A New Laughing Competition

The Renown 3

Workshop Hints

By D. B. Knock
MAGNAVOX "Dynamic" SPEAKERS

First place in realism ... flawless re-creation ... is accorded Magnavox Dynamic Speaker by everyone who hears it. Magnavox made the first Radio Loud Speaker ... created and sponsored the wonderful Dynamic ... Magnavox Speakers are used as built-in equipment by makers of fine Sets in England and America. Let these dominant facts guide you.

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These thoroughly modern sets carry Harrington's usual twelve months' guarantee, and have only been marked at this throw-out price in order to make room for new models. Every accessory and the Amplion A.C. 2 Cone Speaker are included in the purchase price.

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LAUGH WITH THEM ON MARCH 28

C. R. HALL

CARLTON FAY

WALLY BAYNES

R. A. BARTLEMAN

JACK CANNOT

DOROTHY DEWAR

£2/2/- for Correct Guess

NOT a series of dental ads, but another Laughing Competition. Everybody enjoyed the last Laughing Competition, and over a thousand people voted. Join in the hilarity again on March 28, when these people will be heard from 2FC. They will compete to see who, in the opinion of listeners, laughs best. Each will tell a short anecdote, and then laugh, and at the conclusion of the competition, listeners will be asked to vote for the artist who, in their opinion, laughed best.

All you have to do is fill in the attached coupon, number the squares opposite the names in the order which you believe the voting will take. The largest number of first votes for each artist will decide the winner, and £2 2s will be awarded the entry in which the order of popularity is correct or most nearly correct. In the event of there being more than one correct guess, the winner will be drawn for.

Fill in the coupon, including your name and address, and forward to "Wireless Weekly," 51 Castlereagh Street, Sydney, endorsed "Laughing Competition." The Editor's decision will be final.

All photographs on this page by courtesy of HOWARD HARRIS STUDIOS, King Street.
Tradition

**Mr. Eric Bessemer**, who announces frequently for 2BL and 2FC (we forget when; but you will have heard his delightful voice), was faintly excited when a horse drew up at the front entrance of the hotel, and the name of Bessemer rang third at Flemington in Victoria. "Although," said Mr. Bessemer, "I am not superstitious by nature, I went into this question very carefully, to make perfectly certain that it might or might not be an omen for the future. However, I have decided that this unfortunate animal did not come up to the name, and as it is the peculiarity habit among Bessemers to come first on all occasions," We sympathise with Mr. Bessemer as he grieves over this blot on the family escutcheon.

Paint

"I TIS NOT OFTEN THE FPC "Hello Man" is worked a general soul; he accepts the world in a spirit of good fellowship, which many would do well to emulate. But the contretemps which arose last week disturbed even his habitual calm. Nobody likes to receive a telegram when there can be no possible reason for it; and as he was conducting his session at the time he could not stop to ascertain the message behind the ominous flaring "URGENT" which stared at him from the table. All manner of weird possibilities—and wondrous improbabilities—chased through his mind while he strove desperately to concentrate on the job in hand. At last he was free, and trembling fingers undid the envelope. The home folk, what was the matter. It could not be.

"YOU’LL WANT TWO COATS OF OIL PAINT, OIL PAINT, AND OIL PAINT." One of his friends had received by telephone for him to play Schubert's 'Ave Maria.' He was highly delighted, and promised to include it in his programme from the Lyceum Hall on Good Friday Night.

Conshihro

Mr. Ewart Chapple placed a neat brown paper parcel on a seat in the waiting-room hall at 2PC, and remained very uncommunicative as to its contents. An hour later he went down in the lift for a M勇 Mummy. One minute later the lift door clicked open again, and the voice of Mr. Ewart Chapple issued forth, singing in the manner of opera "Mai Lau-sun-dreë!"

Mr. Ewart Chapple followed, looked about anxiously, and suddenly dived for the brown paper parcel. continued the evolution into the lift, which descended immediately.

Precisely!

The latest way of getting over the awful fact of a gramophone record is to say, after the name of the composition, "Recorded on a Gramophone."" It is quite unlike Mr. Peddle, whose features are a modest blending of the beauties of Adonis and Apollo, and who, therefore, does not think a beard or any other disguise necessary during the hot seasons. But it turned out to be quite another Mr. James Peddle, and our Mr. Peddle is hoping that his friends may soon forget all about it.

Music

Mr. Scott Alexander was at 2FC the other night, putting over one of his inimitable sketches. He wore a frock coat, striped trousers, and a marvellous crown. We asked him if he wore this unusual garb to get the atmosphere and feeling of his production, and were rewarded with an icy stare. We had been foolish enough not to know that Mr. Scott Alexander was dressed for the part of manager in "New Broons," in which he is playing at the Palace. And as we were talking to Mr. Alexander the swing doors of the studio parted, and Mr. John Donne came out, dressing in the uniform of the Captain of "Hit the Deck." It was quite a theatrical evening for 2FC.

In Costume

The ballet music of "Sylvia" was being played "Whenever I hear that music, I feel just like a dancing frog!" and he danced a few stale steps in the passageway to illustrate his sense of the idiocy of it. "Who the devil's making all that noise?" demanded the stern voice from the control room.

A Japanese Fan

Two FC had a letter from a Japanese fan this week, whose location sounds uncommonly like a bad burst of static. "Orientalism," adds "Tokyo, Japan," and we really think it necessary. "I am one of the musical gentlemen," he writes, "and I have heard some musical comedy from a hall on wave length of 442 metres on February 8. There were two musical residences, who believe that the programme received was carried out by your station. and I shall feel obliged if you would confirm my report of reception." The New South Wales Broadcasting had much pleasure in including Mr. Masakane Kohno who logged 2FC transmitting from the Capitol Theatre. Ted Henke's "Musical Comedy" in a Capitol show.

Know Ye by These Presents

AUNT WILLA and Cousin Marjorie of 3BL, who were presented with a crepe-paper doll face-piece, and when we said that they ought to be old enough to know better than play with dolls we were told indignantly that these dolls were for the dressing table, and that they were very beautiful (which we had not attempted to deny, and that we ought to mind our own business, anyway.

So we have done so ever since—that is, until we saw Mr. Jack Barnett edging into the lift with an armful of flowers. He said they had been presented to him. We said, "By whom?" Mr. Barnett said, "To put on your grave. If you aren't careful." So we have been very careful—that is, until we wrote this paragraph.
The MOVIES EXPERIMENT WITH SOUND

With the appearance of the "mors-soundie" the motion picture studio has been changed into a sound-proof studio similar to the radio studio. The movies' experiments with sound are intermingled and are interestingly recorded in the article below.

In the working of the motion picture we have to-day a craft which is truly synthetic. The illusion of reality in the minds of the audience reaches a degree of perfection which is only produced by reproducing life even more faithfully than it is by the subtle art of exaggeration and restraint.

The addition of sound to the other necessary attributes has made movie production such a complex matter that the joint labors of a multitude of men are required. To those who have built up the art of presentation based on pantomime it has become a machine, according to David Lasser in the "New York Times."

There are three kinds of sound pictures. One is the regular feature movie, of which all or part of the dialogue is "talkie." Then there is the "short"--a song, instrumental number, or dialogue, serious or funny, lasting for a few minutes. The third is merely the reproduction of a musical score with the silent film, or the addition of some sound effect.

SOUND EFFECTS

The most conservative producers, because of the complexity of the "talkie" are in general still making the movie feature all silent. When the silent film is finished its sound possibilities are studied, and in consultation with the sound director certain scenes may be scheduled for talking or sound effects. The sounds may be only the bark of a dog, a scream in the night, a pistol shot or a rushing train.

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The changing of scenes in itself changes often the acoustic quality of the recording, and may result in a scene being thrown out of harmony with the others. Then the technicians must figure out anew mathematical constants of the acoustic qualities of the set. The result may be that the substitution of a lounge in the set instead of a table will restore its acoustic harmony.

SEX IN ACOUSTICS

These mathematical studies have resulted in certain cases in the discovery that the corners of certain sets are adaptable to the actors of one sex only. There are corners that, because of their acoustics, must be reserved for the male sex and others into which the female must not intrude her voice. To allow a female voice in a male corner would necessitate the rearranging of the furniture, the removal of a carpet, or the hanging of a picture on the wall, or, in some cases, complete reconstruction.

No wonder then that the directors of the school of pantomime are losing slowly under the ever-accumulating complexities of this most strange art.

The action on the stage is observed by a man in a room next door. This man, who is called the monitor, is one of the new powers that sound pictures have brought into being. He occupies all alone a great chamber that in one studio measures precisely 57 feet long by 44 feet wide and 35 feet high. It is the necessity of this lonely individual occupying a room large enough to hold a hundred men that brings forcefully to mind the delicacy of the sound problems in this synthetic art.

THE MONITOR

The monitor's room is shut off from the outside by double walls, so that no undesirable sounds penetrate to it. Looking down on to the stage through three thicknesses of glass, the monitor watches the action, and by a loud speaker connected directly to the stage he hears all the sounds that go to the recording device. In front of him is a large instrument with a set of dials. Each dial is the control for the volume of sound that is to be transmitted to the recorder for each microphone on the stage. Like a cook, therefore, the monitor can mix the sounds on this mixer panel so as to produce the sauce that he thinks most appropriate.

He may, at his judgment, if an orchestra is playing, tone down the volume coming from the microphones over the enthusiastic violinists and at the same time increase the volume from the tired or indifferent brass players. If a number of actors are on the set he can increase or reduce the volume of each one's voice. He can change an assailed maiden's shriek to a squeak, or raise the
The weary villain’s whispered threats to a terrify the hero. He can vary the volume of the base’s profound intonations and increase or decrease the thunder of the crescendo, according to his orchestra is endeavoring to draw from his orchestra.

It is the monitor, too, which often sends by telephone. It is the director’s effort to hear his action as he hears some unintended sound coming from the stage. He may remind the elaborately dressed actress that her dresses sounds like a hailstorm, or that the hand-dressed actress that the rustle of her dresses hears some untoward sound coming from the stage telephones to a man it an ordered to get his apparatus ready. This, too, for the amplifying room, where the sounds are to transmit them to the sound-records that the materials the engineers are gunning for.

We make the room soundproof easily. The concrete building and double walls do that. But to kill echoes and vibrations is the problem that is keeping the sound experts. These new buildings in movieland, awakes night. Science, however, has been solving the problem after the manner it solved similar problems for the broadcasting studios. By composing the inner wall of a number of different materials selected for their sound-absorbing qualities, they have been able to kill 50 per cent. of the sound waves in nineteenth of a second. One of the materials used from the wall is the specially prepared felt. The other elastic 50 per cent. of your sounds is what the engineers are tuning for. Even the sound-reflecting walls are made of special preparations. Furthermore, the stage floor is not connected with the walls, and is itself built of a number of layers of various materials. The top layer may be cork, or even a heavy carpet which will deaden footsteps.

On the stage are two camera booths, both enclosed in sound-proof compartments and wheeled on to the stage on rubber wheels. One compartment has two cameras for long shots and for close-ups, and the other holds a single camera for angle shots. Above the stage, suspended from wires, are a number of microphones which catch the sounds from various parts of the stage and transmit them to the sound-recording devices. The usual stage paraphernalia or other holds a single camera for angle shots. In some of the more advanced studios special microphones labeled “M” are used exclusively for transmitting the male voices and others labeled “F” to record the delicate shades contained in women’s voices.

Then there are the heartbreaking efforts to control the room. In one room the audience is listening to the record by itself (as in the sound track method). A test record of the scene is made on the disc. This is to permit the record to be played back immediately after the scene is over, so that the actual sound effects may be known. The record is made of wax, its surface being ground at the studio to a mirrorlike polish.

By the flashing of signal lights on the stage, the various parts of the organism have signified that they are ready. Then, at a final signal from the director, the actors begin their scene, the cameraman starts his reel, the electricians switch on the power, the recorder starts revolving the disc, and like the starting of a ponderous machine the movie organism begins to function.

From the time the scene starts until it is stopped, for one reason or another, not a word is spoken except by the actors. The directors have by necessity developed a new sign language. With the waving of arms, with imploring, threatening, applauding gestures all their own they ask the actors for more or less force or emotion. The directors are acquiring the technic of an orchestra conductor. Or, to put it another way, while our well-known actors of pantomime are finding their voices and adding sound to their repertoire, the directors are losing their voices and acquiring pantomime.

STARTS AND STOPS

Several times the scene is stopped by the sound experts just as by the directors. Then everything — actors, cameras, and sound discs — stops at once. Then the directors or the cameramen can express their opinion of the things—actors, helicopters, they ask the actors for more or less force or emotion. The directors are acquiring the technic of an orchestra conductor. Or, to put it another way, while our well-known actors of pantomime are finding their voices and adding sound to their repertoire, the directors are losing their voices and acquiring pantomime.

The “PLAY BACK.”

When the scene is finished then comes the “play back.” The record which has just been made is played back on the stage and the effects rendered may be observed by all and criticized. Here the blue note of the musician, the fiasco, the singing of a new song, the right voice and every one knows his part. Then and then only is the recording made, either on the disc or on the film.

A number of miniature theatres designed to reproduce the acoustics of a modern theatre are also a part of the sound estudios. If the final picture will be run off after the film and records have been developed, and a final criticism and editing may be accomplished under theatre conditions. It is in these theatres that the greatest ingenuity has been used to devise means to overcome difficulties. For as the sounds register in the boy theatres they will sound when they are presented to the public which pays the bills.

For example, it has been found that the presence of an audience in a theatre will in itself change the acoustic or sound transmitting properties of the room. Each human being has a sound reflecting and absorbing property. Matemathical constants have therefore been devised for each object in the theatre, and the total sound property of the entire theatre is painstakingly worked out from these constants.

Even the supply of electricity must be of a special brand. The general city supply, it is understood, has in it some static which unites it to operate directly the sound machinery. Therefore, the city system is used to charge storage batteries which in turn, having drained the supply out of the electricity, will supply the necessary power.

DISTORTION

Another room of the studio will probably be a well-guarded library of what might be termed “equivalent acoustics.” These will be devices which give sounds which when recorded sound like some other object whose sounds are desired. For it has been found that the same sound when reproduced do not transmit the reality, but are distorted. A barking dog or a singing song will not reproduce as such. Therefore some curious instruments have been devised from tin cans, pieces of string, bottles, and wooden boxes to reproduce more faithfully than nature a sound effect.

The synthetic sound producer in some cases works within a film is being thrown on the screen, and his effects are simultaneously recorded on a gramophone disc.

(Continued on Page 26.)
There must be a large number of readers who wonder what "VK2NO" means, and what the owner of this crystal set has done in his spare time, such as it is, in between keeping readers supplied with technical material, etc.

The photograph accompanying this description shows exactly half of experimental station VK2NO-VK2AW, not being complete, possible to show the whole of the station at once, owing to its subdivision. In December, 1926, my own station, 2N-J, was combined with that of Mr. A. W. Dye, 2AW, at Maris-road, Centennial Park, Sydney, the idea being to provide a reliable short-wave transmitting station, with two operators, mainly owing to his unusual equipment. In the new receiver, which will eventually be described to "Wireless Weekly" readers as the "Air King," which has been altered to use the Pilot "Wasp" coil kit. With the a tuning range from 17 to 300 metres is claimed. A new receiver, which will eventually be described to "Wireless Weekly" readers as the "Air King," is used for construction, and, when complete, will be of the most interesting and valuable features of the station. This will save a resistance coupling to the aerial for an untuned stage of screen-grid RF amplification, followed by a tuned screen-grid stage before the detector. After this will be one transformer coupled audio, followed by another push-pull audio stage, thus giving a six valve short-wave receiver in all. Needless to say, headphones will not be used, the output being taken to a power operated dynamic speaker. The performance of this receiver is expected to far excel the All-Empire for full load-switch operation of all short-wave stations.

This constitutes the major portion of the station, as it will be in action in the near future, but at the present time the two operators derive their pleasure from the 20-metre band for international contacts, with the self-excited 1929 transmitter previously mentioned.

The aerial used for this work is a half-wave current fed "Hertz" or dipoiet. The input to the transmitter never exceeds 100 watts, and reports from Oceana, including Honolulu and the Philippines, are always rock steady. Signal strength from England is consistently R5, in the old strength code, this being a good working average, according to weather conditions. Although this transmitter will eventually become the standby, it will always be known as the "old reliable," and simply justifies the scrupulous attention to rapid maintenance and layout, recently explained by Mr. Ross Hunt, in "QST."
Mr. Colin Crane

One of the most popular vocalists over the air from 3LO is Colin Crane, who, in addition to his performance in the successful musical play, "The Desert Song," still finds time to delight thousands of listeners with "special request" numbers.

Many readers will remember him as a church boy some few years ago, and, when his voice was properly "act" he was recommended to adopt the concert stage and placed himself under the guidance of one of the best singing masters in Sydney, and studied for seven years—working (as he says) harder than he thought possible for any young vocalist to work. He was then engaged for a season of the "Glee Club," which he joined that strenuous and best school of all—"concert party work"—where art and versatility are taxed to the uttermost. Mr. Crane gained much experience in stage technique when he was engaged as a principal baritone to Sir Harry Lauder, and mastered many points of character acting. "I could not have had a better teacher," he says, "for in the opinion of well-known critics Sir Harry Lauder is one of the finest 'character song' artists we have with us to-day. This is especially noticed in his song, 'The Softest of the Family,' for the detail introduced is marvellous and the artistry of the vocalist, which compels tears to struggle for supremacy over laughter, is a master touch."

