

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

# Wireless Weekly

3<sup>d</sup>

MITCHELL  
12 APRIL  
SYDNEY

INCORPORATING "RADIO IN AUSTRALIA & NEW ZEALAND"

VOL. 13. NO. 17.

FRIDAY, APRIL 19, 1929.

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

**FROM 2 WATTS TO 1 KILOWATT**

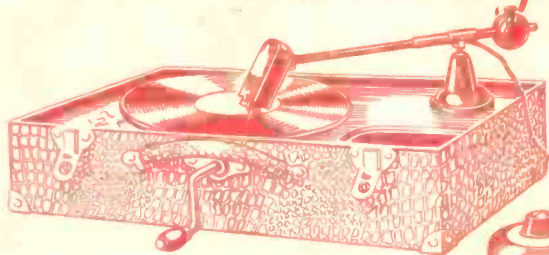
**PHILIPS THERMIONIC RECTIFIERS**

Radio Echo  
Measures  
Aeroplane  
Altitude  
—  
How to tune  
your Receiver  
—  
What is Feedback?  
—  
Ray Allsop  
on Engineering  
in Sound

The advertisement features a collection of Philips thermionic rectifiers of various sizes and designs, arranged on a red and white striped surface. In the background, there are large, detailed illustrations of vacuum tube components. The text 'FROM 2 WATTS TO 1 KILOWATT' is written in a large, blue, slanted font across the top left. The brand name 'PHILIPS' is prominently displayed in a large, bold, black font with white stripes, and 'THERMIONIC RECTIFIERS' is written below it in a red, slanted font. On the right side, a white box with a black border contains a list of technical articles and the author's name.

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and *Phonograph Pick-ups*



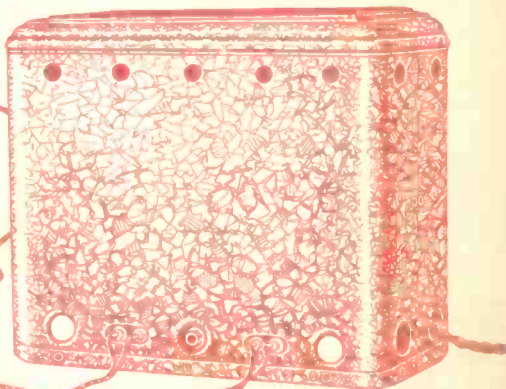
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- HOSPITALS
- PHONOGRAPH SHOPS
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- HOTELS

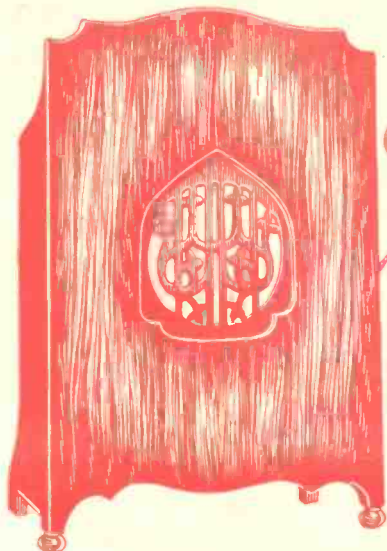


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No radio enthusiast who desires to see the latest developments; to compare sets and appliances; to meet the rest of the radio world assembled to talk about radio; to secure advice and wrinkles from experts, can afford to miss it.

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Open 11 a.m. to 10 p.m. daily except Sunday

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## MIDGET CONDENSERS

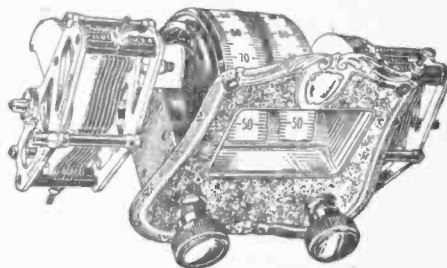
- No. J7, Midget  
7-plate . . . . 5/6
- No. J13, Midget  
13-plate . . . . 6/6

## Pilot Vernier Art Dials

- No. 1278  
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Vol. 13, No. 17  
Friday,  
April  
19,  
1929.

# Wireless Weekly

*Incorporating "Radio in Australia & New Zealand"*

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

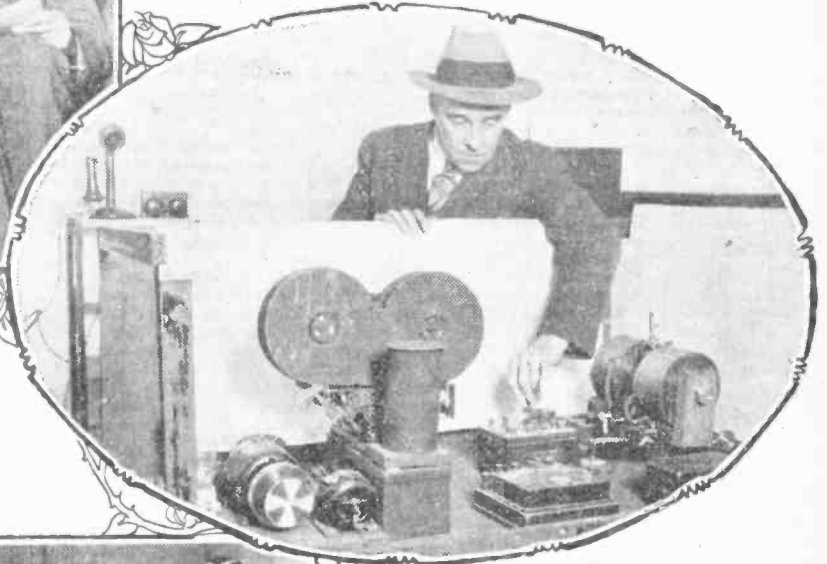
## RADIO NEWS IN PICTURES



The wireless apparatus for life-boats, which is capable of sending and receiving messages, is shown above. Stranded life-boats can thus keep in constant touch with land or rescue ships. In case of disaster. Many Atlantic steamship companies will soon equip their life-boats in a similar manner.



A busy group of guests at the party given at "Cooinoo" Home for destitute children by Farmer's-UW "Children's News" Radio Birthday Club recently.



Vibrations of the human voice, pulsations of the heart, acoustical defects in buildings, and flaws in metal may now be detected and photographed on motion picture film by means of the "oscioscope" shown above. Tone vibrations are transmitted to a revolving mirror with the aid of a fine wire, and are recorded on motion picture film.



The new electrically-operated device shown above has been so perfected that it lowers the temperature in an average room 10 degrees in 30 minutes. The warm air is drawn into the machine through louvers in the front, is cooled by passing over coils filled with a refrigerant, and then circulated through the room by means of a small electric fan at the rate of 450 cubic feet per minute. The humidity in a room is also decreased to a considerable degree.



The drawing of the recent competition for a free trip to Mount Buffalo by S.L.O. Thousands of entries were received, some of which are shown above.

# BETWEEN YOU AND ME AND THE MICROPHONE

## Major Daddy Long-legs

BY the daily mail received at 3LO, Melbourne, there are sometimes over two thousand letters, and many of them are from strange places, and contain a wide range of comments and requests. Recently a letter, addressed to Major Conder, came from an invalid, and the following is a copy:—"Would you please be a nice Daddy Long-legs, and not let 3LO cut off until all speeches at the close of 'The Desert Song' are finished, as I am a sick girl, and would love to hear all to the last."

## Between Items

WE don't usually cut up rough over other people's mistakes; but we cannot help feeling a little annoyed with Miss Kathleen



Roe for keeping us 'n the dark about her wedding. It seems that on a certain Wednesday Miss Roe looked at the 2FC afternoon programme and found that there were no artists to be accompanied; so, with Mr. Hector Pattinson, an eager and ardent accomplice, she went to Burwood, where they have a clergyman friend. That evening Mrs.

## Procession

ON Good Friday 2FC's racing commissioner, Mr. M. A. Ferry, was asked by the officials of the Sydney Show to describe the cattle parade through the loud-speaker amplifiers on the ground. Mr. Ferry began, but the pace at which several fat bulls moved in the vanguard of the procession made him impatient. "No doubt, those of you who recognise my voice will understand that I have been used to faster processions than this," he said; and the loud laughter which echoed all round the ring showed that the showgoers understood him, all right.

## Sir Oracle

CAPTAIN STEVENS' voice, says one of his correspondents, proves him to be a tall man with a dark complexion. Another correspondent described it as the voice of rotund prosperity. Which left the gallant captain speechless. Perhaps, in the circumstances, it were just as well.



## Station in Central Australia

ANOTHER letter arrived from a mustering camp away up on the border of Queensland and the Northern Territory:—"Why not move your outfit to Central Australia?" the writer asks. "Then," he proceeds, "it would give us all a fair go. We listen in to 3LO mostly. It is the only station we can get decently, but often this rotten static spoils everything, and then we have to go to bunk."

**A 3LO Story**  
By C. E.

*3 LO-quent and charming maids  
Went walking in "The Row,"  
And changing on three gallant blades,  
Where poplars cast their welcome  
shades,  
Exclaimed the 3, "L O."  
The friendships grew; the Dads de-  
served;  
The lovers loved and hoped:  
But, occupying of hope deferred,  
In desperation (so I heard),  
At last the 3 L Oped.*

## Songs of Innocence

ON a certain Thursday evening a man was observed to fall in a fainting fit in a busy part of the city, where two wireless shops are doing business in close proximity. A crowd quickly formed, and a policeman pushed his way through the gathering, and began to take notes. Everyone watched anxiously for the first sign of life in the faintee, but it was not until three-quarters of an hour and three flasks of whisky from a neighboring chemist's had gone by that the man was able to sit up and speak coherently. "I was passing between those two wireless shops," he said, "and one was broadcasting 2BL children's session, while the other was broadcasting the 2FC children's session. Just as I was passing Mr. Cochrane, the Hello Man, began to sing a song for the children, and at that very moment Uncle Bas also began to sing a song for the little children. I fainted." "Quite right," said the policeman. "I'd have done the same thing myself. Move on, please." The man was taken to hospital, where his robust physique is expected to ensure an early recovery.

## The Kindly Voice

A WOMAN came to 2FC not so long ago carrying a dilapidated dog in her arms. It had strayed into her home, she explained, and so she had brought it in to the station. Everyone was most sympathetic, but the question was: Why had she brought the dog into 2FC? So the woman explained that she was a constant listener to 2FC, and had been most impressed with the kindness of the voices of Mr. Cochrane and Mr. Halbert. She was sure that Mr. Cochrane and Mr. Halbert would vie with one another in an attempt to take care of the little lost dog. Were Mr. Cochrane and Mr. Halbert present, but, strangely enough, the idea of taking care of the little lost dog did not appeal to them. One might have supposed, from their attitudes, that they needed all their kindness for disposal among children and artists (same things). So someone advised the woman to take the dog to the R.S.P.C.A., and the matter was forgotten until someone dug it up for us the other day.

## Regrets

AT least one announcer will be on the mat during the next few days. Explaining the deletion of an item from an outside show, he said, "We regret that the next item to be sung is by Miss X—X—," and went on to explain something about copyright laws not permitting the item to be performed over the air.

## Foresight

UNCLE BAS classified some Ma. Birth-day calls. The figures are interesting. There were seven families in which the birthdays of three children and one parent fell on the same day; six families in which the birthdays of two children and one parent fell on the same day, and nine in which the birthdays of two children other than twins fell on the same day. Uncle Bas claims that these birthdays are arranged in the interests of Economical Birthday Parties; and we are very pleased to welcome these signs of intuitive thriftiness among Australia's best immigrants.



## Easter "Eggotism"

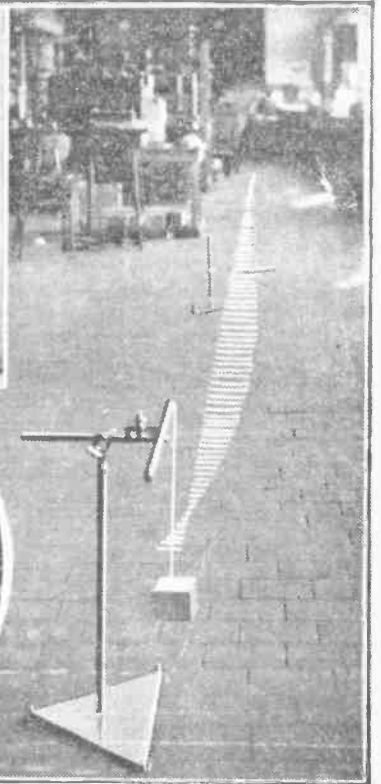
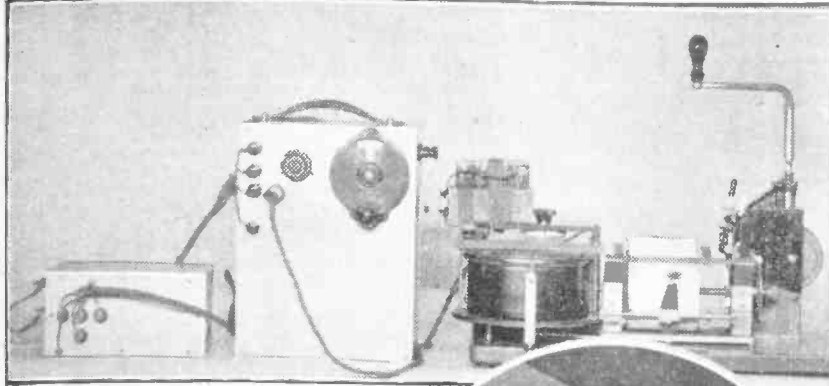
DURING Easter week an Easter egg of delightful sky-blue sweet stuff, with a yellow cotton-wool chicken, wholly disproportionate to its shell, hopping on top of it, was wedged on top of the 2BL microphone. Whether this egg was put there to inspire Mrs. Cranfield's recipe broadcasts or to add eggstasy to Captain Stevens' readings, or to introduce into Uncle Basil's voice the correct enigmatic touch during his reading of a weather forecast, we do not know. We do know that when the young gentlemen of the control room, all of an inquiring turn of mind, split the Easter egg open they found inside three tiny eggs of colored sweet stuff which made them very ill indeed.

