奎尤球询服务的目的是为无线听众提供有用的信息，帮助他们更好地使用无线设备。奎尤球询的服务方式是通过无线听众之间的讨论和交流，来解决听众在使用无线设备过程中遇到的问题。奎尤球询服务的内容包括：无线设备的使用方法、无线设备的技术参数、无线设备的维护和保养、无线设备的选购和使用建议等。奎尤球询服务的形式是通过无线听众之间的互动来实现的。听众可以通过无线听众的问答或者发表自己的观点来获得帮助，也可以通过无线听众的问答来获取新的信息。奎尤球询服务的目的是为无线听众提供有用的信息，帮助他们更好地使用无线设备。奎尤球询服务的形式是通过无线听众之间的互动来实现的。听众可以通过无线听众的问答或者发表自己的观点来获得帮助，也可以通过无线听众的问答来获取新的信息。奎尤球询服务的目的是为无线听众提供有用的信息，帮助他们更好地使用无线设备。奎尤球询服务的形式是通过无线听众之间的互动来实现的。听众可以通过无线听众的问答或者发表自己的观点来获得帮助，也可以通过无线听众的问答来获取新的信息。奎尤球询服务的目的是为无线听众提供有用的信息，帮助他们更好地使用无线设备。奎尤球询服务的形式是通过无线听众之间的互动来实现的。听众可以通过无线听众的问答或者发表自己的观点来获得帮助，也可以通过无线听众的问答来获取新的信息。
No Aerial or other loose wires. Solves your Entertainment Problem

Valves totally 'Phones, B2261, B4594.

Demonstrations in Your Home Without Obligation

Colville-Moore Wireless Supplies Limited

Phones, B2261, B4594. 4 and 10 Rowe Street, Sydney
IF IT'S A.C.
THEN IT MUST BE RADIOTRON

BECAUSE Radiotron Valves are subjected to over 40 individual laboratory tests before they are released—because leading manufacturers of quality receivers specify Radiotrons for initial equipment and for replacements—and because of their world wide reputation for dependability, most owners of Electric Receivers choose Radiotron A.C. Valves.

Distortionless performance due to watchlike assembly, long life and economy resulting from sturdy construction are assured with Radiotrons.

RADIOTRON A.C. VALVES ARE OBTAINABLE AT ALL RADIO DEALERS.

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A GOOD LOUD SPEAKER

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