Mr. Colin Crane.

Mr. C. R. Hall

Mr. C. R. Hall, whose photograph appears among the stunning hero on our front page, was born in Sydney. He was educated at the Cleveland Street School, in common with his famous contemporary, Major C. W. C. Marr. In his youth he was fond of drawing; although there are no specimens of his work in the Art Gallery, a lack of judgment on the part of the trustees, for which we can only account by the fact that Mr. Hall has neither kept any of his drawings nor shown them to the trustees of the New South Wales Art Gallery.

Following his usual custom of associating with none but the great men, Mr. Hall began hard work while he was yet exceptionally young, in the company of Mr. W. M. Hughes, Mr. Hoiman, Mr. J. A. Browne, and Mr. D. R. Hall (the relation) in an old building at the corner of Elizabeth and King Streets. At that time Mr. Hughes was the secretary of the Waterside Workers' Union and life was worth living.

Mr. Hall then spent a few years as an accountant, and a couple more in the operating-room of the O.P.O. Possibly he did many other things. When he entered the Church as a minister in Victoria, but resigned in 1915 to join the A.I.F. as a private in a wireless squadron. His present position as O.P.O. & O.P.O. experience stood him in good stead.

His squadron was sent to Suez by mistake. They were a short while there, and then went to Bombay, and so up the Gult to Mesopotamia and Persia, Wireless, it appears, was the only satisfactory means of communication in the desert on operations; position his O.P.O. experience stood him in good stead.

His squadron kept part of the squadron busy after the signing of the Armistice; and it was not until 1920 that Mr. Hall was demobilised. With 52 other Australians who stayed behind, he received the Kuwaiti Medal, which is, therefore, rather rare in Australia.

For six years after demobilisation he was interested in the financial side of the real estate business, whatever that is; and in 1926 he joined the staff of the Chamber of Manufacturers of New South Wales as an industrial officer.

He gives—Information and Advice to and Pledges in the Federal and State Arbitration Courts for members of the Chamber of Manufacturers of New South Wales. He is also secretary of several associations within the Chamber of Manufacturers, and his graphs of imports and exports, colours, which hang on the walls here and there are marvels of beautiful coloring, and should be most interesting and useful if they are as correct as they look.

Mr. Hall's broadcasting habits began last year with his series of talks on Trak and Persia. He afterwards won the announcing competition in the Radio Entidolod, since when his voice has been heard more and more frequently from both studios. He is ideal who described the "Star" going to press, and the underground railway excavations.

On alternate Sunday afternoons he announces from 3PC. He likes broadcasting immensely, and attributes any special charms of voice and manner to the tuition of Mr. Howlett Rosen, under whom he spent two years in Victoria. He used to spend a half-hour every morning at breathing exercises and vowel pronunciation.

P.S.—Mr. Lewis, who listened and gave valuable suggestions while Mr. Hall told us some of these things, wishes us specially to mention that Mr. Hall is married. Mr. Lewis is Mr. Hall's senior advocate, and treasures associated with the initials W.M.H., which he earned when he belonged to the Waterside Union, and when Mr. Hughes was its secretary. We don't need to specially mention the fact that Mr. Hall is married, but that we do so is a tribute to the excellent advocacy of Mr. Lewis.
MORE HINTS FROM THE WIRELESS WORKSHOP

Explaining How Apparently Disadvantageous Body Capacity May Be Used to Advantage.

(By Don B. Knock, Associate Technical Editor.)

Once the beginner in this fascinating study of wireless communication makes enough progress to understand a little about the subject he is dealing with, he wants to know more and more, and his enthusiasm makes the work-bench the most interesting place in the world.

It is in the workshop, or laboratory, that new ideas are formed and old ones improved upon with the final evolution of the practical application, which may be a success or a failure. There is so much that we do not know about wireless science, even in these days of international broadcasting, that a failure to attain one's objective only adds fuel to the fire and a determination to find out just where the cog is missing in the machinery.

When I think of some of my own early failures they seem strikingly ridiculous at times. They were mostly brought about by a feverish haste to get the work finished and the apparatus working, as it should according to theory, and I know quite well that there must be countless home constructors who are making these self-same errors and who would welcome with open arms some well-timed advice.

Normally, there is actually no reason why a mistake should be made in wiring up a receiver when a back-of-panel wiring diagram is shown, but it often happens that the builder will be in such a hurry as to confuse himself about details which may not look very important, but which are the very heart of the circuit. In any case, I consider personally that a grave mistake was made from the first by technical wireless journals the world over by introducing the point-to-point wiring diagram.

The theoretical circuit diagram is never confusing; it shows plainly the function of each item, and leaves nothing to the imagination, but the point-to-point diagram may show the same theoretical circuit in dozens of different ways, for the reason that there are many different kinds of variable condensers, transformers, valve sockets, coil-tits, etc., which when connected up may all produce the same result.

The symbols used in illustrating a circuit diagram theoretically are really very simple.

It is very disappointing to the man who has a newly-constructed receiver, in connecting up the correct batteries, aerial, and earth, etc., to find that the promised results of range and volume do not materialise. A wrong connection can be very easily made owing to a misunderstanding, and where the constructor's knowledge of wireless and its components is limited he may be forgiven. There is no excuse for the man who has made himself a good technician in the building of sets, but has not troubled to learn something about the theory of the apparatus he is handling.

I recently met with an interesting case where a receiver had been built up according to diagrams and was very neatly wired, showing that the builder meant to get the best from his efforts, but the signal strength, no matter what was tried in the way of detector valve changes, etc., was very weak.

A quick test eliminated the audio amplifier from blame, and, as it was a three-valve Reimartz, the only possible source of the fault lay with the detector. The usual 0.0025 grid condenser and two megohm grid leak with a separate clip mounting had been used, but a mistake had been made in the wiring, which a beginner could make and fail to notice without careful checking.

It had been intended in the circuit that the grid leak should be connected from the grid of the detector valve to the A positive, instead of the more common method across the grid condenser. The two were connected together correctly on the grid side, but in connecting up the other leads from the leak and condenser they had been mistaken, with the result that the other side of the grid condenser was returned to the A positive instead of the leak, and the leak placed in series with the grid end of the coil and the variable condenser stator plates.

The diagram shows exactly what is meant by this—(A) showing the incorrect method, and (B) the correct. An elementary knowledge of the operation of the detector valve will at once explain the effect. The introduction of such a high impedance as two megohms in series with the grid of the detector valve, compared to the low impedance of the grid condenser, prevented the detector from rectifying at anything like its normal efficiency.

It was only necessary to reverse these connections and the set immediately came to life with the usual excellent performance of the Reimartz circuit. Only a little detail, but quite sufficient to "throw a big spanner in the machinery" and ruin the performance of the set.
The following discussion of certain effects noticed by the user of the average set using a regenerative detector and one or two audio stages is prompted by one of my most common queries. Often will a reader write and say that when he places his fingers on certain parts of his receiver there is a considerable increase in signal strength. How often have you built a set and had this happen to you?

Not only does this effect puzzle many constructors, but it is apt to be very exasperating for the reason that it often seems impossible to overcome the trouble. Nothing is impossible, however, particularly in wireless matters, and if the trouble lies at "your finger tips," the best thing is to look for it there. The human body may be looked upon as a fairly high resistance or a fixed condenser, for it often acts as both.

For a rough guide we will consider the capacity to be in the region of 0.01 micro-farads. Supposing that when you touch the aerial terminal of your receiver with your finger the local station seems to come up considerably in volume, this is nothing more or less than a tuning effect. By doing this you are really connecting a fixed condenser across the aerial and earth terminals of the receiver, owing to the capacity to earth of the body, and it should be obvious that careful tuning of your receiver will produce exactly the same effect.

A receiver which has been carefully designed, with the rotor plates of the tuning condenser grounded, and with a metal panel, this effect will not be in evidence, for the reason that the tuning may be correctly done in the first place, and without any body capacity to earth. The effect of placing the finger on a correctly-tuned receiver will be to reduce the signal strength instead of increasing it. In this case, of course I am referring to the ordinary detector and audio type of receiver, but there is an exception to this when a very sensitive circuit, such as in the Marrock Five, with two stages of screen grid R.F. are used.

The human body can collect energy in the same way as an ordinary aerial, and if the finger is placed on the aerial terminal of such a receiver the effect is at once a tremendous increase in strength and a broadening of the tuning. Figure 1 shows the effect of the body capacity in an ordinary regenerative detector.

Even with a crystal set we can prove the same occurrence. If you disconnect the lead joining the telephone to the earth, no signals will be heard, for the reason that the detector circuit will be broken. Although the audibility of the signals is often too low for the human ear, yet they are still there, and you would be able to hear them if an audio amplifier were connected after the crystal set. The human body is really making up the connection as a fixed condenser between the telephones and the earth by reason of capacity to the head.

Often the user of a set will notice that quite a large increase in signal strength will occur when the aerial or earth terminal of the set is touched with one hand and one side of the phones with the other. The explanation of this is quite natural, but it is advisable not to try this with anything else than a set using 90 volts B battery at the most, or you may receive a shock. By doing this the body is placed right across the B supply, and if this is fairly low the effect is a regenerative one, and brings the set up to a more sensitive state. This may be counteracted again in the set itself, as it is only necessary to readjust the reaction control slightly to bring the circuit to the same condition. Figure 3 shows the condenser effect of the body in this instance. In figure 4 is illustrated how the body may act as a resistance, also producing "feedback" and an increase in signal strength.

The reader of this little dissertation may wonder why I am going to the trouble of explaining what may appear to be unnecessary phenomena, but now I will point out how useful these capacity and resistance properties of our earthly structure can be in audio work. Let us assume that you have just finished completion of a neat little two-valve set of quite a straightforward nature. The circuit is of the "sure fire" kind, with a regenerative detector provided with a morible reaction coil, and followed by a transformer coupled stage of audio amplification. Everything has been scrupulously followed in the description of how to make the set, and yet it will not work properly. That is to say, it will work on the nearest local station, but it positively refuses to oscillate at all, thus reducing its range and selectivity.

Suddenly you touch one of the primary terminals of the audio transformer with the finger, and there is a considerable improvement in strength. By keeping the finger there and rotating the reaction coil the set oscillates merrily. What does it prove? You need a fixed condenser across the primary of that transformer, or if there is already one there the value of it needs to be increased. If the quality of the reproduction improves when the primary or secondary terminals of the transformer are bridged by two fingers it shows that a fixed resistance in place of the fingers would be beneficial.

Just because I have pointed out the use of the human body in simple little ways such as this in connection with wireless receivers, I do not expect readers to hold me responsible.
A METHOD OF MODERNISING A ONCE FAMILIAR SET

HAM NOTES

THINGS are beginning to boom on the 28,000 KC (10 metre) band in "hamland."
Managing to hook up with my old friend, Lieut. Rodman, VT2KT, in India, we had a long yarn away together on the 20-metre band, during which he gave me some very interesting information. He has just returned from his leave in England, and since then has worked 4 Australians, 7 Englishmen, 1 Belgian, and 1 Finlander—all on 10 metres, with only 9 watts input! N.T.B. for the previously-despised frequency which the commercial people stung at the "ham" (I wonder how long for).

Even while I am writing, the tests are on until March 24, and as soon as this news from VT2KT gets around there will be a feverish CQ party on 10 once again. It seems that, after all, the 10-metre band will stand a chance of bearing fruit in the future, judging by recent results on its half lower frequency.

Through the courtesy of VK3CX I have discovered where VRIAB is located. He turned out to be old 8C-IAH, at Chinquapina, in Chile—one long known to Aust "hams."

The new prefixes are as yet apt to be very confusing, and, unless the contact is really good, and one is able to get the full "dope" on the QRA, it frequently happens that one or both sides of the QSO are left in the air without any idea as to whom was at the other end, and where!

--- his modernised circuit.---

For grid biasing. Distortion is, therefore, bound to occur in the audio amplifier. As the B supply to the plates of all the valves is common, the voltage cannot be too high.

It is, therefore, bound to occur in the audio amplifier. As the B supply to the plates of all the valves is common, the voltage cannot be too high. And the fact of it being low does not allow the valves V3 and V4 to deal with the grid voltage properly.

The first thing to do, then, is to deal with the audio amplifiers, and provide for grid biasing. Arrange some additional terminals on the baseboard for B positive 2, C positive, C negative 1, and C negative 2. The positive output terminal is then disconnected from B positive 1, and connected to B positive 2. Probably the second transformer in the set is of an unsuitable radio, and should be replaced by a more modern high-grade transformer, with a ratio of 4 to 1. A choke coupling takes the place of the old transformer in the first stage.

Instead of stabilising the R.F. valve by the potentiometer as before, a centre-tapped coil is substituted for the original L1, with the tapping connected to earth. Between the bottom of the coil and the plate of the R.F. valve is connected a neutralising condenser to look after the internal capacities of the valve itself.

The grid return for the detector circuit is taken from a centre tapping on the coil L4 to the potentiometer, and instead of using a variable rheostat for each valve an automatic resistor is substituted. A comparison of the two circuits will show the essential changes, which are well worth while, and which will make your "old-timer" a really modern receiver, which will make you wonder how on earth you were content to carry on with such an old-fashioned arrangement.

Placing fingers across transformer primary, thus producing oscillation, indicates that a bridging capacity is needed here.
WIRELESS WEEKLY

Friday, 22nd March, 1929.

TALKING BETWEEN CONTINENTS

How the America-Europe telephone service operates. Possibility of England-Australia service.

(Re Our Melbourne Correspondent)

P EOPLE interested in radio matters and general readers also have noticed in the press frequent references lately to long-distance telephony. It is now no "stunt" to talk by wireless telephone across thousands of miles separating far distant countries; and truly the marvels of radio are making the world smaller.

The telephone service across the Atlantic from America to Europe is a well-established commercial service. Any telephone subscriber in the United States or Canada can "book a call" for almost any place in Europe. The ordinary land lines are, of course, used in the "call" for almost any place in Europe.

The transmitting stations are situated in England (at Rugby) and the United States (Long Island, near New York), and the receiving stations are situated some miles distant from the transmitters.

Actually there are two distinct channels of communication by radio—one by long waves and another auxiliary circuit worked on short waves. The long-wave circuit with its huge power of about 300 kilowatts is the normal circuit and when the short-wave circuit is introduced the persons conversing are not aware of the difference.

This service was not inaugurated without a long series of tests and experiments extending over several years. A lot had to be learned about transmission and reception—overcoming fading and atmospheres, etc.—and necessarily the tests covered many months in order to cover the effects of seasonal changes. Having regard to those long periods of observation, it will not be expected that any Australian international service will be established at an early date. The process of trial and experiment must be gone through and long periods of patient observation and research completed before anything approaching satisfactory commercial service can be attempted.

There have been several satisfactory experimental transmissions already. For many months 3LO Melbourne conducted a session of world broadcasting on short wavelengths. Those transmissions were in the nature of test transmissions for reception in distant countries, and the successful receptions in places distant thousands of miles from Melbourne were surprising. Hundreds of reports were regularly received from Europe, Asia, America, and Africa.

More systematic telephony trials have recently been carried out by Amaigamated Wireless between Sydney and New York and Java. The results were quite satisfactory, although it was at no time claimed that anything approaching a commercial service could be guaranteed. That will come only by degrees, and these tests now to be arranged with England will be an encouraging start in the preliminary work of establishing regular telephone service between Australia and the heart of the Empire.

3LO SPORTING NOTES

Great Eastern Steeplechase

ARRANGEMENTS have been made by 3LO, Melbourne, to have a description of the Great Eastern Steeplechase relayed from Adelaide on Easter Monday, April 1. The Great Eastern Steeplechase is the richest steeplechase run in Australia during the year, and this year it has attracted an entry from New Zealand, as well as the best jumping horses in Victoria. The race is run on the famous Onkaparinga Racecourse at Oakbank, and is usually a race of great excitement from start to finish.

Cricket Finals

On Easter Monday we shall present the penultimate cricket competitions in Victoria rapidly drawing to a close. The semi-final, which commences on Saturday, March 30, will be concluded on Monday, April 1, and the two teams which will contest the final will meet on Tuesday, April 2. The game will then be drawn-out and played on Saturday, April 6. On each of the days that the semi-finals and finals are being played Rod McGreggor will broadcast full descriptions of the play through 3LO, Melbourne. The broadcasts on Monday, April 1, will be interspersed with descriptions of the races at Williamstown, Randwick, and Oakbank, South Australia.

Sandown Park Races

(1) On Sunday, April 7, the races will be held at Sandown Park, and 3LO, Melbourne, will broadcast descriptions by Eric Welch of all the races there. In addition, acceptances for the meeting, which will be declared on Thursday, April 4, will be broadcast from 3LO during the afternoon news session. Eric Welch will speak of the form of the horses on Friday night, April 5, and he will broadcast his final selections on the morning of the races at about a quarter-past eleven.

Muriel Starr Produces Radio Plays

(2) Of the most important engagements during the broadcasting year is that of the popular dramatic actress, Miss Muriel Starr, who has been engaged to appear in six Radio plays and will be heard from 3AR on March 26 in "A Christmas Present."