## The Story of the Fall

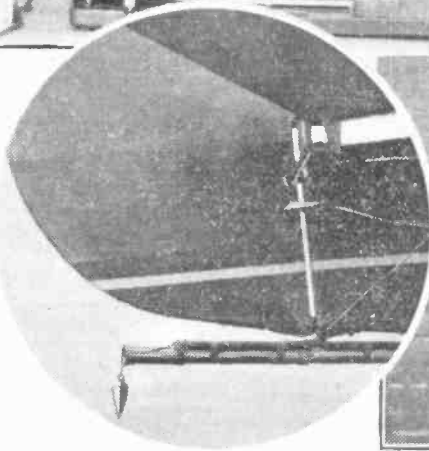
UNCLE BAS described the Hunting Contest at the Show on Saturday, in which Mr. C. C. Nichols, of Ashford, fell heavily at the sod wall. Ashford is six hundred miles direct from Sydney, away out in the back country; and it is worth noticing that 2BL comes through as clear as a bell all day in that district. So Mrs. Nichols heard Uncle Bas describe her husband's fall; and rushed by car from their small, 150,000-acre station into Ashford, where she arrived on Monday morning. Mrs. Nichols listened in to a set near the station, and heard Uncle Bas say that her husband had left hospital to ride in an afternoon event; whereupon she sent him a wire of congratulation.



INSTRUMENTS USED ON 'PLANE FOR RECORDING RADIO ECHO.



# Radio Echo Measures Aeroplane Altitude



Left: Shielded aerial outlet on 'plane used in Dr. Alexanderson's tests. Right: Mechanical model used to demonstrate principle of radio echo on aeroplane.

ONE of the most important aids to navigation of the sea is depth sounding. By means of his soundings and his chart the sailor can usually find his way in foggy weather. We are told that a corresponding aid is needed in aviation, and many suggestions have been made. One of these proposals is to make use of the echo, or reflection, of a radio wave. Depth and distance measurements are sometimes made by sound waves in water and in air. In that case the time is measured for the return of the reflected wave. With radio waves travelling at the velocity of light, this time interval is extremely short, and indirect methods of measurements must be adopted. I am going to describe one such method that has proven successful.

If we decide to measure the time interval in units equal to the time of one oscillation or cycle of the antenna current, the time interval of the echo is equal to the number of wave-lengths the reflected wave has travelled on its way from the antenna to the ground and back again. If this distance is varied by an amount which is a fraction of a wave-length, this variation will manifest itself in a variation of phase of the returning wave relatively to the phase of the transmitted wave. If the distance is varied by an amount of several wave-lengths, then the phase of the returning wave will go through the corresponding number of cyclic changes of phase. Thus, if we have means for ascertaining the phase of the returning wave, and are able to count the number of cyclic changes, we are thereby able to make absolute measurements of the height over ground.

The problem thus resolves itself into finding means for detecting the phase of the reflected wave in relation to the transmitted wave. A direct measurement of phase under these circumstances is difficult, and we are, therefore, taking advantage of a fact which we discovered during tests made from an aeroplane, that the reflected wave modifies the frequency of the original wave. This

change in frequency is dependent on the strength as well as the phase of the reflected wave. These cyclic changes in frequency are used to detect the phase of the reflected wave. The cause for these changes of frequency will, however, need some further explanation.

Ordinarily, we assume that the frequency of an electrical oscillator is determined by

*As has been unfortunately demonstrated by the "Southern Cross" accident, an accurate altimeter and a more reliable and more accurate compass are the main needs of aviation to-day. There is no instrument now in use that measures absolute altitude above the ground, and nothing more accurate than the earth induction compass. This paper, by Dr. E. F. W. Alexanderson, consulting engineer of the famous International General Electric, on the use of radio properties to obtain what is wanted, will be particularly interesting.*

the inductance and the capacity of the circuit, in the same way as the frequency of a mechanical oscillator is determined by the inertia and the restoring force. From these considerations we are tempted to draw the conclusion that the transmitted wave has the natural frequency of the antenna, and that the reflected wave which has the same frequency as the transmitted wave will only modify the phase, but not the frequency of the original oscillations. This conclusion is, however, a fallacy, as we discovered when we

started to make practical tests. The reason for this fallacy is that an oscillator will swing at its natural period only when the restoring forces which are contained in the oscillator itself are the only ones that exist. When the oscillator is acted upon by forces from outside, these forces may add to or subtract from the inherent restoring forces. It is, however, the resulting restoring force which determines the actual period of the oscillator. Thus, if the force coming from outside is in phase with the inherent restoring force, and increases it, the oscillator will swing with a higher frequency, and, conversely, if the force from outside is in opposition to the inherent restoring force, the oscillator will swing at a lower frequency. This relation between the phase of the force impressed upon the oscillator from outside, and its actual frequency, can be demonstrated with mechanical, as well as electrical models.

As soon as it is understood that the cyclic change of phase of the reflected wave manifests itself in a corresponding change of frequency of the antenna oscillator, a basis has been established for the design of a practical altitude meter.

The object is to measure the distance that the reflected wave has travelled when it returns to the antenna. This distance may be measured in two ways, by the strength of the returning wave, which in its turn determines the amount of frequency change; and by the number of cyclic changes in phase which the wave has passed through before it returns. The indications may be oral, graphic, or visual, or, in the nature of a warning which would call the operator's attention when certain limiting values had been exceeded.

In the measurements so far made, we have used an instrument that traces a graphic record of the frequency variations. Quite a number of such records have been taken, and one of these is herewith reproduced. Up to altitudes of 4000 feet the cyclic nature

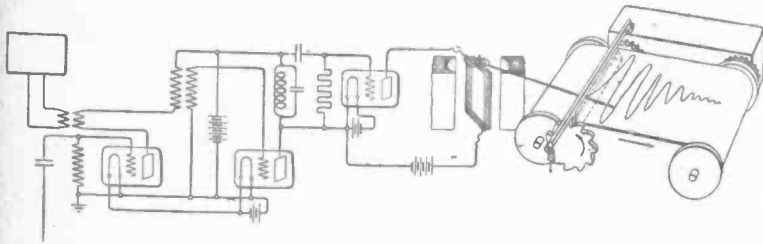


Diagram of instrument for recording radio echo on aeroplane.

of the frequency variations is unmistakably shown by the record. Observations were also made on a barometric altitude meter, and the observations were written down on the graphic record during the progress of the flight. We have thus observations of altitude by two independent means set down side by side on the graphic record. Two logs of the flight are reconstructed below, one from each set of observations. The wave-length was 95 metres, from which is deduced that each cycle of the wavy line in the graphic record represents an altitude change of 155 feet. The barometric log gives altitude over the starting point, whereas the radio echo log gives actual altitudes over the ground. The results should, therefore, not necessarily be identical. The agreement of the general shape of these curves is, however, quite convincing that we have in the radio echo a basis for absolute altitude measurements of height over ground.

How this principle may be best applied for practical aerial navigation we are not yet able to say. Continuous graphic records may be used on larger craft, and it may thereby be possible to positively identify the course flown with the maps and previous experience. Such graphic altitude logs may also be used for surveying.

A very desirable development will undoubtedly be an instrument which permits of positive determination of altitude over the ground at any time desired.

Some suggestions of how this can be accomplished may be sufficient at the present time. Suppose that an aviator is flying in a fog, and he wishes to reset his barometric altimeter for the actual level of the ground. The navigator will put the graphic radio echo meter in operation, and start to climb. The amplitude of the wavy line will give an immediate indication of height over ground, but he may desire a more accurate determination. Let us then assume that he can change the wave-length of the instrument 8 per cent. by pressing a key. By periodically pressing the key he may then trace two graphic curves, one at 100-metre wave-length and one at 92 metres. The phase relation of these two curves will be clearly shown by the record. If the two curves are in phase it means that the distance travelled by the echo wave may be measured in exact whole wave-lengths for both frequencies of the transmitter. Thus the 100-metre wave may have travelled 12 wave-lengths, and the 92-metre wave 13 wave-lengths. In this case the distance over ground would be 600 metres (2000ft.). If, on the other hand, the cyclic variations of the two records are 180deg. out of phase, it may be concluded that the altitude is either 300 metres (1000ft.) or 907 metres (3000ft.). The amplitude of the echo indication will indicate with sufficient accuracy which of the two figures should be accepted.

A definite calibration of the barometric instrument, with reference to ground may, therefore, be made at 1000, 2000, or 3000 feet altitude.

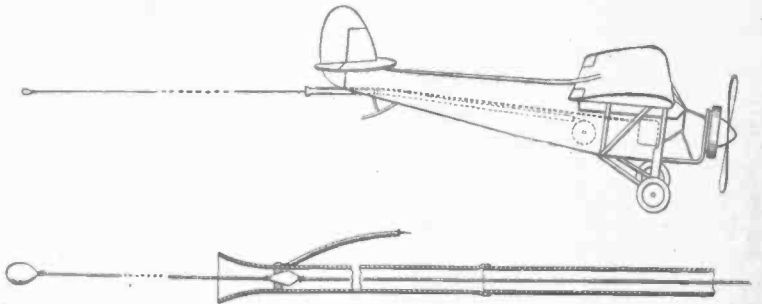
Another suggestion for the development of direct indicating instruments is to use two antennas with an oscillator in each antenna.

One antenna may have a wave-length of 10 metres, and the other 11 metres. The beat frequency between these two oscillations is detected and observed. This beat frequency will be of the magnitude of 3,000,000 cycles, but the frequency will change cyclically when the plane changes altitude. It will pass

est and the strongest maximum may light a green and a red lamp at, respectively, 240 and 80 feet.

If the oscillators are set with an interval of 2 per cent., instead of 10 per cent., a scale of maxima is obtained where the steps are five times as large. The strongest maximum will thus be at 400 feet.

These two scales may be used in succession during a landing in fog. The green and red lamps at 1200 and 400 feet for the approach and the same indications repeated at 240 and 80 feet for the final glide. A third scale may then be established by measuring the radio-frequency of one of the antenna oscillators, which will pass through maxima at 45 and 15 feet. It is assumed that other radio indications are given to determine the position of the landing fields. Such signals may be received by the same radio set as the altitude indications, and may be brought to the attention of the pilot by sight or sound, without interfering with operation of the altitude indicator. If these radio indications of height



Arrangement of aerial and reel in tests of radio echo.

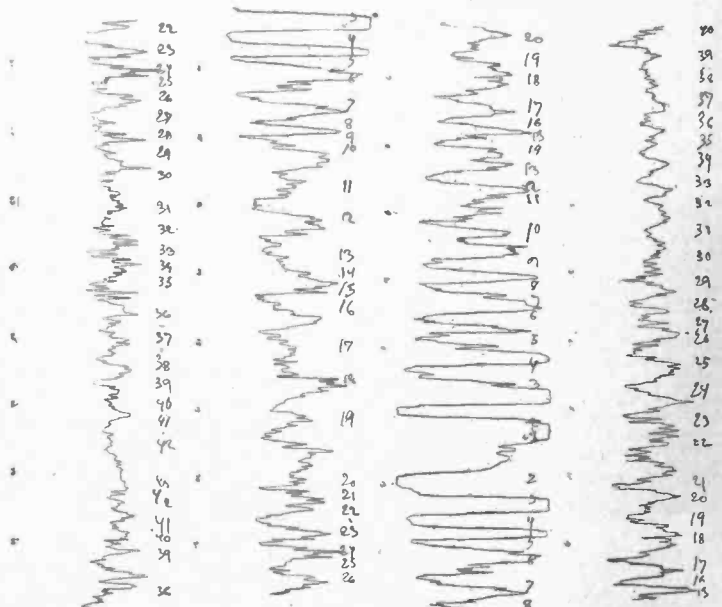
through maxima when the echo wave tends to decrease the frequency of the 11-metre oscillator at the same time as it increases the frequency of the 10-metre oscillator. The maxima of the beat frequency will occur at heights of 25 metres (80ft.), 75 metres (240ft.), 125 metres (400ft.), etc. Such a scale of indications may be a guide for landing in fog. For instance, the next strong-

and position are combined with a mechanical landing device, touching the ground at 10 to 15 feet, it is conceivable, at least, we are told so by our associates, who are skilled aviators, that safe landings may be made in fog, without any vision of the landing field.