Sacred Music

The production selected by Mr. Mansley Green for the Tuesday evening before Easter is the successful passion cantata, "The Darken Hour," by Harold Moore, which depicts the trial of Christ before Pilate and the Crucifixion. The musical accompaniment for the series will be the Biblical scene by Dr. Herbert Brewer.

Mr. Mansley Greer will also act as organist, and his playing of the famous organ at Scots Church will be a special feature of the productions. Broadcasting from Scots Church is always a success on account of its acoustic properties, which are very suitable for microphone transmission of big choral and organ productions such as these, and a delightful feature of broadcasting from there is the intermingling with the music of the inspiring beauty of holiness and atmosphere of sanctity of Scots Church.
EASTER WEEK PROGRAMMES

Melbourne Relays

A series of relays has been arranged throughout April by the New South Wales Broadcasting Company, whereby listeners with facial sets will be afforded an opportunity they otherwise would not have of hearing the Melbourne stations. On Thursday, April 4, 2BF will relay 3AR between 9:00 and 10:00 p.m. On the following Thursday, April 11, 3LO will be relayed by 2FC between 9:30 and 11:30 p.m. This is 3LO’s dance night; and here is a chance of arranging house radio dances to the strains of the famous “Radio Revellers.” An hour’s dance music will be taken by 2BF from 3LO on the following Thursday April 18, and the final relay for the month will be from 3AR through 2FC between 9:00 and 10:00 on the evening of Friday, April 25.

League of Nations Council

In connection with the meeting of the Council of the League of Nations at Geneva in May, arrangements have been to broadcast the proceedings. The New South Wales Broadcasting Company, which is anxious to arrange transmissions from this historic conference, have advised that preliminary tests will be carried out by Station FCLH, Holland. These tests will be given on March 14, 21 and 28, at 2:00-2:30 p.m., London time, or 11 midnight to 1:30 a.m., Sydney time. The power to be used is 25 kilowatts on a frequency of 18,966 and a wave length of 16.666 and a wave length of 18,430 meters. The station is associated with 2BF and 2FC, and will listen to these tests, and if the reception is satisfactory portion of these programmes will be placed on the air.

Interpretations

A unique competition has been arranged for 3FC listeners in the Personality Competition, to be carried out by the 3FC staff. The competition is to select a personality to interpret some famous referring to the proceedings. The New South Wales Broadcasting Company, which is anxious to arrange transmissions from this historic conference, have advised that preliminary tests will be carried out by Station FCLH, Holland. These tests will be given on March 14, 21 and 28, at 2:00-2:30 p.m., London time, or 11 midnight to 1:30 a.m., Sydney time. The power to be used is 25 kilowatts on a frequency of 18,966 and a wave length of 16.666 and a wave length of 18,430 meters. The station is associated with 2BF and 2FC, and will listen to these tests, and if the reception is satisfactory portion of these programmes will be placed on the air.

Crucifixion

The outstanding item of 3AR’s programme for Good Friday will be the broadcasting of Stainer’s “Crucifixion” from St. Paul’s Cathedral. This favorite Easter oratorio is one of the events of the church year and the very fine interpretation always given by the Cathedral Choir with special soloists is a performance that no listeners can afford to miss.

More Easter Features

Good Friday at 3LO will commence with the broadcast of the morning service from St. Paul’s Cathedral. During the afternoon the Station String Quartette will be heard in some of the greatest golf players in the world will compete for the gold medal. Among the players are Charlie Sennett, who won the world championship last year, and Bob Hope, who also competed for the medal in 1928. The broadcast will be accompanied by a group of strings and a choir, under the direction of Mr. G. M. Williams.

Pat Returns to 3AR

Pat McLean and her ukulele are due at 3AR on March 25 to the delight of the large circle of listeners who appreciate the true spirit of comedy. Pat is a very versatile little lady, and can extract every ounce of wit from a comedy number; but it is with her immensely clever child impersonations that she scores her greatest successes. She is a veritable “tiger” for work, and her expertise always contains the latest and best numbers.

WIRELESS WEEKLY
THE figures presented by the P.M.G.'s Department last week show that there are now 94,604 licenses in New South Wales. The net increase for the month of February was 1,723 out of a total increase for the Commonwealth of 3,124. This State also presented the smallest percentage of cancellations of licenses, previously existing.

February covers a period of particular interest to New South Wales, for it was in that month in 1928 that this State received its last set-back in radio licenses. Ever since then there has been a steady but definite increase, and February of this year sees the close of a term of three years in which exactly 62,000 additional licenses have been brought into existence.

The steady upward trend month after month in New South Wales and the gradual decrease in lapses, must prove beyond doubt that the policy governing the administration of broadcasting in New South Wales is meeting with approval. There are, however, certain directions in which improvements can be brought about which will be to the mutual benefit of the radio stations and the listening public.

Each week the Radio Inspector of New South Wales supplies a list of successful prosecutions for evasion of the payment of wireless licenses. Attached to the list received last week was the following notice:

“Sixteen prosecutions are already pending for the first week in March of persons who have been evading themselves of the broadcasting services without being in possession of a wireless license.”

It is very evident that with the whole State to cover, however energetic the officers in the Radio Branch of the P.M.G.'s Department may be, they can only detect a small percentage of people who are evading their obligations. Some twelve months ago an appeal was made for the co-operation of licensed listeners with the broadcasting stations and the P.M.G.'s Department in an effort to prevent pancy. This was very successful. In view of the continuation of the practice of evading the payment of license fees by such a considerable percentage of set owners, the question arises as to whether the time is not suitable for another State-wide drive. It has been previously pointed out that every increase of revenue leads to an improvement in the services rendered by the “A” class stations, and this in turn makes the possession of a wireless receiving set still more attractive. The existing claims that are being made upon those controlling broadcasting are an ever-increasing quantity, and the payments made in copyrights, royalties, and fees, of which the public have little or no knowledge, are eating into the revenue previously available for programmes to such a degree that to maintain the standard which has apparently proved so satisfactory during the past three years can for a still greater percentage of new licenses.

Incorporating "Radio in Australia and New Zealand."

RADIO FAMILY PARTY

To people who do not listen-in, the least understandable thing about a radio fan is his immense enthusiasm. He pursues his interests with a singleness of purpose seldom met elsewhere, and this often leads people to dismiss him summarily as a "crank."

The unfairness of this attitude does not need our comment. If the radio fan finds grid leak more fascinating than gardens, and potentiometers of more consequence than ponies, it is merely an indication of his energy and ability in certain directions. However, the mild social ostracism with which his seemingly strange pursuits are met, has had a powerful influence upon him.

It has caused him more and more to seek his friends among those who share his interests. And even more than that, it has produced a camaraderie among radio fans generally. How many firm friendships have been the outcome of casual references to circuits and sets. How many times has every advanced radio fan helped an enthusiastic beginner.

Some time ago we published a letter from a reader who wanted to obtain a copy of a long since sold out issue of "Wireless Weekly" in order to build a set from details published therein. Within a month he had received fifty letters from listeners in every State in the Commonwealth, not only informing him that they had posted him their copy, but also advising him how to go about building the set from their own experience. Since then numbers of readers who have collected or saved their copies of "Wireless Weekly" have written and placed them at the disposal of others who might desire them.

What other than a wireless paper can boast of such a spirit among its readers? Always our observations have confirmed the fact that radio fans are willing, indeed anxious, to share their knowledge and experience, not only with advice, but in practical matters. Here nearly every radio fan has, at some time or another serviced his neighbors' sets or otherwise helped them, grumbling perhaps, but good-naturedly. It is this community spirit which makes him the valuable citizen he is, even though he may often be branded as a "crank."

The Young Idea Gets Radio - No. 2
An Old-time Night

Dear Sir,—The little town of Albion Park, which lies in the midst of the dairy farming country, is not so far away as one might think. I discovered that it was difficult to attract a satisfactory audience to old-time dances, so I started to do the best that I could as organiser of such functions, and even the presence of special jazz musicians at a recent function was not entirely a success. (Cricket Announcer). Yours, etc.,

Another "Ghost" Voice

Dear Sir,—I noticed readers complaining about their receivers picking up telephone "noise," Well, my received was a three-mile Reinartz with interchangeable coils for long or short waves. So far as I could tell, I was using changing coils, and left the set switched off, and so as the coil (tuning and re-tractor) was removed a voice spoke very loudly in the speaker. The telephone wires are within 20 feet of the set, and my aerial runs at RIGHT ANGLES to them.

New Technology

Dear Sir,—I would just like to say that the man who wrote the letter entitled Poor Antarctic, ought to write another letter and then die. Let him try to undertake the job of the announcers, and then he would not stand long; he would be lying low. I am afraid. He is not worth wasting ink, paper, or time with. So let him mend himself or he'll have some of the million "nices and nephews" running him down. Yours, etc.

Echo Effect at 3JR

Dear Sir,—On reading the article "Radio echoes from Space" I thought that perhaps you would be interested in the reception of echo signals at VK1JR. During the latter part of last year signals from LPI in Argentine could hardly be copied on account of the echo effect, the QTH being about 33 metres. I received about 7 p.m. to 8 p.m. At times when he was sending a dash, count as many as three echoes, some fainter than others. The dash would sound like a B — — — , and echoes would appear within a fraction of a second. The same thing has been happening to KFL on about 43 metres lately at about 9 p.m. Also signals from WK in 22 metres are noticed about 8.30 p.m. to 9 p.m., but only on certain nights.

By listening closely one can count the number of echoes, and if the station has been sending long dashes every now and then one can make more accurate observations. I think that the echoes I heard only traversed the earth once.

Now take LPI in Argentine. For instance it is a little more than halfway around the world. You know, of course, that a signal sent out from a radio station disturbs the earth and causes the surface of a pond of water when dropped into it, and the signal thus sent out is reflected from the Heavyside layer to earth, and back again until the signal has diminished in strength. The signal sent out will travel in either direction — say, one to the east and one to the west. You will note that the shortest distance is via South Africa, and the signal travelling by this route will reach here a fraction of a second before the other, and so on. The signal going to the north-west of Argentina would travel a further distance still to reach Australia, and would arrive a fraction behind the other.

Provided that the angle of reflection from the Heavyside layer reflects this wave to the receiving station, you can notice this echo effect, and the strength of echo will vary according to the angle of reflection and the magnetic field surrounding the earth, and the receiving and transmitting aerials' direction etc. One way of overcoming this effect is to send a beam if it is required to be stopped, and then the signal, if the beam is powerful enough, may traverse right round the world and cause an echo, as others have suggested. Then, of course, it is an ultra power station, or the receiving station can send a beam through the Heavyside layer, and be reflected as suggested by Professor Skornik. Yours, etc.

Valentine Rainbow (VK1JR)

Running Him Down

There is a letter from Jean, of Dargle: "(The Hello Man)"

1. "I notice, now, a letter from Jean of Dargle."

2. "Is it fresh and on the train, or on the coast." (Lawrence Halbert.)

3. "I think, Jean, is just calling the boys into line." (Mr. Ferron, Racing Commentator.)

4. "The recipes are to be demonstrated on "Sunset, potato cakes, and the most optional "Boiled Chops and Goodbye." (Miss Furst, Cooking Talker.)

5. "This is the loveliest bloom that has ever been seen. friends, in Australia." (Redskin.)

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G. E. Tests

Dear Sir,—I wish to inform the readers that the General Electric Company's station KGO is conducting a series of Saturday evening programmes from 9 o'clock till 11.30 midnight (American time), which corresponds with 5 o'clock till 6 o'clock Sunday afternoon (Sydney time), and they are working on about 21 or 22 metres. They are very clear and strong. I worked them this afternoon myself on my three-valve set, which is the A.1.D.X. circuit, from the 28L, which I bought two years ago as a two-valve receiver to which I added second stage of audio. I have had very good results from this set. Stations heard are as follow—WLL, 2XAD, 2XAF, 2XAL, 2XG, RPM, RFN, PCJ, PCL, SWM, ANF, ANH, GC, Part, JHBB, VF Dusa, New England Amateurs 22A0, 23AJ, 23AU, 23AR, and many foreign stations, but I cannot understand the signals KGO is putting out a fine programme—no gramophone records. Yours, etc.

Mayfield.

F. J. REDHOUSE.
Pim and Pam
Dear Sir,-I would like to offer my sincere apologies to "Constant Reader" through the "Safety Valve" for not being able to guess in my foolishness and brainlessness that he meant just the opposite to what he wrote in my letter last week. I regret it sincerely, and hope you will forgive me.

Yours etc. 

Macot.

Inter-State Programmes
Dear Sir,—Quite frankly, we don't like the way the Inter-State programmes are now laid out. Of course, we understand that you are hard pressed for space, and that to enlarge the programme would require a long-suffering of the amount of space devoted to more interesting matter.

But why don't you publish the night sessions only of the Inter-State stations, just giving a schedule of the day sessions? This would enable you to space out the Inter-State programmes, and I am sure no one will be inconvenienced, as very few people tune in the day sessions of the Inter-State stations with the exception perhaps of 2LO and 4GO.

Yours etc.,

S. H. EAST.

Licence No. 7331.

Glebe.

Constructive Comment
Dear Sir,—Having recently noted with interest several of the statements you make in your columns, I would like to add a few opinions of my own.

Replying to Pedup 2, I would like to shake hands with him for writing that paragraph under "We are Not Wowsers," though I am afraid a few of our listeners belong to that category. I would like to correct one word in Mr. Pedup's letter viz. "dead," in line 6. As the sermonettes generally heard on the public air are mostly worse than dead, what is demised is sometimes the real thing, and that is what we are in an advanced state of putrefaction. I suppose there are some people who like this high stuff, just as there are people who like "high" venison. But it is all a matter of taste. What would we say if "Wires Weekly" devoted half its space to photography or some other hobby? It would suit some of us admirably, but it is far better to leave that kind of thing to be discussed by the papers which already specialise in it. If a butcher sells bad meat with the good, who will then patronise him? If a broadcaster "puts over" good stuff, with a sprinkling of the bad variety, or vice versa, who will tune in him? Practically nobody.

Those who don't mind a heterogeneous mixture may find it pleasant, but we, the majority, will tune to a station which delivers us pure goods, or, alternatively, we will switch off. But those who like hot air won't tune in to such a mixed programme as I have suggested because there is too much dreary matter with it. And, conversely, people who like good items will tune in another station rather than bother about sorting out the mush.

I hereby second the motion proposed by Pedup, i.e., that the soft-sopers, wowers, etc. should have their hot-air diet from one or two stations, thus allowing the others—the majority—to listen in in peace.

Being consistent, I will allow the wowers one small concession. There is too much horse racing and cricket being broadcast. Don't misunderstand me. I am quite in sympathy with the followers of these sports; but those who listen, e.g., to horse racing on Saturday afternoons only possess ordinary receiving sets, I presume. By this means sets which will only tune in one programme at a time. Therefore, those who listen to race descriptions are only able to watch one station at a time, either 2FC or 2EC, therefore the "dinner music" commences. Why not let a couple of stations co-operate (say, 2BC and 2PC), so that you and the others who mind the "dinner music" can enjoy the others? Why not split the audience? 2BC and 2PC, to give us dinner music; and, perhaps, a little news to provide table-talk. After dinner. These stations could then switch off and listen to the "dinner music" commences. Why not let a couple of stations co-operate (say, 2BC and 2PC), so that you and the others who mind the "dinner music" can enjoy the others? Why not split the audience? 2BC and 2PC, to give us dinner music; and, perhaps, a little news to provide table-talk. After dinner. These stations could then switch off and...
Install these Accessories and have perfect Radio reception

Everything for the Radio Enthusiast

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'' A & B Charger
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'' Valves

The Philips Eliminator does away completely with your "B" Battery, and is used by simply plugging into the ordinary electric light socket.

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PHILIPS STANDARD 1 "B" ELIMINATOR, 372.
Here is the most popular power unit in Australia, which, owing to a price reduction, is now actually a cheaper proposition than "B" Batteries. At its new price of £7/15/- there are none who need suffer the inconvenience of the dry battery.

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Easy Terms can be arranged if preferred.

PHILIPS BABY GRAND LOUD SPEAKER.
This is a particularly fine baby model with an exceptionally clear tone and pleasing appearance. Splendid value at

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3 VALVES BRING IN 3LO

On the "RENOUN SPECIAL THREE" Valver

(FEATURED IN THIS ISSUE OF "WIRELESS WEEKLY")

USERS OF THIS CIRCUIT REPORT AMAZING RESULTS

HERE IS A LIST OF PARTS EXACTLY AS USED IN THIS SET

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<tr>
<th>Part Description</th>
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<td>Philips Valves</td>
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<td>Renown Coil Kits.</td>
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<td>Wound on Natural Bakelite Formers EXACTLY to specification, and doped with best Aeroplane Varnish.</td>
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<td>Eby Rear Panel Dials</td>
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The RENOWN SPECIAL 3

This receiver represents the very maximum in simplicity and efficiency ever obtained with 3 valves. On Interstate as on local stations, it gives astounding results, and what can only be described as five valve set performance.

The greatest problem confronting the radio designer to-day is that of selectivity. No matter how excellent are the normal qualities of a receiving set, its value is lost unless it has the ability to cut through the "blanketing" effect experienced by set owners in the shock excitation area of one of our big broadcasting stations.