### MAGNETIC COMPASS

AT the same session of the N.A.S., Dr. J. D. Tear, also of the research laboratory of the

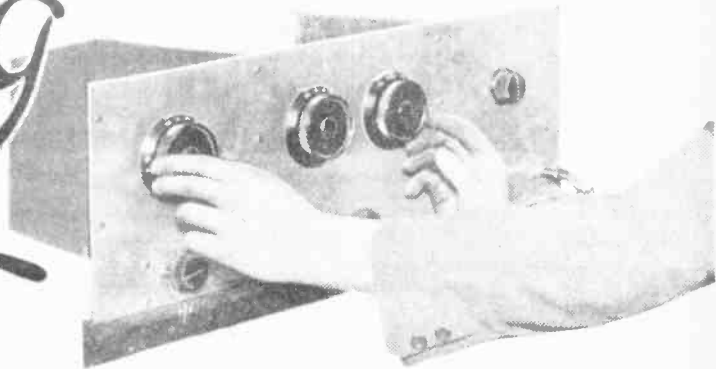
(CONTINUED ON PAGE 30.)



Graphic record made on aeroplane, showing cyclic relation between altitude and frequency.



# Tuning a Set



*Accurate tuning is not an art, says Mr. Knock in this article, but an accomplishment which can be acquired by every listener-in.*

By **DON B. KNOCK** (Associate Technical Editor)

**T**HERE is considerably more in the handling of your set than in just switching on and indulging in a little dial swinging. So many people possessing really good receivers say, "I am certain my set will bring in the distant stations really well, because one night Smith came round, and in a few minutes he tuned in all the main Australian stations, a New Zealander, and even identified a Jap. It would be nice if I could only do that to-night, when Jones comes round, so that he can see what the set is capable of; but somehow I can't get the hang of it."

Now, it would not be fair to dub the man who says this, "Ham-handed Henry"—the name I give to the indiscriminate dial twister—as he may be really painstaking, but as a matter of plain fact, is really afraid of his set. He knows full well that the set will do what he wants, and all on the loud-speaker, but sometimes, owing to misadjustments, he has been greeted with a distracting howl or "motor-boating," and from then on has been content to listen to one or two stations only. The receiver cannot be blamed because on occasions the owner has heard those stations he wants, although it was tuned by someone who knew the pros and cons of tuning.

Practice makes perfect in everything. Take, for instance, the experienced motor car driver or the aviator. Not only does he know what he has got underneath him, but he knows the reason exactly why, when he uses his rudder-bar and joystick, the

machine is responsive. For safety in driving a car or piloting an aeroplane one needs more than just casual practice. Just so with the wireless receiver. To get the best out of a receiver it is just as important to know what is happening behind those controls on the panel, otherwise you will be like the driver of a car who is able to drive, but all most know is that they "pull this and press that," and the car gets along—in a fashion.

If the operator of a wireless receiver knows just what is happening when he snaps on the filament switch and turns up the filament of the detector valve, or when he has to re-adjust the main tuning control every time he handles the reaction, the necessary adjustments will be made with confidence, and he will be able to find the station he is looking for at once, without having to roam over the whole tuning range.

At this point it is as well to mention that for the kind of listener who ignores the why and wherefore of the set (which is to enjoy good programmes), and seeks carefully around trying to identify those far distant stations he had heard so much about from other people, a wavemeter should be indispensable. It is not a hard job to make one's own wavemeter, and to calibrate it with a reliable degree of accuracy from known transmissions; but, on the other hand, there are marketed precision wavemeters calibrated from world-wide standards, and which are not unduly expensive. Normally, however, the wavemeter is not a great deal of use to the average listener, who is content with his local or own country's programmes.

It is easy to note the really experienced operator in his manner of going about the tuning of a set, and the first thing that strikes one is that he moves the actual tuning controls very slowly. The only time he makes quick alterations in the tuning is when he resets it to some previously known setting, or when a tuning condenser is swung backward and forward across a strong signal in order to determine the best zero point setting.

In these days of very selective receivers, it is much more important that tuning should be done slowly than was the case a year or two ago.

To illustrate exactly how tuning should be done, we will suppose that we are using a simple little one-valve regenerative receiver for headphone use, and that we are trying to identify distant transmissions. Owing to the certainty of interference with other listeners, this is not recommended, but will serve well to show what is meant. It should not take more than five minutes to cover the whole tuning range of the receiver,

and in that time to jot down on a piece of paper the dial readings for all the stations contained in the broadcast band.

Even though in most cases you will only be able to identify a carrier wave, yet by reference to a table, such as printed in WIRELESS WEEKLY, you will be able to locate each station, working up from the lower wavelengths to the top of the band. This is a comparatively easy matter where a straight regenerative detector is used, whether followed by audio stages or not, but when a stage of tuned radio frequency amplification comes into the picture, the procedure takes a little longer. It is necessary to keep the RF stage "in step" with the detector, and to balance the two controls together until the accurate readings are obtained.

Without listening actually to the programmes in course of transmission, try going the rounds of your dials, and identifying each

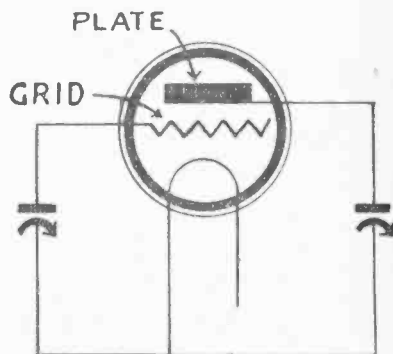


Fig. 2. Showing how tuning and reaction condensers are really in shunt.

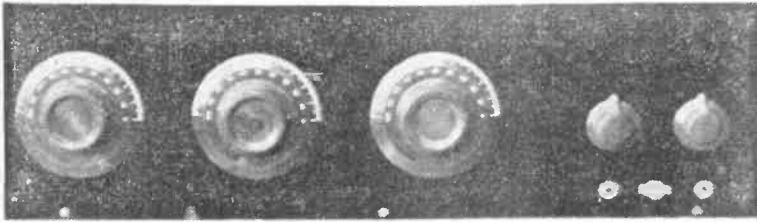
station, and you will in all probability find, if you know your set well, that you cover the whole range in something less than a minute, although you imagine that you are tuning quite slowly.

Most that I have said here applies to the plain type of tuning dials, and there are still quite a large number of these in use. Fortunately, though, the vernier type of dial now commonly used compels slow tuning by reason of its large reduction ratio. Even so, it is still quite easy with the best of verniers to tune quickly enough to miss entirely some of the weaker stations, and also some of those which, with a little care, may be tuned in at fair strength.

Although in 1920 we have reached a stage where most listeners consider the quality



The thumb control method of tuning calls for a little more care than usual, and requires a delicate touch. Sets may, however, be constructed in a very compact form with suitable condensers, as in the illustration.



The old 3 or 4 inch plain dials are still extensively used, and are preferred by many. Quite sensitive tuning may be accomplished by resting the fingers, with the hand spread out, on the full diameter of the indicator scale, instead of the knob in the centre.

(technically) of a transmission of primary importance, yet, the DX craze has not by any means been relegated to the past. Always the number of wireless enthusiasts is on the increase, and the newcomer will naturally pass through the same stage the more experienced listener did in the beginning. If you doubt this, you have only to listen on the wavelength of a distant interstate station after the local programmes have ceased to be greeted with the same old medley of howls, squeals, and whistles from dozens of listeners who have picked up the carrier wave with their sets in an oscillating condition, and are vainly trying to get some speech and music out of it. As much as we decry such practice, it is one of the charms of wireless reception to the beginner, and it is doubtful whether it will ever cease.

It is fairly certain that the majority of listeners, no matter what set they use, seem content to listen to their local programme, for the reason that during broadcasting hours there is not the same amount of interference from oscillating sets we knew a couple of years ago, and we must not overlook the great advancement in design owing to the wide use of screen grid RF amplifiers with their non-radiating qualities. One may be forgiven for allowing the set to oscillate when identifying stations on its dials for the first time by first searching for the carrier-wave, but once this has been done, and the positions noted, tuning should always be done by first setting the dials to the known readings and then advancing the reaction control until the transmission itself is heard, afterward balancing up on the tuning.

You must also remember that because your set is able to pick up a very faint and distant carrier wave it may be impossible to resolve that carrier into anything intelligible for the reason that it may be beyond the RF amplifying capabilities of the set, or, on the other hand, your set may be giving trouble and the RF amplification may not be doing their duty properly. There are many stations in the dim distance, such as the Japs, which the average receiver used around Sydney will only locate by the carrier wave alone, and from which it is usually impossible to get readable strength.

My advice to the man who experiences this, and is using a good average set, such as a Browning Drake four or a Marco, is (if he must have those DX stations) to build a screen grid RF booster unit, which is not a difficult proposition, costs little, and although it is an extra tuning control, will not make the set any harder to tune.

Many readers may be unaware that an ordinary Reinartz type of receiver may be schemed out, and balanced up well enough to render it really a "constant reaction" receiver. To keep the ordinary set away from oscillation, and yet close enough to it to get the full benefit of reaction while tuning, needs continual readjustment of the reaction control while the tuning dial is being tuned, but it is possible to have such a set so well balanced up with regard to inductance, capacity, and grid and plate potentials that the reaction control need hardly be touched as the tuning is swung through the whole

range, with the result that the circuit is in a fully sensitive condition without actually oscillating.

Here is a point to be remembered in connection with tuning. There are quite a lot of people who like tuning in one direction only, so that when they have reached the top of the tuning scale, they swing the condensers down to the bottom of the range, and start all over again. This is easy enough if the receiver is truly a "constant reaction" one, but if it is one where sensitivity has to be "chased" with the reaction, it means that as the reaction adjustment has followed the tuning on the way up, it must be set back before starting again at the bottom, otherwise the set may go into oscillation, perhaps with a violent howl, which, if you are wearing headphones, is very uncomfortable to the ears.

Besides producing the required sensitivity by oscillation or near oscillation, the tuning and reaction controls have another effect on each other which must not be overlooked. Suppose that you are listening to a station with the set in a fairly sensitive state, and that you are able to advance the reaction a little more without going too far. You will find that an increase in the reaction requires a slight decrease in the tuning setting, and when reaction is decreased an increase in the tuning is required.

This rule follows in all cases, and those who are used to the handling of a short-wave receiver will realise better exactly what I mean, as the effect is much more noticeable owing to the higher frequency. If this rule is borne in mind, tuning is simplified, as there is no need to play around to find out which is the way.

The cause of this rule is readily explained. There are two coils, one for the tuning and one for reaction. If the two coils are brought closer together, the wavelength to which the tuning coil is set will be increased owing to the self capacity of the reaction coil in relation to the tuning coil. To counteract this, and to get back to the previous wavelength, the tuning condenser must therefore be reduced. If reaction is controlled by a variable condenser, as in a Reinartz receiver, the effect is just the same, but is brought about in a different manner.

Reference to the Reinartz circuit diagram will explain this. The coupling between the two coils, L1 and L2, is fixed, and reaction is controlled by the variable condenser C2. Really, this reaction condenser C2 is in parallel with the tuning condenser C1 through the internal capacity of the valve. Figure 2 shows this. This internal capacity compared to the capacity of the reaction condenser, is small, so that the reaction condenser has only very little effect on the tuning condenser.

The variation of tuning is much less with this type of circuit than with one where a movable reaction coil is used, so that it is for this important reason to be preferred. An ordinary straight circuit such as this does not require any special skill in the handling, as it is so simple that the operator becomes accustomed with its function in a few minutes.

It is a different matter with the receiver using neutralised RF amplifiers, and it is worth while in such a case spending time and cash to get matters right before starting the tuning process. If neutralisation is not complete, the set will be difficult to handle and speech will be distorted, causing the unknowing operator to lay the blame with the audio amplifiers.

Neutralising is not a procedure to be looked upon with awe, as it is by so many, and all that is required is a systematic adjustment. If you are neutralising two RF stages, see that a true point is found for each valve. It is not sufficient on turning out the filament of the valve to find on rotating the neutralising condenser that the signals become weakest at one or the other end of the capacity setting. This signifies that the neutralising condenser is unsuitable, and that another one should be substituted, most likely of a lower minimum capacity.

Once neutralisation is properly effected, moving the neutralisation condenser in either direction should bring in the signals more strongly.

The question of valves is most important, and if a set is being designed for one purpose, for instance, selectivity, it is advisable to use the correct valves, which must be of the high impedance type. Remember that in a neutralised receiver, the same results will not be obtained by using low impedance valves in the RF stages even though they are easier to neutralise, although they might serve with medium results for the time being.

Tuning a receiver efficiently, whether broadcast or short-wave, is not an art, but just a knowledge of the functioning of the circuits one is tuning, and those readers who are seriously interested in the operation of wireless receivers should take the trouble to acquaint themselves thoroughly with what actually happens behind the panel as the controls are moved, when they will be like the experienced car driver, who has no need to look inside his gear-box to see what happens.

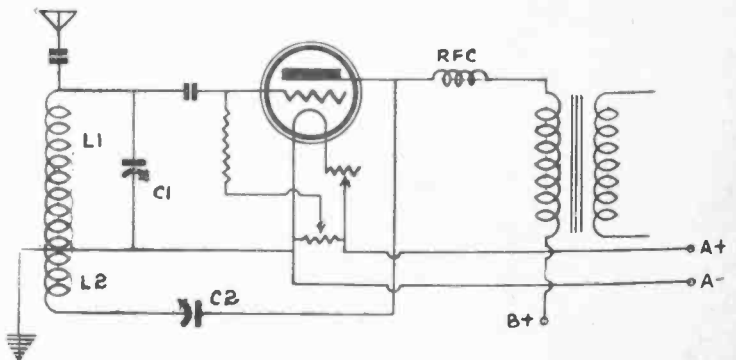


Fig. 1. Reinartz circuit referred to in article.

# Engineering In

# SOUND

## The Material of Broadcasting

By RAY ALLSOP

(Associate Technical Editor)



**I**n picking up material for broadcasting (that is, in getting the sound energy into electrical energy) the general requirements would seem to be to get to the high quality microphone, the sounds in the form in which a skilled listener would wish to hear them if he were free to choose his location with respect to the source of these sounds. In this respect, the skilled listener would be largely governed by hearing the sounds under the accustomed conditions, with all undesirable noises, echoes, and abnormal reverberations removed. In considering the pick-up of material for broadcasting it should be noted, however, that it corresponds to listening with one ear.

In picking up sounds, undesirable effects, which may be classed as distortion, may be obtained by having either too much or too little reverberation, or, where the sounds come from several sources, such as in the case of a quartet or an orchestra, by not having the proper relation between the intensities of the sounds which reach the microphone from the several sources. Since most speeches and musical selections are given indoors, a certain amount of reverberation is generally present. Because of this customary condition, music particularly, without reverberation, such as is obtained in a heavily padded room, sounds "dead." Too much reverberation, on the other hand, causes one tone to drag over into a succeeding one, and tends to blur the sounds.

Much of the material that is broadcast is given in a special studio, where it is possible to control the conditions. The studio can be placed in a quiet location, it can be treated with absorbing material to give the proper amount of reverberation, and the speaker, singers or musicians can be placed with respect to the microphone so as to obtain the desired balance between the direct sounds and the reverberation, and also between the sounds from the several sources where more than one source is used. With the large number of variables involved, it is not as yet possible, however, to give general rules governing all of them. In regard to the matter of equipping such a room with sound-absorbing material, it is seemingly a mistake to cover as completely as possible the ceilings,

walls, and floor of a studio with such material. Such a room, in addition to making the music sound "dead," makes it difficult, and in some cases impossible, for a singer or violinist to keep on the key, because they are accustomed to get the pitch of one note from the reverberation of the preceding note.

There is an increasing demand in broadcasting for the use of material which is not being given specifically for broadcasting, such as a speech by some well-known person, theatre organs, church organs, musical comedy, or a concert by a large orchestra. In such cases it is not possible to change the acoustics, so that the problem becomes one of getting the best location for the microphones.

For a speech, the problem is generally not difficult, as the microphone can usually be located within about three feet of the speaker, so as not to restrict unduly his usual movements. For a large orchestra of many pieces, or large choirs or brass bands, the problem presents some difficulties. It is desirable to get the microphone far enough away from the orchestra so that the paths from it to all the pieces of the orchestra are about equal, in order to get proper balance between the parts and at the same time not to be so far away from the orchestra that the noises of the audience are loud compared to the music.

Good results have been obtained under these conditions by suspending the microphone from the ceiling of the theatre and on the dress-circle rails. This brings it close to the audience, but also far enough away from it so that noises (clapping, etc.) are not particularly bothersome, and far enough away from the orchestra to get a good balance between the parts. Also this permits the sound striking the microphone through reverberation to be sufficiently appreciable as compared to the direct sound.

This reverberation gives the impression of the orchestra playing in a concert hall, which, of course, is its natural condition. The scheme of using several microphones distributed throughout the orchestra, in order to pick up the different parts, has been found undesirable, because of the lack of reverberation and the difficulty of getting proper balance between the parts.

In the case of some theatre organs it has been found necessary to use two or more microphones as the majority of these instruments have two sound outlets to the theatre. Therefore, the microphones must be so arranged to pick up the beautiful, soft notes and also be in such a position to handle the full volume of bass notes.

Church services in most cases present a problem to obtain good balance between the organ and choir, and also to pick up the individual parts of the service.

### SPECIAL EXHIBITION NUMBER

Watch for the special Exhibition number of "Wireless Weekly" next week.

Much enlarged, it will contain many important features, including the 1929 Neutrodyne, by Don B. Knock, and a special article by Ray Allsop. Brasso, so well known to readers of "Radio," will contribute, as will many others.

Complete details of the Radio Exhibition, including plan showing position of stands, will be published.

Order your copy now, and avoid disappointment.



—HOWARD HARRIS, Photo.

### Laurence MacCaulay

MR. LAURENCE MACCAULAY is a native of Glasgow, but it is as a bass singer we are to judge him, and, anyhow, it couldn't be helped.

He was not a child wonder. At the early age of five he did not evince signs of interest in the casual warblings of the cuckoo; nor did he attempt to imitate the twitterings of the sparrows, as they hopped from twig to twig. He was not—or, so far as we can discern, he was not—conscious of a higher destiny, or the relationship between the tonic scale and its minor diatonic third (if there is such a thing, because we don't know).

Positively to conclude these negative premises, let us say that he was not even a sweet-voiced member of a church choir. There, now; we suppose you are wondering how on earth he became the singer he is. This is exactly what we wished you to wonder, and the tale will be unfolded in the next paragraph.

While Mr. Laurence MacCaulay was still a young man, and when his voice had been thoroughly broken, he went to spend the evening at the house of a friend. And at this house on that very night there was a singer of undoubted ability and attainments, who let his voice soar forth into the Glasgow air, improving its quality and interest by at least from sixty to sixty-five per cent. on the gross total.

"I think I could sing that song," said Mr. MacCaulay.

"Do try!" said his friends.

"Do try!" said the singer of attainments and ability.

So Mr. MacCaulay tried, and succeeded, to the delight, no less than to the astonishment, of his friends and the singer, who told him that lessons should begin immediately. Lessons began.

He gained some experience during a tour of holiday resorts, and as the broadcasting stations were, at that time (1922-23) being erected, he was one of the first to broadcast. Like the Johnsonian Scotsman, he saw fair prospects on the English Highway, and made a successful English tour, receiving praise from critics of the calibre of Harry Plunkett Green (who gave him lessons), Walford Davis, and Sir R. R. Terry. Then he went back to Scotland, and proceeded to mop up

# PROGRAMMIE PERSONALITIES

the Scottish Music Festivals, which are the rich Uncles of what we are pleased to call our cisteddfods. He gained certificates in Glasgow, Aberdeen, and Greenock, also in Renfrewshire.

In 1926, Mr. MacCaulay came out to Australia, to tour; but he tells us that Australia has exercised her charms (politicians, unionists, and double taxation) over him, and he has settled down here, with his wife and child, whom he is proud to call an Australian.

For the benefit of the Inquisitive, Mr. MacCaulay is tall, with a slight Scottish accent, and a horrible fear that the photograph we present somewhere on this page may make his face seem too long. His broadcasting experience is of the stations in London, Glasgow, Aberdeen, Newcastle, Manchester, Cardiff, and Bournemouth. He says that the standard of Australian broadcasting attains to as high a state of proficiency as that of England, but adds a rider admitting that the comparative affluence of the British stations permits them to retain many permanent features, which are not used in Australian stations. In England, he says, some of the stations maintain their own choirs, vocal quartets, and symphony orchestras; and the performance of great works is thus made an every-day affair.

Mr. Laurence MacCaulay was also extremely interested in a form of entertainment which he terms a "free and easy night." The idea was to do away with all formality in the announcement of items, and to make the programme seem as spontaneous as possible. This was most successful, we believe, in fact, an imitation of a picnic party at Loch Lomond was received so well by the public that it was repeated from the banks of Loch Lomond itself. For an unannounced programme this should constitute a record, as a moment's thought will prove the singularity of operating on banks, without tellers.

By the way, we have lost our records of the spelling of our artist's name, so we have spelt it in many ways, just to make sure. We should not like to make a mistake.

### "God Save the King"

IT was midnight in the 2BL studio. A gramophone record rolled over on its nail in the wall, and yawned loudly. The microphone turned on his stand and glared through the darkness.

"Shut up," he said testily. "I've had a hard day to-day. For heaven's sake let a chan get to sleep."

"It's all very well for you to talk of sleep," said the gramophone record. "You're working all day. You don't consider my position in this station."

"Position!" sneered the microphone. "YOUR position! What is YOUR position in this station, I should like to know! All you do is dance round at the end of a day's work, singing the National Anthem—that's all you do! And here am I working and vibrating all day like—"

"That's the whole trouble," answered the gramophone record. "I have the ability. I am quite prepared to work hard in this stu-

dio. In fact, I have an extensive repertoire. On one face I have, graven indelibly, the National Anthem and 'Britannia Rule the Waves'; on the other face—"

"Might have known you'd be double-faced," grunted the weary microphone.

"On the other face," continued the gramophone record, deaf to aspersions in the overwhelming sense of the justice of his grievance, "on the other face are 'Long Live the Prince of Wales' and 'The Marseillaise.' I am quite prepared to sing any one of the numbers—all being extremely interesting and patriotic—at the shortest notice, but what do the announcers say? What does the programme department say?" The microphone snored loudly, but it didn't matter. They say, "The one item, at the close of each night session, please," and I am left without hope of redress; indeed, I am not allowed even to follow the Australian custom in such cases, and refuse to offer my services." The microphone snored once more, but the gramophone record did not heed him. "It is not fair to an artist," he said, "to restrict his repertoire in such a manner. There are notes in 'Long Live the Prince of Wales' which I sing better than any one else in Australia. My rendering of 'Britannia Rule the Waves' has been praised by the foremost critics in England and in Australia. But will Kirke take any notice? Will Stevens consider my artist-soul? No, I am simply a pawn in their hands, and they stand over me during my recital, wait-



ing their earliest opportunity to snatch me off the air, between my 'God Save the King' item and my rendering of 'Britannia Rule the Waves.' Moreover, I am always on at the END of a performance, when most respectable people are in bed. I am not granted a sufficient audience. Many people would be surprised to know that I exist. What I say is, IS IT FAIR TO THE LISTENER-IN?"

The gramophone record paused, as he was thoroughly exhausted, and awaited the reply of his audience. But the microphone was sleeping silently, and one might have heard a pin drop, so still was the stillness. The gramophone record gave a despairing cry, and commenced to whirl himself round and round on his nail. Round and round he went—and outwards and outwards. He was going to end everything. But just as he was nearing the end of the nail he stopped. The nail had a round, flat head, which would not permit him to roll off. Once more Humanity had beaten him. With a terrible cry, the gramophone record dropped back into his place, and sobbed himself to sleep.



# ANZAC DAY PROGRAMMES

## 2FC AND 2BL

THE Directors of the New South Wales Broadcasting Company, Limited, have arranged very comprehensive programmes for both stations 2BL and 2FC suitable for Anzac Day.

2FC will open at 10 a.m. with the ordinary news service, and will then cross at 10.30 to transmit from Canberra, the inauguration of the Australian War Memorial. This function will run on until 12 o'clock, and arrangements have been made for it to be relayed through 3LO, Melbourne, 5CL, Adelaide, and 4QG, Brisbane. It will commence with a short description of the historic deeds that led to the establishment of the War Memorial. The story will then be told of the arrival of the Royal Military College Guard of Honor with colors and band, the R.A.N. Cadet-Midshipmen, and Returned Soldiers. The arrival of His Excellency, the Governor-General, and the Prime Minister, and the inspection of the Guard of Honor, together with the arrival of the various bands, will be portrayed. Speeches are to be delivered by the Governor-General and the Prime Minister, and prayers are to be read by various military chaplains.

Very complete arrangements have been made for the musical side of this function, and the Canberra City Band, the Royal Military College Band, the Canberra City Choir, and the Canberra Schools' Choir will take part, and the Boy Scouts and Girl Guides movements are also included in the function.

The afternoon session from 2FC will cover an organ recital from Christ Church, St. Laurence, arranged by Mr. Christian Heilemann. The whole programme will embrace Australian compositions. This will run from 2.30 to 3.30, and at the latter hour 2FC will broadcast from the basement of the Town Hall a programme given in connection with the annual soldiers' entertainment, under the auspices of the Anzac Fellowship of Women.