In the earlier days of broadcasting the chief aim was to produce a set which would give pure reproduction with ample volume. Thanks to improved and perfected apparatus and our better knowledge of the general design and "balance" of receiving sets, this was achieved, and radio began to be appreciated at its true value. This very appreciation and popularity, however, brought with it a new bugbear. The demand for wider and more varied programmes was met by the erection of more and more broadcasting stations until it was found that the old and hitherto satisfactory types of sets were no longer able to cope with the new conditions.

Lower and finely divided broadcast wavelengths resulted in programmes from several stations being heard at one and the same time. The hydra head of interference had appeared, and the old set was no longer selective; no more could the harassed listener peer in the delights of "pulling in" those distant stations at will. What was a commonplace matter became a virtual impossibility, except for those happily situated well outside the interference belt.

The demand for wider and more varied programmes was met by the erection of more and more broadcasting stations until it was found that the old and hitherto satisfactory types of sets were no longer able to cope with the new conditions.

Clearer something had to be done. Here was a problem big enough to engage the best radio engineering brains the world over. It was, of course, known that if the selectivity of sets would be improved we could win back the old standard of efficiency and simplicity. Many and varied have been the designs and suggestions put forward, and certainly a great deal has been done to mitigate the nuisance. Generally, however, to obtain even a fair degree of selectivity and break through that baffling fog of high-power local stations a multi-valve set is still essential.

From time to time we have placed before our readers constructional details of simpler and less expensive sets, which could fairly claim to have improved selectivity of tuning. Each new design has been considered to mark an advance upon its predecessors, but not until the development of the Renown Special Three, which is the subject of this article, have we been able to describe a set which has so convincingly demonstrated its title to be called the truly hyper-selective radio set.

We submit the Renown Special Three to our readers in the firm belief that it will amply repay the little care and trouble involved in building it, and that by its amazing performance—its superb volume and clarity, allied to its truly astounding distance getting ability, it will prove to be the solution of the troubles of those who have hitherto been unsuccessful in obtaining the full benefits of radio reception.

Our high opinion of this set is justified by the exceptional results observed on actual tests, and is more than corroborated by the enthusiasm of those who have already built it. It will be of interest to print extracts from some of the reports we have received.

At its selectivity one builder says:—"It is by far the most selective set I have ever heard, irrespective of the number of valves or the type of circuit used." Another:—"The Renown surprised me. With only three valves in the set and using it within a quarter of a mile of 2FC there is not a four or five valve set around here better."

And on the matter of long-distance reception this letter is typical of many received:—"With the Renown Three I have tuned in 3LO, Melbourne, in daylight at full loud-speaker strength, and enjoyed the full programmes. At night time I can get every station in Australia and New Zealand easily."

And now, upon what does the efficiency of this receiver depend? Upon the correct selection of parts and accessories, and carefully-planned panel and baseboard layout. It is as well to remind intending builders at the outset that strict adherence to the following specifications is absolutely essential to get the best results from the Renown Three, and departure from them will inevitably lead to disappointment.

On looking at the theoretical circuit a general resemblance to the well-known three-valve Reitnartz diagram will be noticed. There are the three valves, the usual Reitnartz re-action condenser, and the components which go to make up the orthodox three-valve set. Closer inspection of the coil design, however, will reveal several entirely novel features simple in themselves; but in their correct application they will mean all the difference between the mediocre and the set of superior merit. We will commence the detailed description with an explanation of the coil and tuning system.

It will be seen that there are three separate coils—L1, L2, and L3, coils L2 and L3 being wound on one former and L1 on a special former. As placed in the completed receiver these two formers must be at right angles to each other, separated by about two inches. Coil L1 will consist of 70 turns of No. 28 D.C.C. wire wound on a 2in. former, and with a tap taken off at every fifteenth turn.

(Continued on Page 20.)
Combination Wave-trap-aerial-coupling
Provides Extreme Selectivity

To commence the winding make two small holes, close to each other at one end of the former, and thread the wire tightly through these, leaving about 6 inches free. Wind on the wire carefully, turn by turn, make a loop about one inch long in the wire, and twist to form a kind of spike. Without breaking the wire continue the winding, and make a similar tap at every fifteenth turn until the full 70 turns are in place. Secure the end by means of two small holes as at the beginning, and again leave about 6 in. free. You should now have a tightly wound coil with five taps and the two free ends.

Now clean the cotton covering from the wire at each tap, and coil L1 will be completed. Coil L2 will be wound on the other former in exactly the same manner, except that the total number of turns will be ten of 20 D.C.C. wire, with a tap at every second turn. Coil L3 will now present no difficulties. It will consist of 110 turns of No. 36 D.C.C. wound as one continuous coil, but with a tap at the 75th turn. Coil L4 will begin at ¼ in. apart from the last turn of L2. Having completed all the coil windings give each coil a good coat of aeroplane varnish. This will serve both to keep the turns closely together, and to preserve them from damp and atmospheric moisture.

The next step is to mark off and drill the panel for mounting the tuning condensers and rheostats, etc. Reference to the panel-drilling diagram will show the correct distances for the various holes, and this part of the work will be quickly done. Now mount all the panel parts, and fit the dial to the tuning condensers: C2. As condensers C1 and C3 will not very often be moved after the correct setting has been arrived at plain rheostat knobs will be suitable, instead of the regular type of tuning dial.

Having mounted all the panel parts place the basicboard components in their respective positions as shown on the layout diagram. As above mentioned, the two coil formers will be placed at right angles and at least 2½ in. apart. The two transformers and the three valve sockets are all in line, and it will be seen that the transformers are, like the coils, at right angles to each other. This is very important in order to avoid any interaction between the audio frequency circuits. No radio frequency choke is used in this circuit, as it was found that the A.W.A. transformers gave perfect results with no "feed back" of high frequency currents from the aerial or detector circuit.

After a careful study of the diagram of connections the actual wiring will present no very serious difficulties. Tinned copper bus-bar should be used throughout, and this will make a solid and neat job. Always take care to see that each connection is tight and clean—bar joints spell ruin to efficiency. It is a good plan to test every joint on completion by giving it a good hard tug with the pliers. All grid and plate wires should be kept as far apart as possible, and they must never run parallel to each other.

When the last wire has been placed, the last connection made, and a final check over ensures that nothing has been missed, the actual testing can be proceeded with. This will be the pleasing culmination of the whole work, but do not allow your eagerness to get the set working to lead you to carelessness.
Constant Reaction Circuit Greatly Improved; Knife-edge Tuning

A mistake now may result in delay and disappointment; perhaps the expensive necessity of buying new valves.

On actual test it was found that a Philips A415 valve gave by far the best results as detector, whilst A409 and a B406 performed splendidly as first and second amplifiers. The detector will need about 30 volts for test operation, and the amplifiers 90 or even more. It must not be forgotten that the "C" battery plays a very important part in the operation of any set. Incorrect "C" battery voltage is responsible for most of that harsh, noisy reception we so often hear, but when it is correctly used it aids very greatly in imparting a pure, mellow tone. In the present case it was found that nine volts gave excellent results.

Before going into details of the actual tuning a few words on the most suitable type of aerial will be necessary. Very few of us are so fortunate as to have space available to erect the ideal aerial, but we can all spare a little trouble to take the fullest advantage of the facilities we have. The best aerial for the Renown Three must be from 25 to 40 feet high and 60 to 15 feet long. Let the lead in be well insulated and brought in well clear of all surrounding objects. The water pipe will make the most efficient earth, and a clean, well-soldered connection should be made. Always use as short an earth lead as practicable, and use a good thick wire. For best long-distance reception the aerial should, if possible, lay nearly north and south, with the lead-in taken from the north end. Aerials frequently have a pronounced directional effect, and as, in this case, we are looking for consistent inter-State reception, we must take full advantage of their effect.

It will be found that tuning with the Renown Three is delightfully smooth and easy. Once the dial positions of the various stations have been found there will be no difficulty in turning to them at will. Condenser C1 and coil L1 are intended to act as a special form of wave-trap. The coupling between L1 and L2 is made between the two sets of taps by means of a short flexible lead fitted with a small clip at each end. The best tap for maximum volume and selectivity will depend upon the locality where the set is to be used, and when a suitable position is found the coupling clip need not be moved again. If any interference is experienced an adjustment of condenser C1 will suffice to tune out the unwanted station. Condenser C2 is the wave-length condenser, and it will be found that the vernier dial is essential for fine tuning. Tuning will be so sharp that even one degree on the dial will be sufficient to tune a station in or out. C3 is the usual type of regeneration condenser. A little experience with this will show that it can generally be left at a setting which will give just the right amount of regeneration for all stations.

More Titles

A 2BL listener thinks that the various artists who broadcast must have a feeling of resentment at the custom adopted of not giving the prefix Mr., Miss, or Mrs. before their names. The company points out that it is not the custom in musical circles to use titles before artists' names, suggesting Mr. Caruso and Mr. Kreisler as illustrations of the absurdity. Moreover, they say: "When artists are in the foremost rank they are simply known by their surnames, and artists generally prefer to be given their full Christian names and surnames without any prefix." We think this is quite right; in fact, we think it better taste to drop the prefix in the circumstances than to use it. Often you may see us calling an artist "Mr." or "Miss," or "Mrs." or "Madame"; but this is only because we have no sense of decency. Or because we are downright contrary. We are not sure which.
SHORT WAVE SCREEN-GRID FOUR

demands above all else a high grade coil kit

HOME BUILT COILS ARE NOT SATISFACTORY

Low R.F. Resistance, accurate calibration, permanence of characteristics, ease of interchangeability, and PERPETUAL GUARANTEE are essential.

RADIOKES SCREEN-GRID SHORT WAVE COIL KIT embraces these features and has the smoothest interchange action of any kit in the world.

This Coil Kit is, without question, the finest Kit ever offered to the Radio Public of this or any other country. . . . The workmanship is excellent, and the finish is the best that present-day manufacturing can produce. The design is electrically most efficient, and represents the very latest developments in short-wave practice. Specially arranged to bring out the best that is in the latest Radio Wonder, that is, the Screen-grid Tubes. The efficiency is high because the losses are low. Radiokes' unique construction, which utilizes a super efficient winding, supported upon a skeleton framework of highest grade Bakelite, makes for the lowest possible losses, as by this means least solid dielectric is included in coil field.

The use of highest grade Bakelite assists in the maintenance of mechanical rigidity, and RADIOKES' method of riveted construction guarantees a reliable strong coil form, which, on account of its very strength, retains the coil calibrations as originally designed in Radiokes' laboratory, and fabricated in the Radiokes' factory.

A new type six-contact mounting base, equipped with a special silver spring system, makes the interchange of coils a pleasure and the smooth but positive velvety action of the contacts will assure that the robust little coils may be interchanged almost indefinitely without damage to themselves or mounting base. This new Radiokes' Kit consists of four interchangeable R.F. Transformers, as illustrated, a six-contact horizontal type mounting base, and a special antenna coupling choke, and lists for £3/12/6 per kit. A Broadcast coil is available at a cost of 15/, to cover the waveband from 245 metres to 555 metres, using the recommended .00014 m.f. Tuning Condenser.

RADIOKES RADIO FREQUENCY CHOKEs

are the only chokes on this market which are suitable for use in a universal receiver, such as the Short Wave Screen-grid Four.

These Chokes are so designed and manufactured as to be equally efficient on the 15 Metre Band as on the 545 Metre Wave Band. They are small in size, ruggedly constructed, and sell for the moderate price of 8/6 each. Radiokes' Products are obtainable from the High-class Dealers, or direct from

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COPPER SHIELDING FOR RADIO  

Practical Suggestions for the Use of Sheet Copper in Shielding Copper Radio Receiving Sets

THE THEORY OF SHIELDING

When an electric current runs through a wire, magnetic lines of force are set up about the wire. If the wire is wound into a coil, the magnetic field is increased and the area within the coil is increased. The field is further increased. This effect is not confined to the center of the coil, but extends outward and is not confined to the center of the coil, but spreads out around the coil in the form of magnetic flux in accordance with the shape of the coil. In coils of the solenoid type, the magnetic field is most intense along the axis of the coil, but flux lines spread outside the coil from its ends. This type of shielding is known as "cathode". Electro-magnetic shielding is employed to prevent the effects of fields from waves radiated by stations, and the most satisfactory and practicable method is to tear down and rebuild the receiver with shielding as the basis of the new design. In many type valve receivers, therefore, the radio-frequency valves are not placed directly behind their inductances and condensers. Instead, they are placed beside the condenser-inductance unit, and are staggered with the audio-frequency valves. For this reason, it is difficult to make a can to surround the condenser-inductance and associated valve of each radio-frequency stage. It is better to redesign the set with the radio-frequency valves directly behind their respective inductances (which as a rule are mounted on the condenser frames) and build rectangular cans to hold the complete units.

WHY COPPER IS USED.

The ideal theoretical shielded receiver is one in which the inductances are so widely spaced that their fields cannot interlink. Because of size limitations and feed-back due to wiring, etc., this condition is impracticable, if not impossible, and it is therefore necessary to sacrifice efficiency slightly for practicability by using a shielding material that will dissipate these stray fields in the form of eddy current losses. As the efficiency of this dissipation is proportional to the conductivity of the shielding material, copper is found to be the most practicable material for the purpose.

DESIGNING THE SET.

In laying out the design of the shielded receiver, the size of the can for the radio-frequency unit must be considered first. This is determined by the equipment it is to hold—the condenser, inductances, and valves being the essential factors. The most important of these is the inductance, which must have sufficient clearance to the walls of the can. In general, it is best to make these cans just as large as possible, while taking into consideration that large radio-frequency units require correspondingly larger main and sub-panels to hold them.

After the radio-frequency unit cans have been designed, make up a lay-out plan of the set to scale, similar to that shown in Figure 1. Design the sub-panel to set 1-Hin. behind the main panel, and locate the centre can on a centre line of the set. Lay out the rheostats, volume control, jacks, and mounting brackets approximately as shown. Allow room enough between the cans for rheostats and volume controls that are usually mounted on the main panel, and design these to be mounted on the panel between the cans. It is not necessary that these be shielded, provided the wires go directly into the shielded box below the sub-panel, or into one of the inter-stage cans directly adjacent to the controls. As a rule, the set will wire best if the jacks are mounted on the panel below the sub-panel so that they project into the sub-panel box.

This layout will determine the length of the main panel and sub-panel. Now lay out the audio valves and transformers to determine the depth of the sub-panel and make a front view of the set and cans to determine the necessary main panel height. It is found that the panel will be too long, rearrange the jacks to be located directly under the rheostat and volume control, and, if necessary, decrease the width of the cans a little to gain space.

Make a schematic diagram, and from it work out a full scale working diagram, rearranging the parts to make the leads as short and direct as possible. The negatives of both A and B batteries may be soldered directly to the cans, thus saving a lot of wiring. The shielding should be connected to the ground binding post of the set. Plan on insulating the parts, etc., where necessary, with bushings or blocks of hard rubber.
MATERIAL. The most practical shielding material will be found to be 16oz. soft copper sheet, which may be procured from any -day, plumber or hardware dealer, as it is a standard size which is invariably carried in stock. It is best to use sheet that has not been cold-rolled to keep the surfaces as flat and true as possible.

In working the copper, bear in mind that it is soft and is, therefore, easily dented and scratched out of shape. Never hammer it with the face of a hammer or hard instrument. Always use a hard wood block underneath the sheet with another hock on top to distribute the hammer blow over a comparatively large area. Always work from a pattern or cardboard pattern scratching working lines on the copper sheet with a scriber. Do not sandpaper the work until all the bending is finished, or it will be difficult to see the working lines.

Fig. 2 shows the pattern lines as they will be found invaluable in bending. The edges of these should be cut straight and true on a taring line. The copper is bent between two such blocks held together in the jaws of the vise and bend by hammering down to the vise. A similar block against the copper to hammer on. Never clamp the copper in the vise without the block, as it will slip slipping bending to a line. Set the work between the blocks in the vise with the edge of the block flush with the working lines. The sheet may then be bent over as far as possible by hand and then held together with the other ends of the blocks to complete the right angle. Do not use pliers except on very small pieces where bending will not be required. Pliers are apt to stretch or bend the copper out of shape, put knive it, etc., which are very difficult to work out.

In soldering, be sure to have the copper clean and bright. Use a very hot iron as large surfaces of copper dissipate heat rapidly. Use as little flux as possible, and take pains to wipe off all excess solder from the copper cans to line up with the mounting hole. The flux should be scored to show the cutting line, after which the form may be cut out with a pair of snips, and the sides and flaps bent to shape between blocks of wood in a vise. The flaps should then be soldered thoroughly to the sides of the box. When the cans have covers, the flaps should go on the inside of the can, while for the covers the flaps should go on the outside. Careful measurements must be made to allow for the thickness of the metal in order to assure a good fit of the top on the bottom can.

THE RADIO-FREQUENCY UNITS. Each radio-frequency unit should consist of two rectangular boxes practically the same size, one forming the cover for the other. As shown in Fig. 2, make a rectangular copper box big enough to hold the variable condenser, inductance, and valve, with a small amount of room additional for a neutralizing condenser, if the set employs one. The edges may be only about an inch in all directions. The depth may be only about an inch, and the flaps should be soldered on the outside instead of inside the box.

SHELDING A FIVE-VALVE SET. The following specifications for shielding a typical five-valve set are intended merely as suggestions for the experimenter to follow. They should not be adhered to rigidly but used rather as a basic principle in the design of shields for the particular set under consideration.

Commercial receivers vary greatly in layout, and, therefore, no one set of specifications will be entirely practicable for all types. The experimenter should use his ingenuity in design after carefully taking into consideration the principles in shielding here outlined.

GENERAL PROCEDURE. A rectangular can should be made up for each stage of radio-frequency and for the detector stage, all stages being identical. The audio valves may be mounted directly on the sub-panel with their transformers behind the radio-frequency units with all wiring, except the grid wires, which should be run directly to the sockets, being run through holes in the sub-panel shield to the shielded box beneath.

The terminal strip should be hung by means of small brackets underneath the sub-panel, being connected to the lid being cut away to clear the binding posts. In making up the cans or boxes, a paper pattern should be made first. The pattern should be laid out on a copper sheet, which should be scored to show the cutting and bending lines, after which the form may be cut out with a pair of snips, and the sides and flaps bent to shape between blocks of wood in a vise. The flaps should then be soldered thoroughly to the sides of the box. When the cans have covers, the flaps should go on the inside of the can, while for the covers the flaps should go on the outside. Careful measurements must be made to allow for the thickness of the metal in order to assure a good fit of the top on the bottom can.

THE SUB-PANEL TRAY. The sub-panel should next be covered with a sheet of copper. It is well to bend the copper over the edges of the sub-panel to a depth sufficient to shield the wiring and bypass condensers, which may be fastened underneath the sub-panel, thus forming a coverless box or tray with the sub-panel in its top, as shown in Fig. 1.

A paper pattern should be made for the purpose, laid out, and developed as shown in the sketch where "A" and "B" are the length and breadth of the sub-panel respectively, and "C" is the depth of the tray. Note that a slot should be cut in the centre of the back of the tray to clear the bending portion of the terminal strip, which should be at least an inch longer than the slot and may be trimmed off in the usual manner by means of small brackets, or to the tray wall by means of two machine screws at each end. The sub-panel should be fastened to the bottom of this tray by means of four machine screws, with washers being first slipped over the screws. Holes should be laid out and drilled in the front wall of the tray to clear the jacks.

This box should be of a depth "A" equal to the distance from the sub-panel to a point just clearing the bottom of the condenser shaft, if the set employs one. The other half or cover of the box should be identical, except that it should be enough larger in size to allow of its fitting over the bottom box by tinning, where it should be made great enough to clear the variable condenser, if the set employs one. This box should be of a depth "C" equal to the length to clear condenser inductance, and valve, with a small amount of room additional for a neutralizing condenser, if the set employs one.

This box should be screwed to the sub-panel back of the cans, one-sixteenth-inch spacer washers being first slipped over the screws against the sub-panel to separate the cans from the panel. This clearance allows for putting the top can.

The inductance units should be fastened to the back of the condenser frames in the usual way or to the base of the cans by means of machine screws and nuts. It is imperative, however, that they be kept away from the copper walls by at least an inch in all directions. They should be fastened to the bottom of the cans, mount them on posts of insulating material. The valve-socket should be screwed to the sub-panel back of the inductance in like manner. It is well to put a piece of rubber or other insulating material underneath the sockets and screws, if it is desired to cover the top or side of the shield.

WIRING. Practically all circuits can be altered slightly so that the rotors of all the condensers may be grounded on the cans. This is accomplished by substituting the sub-panel of the detector circuit by returning the grid of the valve through the grid condenser instead of the inductance to A plus instead of across the grid condensers.
This week's chat has been probably a little more technical than usual, but it will be necessary for you to understand this phenomenon before you can understand your experiments, and, of course, I do not want to tell you a few points about a subject upon which volumes could be written. You may rest assured that the points contained in this article are the most important as far as our requirements are concerned. I have some interesting experiments for you next week.

Morse Code

YOU will see by the club reports (of which there are many) that two Morse classes have been started, and that these classes are a great success. Any club member is welcome. For the benefit of those members who would like to learn the code and conventional signs, they are given here.

Practise the code carefully, making each dash three times as long as a dot, and leave plenty of space between each letter, and even more space between each word. Whilst waiting for your copy of W.W. you can learn the code, and you will then be ready for furthering your knowledge in radio.

The Morse Code is as follows:

```
A   B   C   D   E   F   G   H   I   J   K   L   M   N   O   P   Q   R   S   T   U   V   W   X   Y   Z

```

And the numerals-

```
0   1   2   3   4   5   6   7   8   9
```

The following conventional signs will be useful:

```
Comma     ---
Semicolon  -----
Apostrophe  .'
Exclamation  !
Hyphen or dash - -
Quotation marks (beginning and end) " "
Parenthesis (before and after words) ( )
Bar to indicate fraction ---
```

Underline (to be used before and after words to be underlined).

The best way to learn the code is to learn the dot letters first, i.e., E I O T, I two dots, B three dots, H four dots; then the dashes, T one dash, M two dashes, O three dashes. Then the opposites, A dot dash, N dash dot, D dash dash dot, U dot dot dot dash, and so on. When referring to dots, call them "dit," and term dashes "dah." This will get you used to the sound of the letters. Thus you would term letter A—dit dah.

Proving Radio Club Notes

Cremorne Group is in process of formation. The first meeting will be held at Mr. S. R. D. Sherwood's residence, 217 Milton Road, Cremorne, at 7.30 p.m. on Friday, March 22. See letter appearing in Query column. Welcome Mr. Stan Johnson as a new member. As you are at Cremorne, you will be expected at Mr. Sherwood's house on the 22nd.

Welcome also G. Williamson and C. Campbell, of Bankstown and South Kensington, respectively; Mr. A. Fry, of Concord West; Mr. Tarlington, of Pennant Hills; Mr. Vesper, of Croydon Park; Mr. Catterson, of Concord West; Mr. E. Worswick, and Mr. A. Fry, also of Concord West. Finally, welcome the Cremorne Group and the Concord West Group.

Club members will be pleased to hear that "WIRELESS WEEKLY" has been able, through the courtesy of the Radio Exhibition authorities, to secure Exhibition ticket (for members only) at 5d each. Members desiring tickets should let their secretary know at once, in order that the list may be as soon as possible.

Several clubs suggested a picnic at Pennant Hills on Easter Saturday, when permission might be obtained to view the Pennant Hills Radio Station. They will be disappointed to hear that leave is not granted to view the station, but permission has been granted for 60 members of the club to look over the station on certain dates (see below), though these dates are not so suitable as that previously chosen. The reason is that the staff is very small on all days but those mentioned, and, owing to the extremely high voltage in the station, it would be very indubious to allow any number of sightseers to view the apparatus, or electricity would be a common matter. As things stand, the club members are to be divided into parties of twelve, who will be under the guidance of some responsible person, i.e., their secretary or some other officer, who is to see that nothing is touched on any account. As there are four dates made available to the club, it is requested that they help the W.A.A. as far as possible. In arranging for all members to attend at the same day. The second date seems to be the best of those mentioned.

(1) Thursday, March 21.
(2) Thursday, April 18.
(3) Thursday, May 16.
(4) Thursday, June 20.

Those are the dates made available. Thursday is an awkward day we know, but we must be thankful for small mercies. Few people ever get the opportunity to view Pennant Hills Radio Station.
A Country Club is being formed at Coft's Harbor. This is in response to the Coft's Harbor Group. How about some more country clubs? (Continued from Page Twenty-Six)

WILLIOWBY GROUP

THE meeting held on Wednesday, March 13, was a great success. Each experiment was performed in turn, and members were asked questions, which were answered satisfactorily. All members became very enthusiastic over the magnetic needle experiment, especially when Mr. Meadows caused the needle to point to north and south alternately, after it had been floating in a glass of holding power. Present were Mr. B. Morgan, Mr. C. C. Hook, secretary of the club; Mr. Slemmett, sen., Mr. Slemmett, jun., Mr. Webster, and Mr. Ellis. The meeting was arranged to hold the next meeting at the same place — i.e., c/o Mr. Slemmett, Bledisloe Avenue, Turrenura, at 8 p.m. on Wednesday, March 20th. Though the time for the meantime arrangements would be made for a more central meeting place. We should like some more members.

CITY GROUP

EXPERIMENT WITH FIXED MAGNET

A galvanometer was fixed across the terminals of a coil, and a bar magnet was inserted in the centre of the coil, with the result that the needle of the galvanometer was deflected, demonstrating that there was an induction of magnetic power from the magnet to the coil.

DECOMPOSITION OF WATER—This experiment was arranged as described, and members were satisfiedly demonstrated, but owing to the fact that all 60 volts were used the process of decomposition was very slow. Another fact observed was that in the tube in which the water was placed the hydrogen (or the Cathode), a film of yellowish substance was seen. We suggest that this substance has something to do with a "carbon" being liberated from the sodium chloride (salt). Is this the right conclusion? (No, it is not correct. An acid must be present to liberate the chlorine. The cause of the yellow substance was the use of impure water) was the use of impure water, which may cause dyes mixing with metal object, as in metal objects.

TRANSFER OF POWER—On experimenting on page 4, figure 2, it was found that on removing the coil the same results were obtained with magnet and galvanometer. All members became very enthusiastic over the magnetic needle experiment, especially when Mr. Meadows caused the needle to point to north and south alternately, after it had been floating in a glass of holding power. Present were Mr. B. Morgan, Mr. C. C. Hook, secretary of the club; Mr. Slemmett, sen., Mr. Slemmett, jun., Mr. Webster, and Mr. Ellis. The meeting was arranged to hold the next meeting at the same place — i.e., c/o Mr. Slemmett, Bledisloe Avenue, Turrenura, at 8 p.m. on Wednesday, March 20th. Though the time for the meantime arrangements would be made for a more central meeting place. We should like some more members.

DULWICH HILL GROUP

MARCH 10, 1923.—A meeting held being held here to-night, group decided to devote the evening to electrical mathematics. What with resistances in parallel, in series, and condensers in series and in parallel, the club enjoyed the most fruitful night it has yet had. Adjoining it was decided to make a new departure—namely, a night of "music" would be formed for Morse experiments, which would take place at 29 Blairgowrie Street, Dulwich Hill, on each Tuesday evening from 7 till 9. Mr. C. C. Hook, secretary of this club, advises that an advanced class is already operating every Wednesday. These activities are open to all members, who are welcome.

NOVICE MORSE NIGHT.—Six members were present. The evening's work was the conquering of the first seven letters of the alphabet, and members were satisfied to leave further letters to be covered at future meetings. This meeting was held on Tuesday.

ADVANCE MORSE NIGHT.—Meeting held Wednesday, seven members were present. Good work done being.

The Movies Experiment With Sound

(Continued from Page 6.)

But the difficulties implied here in the creation of dialogue and sound that might be compared with the best of the silent dramas, are as child's play when the sound-proof studio must be left behind and an outside location is necessary. Then there must be the varied notes of the ununited city to consider and control besides those made by the curious crowds eternally attracted by the movie camera. In a short comedy called "The Family Picnic," made by the Fox Case Studios, it is said that a whole detachment of police had to be requisitioned to keep beyond the sound area those who would intrude into the microphones their unwanted syllables.

It is because of all these limitations placed on action by dialogue and the necessity of building a new technique as one can and not as one wills that the sound pictures are viewed apprehensively by many of the leaders. For while movie magnates with their wrists go on bandaging up their troubles, pictures will be "talkers" within five years, the conservative directors shake their heads gloomily, oppressed by the complexities of the synthetic art.

School Cricket

I SUPPOSE everyone, girls and all, are greatly interested in the G.P.S. cricket this year. I have been to several games, and I must say that it is a great joy to see the success of schools which have had a pretty lean time of it in recent years. Scott O'Keefe, for example, took down the mighty T.K.S. for the first time in history. This is the big thrill of the year, so far. Very good for the Scotts and very good for T.K.S. also. Generally, as an onlooker, what has impressed me is the way the wickets have been almost uniformly batsmen's carbets. The bowling has been very fast, but it times as poor running time at school. Bless them!

School Cricket

Our Australian Poem

THIS week I suggest "A Bush Christian," by A. B. Paterson, popularly known as "Banjo," You will find it in his volume called "The Bush." It is very funny, and I'll tell it to you next Sunday morning from W.F.C.

Greeting

A ND now the Editor cuts me off! So until next issue of "Wireless Weekly," appears good wishes to you all. Cheerio, comrades, "THE CAPTAIN."
LIKE a baby with a jam pot, I have been enjoying myself to my heart's content in my ramblings around the short-wave dial. Whether I have had a good receiver or a merely indifferent one, it matters but little, for the outcome has been the same. Both in weeding out the distant stations and yarning away with other "hams" in remote parts of the world, I have been blessed with a period of really good signal strength.

How many of you short-wave listeners have heard PHI, Huizin, Holland 16.88 metres and KGO, Oakland, California, U.S.A., in 15 metres? Quite a number of you, I feel certain, after the phenomenal signal strength from those two stations during the last week! During the original GO-CETTER PHI was heard with loudspeaker strength equal to a local broadcasting station and my reception with the new AIR KING receiver on KGO caps the lot. This receiver, which I have designed specially for "Weekly" readers, has been accordingly dubbed "Air King." It was intended to use an indoor set of SG RP speaking 12½ watts and this was tried, with disheartening results. Subsequently both RG's were tuned and, when the description appears in print, readers will have something well worth going through with.

On Sunday afternoon, March 10, this receiver was driving two Magnavox dynamic speakers at full blast on the Saturday evening short-wave broadcast log from March 1 to 3. Excellent short-wave broadcast log from March 1 to 3. Here is Mr. Russell Crane's excellent short-wave broadcast log from March 1 to 3. Two logs really give short-wave enthusiasts an idea of the activity in the realms below the normal broadcasting channels.

**RECEPTION DURING THE WEEK-END.**

**MARCH 1 to 3.**

**STATION G5SW.** Friday, March 1, 10.30 a.m. Very weak, a good deal of static, and almost constant Morse interference. Dutch telephony only fair strength to-night.

**STATION PHI, HUIZIN.** Saturday, March 2, 12.10 a.m. The first announcement was: "Ladies and gentlemen of our English-speaking audience. Dutch telephony only fair strength to-night."

The first announcement was: "Ladies and gentlemen of our English-speaking audience. Dutch telephony only fair strength to-night."

**STATION PCB.** Saturday, March 2, 12.10 a.m. "We are playing in London rather a bad background, but we have tried to get the best of the conditions." The signal was fairly strong, and Morse was just audible.

**STATION 7LO NAIROBI.** Sunday morning, March 3, 3 a.m. This station brings out the best in short-wave reception and modulation excellent. No fading of any sort for about half an hour, but static was bad. Particularly good item noted: "O, My Warrior," sung by Peter Dawson, and compositions of Chopin and Beethoven, the latter with organ.

Note: On no occasion have I heard better short-wave than from these stations.
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Enormous Reductions!!

A quantity of well-known speakers, slightly used, are being sold at cost price, and a number of American samples and shop soiled stocks are included in this list. Note the prices!

Build a “B” Eliminator from these parts and Save Pounds.

<table>
<thead>
<tr>
<th>Description</th>
<th>£</th>
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<tr>
<td>G. R. Step-up Transformers, 500 Volts</td>
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<td>6</td>
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<td>Sec. Centre Tapped</td>
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<td>Muter .006 Fixed Condenser</td>
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<td>.5 By-Pass Condensers</td>
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<td>Hydra 1 M.F.D. 50 Condensers</td>
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<td>Power Plus 4 M.F.D. 1000 V Test</td>
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<td>Power Plus 2 M.F.D. 1000 V Test</td>
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<td>G. R. Double Filter Chokes, 30 Henry</td>
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<td>Reliance .0005 Condensers</td>
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<td>New Type Role Speaker Units</td>
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</table>

The Price of Magnovox Speaker Units quoted in last two issues of “Wireless Weekly” was published in error. CORRECT PRICE, £3/10/.

There are a number of marvellous bargains in Receiving Sets of all sizes. Including Battery and Electric Models; Locally made and imported.

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Local Programmes, Friday, March 22

WIRELESS WEEKLY

Friday, 22nd March, 1929.

2FC

EARLY MORNING SESSION.
Announcer: A. S. Cochrane.
7.6: "Big Ben" and announcements.
7.12: "Programme announcements.
7.45: Good morning news.
7.50: "Music Section" (Fletcher).
7.52: "Tommy Lad" (Margetson).
7.55: "Superman" by Uncle George.
7.58: "Big Ben".
8.00: "Big Ben". Close.

MORNING SESSION.
Announcer: A. S. Cochrane.
10.0: "Big Ben" and announcements.
10.2: "Children's Session", conducted by the "Hello World" Society.
10.6: A talk by Captain A. C. Stevens, In My Ancecdote.
12.0: Studio items.
12.10: "Music Section" (Fletcher).
12.12: "Pop Music Section" (Carey).
12.15: Children's Session; music and entertainment.
12.30: Pop music.
12.45: "Music Section" (Fletcher).
12.48: Cricket scores, England v. West Australia.
12.50: "Big Ben". Close.

AFTERNOON SESSION.
Announcer: Laurence Halbert.
1.30: Programme announcements.
2.00: Educational Session, for the schools.
2.30: "Music Section".
3.00: "Big Ben".
5.45: The Children's Session, conducted by the "Hello World" Society.
6.00: "Music Section".
6.30: "Children's Session", conducted by Bennie Abrahams.
7.00: "Music Section".
7.30: "Children's Session", conducted byurr.
8.00: "Music Section".
8.30: "Children's Session", conducted by Bennie Abrahams.
9.00: "Music Section".
9.30: "Children's Session", conducted by Bennie Abrahams.
10.00: "Big Ben." Close.