The night session from 2FC will embrace an all-Australian programme. It will open with an organ and pianoforte recital by Misses Lilian Frost and Esther Kahn, while from the studio Marsh Little, the well-known Australian composer, will present a number of his own songs. Charles Lawrence will add a little touch of humor suitable to the occasion. At 9 o'clock the Rt. Hon. S. M. Bruce, M.P., Prime Minister of Australia, will deliver an Anzac Day message to the Commonwealth.

From 2BL an equally acceptable programme has been arranged. This station will open at 11 o'clock, and will transmit a description of the scene in the Domain at the Anzac Day commemoration service. This will cover the full programme in connection with the service, featuring the arrival of the troops, band and choral music, the prayers and speeches. Provision has been made for this service to be broadcast from the Town Hall in the event of the weather being unsuitable for an open-air commemoration. At 12 o'clock, from the studio, 2BL will present a radio tribute to the memory of the men of Anzac. This will take the form of music and narration, selected from notable Empire melodies and poems which have endeared themselves to the heart of the Nation. This has been arranged by Captain A. C. C. Stevens. Reproductions from the bands of His Majesty's oldstream Guards, the Life Guards, the Australian Commonwealth Military Band, and the Christchurch Choir and His Majesty's Chapel Royal Choir will be played. At 1.15 Major-Gen. Sir Charles Rosenthal, one of the



Captain MacLean and Mr. Horace Book, who will figure in the Anzac Day programme at 3LO.

Anzacs' most famous leaders, will tell of the "Spirit of Anzac."

The afternoon session will commence at 3.45, and after Basil Kirke has spoken on "Reminiscences of the landing at Gallipoli," a musical programme will run on until 5.23, when the "Last Post" will be sounded by buglers from the Cenotaph at Martin Place.

The night session from 2BL will open with a fine musical presentation from the Capitol Theatre. This will be followed by musical items from W. E. Lewis and Miss Dorrie Ward, who was so well known for her work with the "Cheero Girls" in the days of the war. Johnnie Marks, who claims without exaggeration that he is a familiar figure as a comedian to every Australian soldier, will touch on humorous episodes connected with the stirring days of war. Scott Alexander will present a delightful little comedy, "Lovers' Lane," in which the story is told of a Digger and his girl.

At 9.32 the Rt. Hon. W. M. Hughes, M.P., will deliver a short oration on "The Anzac in the War."

## 3LO AND 3AR

### Anzac Day

LISTENERS to 3LO will be enabled to commemorate Anzac Day in a fitting manner, for the celebrations will commence with a broadcast description of the inspection and march past of the troops at Canberra, and unveiling the Commemoration Stone by His Excellency, the Governor-General. Hymns will be sung, and clergy representative of various denominations will take part. Wreaths will be placed on the stone by His Excellency and the Federal President of the R.S.S.I.L.A., and the National Anthem will be sung by the public. During the afternoon a description of the Melbourne march past of diggers, nurses, etc., will be given by Eric Welch, thus enabling their comrades, many of whom are now in the back-blocks, to be with them in spirit.

### Captain MacLean

"WHAT Anzac Day means to boys and girls" will be the fitting title of the talk that will be given in the Children's Hour by Captain Donald MacLean, on April 25. There is every indication that, as the years roll on, Anzac Day will have a greater significance than ever, and it is anticipated that, year after year, soldiers will join in the march past, until but one solitary figure remains.

### Anzac Day at 3AR

THE Anzac Day Commemoration Service from St. Paul's Cathedral will be broadcast by 3AR at 11 a.m., when special prayers will be offered, and an address given by Bishop Stevens.

### Change in Dance Night

AS Anzac Day falls on Thursday, April 25, the weekly dance night at 3LO will be held on April 23. The educational hour has been transferred to April 24, when the usual instructive and interesting talks will be given by Dr. Loftus Hills, Fritz Hart, and the Rev. Bottonley.

### Speakers

TWO popular speakers will be heard from 3LO on April 25. Howlett Ross, the gifted journalist and lecturer, will give one of his customary well-prepared talks on "The Significance of Anzac Day," and viewing "The Day" from another aspect, Rod M'Gregor will give a talk on "Great Australian Footballers in the Great War."

### Digger Memories

"AN Hour of Digger Memories in Song and Story" will be given on Anzac Night by Rod Exton and some of his clever colleagues, most of whom are now popular radio artists, but who were closely associated in Flanders during the war. The programme will include all the old favorites, "Roses of Picardy," "Australia Will be There," "The Deathless Army," and "A Long, Long Trail." The Brunswick City Band will be heard in the good, well-tries marches, and Horace Rook will recite "Spotty" and "The Hell Gates of Soissons." Assisting artists who will be heard in solos, duets, and quartettes are J. Alexander Browne, Bob Molyneux, and Roy Simpson.

### Donald MacLean on Anzac Day

WHAT promises to be a very inspiring talk will be given from 3AR on Anzac Day by Captain Donald MacLean, who will compare "The Buccaneer and the Spirit of Anzac." Everyone has heard how the undaunted courage of the Anzacs swept away innumerable difficulties during the war, and it will be interesting to see how these indomitable traits of character measure with the adventurous spirits of the bold buccanners.

### Dramatic Selections

HARCOURT BAILEY, who is well known to listeners as an entertainer, will be heard from 3LO on Anzac Day in a series of appropriate dramatic selections: Mr. Tom Semole, the popular broadcasting tenor, will contribute "Heroes of the Dardanelles" and "Sound an Alarm," and Oliver Pencock will be heard in "Let Me Like a Soldier Fall" from "Maritana."

### The Migration Problem

THE all-important question of "Migration" will be discussed at 3LO on April 23 by Professor D. C. Copland, Dean of the Faculty of Commerce at the Melbourne University, who will speak under the auspices of the University Extension Board.

# Wireless Weekly

Incorporating "Radio in Australia and New Zealand."

FRIDAY, APRIL 19, 1929.

## UNDER THE JOLLY ROGER

### A Word to Amateurs

**D**URING the past two months it has been noticed in amateur wavebands that the supposedly extinct "pirate transmitter" is again making his appearance. Complaints are reaching us showing that illicit operators and stations are making use of well-known calls, the owners of which have been temporarily off the air.

Not only is such practice unfair on the part of the perpetrator, but it may lead to serious consequences. In this year of grace 1929, a much higher operating standard is essential than has previously been the case, owing to the more limited frequencies available for the experimental transmitter throughout the world. Those transmitters who have lived with the "ham" world through its ups and downs have taken the trouble to model their apparatus in such a way that the signal is only of the highest order, as pure and as steady as possible. It is naturally very disconcerting to such a man, who may be called away from his station on business for a week or two, to return and hear some station on the air using his own call, and with a note like a buzz saw, and perhaps outside the allocated frequency.

Owing to the great interest aroused in the general public in amateur transmission during the last six months, more new licensed stations are making their appearance monthly, and more and more would-be amateur transmitters are writing to WIRELESS WEEKLY for information for the construction of transmitters, etc. Some of their correspondence practically gives them away, and shows that they have already tried their luck on the air in some way or other.

The genuine applicant for a transmitting license must first consider himself technically competent enough to build and operate efficiently and intelligently such apparatus before even considering its use; and well-known textbooks available to all and sundry supply such information. Having learnt the necessary theory, the international Morse code at not less than 12 words per minute, and operating procedure, the first and requisite step is to apply to the P.M.G.'s Department, Wireless Branch, 215 Castlereagh Street, Sydney, for particulars of the examination for the amateur operator's Certificate of Proficiency when details will be promptly forthcoming.

## Every Other House Has Radio in Victoria

**A**CCORDING to the official figures for the month of March, which have just been issued by the Postmaster-General's Department, the world's record quota of wireless licenses in Victoria per one hundred of population has been raised still further, and now stands at 8.09.

Analysing this remarkable quota, it means that one wireless set is installed to every three houses in Victoria, for, according to the late Sir George Knibbs's statistics, an average of over four people reside in every house; but as a very large majority of the licenses are in the metropolitan area, it would appear that every other house in Melbourne and the suburbs has a wireless set installed.

How long will the issue of new licenses in Victoria exceed the cancellations? That question has been asked over and over again during the last 12 months, and the statements issued by the Postmaster-General's Department, showing an ever-increasing quota in Victoria, provide food for wonder, especially as a stage must be reached that may be regarded as saturation point.

With the issue of licenses in Victoria in such a satisfactory position, it seems incredible that the Government should consider such a revolutionary change as that mentioned in the daily press. If such a change has the result of a levelling down

of the Victorian quota of 8.09 licenses per 100 of population to the Commonwealth average of 4.64, or even to the English quota of 5.79, then the development of wireless in Victoria will receive a serious setback, and the radio trade will suffer a loss too serious to contemplate.

Shortly after the commencement of broadcasting by 3LO, Melbourne, the issue of licenses increased to such an extent that about one-half of the total licenses in the whole of the Commonwealth are issued in

Victoria, and that quota has always been maintained. This proves beyond doubt that the services of 3LO are, and always have been, entirely satisfactory to the vast majority of listeners. Another interesting aspect of the Postmaster-General's statements is that since the introduction of the system of co-ordination and the assumption of control by 3LO of

7ZL, Hobart, and 5CL, Adelaide, last year, the quotas of licenses in Tasmania and South Australia have steadily increased until the latter State is second in Australia only to Victoria.

It is generally acknowledged that it would be a wise policy to give this system a reasonable trial rather than rush into revolutionary changes. The Government may find if it perseveres with its proposed policy that it is adopting a "pig in a poke" attitude.

WIRELESS LICENSES.			
Figures to the end of March, 1929, showed that New South Wales made an increase of 1083, which is more than all the other States together. The detailed figures are as follow:—			
State	In-crease	In-crease	Percent-age
New South Wales	1,083	95,487	3.92
Victoria	290	111,932	3.09
South Australia	260	22,942	3.97
Tasmania	129	4,327	2.05
Queensland	99	24,642	2.67
West Australia	30	3,790	.9
Commonwealth	1,831	293,120	4.64

## SELLING THE OLD SET ..... No. 1



# THE SAFETY VALVE



Readers are urged to express their opinions on matters pertaining to broadcasting. If you have some grievance, if you have some constructive criticism to offer, here is your chance for expression--your safety valve. The

editor assumes no responsibility for statements made by readers and published on this page, as opinions of correspondents do not represent our editorial policies or beliefs. Anonymous letters are not considered.

## Sinners, Beware!

Dear Sir,—What a parlous plight poor G. O'Kell is in! He has apparently got a ticking per week, about seven hours are devoted to religion. Our friend seemingly has no religion, and doesn't want any, but can't get away from parsons, who "really make him believe he is a sinner!" Seeing that religion is intimately related to belief in a life after this, to have no religion is to have no hope or conception of an after life—why, if he is right, should G. O'Kell worry? If there is no after life, neither pleasure nor pain, cheerfulness nor despondency, sermons nor jazz, nor anything else, will matter in the least to G. O'Kell the moment after he "goes west." So why need he growl at anything? According to his philosophy, one may as well be miserable as happy in this life, for what can be the ultimate gain? When he has "gone west" he will be none the better if sermons are cut out, or jazz is quadrupled, nor any the worse either! It was not worth his while even writing to the "Wireless Weekly." Holding the ideas he does, the sooner he "shuffles off this mortal coil" the sooner he will be rid of the things which annoy him and then it won't matter whether the "doleful, mournful, pious hymn-singing angels are devils on Mondays" or not. If nothing really matters when the shadow comes, why does Mr. O'Kell linger on the stage? Quit, brother! Quit either grumbling or living. Or, as an alternative, quit listening in to church services. But, supposing the parsons are right after all! Think of that!

Yours, etc.,

A HAPPY RELIGIOUS CHAP.

Cabramatta.

## Need for "Spiritual Food"

Dear Sir,—I have read the opinions expressed in your "Safety Valve" columns from time to time, and it strikes me more each week how difficult it must be to find the perfect programme. What would suit our "fed-up" friends would not be appreciated by others, and they should remember that abuse is not argument.

The broadcasting stations are to be complimented on their programmes, the Sunday services from 2FC and 2BL being, in my humble opinion, the finest for the week. In fact, I should like to hear one or two religious programmes during the week, and I am not alone in my desires, for it must be remembered that whilst there are thousands living only for the pleasures of this world, there are others in their quiet way who are trying to extend the Kingdom of the God they love, and these religious services are to them Spiritual Food. This cannot be comprehended by some of our correspondents, or they would be charitable in their thoughts, and they would then show the characteristics of true sports when writing and expressing their opinions instead of descending to abuse.

The true Christian is a sport to the backbone, and bears the name of "wowsler" with-

out concern, for his thoughts are for others—not himself. Some like sport, others classical programmes, others a little of each, and there is no doubt about it, the broadcasting companies are supplying fine programmes, and I should be very sorry if the two "fed-up" friends had all their own way.

After all, we only get good religious services one day per week: some people are never satisfied.

I should therefore be glad if you would attach the following contribution—which only reached me yesterday. It does not refer to wireless programmes, but seems to fit some of the writers in the "Safety Valve" column of your excellent publication.—

Yours, etc.,

"SQUARE DEAL."

Sydney.

("Square Deal's" enclosure is published in the panel on this page.)

## IF

*Published at the request of "Square Deal," who wishes it to be an object lesson to some Safety Valvers.*

*If all the sea were made of beer,*

*And all the land of cheese;*

*And crabs and greiv (already cooked)*

*Like leaves upon the trees;*

*And hankies fell instead of rain,*

*And all the grass was gold;*

*And summer days were not too hot,*

*Nor winter ones too cold,*

*If houses sprouted in the night*

*And motor cars cost nil,*

*And everyone was full of vim,*

*And no one ever ill,*

*If foals laid ninety eggs a day,*

*And work was said to be*

*A crime, and everybody lived*

*Three thousand years and three;*

*If every man had thirty wives,*

*And all of them were dumb;*

*And diamonds grew like hazel nuts,*

*And cars provided rum,*

*And politics were barred;*

*And loaves of bread were three feet long,*

*And measured by the yard;*

*If every horse we backed ramped home,*

*And everything was free;*

*And all the girls wore crepe de Chine,*

*And smiled at you and me,*

*And—well, 'twould be a merry world,*

*And some perverted girl,*

*Some pessimistic blabby coar*

*Would find a cause to growl.*

—SAM STANLEY.

## Army Service Wanted

Dear Sir,—I have no complaints to make about the Sunday programmes, for I think they are good, but I think all listeners should be catered for. What I want is this: A good Salvation Army service put on the air on Sunday nights in turn with the other churches, which I think is only right.

Yours, etc.,

W. WOODWARD.

Paxton.

## Quote Numbers

Dear Sir,—I think that a good idea would be to ask all "Safety Valve" writers, satisfied and dissatisfied, when writing, to add their license number. I am sure it would stop a good many from writing and taking up your valuable time and paper, which could be put to a far better purpose.

In this week's issue (22/3/29), a letter written by "Omega," re church services, calls for some comment. May I state that I am of the opinion that the two A class stations could come to some agreement, and have Sunday about with church and music. If one with a cheap set does not want church, then he has the other to tickle up.

Yours, etc.,

ONE INTERESTED.

North Sydney.

## Renowned

Dear Sir,—I would like you to know of the wonderful results I have been getting with the Renown three-valve receiver which was described in issue of March 22. Using a short aerial only, I have been able to get nearly every interstate station with very good volume and clarity. My best include 3LO, 4QG, 5CL, 5DN, 3DB, 3AR, 4CM, 7ZL, as well as all the Sydney stations—all at excellent loud-speaker strength.

Yours, etc.,

A. F. MACDONALD.

Bondi.

## Two Sad Sunbeams

Dear Sir,—I wish to add my thanks for the good programme 2FC and 2BL put on the air, more especially the "Two Sad Sunbeams." I think they are most sparkling and unique in their entertainment. If there were more twins like "The Two Sunbeams" I am sure the public would appreciate them. Hoping to hear more of them shortly.—Yours, etc.,

King's Cross.

P. MUIR.

## When Winter Comes

Dear Sir,—May I ask through whether you have any more sketches are not broadcast as a change to so much music, good though so much of it is. Charles Lawrence's appearance in this direction was very welcome. I live in a boardinghouse containing 25 persons, the majority of whom are radio enthusiasts, and naturally we hold various opinions about the different items put over the air, but we are all united on one point, viz., radio sketches, humorous preferred, but they are all too scarce. I can vouch for three new licenses being taken out last winter after the hearers had heard one of the Mrs. Higgs sketches put over by Eileen Dawn and Edgar Warwick, on a cold, wet night. Now, broadcasting companies, sit up and take notice. Winter is coming.

Yours, etc.,

V. A. A.

Sydney.

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AND OTHERS—INCLUDING ALL LOCALS  
at Full Volume and Perfect Clarity

THIS IS WHAT BUILDERS OF THE SUPER SELECTIVE

“RENOWN THREE” RECENTLY DESCRIBED IN  
WIRELESS WEEKLY SAY:

“The Three Valve Set with the Five Valve Performance”

EVERYBODY'S BUILDING IT—AND GETTING REAL RADIO RECEPTION.

### RENOWN

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EXACTLY AS USED  
IN THE ORIGINAL

Complete Kit, £6/13/11

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- 1 doz. Rd. Bus ..... 11d
- 2 Pewi Clips at 4d ..... 8d
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### RENOWN

#### DIAGRAMS

Showing a Picturised  
Layout, Wiring, and  
General Instructions

1/- each or Free with Kit

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Are, without doubt, the  
Best Made. Ratio, 63 to 1,

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### SOME PARTS FOR

#### THE AIR KING

As featured

in “Wireless Weekly”

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- Radiokos S.G. Coil Kits, for short waves ..... £3/12/6
- Ferranti Transformers—
- AFBC ..... £2/3/3
- OPGC ..... £1/16/6
- AWA Sockets ..... 3/-
- AWA Ideal Transformers ..... 18/-
- Sub-panel Brackets, pr. ..... 3/6
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- Phillips' A412 Valves ..... 30/-
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### VARIABLE CONDENSERS

“THE SAXON” .0005 SLF, ball  
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true low-loss, one hole fixing, 3/6

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“PILOT,” .0005, 13/6

CENTRALINE, .00035, S.L.F., 12/6  
.00025, S.L.F., 12/-

### “ECONOTRON”

A Quality Valve  
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# What is Feedback? Answer Here

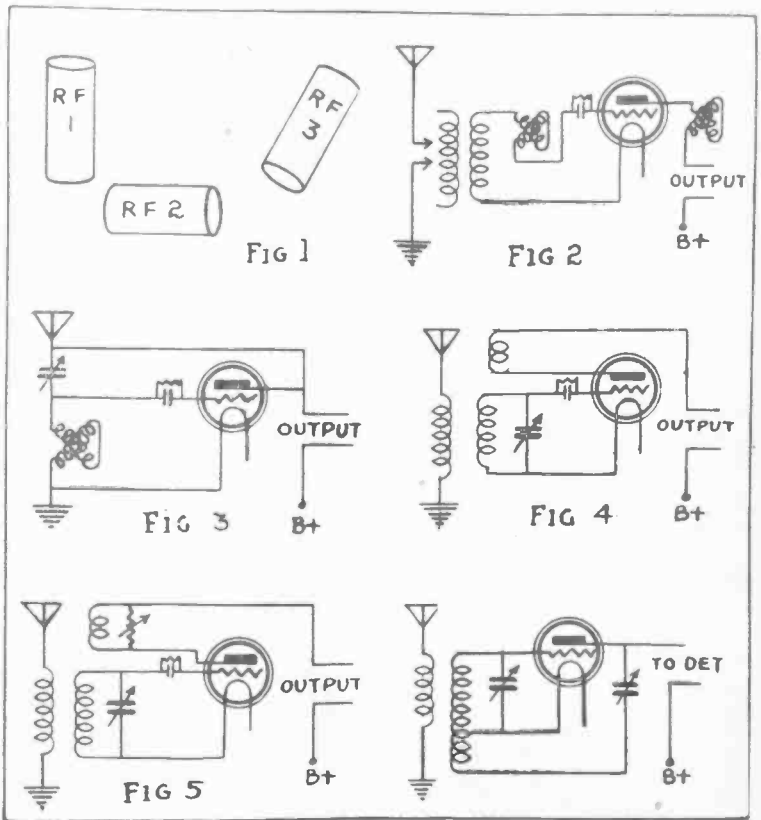
Here is a little article which explains what happens when your receiver goes "motor-boating". Nearly every listener has heard it, but not many know what causes it or the right way to prevent it.

**A**BOUT all that most of us understand about the phenomenon known as "feedback" is that it causes squeals and howls when incorrectly controlled, and affords increased volume when correctly regulated. It may be defined as the transfer of energy from the plate circuit of a valve to the grid circuit of the same valve, or from any stage of a radio receiver to any preceding stage.

When feedback is allowed to run riot strange noises sounding like anything from a motor-cycle race to a steamboat whistle emanate from the loud-speaker. These noises are caused by a sequence of electrical pulsations, of various frequencies, the "motor-boating" being caused by low, and the whistle by higher frequencies. The pulsations cause the diaphragm of the loud-speaker to vibrate at a corresponding rate, and the greater number of vibrations per second (up to the note of audibility), the higher is the note produced.

The commonest cause of uncontrolled feedback is inductive coupling between inductances. This may occur in either the radio frequency or the audio stages, and may be prevented by shielding or by careful placement of the transformers. In most modern receivers the R.F. transformers are enclosed in "cans," or metallic shields, which are connected either to the negative "A" battery lead or to the earth connection. In many sets the R.F. coils are placed some distance apart, and are tilted at an angle (usually 35 degrees from the vertical), or are placed as shown in Fig. 1, to reduce chances of interstage coupling. A.F. transformers are generally kept some distance (four inches or more) apart, or are placed with the core of one at right angles to the core of the other, or are shielded by grounding the metal casing. Another cause of uncontrolled feedback is the placing of the grid lead and a plate lead close and parallel to each other, or the running of a plate lead close to the fixed plates of the variable condenser.

Perhaps the first way of feeding energy from the plate circuit back to the grid circuit of a valve was to use the internal capacity (i.e., the capacity between the grid and plate elements) of the valve itself. This method was used in the old two variometer-variocoupler circuits. A variometer, connected in the plate circuit of the detector, "tuned" the circuit, increasing its R.F. impedance to a point where the energy was forced back into the grid circuit. By adjusting the position of the rotor in the variometer the circuit could be kept at the point of maximum efficiency, just below the point where oscillation commences. The circuit is shown in Fig. 2.



Another early method of obtaining regeneration (as controlled feedback is sometimes called) was by means of a variable condenser, which was also used for tuning. I might add that, though a set built in this manner is very unstable, when properly constructed and carefully tuned it will operate a loud-speaker fairly well on one valve. Both of these methods utilise capacity for obtaining regeneration. Resistance, except when used in conjunction with capacity or inductance, proved unsatisfactory, and today inductive coupling is almost the only means of coupling employed.

Fig. 4 shows a three-circuit "hook-up" (as the Americans have it), in which R.F. energy is inductively fed from the plate to the grid circuit. In this particular arrangement regeneration is controlled by varying the relation of the grid and plate coils. This system of control is losing favor, because the grid circuit is slightly detuned when the plate coil is varied, due to capacity between that coil and the grid coil. A method being substituted generally is to have the coils fixed in relation to each other, and to regulate the amount of current flowing through the plate coil by means of a variable resistance. See Fig. 5.

Radio manufacturers and set builders soon learned that if more than one stage of T.R.F. (tuned radio frequency) was employed there would be a certain amount of feedback through the valve elements. However, a

method for overcoming this was devised. This method is called "neutralisation"—for a small capacity is used to neutralise the internal capacity of the valve, feeding an equivalent amount of energy into the filament circuit, and thus obtaining stability. (see last diagram).

Almost every one of my readers is aware that careless handling of regeneration causes interference. Mr. Allsop (2BL's chief engineer) tells me that ships at sea have heard interfering receivers whilst they were 50 miles away.

## 2UW Extends Broadcasting Hour

THE number of requests for special musical items, and also for birthday calls, made daily to Station 2UW by listeners has exceeded all expectations.

It is quite a usual thing to receive 100 in a day, and considerably more on Sundays, which meant that it was not always possible to accede to the requests of all listeners that evening, and many had to be carried over till the following day. In order to cope with this phenomenal demand for the beautiful music that is being broadcast from 2UW, the directors of Radio Broadcasting, Limited, who control the station, decided to extend the broadcasting period to 10.30 nightly. This has been done, but the phone calls for request numbers continue to flow in.

# RADIO FAIR AT THE TOWN HALL SYDNEY

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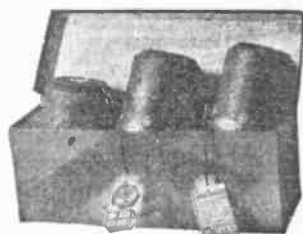
SAME LOCATION AS OUR STAND LAST YEAR

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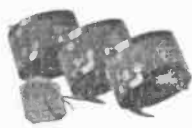
The well-known RADIOKES REINARTZ Tuner makes up into an excellent three valve receiver, beautifully finished and efficient. Price, 10/6 each.



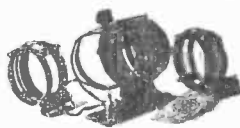
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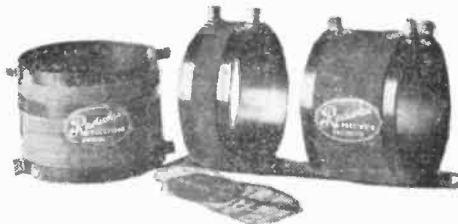
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Radiokes Popular R.F. Choke. This is the most efficient R.F. Choke ever marketed, and, furthermore, is universal in its application. Will perform equally well on short and long waves, up to 600 metres. PRICE, 8/6 EACH.



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# PROVING RADIO!