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THURSDAY, March 28-

2FC, 2BL, 2GB, 2UW

2BL

MORNING SESSION.
Announcer: A. C. Stevens.
8.00: Music.
8.00: "Music Section".
8.30: "Children's Hour, conducted by Uncle George.
9.00: Music.
9.30: "Children's Hour, conducted by Bennie Abrahams.
10.00: "Music Section".
10.30: "Children's Hour, conducted by Sir George.
11.00: "Music Section".
11.30: "Children's Hour, conducted by Bennie Abrahams.
12.00: "Music Section".
12.30: "Children's Hour, conducted by Bennie Abrahams.

MID DAY SESSION.
Announcer: A. C. Stevens.
11.30: "Children's Hour, conducted by Miss Gwen Varley.
12.00: "Music Section".
12.30: "Children's Hour, conducted by Miss Gwen Varley.
13.00: "Music Section".
13.30: "Children's Hour, conducted by Miss Gwen Varley.
14.00: "Music Section".
14.30: "Children's Hour, conducted by Miss Gwen Varley.
15.00: "Music Section".
15.30: "Children's Hour, conducted by Miss Gwen Varley.
16.00: "Music Section".
16.30: "Children's Hour, conducted by Miss Gwen Varley.
17.00: "Music Section".
17.30: "Children's Hour, conducted by Miss Gwen Varley.
18.00: "Music Section".
18.30: "Children's Hour, conducted by Miss Gwen Varley.
19.00: "Music Section".
19.30: "Children's Hour, conducted by Miss Gwen Varley.
20.00: "Music Section".
20.30: "Children's Hour, conducted by Miss Gwen Varley.
21.00: "Music Section".
21.30: "Children's Hour, conducted by Miss Gwen Varley.
22.00: "Music Section".
22.30: "Children's Hour, conducted by Miss Gwen Varley.

2GB

MIDNIGHT SESSION.
Announcer: Basil Kirke.
0.00: "Music Section".
0.45: "Music Section".

2UW

MIDNIGHT SESSION.
Announcer: Basil Kirke.
12.00: "Music Section".
INTERSTATEOPERA PROGRAMS, FRIDAY, MARCH 22

3LO

EARLY MORN. SESSION
7:15: Morning melodies. 7:30: Morning exercises for adults. 7:30: Stock reports; Stock Exchange Information. 7:35: Stock market closing price, shipping and sporting information. 8:00: Melbourne Observatory time signal. 8:15: Closing down.

MORN. SESSION

MIDDAY SESSION

AFTERNOON SESSION

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MORN. MUSICAL SESSION

AFTERNOON SESSION
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LOCAL ProgrammeS, Saturday, March 23

2FC

EaRLy EaRNY Session. 
Announcer: A. S. Cochrane.
7:00: "Big Ben" and announcements. 7:2: Official weather forecast; rain; river reports; temperatures; astronomical memoranda. 7:7: "Sydney Morning Herald" summary. 7:12: Shipping intelligence; mail services. 7:15: Studio music. 7:25: Investment market; mining sharemarkets; meal quotations; wool sales; breadsluffs markets; inter-State markets; produce markets. 7:40: Studio music. 8:0: "Big Ben" Close.

MOoNING Session.
Announcer: Eric Bessemer.
10:00: "Big Ben" and announcements. 10:10: Piano forte reproduction. 10:15: "Sydney Morning Herald" news service. 10:25: Studio music. 10:30: "At a minute's notice" information, by the RFC Race Commission. 10:40: Studio music. 10:45: A talk on "Gardening" by J. O. Lockley ("Redgum"). 11:00: "Heidi" score. RCA and Reuter's cable service. 11:10: Close down.

MIDDy Session.
Announcer: A. S. Cochrane.

AfTernoon Session.
2:30: Programme announcements. 2:32: The Savoy Set Trios. (a) "I'm In Love Again" (Porter). (b) "Lolita" (Stoneham). (c) "My Message" (D'Hardelot). (d) "Symphony" (Marshall). (e) "On Wings of Song" (Mendelssohn). (f) "Minites" (Berchini). 2:50: Cricket results. England v. West Australia, played at Perth. 2:52: Popular music. 2:57: "Smart Trio" (Kerr). 3:00: "It Goes Like This" (Friend). (b) "Moonlight on Danube" (Clay). (c) "Was It a Dream" (Spier). (d) "Pam" (Jones). 3:10: Studio Items. 3:15: Studio Dance Band, conducted by Cee. Morrison. 3:45: Studio Items and announcements. 4:0: "Big Ben"; Studio Dance Band, conducted by Cee. Morrison. 4:15: Cricket scores. 4:22: Studio Items. 4:30: Studio Dance Band. 4:45: Studio Dance Band. 5:0: "Big Ben." Close.

EARLY EVENING SERVICE.
Announcer: A. S. Cochrane.

2BL

MOoNING Session.
Announcer: A. C. C. Stevens.
8:00: G.P.O. chimes; Weather service. 8:10: Studio weather report, by A. A. C. Stevens. 8:15: G.P.O. chimes; news from the "Daily Telegraph Pictorial." 8:30: G.P.O. chimes; news service. 8:45: Information service. Mails, shipping arrivals, departures, and sailing dates. 8:50: Studio music. 8:55: "Big Ben"; talk to silent friends. 9:45: Studio music. 10:0: G.P.O. chimes; close down.

MIDDy AND AfTERNOoN Session.
Announcer: A. C. C. Stevens.

EARLY EVENING SESSION.
Announcer: Basil Kirtie.

2GB

EVENING Session.
Announcer: and Accompanist, J. Knight Barnett.

2UW

EVENING Session.
Announcer: and Accompanist, Uncle Jack.
7:00: "Big Ben." Close down. 7:30: "Big Ben." Close down. 7:45: "Big Ben." Close down. 8:0: "Big Ben." Close down. 8:15: "Big Ben." Close down. 8:30: "Big Ben." Close down. 8:45: "Big Ben." Close down. 9:0: "Big Ben." Close down. 9:15: "Big Ben." Close down. 9:30: "Big Ben." Close down. 9:45: "Big Ben." Close down. 10:0: "Big Ben." Close down. 10:15: "Big Ben." Close down. 10:30: "Big Ben." Close down. 10:45: "Big Ben." Close down.
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- 1 Pilot Indicating Toggle Switch £0 2 9
- 1 R.M.S. Single Circuit Jack £0 1 7
- 1 Pilot Bakelite 30-ohm Rheostat £0 3 6
- 1 Grid 2 or 3 ohm Grid Leak £0 3 0
- 1 Five-ply Baseboard, 20 x 8 x 2in. £0 0 6
- 1 Engraved Bakelite Terminals £0 2 3
- 1 doz. Round Tinned Copper Bus Bar Wire £0 0 1 0

3 Cushioned UX Valve Sockets, Emmco £0 7 6
1 A.W.A. Ideal 3½/1 Transformer £0 1 0 8
1 Pilot Indicating Toggle Switch £0 2 9
1 R.M.S. Single Circuit Jack £0 1 7
1 Pilot Bakelite 30-ohm Rheostat £0 3 6
1 Z or 3 ohm Grid Leak £0 3 0
1 Five-ply Baseboard, 20 x 8 x 2in. £0 0 6
1 Engraved Bakelite Terminals £0 2 3
1 doz. Round Tinned Copper Bus Bar Wire £0 1 0

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EVENING SESSION.

Announcer: Jack Broadbent. 6:00: Running description of Beechworth Kennedy Race, 2 miles, run at Moonee Valley Racecourse, Melbourne, Victoria. 3:30: Close down. 6:10: Running description of Collingwood Hansard, 1/2 furlongs, run at Moonee Valley Racecourse, Melbourne, Victoria. 3:30: Close down.

AUFRNOON SESSION.

Announcer: Jack Broadbent. 2:00: Running description of Beechworth Kennedy Race, 2 miles, run at Moonee Valley Racecourse, Melbourne, Victoria. 3:30: Close down.

EVENING SESSION.


Page Thirty-Seventy

WIRELESS WEEKLY

Friday, 22nd March, 1930.
Local Programmes, Sun., March 24

2FC

MORNING SESSION.
Announcer: A. S. Cochrane.
12.15: From the Studio, "Sun" news service.
2.0: G.P.O. chimes; close down.

APRIL SESSION.
Announcer: Jack Barnett.
3.0: G.P.O. chimes; Studio music.
3.30: From the Band Rotunda, Manly Beach, the Manly Municipal Military Band, conducted by James Pheloung.
5.0: G.P.O. chimes; close down.

EVENING SESSION.
6.0: G.P.O. chimes, children's session, conducted by Uncle Peter.
From St. Jude's Church, Randwick, evening service, conducted by Canon Catechism. Organist: Arnold Mote.
Announcer: A. S. Cochrane.

2BL

MORNING SESSION.
Announcer: A. C. C. Stevens.
11.0: G.P.O. chimes.
From the Newtown Methodist Mission morning service, conducted by Rev. A. E. Walker.
Hymn 663. Benediction.
12.15: From the Studio, "Sun" news service.
2.0: G.P.O. chimes; close down.

APRIL SESSION.
Announcer: Jack Barnett.
3.0: G.P.O. chimes; Studio music.
3.30: From the Band Rotunda, Manly Beach, the Manly Municipal Military Band, conducted by James Pheloung.
5.0: G.P.O. chimes; close down.

EVENING SESSION.
Announcer: G. Vern Barnett.
6.0: G.P.O. chimes, children's session, conducted by Uncle Peter.
From St. Jude's Church, Randwick, evening service, conducted by Canon Catechism. Organist: Arnold Mote.

Wireless Weekly

It all depends on the valves you use. Most of them look the same from the outside—it's the inside that counts Mullard valves—the only valves containing the wonderful P.M. Filament—ensure the finest reception of which your set is capable at the lowest maintenance cost. It stands to reason—they cost no more to buy, they consume only .075 ampere, their gigantic emission surface gives maximum power and purity, and they last for years. Every radio dealer in Australia stocks Mullard Master Valves—the all-British valve with the wonderful P.M. Filament.

Mullard

THE MASTER-VALVE

Ask your dealer to demonstrate the Mullard Speaker, the only Speaker with a Tone Control Switch.
PORTABLE VOLTMETER

Pattern 136: A most convenient D.C. Luxe Portable Jewell Voltmeter. Beautifully finished of black bakelite, clock stand type of mount. Range of scale 0.75-150 volts. Push button switch mounted in the lower range. Three leads with phone tips. Connected permanently will show element voltage. By pushing the button the "B" Battery voltage is read.

Write for Radio Instrument Catalogue No. 15.e

STROMBERG CARLSON
Australasia, Limited, 76 William Street, Sydney, Phone: F4184. Telegrams: "Strom."
**Local Programmes, Monday, March 25**

**2FC**

Announcer: A. S. Cochrane.

**EARLY MORNING SESSION.**

7.0: “Big Ben.” and announcements.

7.2: Official weather forecast, rainfall, river reports, temperatures, astrological memoranda.

7.7: “Sydney Morning Herald” summary.

7.13: Shopping intelligence, mail service.

7.15: Studio music. 7.25: Investment market, milling slate markets, metal quotations, wool sales, beefs, markets, inter-State markets; produce markets. 7.40: Studio music. 8.0: “Big Ben.” Close down.

**MORNING SESSION.**

Announcer: A. S. Cochrane.

10.0: “Big Ben.” and announcements.


**MID-DAY SESSION.**

Announcer: A. S. Cochrane.

12.0: “Big Ben.” and announcements.


**AFTERNOON SESSION.**


2.30: Programmes and announcements.

2.32: Educational session, for the Schools. A short musical recital, a reading. 2.36: “Big Ben.” Pianoforte reproduction.

3.15: Popular music.

3.20: Gladys Lohden, contralto.-“Melodrama in the Wood” (Goetz). (b) When Song is Sweet” (San Bouel). 3.25: Studio items.


**2BL**

**MORNING SESSION.**

Announcer: A. C. C. Stevens.


**MID DAY SESSION.**

Announcer: A. C. C. Stevens.

11.0: G.P.O. Chimes; 2BL Women’s Show. 11.15: Address. 11.30: Advertising talks, talk on Diet and Health, by Miss Dorothy de Cogho. 11.40: Women’s session, conducted by Mrs. Cranfield. 12.0: G.P.O. chimes; special for Miss Mary G. van den Bergh. 12.15: Ocean forecast and weather report. 12.30: Studio music. 12.35: Market reports. 12.45: “Sun” midday news service. 1.0: Studio music. 1.10: Talk for children and special entertainment; children in hospital. 2.0: G.P.O. chimes; close down. 2.15: Radio Special Reports. 2.30: Weather forecast and forecast by courtesy of Governor. 3.00: Women’s session. 3.15: Close down.

**EVENING SESSION.**


10.0: G.P.O. chimes and Topical Chorus. 10.2: From the Haymarket Theatre, the Haymarket Theatre Orchestra. Conducted by Stanley Porter.

10.30: From the Studio—Theodore Atkinson, baritone; winner of the baritone section in the recent Radio Ecumenical, conducted by the N.S.W. Broadcasting Co., Ltd.

(a) “The Wheel Tarper’s Song” (Charles).

(b) “The Somerset Farming” (Williams).

11.0: Sketches by Zena and Zenas Kendall.

11.15: “Kitty Clive” (Gibb).

11.30: Women’s session, conducted by Frank Ryan, conductor.

11.40: Theatricals. From the Haymarket Theatre, the Haymarket Theatre Orchestra. conducted by Stanley Porter.

11.50: From the Studio, Frank Ryan, conductor.

12.0: The Savoy’s Dance Band.

12.15: Late weather and announcements.

12.25: The Savoy’s Dance Band.

12.45: To-morrow’s programme and announcement.

1.0: G.P.O. Chimes; close down.

**2GB**

10.0: Music. 10.10: Happiness Talk by A. E. Bennett, on Women’s session by Miss Helen J. Bergley. 11.30: Close down.

11.45: Radio Girls’ News Service by Mrs. Dorothy Jordan. 2.50: Music. 3.30: Close down. 5.15: Children’s session by Uncle George. 7.0: Music. 7.30: Feature story. 8.0: Miss Lorraine Lincey, contralto. 8.30: Miss Molly Jones, pianiste. 8.55: Miss Leslie Herford, baritone. 9.25: Instrumental music. 9.30: Mr. Heath Burdock, Shakespearian recital. 9.45: Miss Gwyady Edwards, soprano. 8.50: Miss Molly Jones, pianiste. 8.60: Weather report. 8.32: Address. 9.15: Childrend’s Session by Uncle George. 9.30: Mr. Heath Burdock, Children’s session, conducted by Uncle George. 9.50: Mr. Jack Will and Mr. Leslie Herford, baritone. 10.0: Instrumental music. 10.05: Close down.

**2UW**

**MID DAY SESSION.**

12.30: Music. 1.0: G.P.O. clock and chimes; close down. 4.30: Musical programme. 5.30: Children’s Hour, conducted by Uncle Jack. 6.30: Close down.

7.0: G.P.O. clock and chimes; music. 7.30: Radio Girls’ News Service. 8.00: Women’s session by Miss Dorothy Jordan. 8.30: “To-day’s anniversary; music. 8.00: G.P.O. clock and chimes; in foreign affairs by Mr. J. M. Prestige. 9.10: Music and request numbers. 10.30: Close down.

**FULLER ACCUMULATORS LAST LONGER**

GILBERT-LODGE & CO., LTD.
NEW ZEALAND stations controlled by the Radio Broadcasting Company of New Zealand, Limited, are in operation only six days per week, and, in the case of 3YA, only five days. The schedule adopted is as follows:

- Station 1YA: Closed each Monday.
- Station 2YA: Closed each Wednesday.
- Station 3YA: Closed each Tuesday.
- Station 4YA: Closed each Monday and Wednesday.

Except on their silent days, all stations are on the air at 3 o'clock. The children’s sessions commence at 9 o’clock; that is, a voice boomed in my ears, even before I located PH1’s carrier.

With all the care of one used to looking for weak carrier waves, I crept slowly down toward 16 metres when suddenly a voice boomed in my ears, even before I located PH1’s carrier. The history of short-wave broadcast, there was no need to “nail on” to the transmission, it literally smote one like a hard burst.

The receiver I was using was an ordinary regenerative detector and two stage audio, and the substitution of a loud-speaker for the phones enabled me to sit back and listen to a most excellent musical programme, played by an Amsterdam orchestra, with a difference of one hour and thirty minutes, between New Zealand and European time and standard time for the eastern State of Australia. That is to say, when it is 10 p.m. in New Zealand, it is 9.30 p.m. in Melbourne, Sydney, Brisbane and Hobart.

SHORT-WAVE NOTES

INTERNATIONAL broadcasting de luxe; that is what the week-end of March 2-4 has held forth for those fortunate enough to possess a short-wave receiver. Following on the announcement of the opening up of Hulton (PH1), in Holland, with experimental transmissions, preparatory to the inauguration of a regular service, I decided, on the night of March 1, at the witching hour of midnight, to see what this newcomer had to say for himself.

With all the care of one used to looking for weak carrier waves, I crept slowly down toward 16 metres when suddenly a voice boomed in my ears, even before I located PH1’s carrier. The history of short-wave broadcast, there was no need to “nail on” to the transmission, it literally smote one like a hard burst. The receiver I was using was an ordinary regenerative detector and two stage audio, and the substitution of a loud-speaker for the phones enabled me to sit back and listen to a most excellent musical programme, played by an Amsterdam orchestra, with a difference of one hour and thirty minutes, between New Zealand and European time and standard time for the eastern State of Australia. That is to say, when it is 10 p.m. in New Zealand, it is 9.30 p.m. in Melbourne, Sydney, Brisbane and Hobart.

What would have happened with a screen-grid receiver such as the All Empire would have almost constituted a “fisherman’s lie” for I have never before heard such a powerful long distance short-wave telephony transmission. An enthusiastic letter from Mr. Russell Crane showed that he had been “on the job” as well, and, in forwarding his summary of week-end receptions, he states, “I doubt if ever, in the history of wireless, so many good short-wave stations have been on the air.”

Now “Q” Signal

We hear that a certain amateur was searching his code sheets the other evening for the meaning of QTR. This mysterious signal emanated from a Brazilian station, whose signals he had reported as “loud and clear.” Asked for a translation the Brazilian gave it: “Quit the kidding.”


**WIRELESS WEEKLY**

Friday, 22nd March, 1929

**INTERSTATE PROGRAMMES, Monday, March 25**

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**3LO**

**EARLY MORNING SESSION.**

7.15 to 8.15

**MORNING SESSION.**


**MIDAY NEWS SESSION.**


---

**3AR**

**AFTERNOON SESSION.**


**EVENING SESSION.**

When YOU'VE heard and seen
"FARMER'S THREE"

Remarkable value! £21 Ask about terms!

You'll become enthusiastic about it!

Perhaps you're sceptical, though. You might certainly be excused for doubting. It does seem improbable that such beauty, such tone and such miraculous ease of tuning as these advertisements have been eulogising, should be incorporated in a £21 receiver. But the fact remains that they are.

And all who have examined "FARMER'S THREE" know it! You're interested in wireless, in wireless development? Then come, see and hear this set for yourself. It's a definite advance in radio! You'll realise that—and like these ads., you'll grow enthusiastic about it. Go to the—

WIRELESS DEPARTMENT, FIRST FLOOR

A convenient system of deferred payments will be made on request.

FARMER'S
Pitt, Market, and George Streets, Sydney
Local Programmes, Tuesday, March 26

**WIRELESS WEEKLY**

**2FC**

**EARLY MORNING SESSION**

10.0: "Big Ben" and announcements.

10.15: Studio music.

11.0: "Big Ben." Close down.

**ANNOUNCER:** A. C. C. Stevens.

**NEWS PORTY-FOUR**

12.0: "Big Ben" and announcements.


6.0: "Big Ben." Close down.

**ANNOUNCER:** A. C. C. Stevens.

**2BL**

**MORNING SESSION**

Announces: A. C. C. Stevens. conducts.

8.0: O.P.O. chimes; metropolitan weather report. 8.1: State weather report.


9.10: Midday news service. 9.20: "Big Ben." Close down.

**ANNOUNCER:** A. C. C. Stevens.

**NATIONAL PROGRAMME**

Announces: Mr. Basil Kirke.

10.0: G.P.O. chimes and Topical Chorus.

10.1: Charles Proteus Steinmetz. 10.15: Announcements.

10.20: From the studio, W. E. Lewis (bassist).

10.30: "Big Ben." Close down.

10.35: Studio items.

10.45: "Big Ben." Close down.

10.45: Topical talk, "Week By Week," by R. H. Beckford.

10.55: "Big Ben." Close down.

**ANNOUNCER:** A. C. C. Stevens.

**AIR KING**

The short wave enthusiasts among our listeners should note the following hours: Mr. Norman speaks to the bigger boys. 12.50: Racing review. 15.30: Distributing Society's poultry report studio semi.

**EVENING SESSION**

4.0: Children's session; music and entertainment for children.

4.30: "Big Ben." Close down.

4.30: "Big Ben." Close down.

**ANNOUNCER:** A. C. C. Stevens.

**2GB**

**MIDNIGHT SESSION**

Announces: Mr. Jack Win and Mr. Heath Burdock. 7.30: Music of the World. 7.45: Theatre news.

7.45: "Big Ben." Close down.

10.45: "Big Ben." Close down.

**ANNOUNCER:** A. C. C. Stevens.

**WIRELESS WEEKLY**

**2UW**

**MIDNIGHT SESSION**

Announces: Mr. Celli and Mr. T. J. J. C. 7.00: Music of the World. 7.50: Theatre news.

10.00: "Big Ben." Close down.

10.00: "Big Ben." Close down.

**ANNOUNCER:** A. C. C. Stevens.
**EMMCO's RADIO PRODUCTS**

- **"A" Socket Power Supply.**
  - Price: £12 12/-

- **Pep Punch Transformer.**
  - Price: 12 6

- **Emmco Trickle Charger.**
  - Price: £3 10/-

- **Maxum "B" Socket Power.**
  - An improved "B" Eliminator.
  - Price: £8 15/-

- **Emmco Superstatelyne Condenser.**
  - Price: .0005 12 6/ and .00035 12/6

- **Emmco Vernier Dial.**
  - Remarkable Value.
  - Price: 7 6

- **Velma Dial, Clockwise or Anti-clockwise.**
  - Price: 6 6

- **Emmco De Lux Vernier Dial.**
  - Clockwise or Anti-clockwise.
  - Price: 9 6

- **Emmco Headphones.**
  - Price: 21 6

- **Emmco Balanced Socket.**
  - Price: 3 6

- **Sub-panel Socket.**
  - Price: 2 9

- **Kurly Kone Speaker.**
  - Price, complete in case, £5 5/6.
  - Price, Horn and Unit: £4 4/6.

- **Emmco Simplex 3-Gang One-control Condenser.**
  - Capacities .0005 and .00035
  - Price: £3 6

- **Golden Voice Transformer.**
  - The largest Transformer made.
  - Price: 42 6

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3LO

EVENING SESSION

8.15: Poems, read by Miss M. B. Commonwealth. G. W. Bell. (in verse).
8.45: Programme: "The Roving Party."
9.0: "Pipsqueak." Programme: "The Roving Party." (All numbers to special request."
9.28: Seth Smith, banjoist, in "Beethoven". (in verse).
9.40: "Nuisance," Part-11, by Liang Hsiung. (both numbers by special request."
10.30: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
10.40: "Bye, Bye." Programme: "The Roving Party." (All numbers to special request."
11.0: Richard Wight. Baritone, "Davey Jones Locker" (Petrie).
11.15: "Thank God for Sleep." Programme: "The Roving Party." (All numbers to special request."
11.19: "Dearest." Programme: "The Roving Party." (All numbers to special request."
11.45: "Music of the Morn." Programme: "The Roving Party." (All numbers to special request."
12.0: "Lisztiana." Programme: "The Roving Party." (All numbers to special request."
12.15: "Prudence." Programme: "The Roving Party." (All numbers to special request."
12.35: "Paree" recite, "Ullo! Ullo! Ullo!"
12.40: "Lisztiana." Programme: "The Roving Party." (All numbers to special request."
1.0: "Chickens!"
1.0: "Cranberries Spiced." Programme: "The Roving Party." (All numbers to special request."
1.05: "Birds of Paradise." Programme: "The Roving Party." (All numbers to special request."
1.10: "Meditation on Morning." Programme: "The Roving Party." (All numbers to special request."
1.14: "Flowers in the Sun," by G. B. Shaw. (Both numbers to special request."
1.19: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
1.24: "Serpentine Dance." Programme: "The Roving Party." (All numbers to special request."
1.30: "Dancing and Singing" (British). Programme: "The Roving Party." (All numbers to special request."
1.35: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
1.40: "The Seraphina."
2.0: "O.P.O. Chimes.
2.04: "Our Daily Bread." Programme: "The Roving Party." (All numbers to special request."
2.36: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
2.41: "Processional of the Cross." Programme: "The Roving Party." (All numbers to special request."
3.0: "Radio Recluse." Programme: "The Roving Party." (All numbers to special request."
3.07: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
3.12: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
3.17: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
3.27: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
3.32: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
3.37: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
3.42: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
3.47: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
4.02: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
4.07: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
4.17: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
4.27: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
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4.47: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
5.02: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
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5.37: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
5.42: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
5.47: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
6.02: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
6.07: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
6.17: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
6.27: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
6.32: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
7.02: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
7.07: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
7.12: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
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7.47: "The Station Orchestra, "Ballet of the Flowers," Part-11, (Pergolesi-Kreisler)
Another

**Murdoch Bombshell!**

£5/5/-

**Loud Speakers for 30/-**

A **stunning scoop.** The result of a sensational purchase. These are genuine QUAM horn-type Loud Speakers, standing over 22 inches high and with a moulded flare of 15 inches. Adjustable unit and complete with cord. Wonderfully volume and exceptionally clear tone. Usually sold at £5/5/-.

NOW **30/-**

**Bargains**

**10/6 VALVES 1/6**

The famous "Cosmos" U.X. base 1.6 to 2 volt filament, taking .25-.3 amps. Usually sold for 10/6 each. NOW **1/6**

**FIVE for 6/6**

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"Pilot" Kilogram Dial, new stock and in perfect condition. Buy while stocks last.

**Usually 6/9. NOW 4/6**

**3/6 RHEOSTATS, 1/6**

High-grade Rheostats, 6, 10, 20, and 30 ohms. Usually 3/6 each. NOW **1/6**

When in Sydney for the Show be sure and call at Murdoch’s Radio Dept. All that is latest in the Science of Wireless awaits your inspection.

Radio Parts Post Free, except Loud Speakers which are freight 2/- in N.S.W. and 4/- Inter-State; and "Cosmos" Valves, which are postage and package, 1 to 4 valves 6d, over 4 Post Free. Kindly address your letter to Desk A. 2.
Local Programmes, Wednesday, March 27

2FC

EARLY MORNING SESSION
Announcer: A. S. Cochrane.

7.0: "Big Ben" and announcements. 7.7: Official weather forecast; rainfall, river reports, temperatures, astronomical memoranda. 7.7: "Sydney Morning Herald" summary. 7.12: Shipping intelligence; mail services. 7.15: Studio music. 7.25: Investments; mining developments; market quotations.

MORNING SESSION
Announcer: A. S. Cochrane.

10.0: "Big Ben" and announcements. 10.3: Pianoforte reproduction. 10.10: "Sydney Morning Herald" news report 10.23: Studio music. 10.30: Programme announcement by the 2FC Racing Commission. 10.45: A talk on "Home Cooking and Recipes," by Miss Ruth Furst.

1.0: "Big Ben." 1.15: The 2FC Dinner Quartette, conducted by Horace Kents. (a) Autumn Manoeuvres" (Kilman). (b) "Providence." 6. "The Barber of Seville" (Rossini), (d) entr'acte, "Romandu" (Schubert). (e) "Clownom- eto" (Tchaikowsky). (f) "By the Tamarisk" (Coates). (g) "Querida" (Bimont).

EVENING SESSION
Announcer: Laurence Halbert.

7.0: Popular music. 7.15: Programme announcements. 7.48: Laurence Godfrey Smith will speak on the "Teachers' Conference." 7.50: Madame Emily Marks, a classical program under the direction of Madame Emily Marks, with whom will be associated the Australian Quartette; Emily Hynes, Ray Beatty, John B.:njamin, Josse Brakell. 9.0: Weather report.

Talk by Francis Jackson, "Love Stories of Versailles." 9.15: Madame Emily Marks, second half of the classical program.

10.15: Late symphony. 10.28: To-morrow's programme.


2BL

MORNING SESSION
Announcer: A. C. C. Stevens.

8 a.m. O.P.O. chimes, metropolitan weather report. 8.1: State weather report. 8.2: Studio music. 8.3: O.P.O. chimes, news from the "Daily Telegraph Pictorial." 8.30: O.P.O. chimes; news service continued. 8.40: Information; mails; shipping; arrivals; departures; and sailings. 8.45: Studio music. 9.15: Half an hour with silent friends. 9.45: Studio music. 10.00: O.P.O. chimes; close down.

MIDDAY SESSION
Announcer: A. C. C. Stevens.

Note: From the Royal Agricultural Showground, General Judging Day. 11.0: O.P.O. chimes; 2BL Women's Sports Association session, conducted by Miss Owen Varley. 11.30: Advertising hints. 11.40: Women's session conducted by Mrs. Chanfield. 12.0: O.P.O. chimes; special overseas report; and weather report. 12.30: Studio music. 12.30: Shopping and mailing. 12.45: "Sun" midday news service 1.0: Studio music. 1.10: Children and special entertainment for children in hospital. 2.0: O.P.O. chimes; close down. Note: Race results from Moorefield Stacks in the running. During intervals, dance music from Romance's Orchestra, conducted by Bennie Abrahams, will be broadcast.

Resco Sets are Quality Sets, but are quite within the purchasing powers of anyone.

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All Inter-State Stations are Guaranteed at Full Speaker Strength on the Resco Standard 5 and 6 Valve Models.

We have made a special study of the districts where interference is so rife, and give a money-back guarantee that these stations will be received without that annoying background of local stations.

2GB

10.0: Music. 10.10: Happiness Talk by H.C. Bennett. 10.20: Publicity by H.C. Bennett. 10.30: Women's session by Miss Helen J. Beeling. 11.00: Guests down. 11.20: Women's Radio Service; by Mrs. Dorothy Jordant. 25.00: Bulletin; children's demonstrations from Rock and Kirby. 4.0: Close down. 5.20: Children's session by Uncle George. 6.00: Instrumental music. 6.30: Mr. Clifford Lathbury. 6.55: Miss Ada Brook, pianiste.

EVENING SESSION
Announcer: A. C. C. Stevens.

4.35: O.P.O. chimes; instrumental music. 4.40: O.P.O. chimes; a talk by Basil Kirke. 4.45: Margaret Hunt, soprano. 4.55: O.P.O. chimes; pianoforte reproduction. 5.15: Studio music. 6.00: Racing resume; features of the evening's programmes.

EARLY EVENING SESSION
Announcer: Basil Kirke.

5.40: Children's session; music and entertainment; letters and stories. 6.00: "Sun" news and life reports. 6.05: 2BL Dinner Quartette. (a) "Dance des Talons" (Michelot), (b) "An Old Adieu" (Heiberger), (c) "Dreams" (Vagner), (e) "Ojip" (Blessett). 6.10: Adelaide Mercantile Land and Finance Co.'s report; weather report and forecast, by courtesy of Oceana View Meteorologists; Producers' Distributors' Society's rice and vegetable market report; grain and foodstuff market report; and produce report ("Sun"). 7.25: Mr. Pirb and Mrir Pirb in an interlacing." 7.30: Programme and other announcements.

EVENING SESSION
Announcer: Basil Kirke.

8.0: O.P.O. chimes and "Big Ben". 8.1: Production by the H. W. Warna Company, "The Man from Toronto." 8.35: Bobbie Gilmont (William Hume), Martha (Fell Mar), Leon O'Flaherty, Mrs. Hubbard (Miss Pat Barton), Mr. Leonard, Mrs. Hume (Gwen Launcas), Fergus Winburn (H. W. Warna). 9.0: Mrs. (Mr. Alton). 9.25: "Gipsy" (Signorelli). 10.0: "Sun" midday news. 11.30: Close down.

NOTE:

"Big Ben" and announcements. 7.7. "Sydney Morning Herald" summary. 7.12. Shipping intelligence; mail services. 7.15. Studio music. 7.25. Investments, mining developments, market quotations. wool sales, breadstuffs, markets. Inter-State markets produce markets. 7.40. Studio music. 8.0: "Big Ben." Close down.

2UU

MORNING SESSION
Announcer: C. V. Bristed.

12.30: Music. 1:00: O.P.O. chimes and announcer. 1:30: Close down. 2.00: Musical programme.

EVENING SESSION
Announcer: Basil Kirke.

1:00: O.P.O. chimes and announcer. 1:30: "Sun" news and life reports. 6.06: 2BL Dinner Quartette. (a) "Dance des Talons" (Michelot), (b) "An Old Adieu" (Heiberger), (c) "Dreams" (Vagner), (e) "Ojip" (Blessett). 6.10: Adelaide Mercantile Land and Finance Co.'s report; weather report and forecast, by courtesy of Oceana View Meteorologists; Producers' Distributors' Society's rice and vegetable market report; grain and foodstuff market report; and produce report ("Sun"). 7.25: Mr. Pirb and Mrir Pirb in an interlacing." 7.30: Programme and other announcements.

2WW

MORNING SESSION
Announcer: C. V. Bristed.

12.30: Music. 1:00: O.P.O. chimes and announcer. 1:30: Close down. 2.00: Musical programme.
ARE YOU FED UP OF PAYING BIG PRICES FOR RADIO? If so, LEVENSON'S LOW PRICES will astound you.

Please Add Freight
SAME DAY DESPATCH

Send 9d in Stamps for NEW ILLUSTRATED MONSTER CATALOG
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<td>Flares Slightly Damaged.</td>
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LEVENSON'S RADIO Established 23 years.