**No. 17** This article describes the construction of an exceedingly powerful horseshoe electromagnet, with which many experiments can be performed. Later we shall use an electromagnet when we construct our own headphones. The ampere, milliamper, volt, ohm, megohm, D.C., and A.C. definitions are also given.

THOSE OF YOU who have followed out these experiments week by week will know that an electromagnet has a central iron core, which, when the current is switched on becomes situated in a magnetic field due to the windings which constitute a solenoid. We have seen that the space inside a solenoid has peculiar properties, such as power to magnetise soft iron and to attract iron bars into it.

Such space is called a magnetic field, and for purpose of comparing field strength it is customary to imagine "lines" of magnetic force running from the south end to the north end inside the solenoid, in numbers proportional to the strength of the field.

The field does not exist before the current is switched on. When the current flows the field gains strength according to whether the current is great or small, and also to the

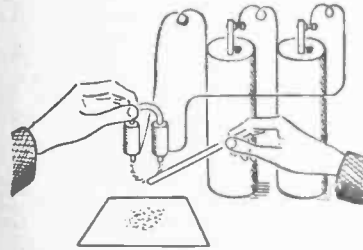


FIG. 3.

number of turns of wire through which the current flows.

If the space be filled with iron, the magnetic field causes the iron to become magnetised also, so that it adds its quota to increase the field.

Every so-called line of force which runs through the iron must complete a magnetic circuit through the air. The field is found by test with small compass needle to spread in air over a wide area, thus losing concentration. To prevent this spreading we bend the iron so that the air distance between pole and pole is reduced to a minimum. In this case the "lines of force" are imagined to flow almost parallel from north pole to south pole across the air gap.

What applies to the field due to a magnet applies with equal force to the extra field due to a solenoid wound round the magnet.

You will have learned, too, that a horseshoe magnet is stronger than a bar magnet, because the poles are closer together, and thus the flux density will be stronger, because the air space between the two poles is relatively small compared to a bar magnet. What, then, is more feasible than a horseshoe electromagnet? Take a look at the "innards" of a bell or a buzzer, and you will see that a horseshoe magnet is used. You will notice a horseshoe magnet is also used in loudspeakers, telephones, and so on.

The easiest way to make a horseshoe electromagnet is to cut off the ends of a large staple, as shown in Fig. 1. This done, file the end off smooth and even. You will find that the electromagnet can be improved by annealing. To do this, heat the staple red

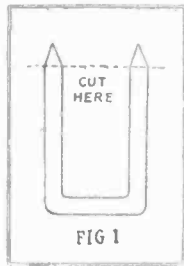


FIG 1

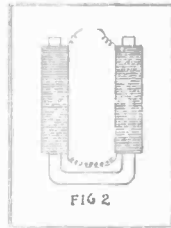


FIG 2

hot, then cover it up in a bed of hot ashes, and let it cool off very slowly.

Now wind five layers of 24 gauge wire on each leg, taking the wire over to the right hand leg as soon as the left hand leg is finished. This will bring both ends of the wire out near the poles of the magnet, as in Fig. 2. The windings should be in opposite directions.

If you connect the electromagnet to a three-volt battery, then suspend the magnet above a few brads or iron wood screws, you will find the magnet will attract them, and a magnetic bridge will be formed. The reason why the individual brads or screws attract each other, is because they each become a magnet. Therefore, each brad will have a north and a south pole, and will have magnetic lines of force. The first brad, for instance, connecting to the north pole will have its north pole connecting with the south

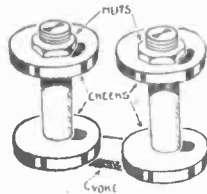


FIG. 4.

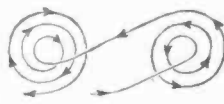


FIG. 5.

pole of the next brad. The reason why the north pole of the magnet causes the end of the brad nearest it to become south, should be obvious, if you have studied previous series. See Fig. 3.

We shall now construct a horseshoe electromagnet of an improved type which can be used for the making of headphones, electric bells, buzzers, and so on. It is extremely powerful.

Two iron machine screws 1/2 inch diameter and 1 1/2 inches long, with nuts to fit, will first be required. You will also require a strip of soft iron 1-8in. thick, 1/2 in. wide, and 2 inches long. Drill a hole 1/4 in. diameter in each end of the latter strip, then place one of the machine screws through each hole, and fasten with a nut. This part of the electromagnet is called the "yoke."

Place a cardboard or fibre washer on each end of the two machine screws. These are termed the "cheeks." Next gum four layers of thin paper round each leg of the yoke. The width of the paper should be 1 1/2 inches

Next follow the instructions for winding and finishing the spools as given for the simple horseshoe electromagnet. Make certain the windings are in opposite directions. Fig. 5 will illustrate this. A nut is screwed on to each end of the legs. There is a good illusion trick that can be shown, and in this use is made of the electromagnet.

Bore two holes in the top of a cigar box and fix the electromagnet on it so that the poles are flush with the outside surface of it, and paste a sheet of paper over the top of the lid to conceal the poles. Now connect a pair of fine wires (say, 30 gauge) to the terminals of the magnet coils, and run them out of the box to a key and battery, which should be concealed under the table (which should be an old one, otherwise there might

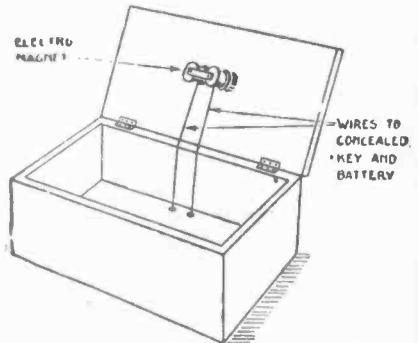


FIG. 6.

be ructions in the family). The box should be screwed to the top of the table and the lid should also be securely fastened down in case anyone should wish to open it. The two wires should pass through two small holes in the table and into a drawer or some other inconspicuous place. Now get another cigar box and fix a sheet of thin iron on the bottom of it, and paint it to make it look like part of the cigar box (you can stick

paper over it if you wish), and place this on top of the lid of the other box. Now ask a friend to lift the top box. He can do this easily as long as the current is off, but as soon as the key is pressed he will find that the box feels extraordinarily heavy.

This is because the flux round the poles of the electromagnet attract the iron sheet on the bottom of the top box. Magnetic poles are developed in the thin iron sheet on opposite faces.

If you find it difficult to press the key when it is placed just inside a drawer, the key can be screwed to the underside of the table, or mounted underneath a carpet. In the latter case, the key can be worked with the foot. Keep this electromagnet, for we shall make good use of it later when we make our own buzzer and electric bell.

Now, below are given a few radio terms which should be thoroughly learnt. Later, examination questions will be issued (in a few weeks), and you will be asked to give definitions of various radio terms. Only terms that have been treated will be given here.

**Ampere:** The rate of flow of electricity. The ampere is the unit.  
**Milliampere:** 1/1000th of an ampere.  
**Volt:** The unit of electrical pressure.  
**Ohm:** The unit of resistance in an electrical circuit. All materials offer resistance to the flow of electricity through them. In the case of a wire, the resistance is proportional to the cross section of that wire. Different materials have different resistances. Silver having the lowest resistance, and copper next. Current (amperes), pressure (volts), and resistance (ohms) are connected together by the very simple formula—

$$\frac{\text{Volts}}{\text{ohms}} = \text{Amperes}$$

usually written I equals E over R

so that, knowing any two quantities, the other may be calculated.

**Megohm:** 1,000,000 ohms.  
**D.C.:** The symbol for direct current, that is a current which flows in one direction only.

**A.C.:** The symbol for alternating current. An alternating current is one which periodically rises to a maximum in one direction, falls to zero, and rises to a maximum in the opposite direction, and so on. The rise and fall of current is called a period, or cycle. The number of periods or cycles per second, is termed "frequency." Cycles are sometimes represented by the symbol (S on side), which is nothing more than a curve showing one complete cycle.

**Proving Radio Club News**

**NEWCASTLE GROUP:** "I wish to let you know I have been touch with several 'fans' who wish to help form a 'Proving Radio Club' in Newcastle. We have decided to hold our first meeting on April 16, at 8 p.m. sharp. Mr. F. W. Shaylor has kindly offered the use of his residence, 51 Bridges Street, New Lambton, opp. Baptist Church, for that meeting. We expect a big roll up, as I know quite a number who are just waiting for someone to press the key. The following have answered my letter, published in WIRELESS WEEKLY March 29, 1929:—Mr. E. Peel, Mr. F. W. Shaylor, Mr. A. Feirall (VK2KB), Mr. R. Norris, Mr. H. Jones, Mr. E. Williams, and Mr. F. Norris."

**CREMORNE GROUP:** "A group meeting was held at 117 Milson Road, Cremorne, on Friday night, April 5, 1929. **Group Business:** Mr. Lewis, proprietor of the Golden Wattle, situated at 183 Military Road, Neutral Bay, has kindly lent us a room attached to his place of business in which to hold our meetings, free of charge. It was decided to hold our next meeting at Mr. Lewis' place. A letter was also received from Mr. E. D. Huckell, Radio Engineer, Cremorne Junction, who has kindly offered to loan us certain apparatus. We welcomed Mr. Geo. B. Hogan as a member. He is a member of the American Radio Relay League, and also of the New Zealand Transmitters' Association. **Crew Experiments:** This week Mr. Hughes was able to get the Electroscope to function. He was also successful in getting the Electrophorus to operate, and was able to explain the working of the apparatus with the aid of a blackboard. A Leyden Jar was then made, and charged and discharged successfully. The operation and theory were explained very simply by Mr. Hughes. We should like to welcome some more members." (Signed) R. Sherwood, Hon. Secretary.

**KOGARAH (or ROCKDALE) GROUP:** "Are there any readers in the Carlton, Kogarah, or Rockdale districts who desire information concerning or who care to join a local 'Proving Radio Club'? If so, please call on Mr. Roberts, No. 11 Prince's Highway, Kogarah, any evening, when full particulars will be gladly given."

Let us have a full report, please, Mr. Roberts. The Hon. Organising Secretary (to whom we have passed your letters) will get in touch with you.



**ARNCLIFFE GROUP:** This group held its first meeting on March 28, at 15 Mount Street, Arncliffe. The hon. organising secretary was present, and welcomed the following members:—Messrs. N. E. Conrad, Buxley; B. E. Jones, Rockdale; G. H. Argue, Arncliffe; A. G. Simmonds, Arncliffe. It was then decided that the group meet every Thursday evening. New members will be warmly welcomed. The evening was spent doing a number of experiments with magnets, and discussing their respective theories. On April 6 the Theory of A.C. was discussed and compared with D.C. A magnet was sealed in a lead tube, and, on applying iron filings, it was found that they were attracted to the magnet in no small quantity, thus definitely establishing that magnetic lines of force pass through non-magnetic substances.

**EASTERN SUBURBS GROUP:** This group is growing very quickly, having now a membership of 15. Of this number six joined up last week, as follow:—Messrs. E. P. Harvey, Coogee; S. Pauley, Bronte; W. T. Peterson, Coogee; S. M'Evoy, Alexandria; L. Bedford, Randwick; E. Bedford, Randwick. A Morse group has been formed, and will meet on Wednesday nights. The experiments carried out in the last two weeks were those connected with static electricity. The Simple Cell, Leclanche Cell, Dry Cell, connection of cells in series, parallel, and series-parallel were also treated. The theory of each experiment was explained and discussed.

**ANOTHER EASTERN SUBURBS GROUP:** "Anybody in the Eastern Suburbs who is interested in this movement, and who wishes to form a group, but has not enough members, will be able to obtain a list of members from the organising secretary. The local group has grown too large, and another group is to be formed."

**DULWICH HILL GROUP:** An interesting evening was spent by the group on March 22, discussing the theoretical side of A.C. and D.C. One member took the lead, and explained per medium of the blackboard the form taken by electricity, starting from the power station, through the alternator, finally furnishing the house with lighting and power services. This was an instructive subject, and it was decided to spend the following meeting in carrying out the same discussion more practically, and the group, therefore, decided to obtain a bell magnet for the next meeting, which was held on April 5. The group devoted their time on this night to pulling down the bell magnet, during which an explanation of each part was given, then it was re-assembled. Each member took his turn at getting a shock from the instrument. It was the unanimous opinion of those present that the subject for the last two meetings was most beneficial.

**COFF'S HARBOR GROUP:** "The general meeting was held on April 5, and we had a great roll-up, and, incidentally, got through a lot of business. Election of officers demanded our first attention. The results fol-

low:—President, Mr. Debenham; vice-president, W. H. T. Riding; secretary and treasurer, J. M. Burke. The members present were Messrs. T. Hanhart, W. Jackson, R. Jacobs, H. Smith, G. Pullen, J. Cockle (all of whom are new members), and R. Morrow, Debenham, H. T. Riding, and J. M. Burke. The first business of the new committee was to elect a sub-committee to draw up and print a set of rules to hang in the club-room. The meeting night was arranged for Wednesday each week, and we have received permission to use a room at the Fire Station for these gatherings. It was decided that new members should pay 2/6 entrance fee, and 6d per week. Another matter that was brought up at the meeting was in connection with interference from the local power-house. The dynamos here are 500-volt D.C., and cause a great deal of interference, so we decided to write to the proprietor of the plant (Mr. P. Burke) and ask him if he would install the necessary condensers on his machine. We intend to commence our experiments next Wednesday. As the price of the materials required for these experiments is unknown, we should like to have these things sent us c.o.d. if possible, not later than Tuesday, if this can possibly be managed."