FRESH NEW GOODS ONLY NO OLD-FASHIONED, Unwanted Junk.
Interstate Programmes. Wednesday, March 27

3L0

EVENING SESSION

ANNOUNCER: Maurice Dudley. 6:00. G.P.O. U.N.I.T. and "Tec." 10.15. Make-up reports; farm animals. 11.30. Winter vegetable production. Fruit, veg. products, etc. 12.15. Shipping forecasts. 1.00. Command of Dairy Produce. All these services are exclusive to 3L0. 2.20. British official weather reports. 3.10. Close down.

3AR

AFTERNOON SESSION


EVENING SESSION

ANNOUNCER: Maurice Dudley. 6:00. Gramophone recital. 7:00. Newspaper announcements; results of Werribee races. 7:20. Gramophone recital con- tinued.

NIGHT SESSION


6WF

NIGHT SESSION


7ZL

MIDDAY SESSION

ANNOUNCER: Jack Brood. 11:30. and 1:30. for Saturday, 2:30. Closing down.

MIDNIGHT SESSION

ANNOUNCER: Jack Brood. 3:00. Running description of the Jumpers' Flat, 5 furlongs, run at Werribee Racecourse. 3:15. Close down.

4QG

EVENING SESSION


AFTERNOON SESSION


EVENING SESSION


AFTERNOON SESSION


EVENING SESSION

THIS ELIMINATOR BUSINESS

Splitdorf 30-henry Chokes, low d.c. resistance 10/6
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AND ANY OTHER PARTS YOU REQUIRE AT LOWEST PRICES.

Same day service for country clients.
Unqualified money back guarantee.

PARTS OF QUALITY AND CHEAPNESS

Four-gang Condensers, with bed-plate 30/-
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Dubliner ½ mfd. 2000 volt-tested Condensers (for transmitters) 15/-
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DIAGRAMS AND INSTRUCTIONS FREE OF CHARGE.

WIN

£150

1st Prize £150 Cash
2nd £100
3rd £45
4th £20
and hundreds of other prizes
YOU CAN WIN!

FIND THE FACES

Alman Bey, Magician of the East, is working in his magic way. He thinks he is alone, but there are four people watching him. If you turn the picture this way and that you will find them hidden in different parts. Mark each face as you find it with an X and send your answer AT ONCE.

£50
Extra for Correct Solution and Early Entry.
£50 will be added to any prize won by you if you are successful in finding the four hidden faces and if yours is the earliest winning entry received in my Picture Game Competition. So send your solution to the Magician Puzzle AT ONCE.

As soon as your solution of the Magician Puzzle is received I will send you a copy of the simple, novel and thrilling Picture Game Competition in which over £600 is offered in 500 Big Prizes. First Prize, £150 Cash. The object of this Great Competition is to advertise my new series of books on character analysis through Graphology. Surely you can win one of these splendid prizes in this great test of skill! If there is a tie for any prize the full amount of the prize will be paid to each person. The prizes will be forwarded immediately after the judging.

Cut the Magician Puzzle out now, mark the hidden faces with an X, and send to me TODAY with your name and address clearly written. Here's your opportunity to win a small fortune. A simple test of skill which all may try. Enclose 3d. in stamps for postage, etc., on the particulars and simple rules of the Puzzle Game Contest, which will be sent at once. Address your solution to—

A. HENRY SILVER, Author and Publisher

(BOX 414SX, G.P.O.)

284 Castlereagh Street, Sydney
Local Programmes, Thursday, March 28

2FC

EARLY MORNING SESSION
Announcer: A. C. Stevens
7.0: "Big Ben" and announcements.
7.2: Official weather forecast. Rainfall, river reports, temperature, astronomical memoranda.
7.7: "Sydney Morning Herald" summary.
7.12: Shipping intelligence. Mail services.
7.40: Studio music. 8.0: "Big Ben" close down.

MORNING SESSION
Announcer: A. S. Cochran.
10.0: "Big Ben" and announcements.
10.2: Piano forte reproduction.
10.30: Last-minute service announcement. 10.40: "Big Ben".
11.0: Studio music. 11.10: Benyoun, baritone. 11.40: "Big Ben".
12.0: Studio music. 12.05: "Big Ben" close down.

MIDDAY SESSION
Announcer: A. S. Cochran.
12.0: "Big Ben" and announcements.
1.15: "Big Ben", weather notices. 1.2: "Morning News" midday news service. 1.20: Producers' Distri\tion service. 1.28: Stock Exchange second call. 1.30: Studio music. 1.50: Last-minute service announcement. 1.55: "Big Ben".
2.0: Studio music. 2.10: "Big Ben" close down.

AFTERNOON SESSION
2.0: Programme of theLondon. 2.22: Educational session for the rambos; a short musical recital; a "Big Ben"; piano forte reproduction. 2.33: Annule Sedgcr, mezzo-soprano. 2.40: "Mio Fiando" (Demetri). 2.52: Studio music. 3.00: Carlos Fabola, popular pianist. 3.20: Studio music. 3.40: Annule Sedgcr, mezzo-soprano. 3.47: "If You Were in My Garden" (baritone). 4.17: Popular music.
4.27: Carlos Fabola, popular pianist. 4.27: A. S. Cochran.
5.00: "Romund King" (Baritone). 4.42: Studio music. 4.45: Studio music. 5.00: "Big Ben" close down.

EARLY EVENING SESSION
5.40: The chimes of 2FC. 5.45: The childrend's hour. 5.50: Miss Helen Macquarie, letters and stories, music and entertainment. Talk on "Safety First". 6.05: Dolphy's market reports (cotton, wheat, and stocks). 6.40: Fruit and vegetable markets. 6.45: Stock Exchange information. 6.45: Weather and shipping news. 6.48: Rugby wireless news. 6.55: Late sports news. 9.0: "Big Ben"; late news service. 7.10: The 2FC Dinner Quartette, conducted by Monte Kosta, (a) "Ballad of My Dreams" (Kurkijarvi). (b) "Intermezzo" (Scotty). (c) "Foggy, Foltine Music" (Gould). (d) "Tess" (Rason). (e) Tin Pan Parade. (f) Whittington.

EVENING SESSION
7.40: Popular music.
7.45: It is hoped that we will be able to arrange an interview with the eminent violinist. Erica Morini.
8.15: Frederick Todd, basso. (a) "Shining Song" (W. Wolmer). (b) "Hunting Dog" (Sanderson).
8.22: Professor Von Hoffman, pianist.
8.34: A. S. Cochran.
8.46: From the Capitol Theatre, Frederic Scott, conductor. 8.50: "Swanee River" (Kreider).
9.10: From the studio. 9.15: "Big Ben" close down.

MIDNIGHT SESSION
Announcer: Basil Kirkce.
12.00: "Big Ben" and announcements.
12.2: Piano Forte reproduction.
12.30: Last-minute service announcement. 12.38: "Big Ben".
12.50: Studio music. 1.00: "Big Ben" close down.

2BL

MORNING SESSION
Announcer: A. C. Stevens.
8.0: G.P.O. chimes, metropolitan weather report.
8.1: State weather report.
8.2: Studio music. 8.3: G.P.O. chimes, news from the "Daily Telegraph pictorial".
8.30: G.P.O. chimes, news service continued.
8.40: Information. Mail sales, shipping arrivals, departures, and sallings.
8.50: Studio music.
9.0: "Big Ben".
9.15: From the studio. Popular music.
9.30: Frederic Todd, basso.
9.40: "Big Ben". Notes.
11.0: "Big Ben" and announcements.
11.10: National Anthem.
11.30: "Big Ben" close down.

AFTERNOON SESSION
Announcer: A. C. Stevens.
Note: Official opening of the Royal Agricultural Showground.
11.6: G.P.O. chimes.
11.8: BL Women's Sports Association session conducted by Captain A. C. Stevens, U.D.A. 12.0: Advertising hints. 11.40: Women's session, conducted by Mrs. Carroll. 12.0: G.P.O. chimes, special ocean forecast and weather report.
12.35: Market reports. 12.15: "Sun" news service. 1.0: Studio music. 1.15: Talk to children and entertainment, for children in hospital. 2.0: "Big Ben". Children's hour. 2.15: G.P.O. chimes.

AFTERNOON SESSION
Announcer: A. C. Stevens.
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2GB

MORNING SESSION
Announcer: A. C. Stevens.
8.0: G.P.O. chimes, metropolitan weather report.
8.1: State weather report.
8.2: Studio music. 8.3: G.P.O. chimes, news from the "Daily Telegraph pictorial".
8.30: G.P.O. chimes, news service continued.
8.40: Information. Mail sales, shipping arrivals, departures, and sallings.
8.50: Studio music.
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9.15: From the studio. Popular music.
9.30: Frederic Todd, basso.
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2UW

MIDDAY SESSION
Announcer: A. S. Cochran.
12.30: Music. 1.0: In Old Granada. 1.15: Popular music.
1.30: "Big Ben" close down.

FULLER ACCUMULATORS

LAST LONGER

GILBERT-LODGE & CO., LTD.
3LO

EARLY MORNING SESSION.
1.0 to 6.15. See Friday.

MORNING SESSION.

MIDMORNING SESSION.
Announcer: Jean Broadbent. 9.0: "A Real". 10.0: "At the BBC..." 11.0: "From the BBC..." 12.0: "From the BBC..."

AFTERNOON SESSION.

EARLY EVENING SESSION.
Announcer: Jack Broadbent. 5.30: "Under the auspices of the "Congo to Tasmania" organization.

NIGHT SESSION.
Announcer: Jack Broadbent. 7.30: "Under the auspices of the "Congo to Tasmania" organization.

3AR

EARLY MORNING SESSION.

MIDMORNING SESSION.

AFTERNOON SESSION.

EARLY EVENING SESSION.

7ZL

MIDMORNING SESSION.
Announcer: Jack Broadbent. 5.10 to 6.10. See Friday.

AFTERNOON SESSION.
Announcer: Jack Broadbent. 6.10. See Friday.

EVENING SESSION.
Announcer: Jack Broadbent. 7.10. See Friday.

MIDNIGHT SESSION.
Announcer: Jack Broadbent. 8.10 to 9.10. See Friday.

4QG

EARLY MORNING SESSION.

MIDMORNING SESSION.

AFTERNOON SESSION.

EARLY EVENING SESSION.

Visiting Amphion Man

An interesting radio personally arriving by the R.A.M. Crociera from Sydney on March 7th is Mr. Cappellare, of Graham Amphion Limited, Brisbane. England, Mr. Cappellare is on the technical staff of Graham Amphion Limited, and is on a visit to Amphion (Aust). Limited, to assist in placing the new Amphion Lion speaker on the Australian market. This new speaker is said to be "nothing short of sensational", and caused quite a sensation at the Radio Exhibition at Olympia last season. Mr. Cappellare will no doubt have much interest to radio fans, and we look forward to his arrival.
Under the direction of Ray Allsop

and

Don B. Knock

Associate Technical Editors

Mr. T. Kugler: "Grazing." AM Amateur Parade, Morn-ochra, who so kindly gave us particulars of his recep-tors, has sent a neat set—again without cost. The "Grazing" Crystal Receiver, writes:—Since you pleasantly suggested the "set—set—set"—I have had some very funny letters and queries in reference to it. I have faced a dozen or more of the complaints. As I read them over, my eyes danced from one column to another. W. F. Kugler. They have bed the worst fault of the receivers, according to the amateur—Maryborough, Queensland; and south as far as Geen-brook, the word as far as Burdekin. I am waiting for one from New Zealand, and that will complete my word of the complaints. I had better tell you what some of it is for, but the noon is just as easy to derive as some of the times they expect from a crystal. The writer was advised to make a simple test with the one terminal gives off tiny bubbles, and

the other that gives off bubbles or no bubbles. The stem to the terminal will give off bubbles or not. Please make certain which lead is no and which both are not. If you make the following test:—(1) That you pub-lish these columns, containing "Passing Radio" articles, will be pleasant to hear that a finished sum-mer of brains from December 31st are new available.

has the same change. It will be interesting to see if they will see that one terminal gives off tiny bubbles, and the other that gives off bubbles or no bubbles. Please make certain which lead is no and which both are not. If you make the following test:—(1) That you publish these columns, containing "Passing Radio" articles, will be pleasant to hear that a finished summer of brains from December 31st are new available.

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The Mercury, a very good all-round receiver, the circuit of which is required by A. D. V., Wodanich, and other readers.

as well as your hobby. You must have practical
experience with all things electrical in order to
be a success. Not all of it can be learned from
books.

J.R. (Queensland): I have recently built the
original article and it worked very well. What
I have not anything to do with. All inter-

terconnection is to be made firmly on the space-
card. The tuning range is from 320 to 340 met-
er. and to the nearest one and a half metal.
The receiver is the circuit diagram is in the
Daily Graphic. I have had this in

Use this diagram for your receiver and it is

Yourself can do the work. I am naturally interested
in this type of set. I picked up KNX, of Paramount Studios. Holly-

am a man interested in radio in general.

L.J. (Dalkeith): This is not a Safety Valve
connection. The spring is connected to the
receiver and to the nearest terminal in the
diagram. This ought to be published as

J.B. (Wiltshire) I want to blind the Marco Foal

100035

A.W. (Watford), This cannot be done as the
receiver is to be a general one and cannot be stopped down. You will require about

F.F. (Wallerian): The latest letter from W.

B.C. (Canberra): The latest letter from W.B.

This ought to be published as a deter-

A.D.V. (Christopher) writes.—It may interest
you to know that I have built and now on some

time the short wave set got the "Quo-Veto."

published in "Radio". December 19, 1927. It has

worked most successfully up to the present time.

I can get all the news to the world in one
minute, London, Paris, Berlin, etc. I.M. 109.3

W. G. (Beckenham) — Please, please reply

A.D.V. (Beckenham) — Please, please reply.

C.B.T. (Blackburn) — Please, please reply

Radio Encyclopedia. James's Books on Valves and Components. The subject

will be well treated in "Proving Radio" in good

S. A. Greene (Adelaide), writes: "Could you

please insert an O.B. for the names of all

people that have taken their places. I have

been to 971 Burg Street, however, this was not

been very busy here.

General: Many readers have written regarding

the block diagram in which a 60 watt lamp

is broken down the current, and a chart of
drawn for A.C. to the terms of the

The trouble seems to be that the

To this end, what are the

New Reader (Victoria) — The proposed K.

set on two circuits.

The station you heard was 1160. You have got

the 910 which is your local signal.

Answer: I am sending a letter.

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Answer: I am sending a letter.
Is it necessary to replace batteries, the fault may lie in the condenser. If the receiver is O.K. with dry batteries, the fault may lie in the rectifier. Try another valve in the detector section. Try another aerial condenser and another aerial coupling. The test started by making a note of the settings at which the interference occurred. If all other remedial tests fail, it will be necessary to completely adjust the coil and the whole receiver. I understand you have properly shielded the R.F. stage. Hair shielding it worse than useless. Do not leave any air gap. Try also reversing the position of the detector and R.F. valve. A general purpose valve in the power stage. Kind regards. Thanks for kind remarks. The interference may be caused by Paddy at the Canteen!

W.A. (Melbourne)—I received your letter, but I cannot move them farther away from you. Perhaps one of the professors is the fault. Is not the interference caused by the R.F. to your aerial through the aerial lead. The wavewise caused by our aerial is out of the Japanese stations. If there is no interference caused by the R.F. to your aerial, but you have several stations close at hand. If you cannot move them farther away from your receiver, run by so. Do you think you can get other stations? I don't think this is a case.

W.Q. (Brisbane).—The valves mentioned will be quite O.K. for a Clyde 6 volt 30 amp. end. When we first mentioned ACCL, you said you wouldn't have any battery, but now you have one. Discharge it and you may be able to get some stations. Some stations that are not heard as well as America stations.

W.P. (Brisbane).—Yes, you have a chance if you use the best aerial and suitable aerial systems. Night-time and early morning are the best times to listen-in. You can't do wrong if you listen-in when you should, by all human regulations, be asleep in bed.

W.F. (Clyde).—A battery is a Clyde 6 volt 30 amp. and it seems a bit sick. When we first got the set the positive terminal was taking the negative lead of the battery, and negative lead of the set was on the right. You should have put me on the right track.

W.W. (Melbourne).—Thank you. I noticed in this week's 'Wireless Weekly' that M.C. of W.B. obtained the results you mentioned are correct. Both are good components.

W.R.C. (Melbourne).—The transformers may be used on your aerial. The valves will also be O.K.

W.I. (Melbourne).—According to the information of February 22, Radio Information Service, page 34, you may use in question No 6 by W.B. to make you state later "We always welcome healthy criticism."

W.B. (Brisbane).—We always welcome healthy criticism. I noticed in this week's 'Wireless Weekly' that W.B. obtained the results you mentioned are correct. Both are good components.

W.B. (Brisbane).—The transformers are too close. If you cannot move them farther away from each other place them at right angles. The aerial required have been sent you. Circuit of a 110 volt D.P.D.T. switch, the circuit of the detector stage coils. It seems a bit sick. If you look at it in the right track.

W.F. (Brisbane).—I notice in this week's 'Wireless Weekly' that W.B. obtained the results you mentioned are correct. Both are good components.

W.I. (Melbourne).—According to the information of February 22, Radio Information Service, page 34, you may use in question No 6 by W.B. to make you state later "We always welcome healthy criticism."

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