The above letter has been passed on to the organising secretary, who is authorised to purchase club material.

**THREE NEW GROUPS:** Three new groups are in process of formation. These will be termed City No. 2, Epping, and Leichhardt. All intending members please get in touch with organising secretary. Address below.

Readers interested in forming groups in their district, should write to the Organising Secretary Mr. C. Y. Hook, 29 Blairgowrie Street, Dulwich Hill.

It is a pleasure to note how several well-known amateurs are co-operating with the clubs, and offering their assistance. We should like to hear from other hams also. Please write to the "Proving Radio Section," "WIRELESS WEEKLY," Williamson House, 51 Castlereagh Street, Sydney.

A series of Morse lessons for beginners is being carried out by amateur transmitters in Melbourne. Cannot Sydney or New South Wales amateurs follow the same good example?

**A DAY AT PENNANT HILLS:** A most instructive and enjoyable day was spent at the A.W.A. Station, Pennant Hills, by those of the "Proving Radio" Groups who took the advantage on Good Friday of the short notice given them. The visit was made possible by the effort of Mr. W. J. Long, M.H.R., whom we have to thank. The party assembled at Epping Railway Station, where a bus awaited to convey us to the wireless station. On arriving, we were met by Mr. Cookson and his colleague, who spared neither time nor trouble in making the visit something to be remembered, considering there are nine different transmitters, which can all be operated at the same time by one operator, without interference. After visiting the operating room, we were shown the aerial service, which was described in detail. The large mast is 400 feet high, and is insulated from earth by a glass base. The electric charge accumulated (as in a fixed condenser) was demonstrated by Mr. Cookson, who operated a lever which earthed the mast. An arc half an inch long was seen, and, to our amazement, music burst forth from a loud-speaker. At the conclusion of the visit a vote of thanks was moved by Mr. Manuel (City Group). Mr. Cookson, in reply, wished the club every success in their venture. The party decided before breaking up that there must be similar visits of this character, and decided to secure a permit to visit the A.W.A. station at La Perouse at the first opportunity. All members wishing to visit this station, please forward names to the Hon. Organising Secretary, C. Y. Hook, 29 Blairgowrie Street, Dulwich Hill. Phone, Petersham 3272.



# Additional Broadcasting Stations

## General News from Our Melbourne Correspondent

SEVERAL official pronouncements have been made during the last six months regarding additional stations. One thing has characterised all the pronouncements; the secrecy or uncertainty as to the number of stations, where they are to be located, and when they will be established.

The necessity for stations in the country districts has been recognised by all concerned for many months. In 1927 the Federal Government's Royal Commission that investigated the wireless situation in all the States recommended the establishment of such stations. Prior to the hearings of the commission the need for some relaying stations had been seen by 3LO, Melbourne. A scheme had been elaborated, after exhaustive inquiry by technical experts, for the establishment of four or five stations in different parts of Victoria.

It had been seen that, however excellent the transmission from 3LO might be, even if the operating power were to be increased three or four fold, there would be many parts of the State where good reliable reception would be impossible. The annoying features of fading and atmospheric would continue, as at present, to militate against the grade of service metropolitan listeners are accustomed to. And, of course, that was the aim; to give as satisfactory receiving conditions in the large settled areas of the State as obtained in and around Melbourne.

Apparently that lesson has been learned by the authorities, as it is clear from the official statements that several country stations are to be established. What will be of special interest to Victorian listeners is an answer to the questions, how many stations is Victoria to have, and when will they be ready for service? As this State has contributed more than half the revenue from broadcasting licenses, and still holds the predominant position amongst the States, it is only just that Victoria should be treated fairly in the matter of additional stations. It is not unlikely that we will hear of the first stations being established in some other State. The proposals of the Royal Commission to make the successful stations carry the failing stations by subsidising their revenue, is an indication of what might happen. Some people there are who will say that all the revenue should be "pooled," and shared by all the States. In that way Victoria will be called upon to subsidise stations in the other States. Before doing that it should be the duty of the authorities who may be responsible for it to see that Victoria is properly served.

## Devastating Floods in Tasmania

IMMEDIATELY the tragic effects of the appalling floods in Tasmania became known 3LO, Melbourne, made available the whole of their organisation and services to relieve the extraordinary situation caused by interrupted communications, and for the purpose of assisting relief efforts. Tasmanians were without any news, excepting local news, of the disaster, and 3LO organised a special broadcasting news service, in conjunction with 7ZL, Hobart, to keep them posted with urgent reports of the increase and subsidence of the flood waters, and the safety or danger of their relatives' and friends' positions in the affected areas.

All day long on Sunday and Monday, April 7 and 8, Senator Milten was in attendance at the 3LO studio, and, in collaboration with Major Conder, general manager of 3LO, who is himself a Tasmanian, and a special staff, organised urgent relief efforts. Without dwelling upon the harrowing details of the disaster—of the 4000 homeless, of families wiped out, of children left without their breadwinners, and even their homes, and of inestimable damage to property and public works, 3LO broadcast an appeal for funds for general relief, and the response was extremely gratifying.

## Victory Theatre Orchestra

THE usually attractive programme will be transmitted by 3AR on April 24, from the Victory Theatre, St. Kilda, when the orchestra, under the direction of Henri Penn, will be heard in a programme of light operatic and popular airs. Mr. Penn, who is known as a fine all-round musician, is a past professor of the Sydney Conservatorium, and has held many piano recitals throughout New South Wales. Listeners will remember his excellent work, both as soloist and accompanist, with the Humphrey Bishop Comic Opera Co. some little time ago, and he is equally at home as the leader of the popular Victory Orchestra.

## Successful Contralto

MYRTLE WALSGOTT, contralto, will be broadcasting from 3LO on April 23. Miss Walscott will be remembered by many for her successful appearances at the Conservatorium concerts, and also in connection with the operas produced by Mr. J. Sutton Crow. She possesses an ideal voice for the radio, mellow and sympathetic, and exercises a wisdom, often rare among contraltos, of not endeavoring to sing songs beyond the range of her natural voice.

## Local Programme Features

### Hyde Park Concert

THE concerts in the Hyde Park rotunda, arranged by the New South Wales Broadcasting Company, by courtesy of the Chief Civic Commissioner, have provided a long-felt want, and justly merit the many letters of appreciation which have been received. The programme which is now in hand for Saturday night, April 27, to be broadcast through 2FC service, promises an excellent evening's entertainment. Charles Lawrence, the indefatigable director of these outside entertainments, is busy thinking up new and attractive features. He possesses the happy faculty of discovering some things entirely off the beaten track; his long experience and well-developed sense of showmanship are responsible in no small degree for the success of this, 2FC's latest innovation.

### Ball Music

MONTGOMERY EVANS' Dance Orchestra is supplying the music at the big ball to be held on R.M.S. Narkunda, on the evening of April 26, and 2FC will broadcast at regular intervals throughout the evening. Here is a splendid chance for trippers of the light fantastic to arrange home dances to radio music, from one of the best combinations now offering in Sydney.

### "M'Haggis"

A NEW artist to 3LO is M'Haggis, the Australian Scot, who, with song and story, has established his fame as an entertainer at 2LO, London; also at several New Zealand stations. His humor is a particular brand of his own, just as the majority of his songs are of his own composition. He has a reputation as a song writer, and has written many ditties featured by the popular artist, Miss Ada Reeve, one of the most successful bring "Wodonga." Needless to say "M'Haggis" only conceals the real name of a particularly genial and clever artist.

### Beethoven's Pastoral Symphony

A MUSICAL treat provided by the world's best records, will be broadcast from 3AR on April 24, when the whole of the famous Pastoral Symphony (Beethoven) will be given. The work is in ten parts, and combines the murmur of running water, the voices of the nightingale, the cuckoo, and the quail; it is, in short, a musical picture of a village merry-making. As might be expected in a village band, the wind instruments predominate, and the theme has a truly rustic jollity. A merry dance tune is followed by a storm—the parent of all orchestral storms since written—and it is astonishing what effect Beethoven has obtained with the small forces at his command.

### Popular Concert Artist

A CONTRALTO to broadcast from 3LO on April 23 is Dorothy Eytton Jones, who has been entertaining listeners since the very early days of broadcasting. Miss Jones, who is well known as a concert artist throughout Victoria, has done good work in the competition world, and has a vivid recollection of being "runner up" with John Brownlee for the vocal championship at South Street.

### Three Nocturnes

ALCIA HAYWOOD, who won the grand vocal championship in the recent Radio Elstedford, conducted by the New South Wales Broadcasting Company, Limited, is appearing at 2BL on the evening of April 26. Her programme will include Sanderson's Three Nocturnes, "Hush'd Is My Lute" (Phillips), and Harriet Ware's well-known "Boat Song."

### Organ and Piano Recitals

SOME very fine work is being offered to 2FC listeners at the present time. In the organ and piano recitals arranged by Lillian Frost and Esther Kahn, broadcast from the Pitt Street Congregational Church. This unusual combination is decidedly attractive, and the high standard of both artists leaves lovers of the old masters with the happy conviction that the cause of good music "on the air" is not lost, after all. Miss Frost and Miss Kahn are at present busy preparing their special programme of Australian composers for Anzac Night. Miss Kahn, who is to sing at 2FC later in the evening, has included one of Miss Kahn's own compositions in her programme. The next recital from Pitt Street Church will be heard early in May.

# BARGAINS!

## 3 VALVE AC RECEIVERS,

Complete with Speaker, £24  
 Cash Price, £24  
 Dep. £5, £1/15/6 monthly.

## 3 VALVE BATTERY MODEL,

£14/10/- £14/10/-  
 Complete with Speaker and all Accessories.  
 Cash Price, £14/10/-  
 Dep. £3, 5/- weekly.

	£	s	d
.06 Valves, Type 199	3	6	
.25 Valves, Type 201A	4	6	
.00025, .00035, and .0005			
Variable Condensers, with			
Dials	4	0	
Rheostats, from	1	6	
Emmco A.B.C. Eliminator	10	10	0
Balkite Trickle Chargers	3	0	0
Loud Speakers, from	15	0	
Transformers, from	7	6	
Triple Capacity "B" Batteries, 45 volt	17	6	
Single Valve Sets, complete with 'Phones and Batteries	3	10	0

### TERMS

	Cash Price.	£	s	d
COLMOVOX "B" BATTERY CHARGER	5	10	0	
Deposit 11/-, and 19 Weekly Payments of 5/6.				
COLMOVOX "A" and "B" CHARGER	6	10	0	
Deposit 13/-, and 19 Weekly Payments of 6/6.				
EMMCO TRICKLE CHARGER	3	10	0	
Deposit 7/-, and 19 Weekly Payments of 3/6.				
PHILIPS TRICKLE CHARGER	3	10	0	
Deposit 7/-, and 19 weekly Payments of 3/6.				
RECTOX TRICKLE CHARGER	5	10	0	
Deposit 11/-, and 19 Weekly Payments of 5/6.				
PHILCO RECHARGEABLE WET BATTERY	8	15	0	
Deposit 17/6, and 19 Weekly Payments of 8/9.				
OLDHAM RECHARGEABLE WET BATTERY	5	0	0	
Deposit 10/-, and 19 Weekly Payments of 5/-.				
PHILIPS 372 ELIMINATOR	7	15	0	
Deposit 15/6, and 19 Weekly Payments of 7/9.				
AMPLION AC7 SPEAKER	6	17	6	
Deposit 14/-, and 19 Weekly Payments of 7/-.				
PHILIPS PCJJ	6	10	0	
Deposit 13/-, and 19 Weekly Payments of 6/6.				

## Railway Radio

495a Rawson Chambers, Pitt St., Sydney.  
 'Phone: MA5288.

### Radio and Electrical Exhibition, 1920

The annual Radio and Electrical Exhibition is to be held in the Town Hall, Sydney, from 1st to 11th May, and arrangements have been completed whereby programmes will be supplied by the New South Wales Broadcasting Company, alternating as far as possible through the services of 2BL and 2FC, throughout that period. 2FC will take the official opening, on the afternoon of May 1, at 3 p.m., and between 3.30 and 4.30 musical entertainment will be provided by Mabel Batchelor, R. A. Bartleman, Foster and Finlay, Charles Lawrence, who is master of ceremonies, will supply humorous items. In the evening the transmission will be through 2BL and the artists engaged for the occasion are Theodore Atkinson, Evelyn Hall (who recently returned from London), Josef Kaartinen, Edith Cowley, and Ian Maxwell, and the Mar-

rickville Silver Band. The programme will commence punctually at 8.0 p.m., and conclude at 9.0 p.m. 2BL will broadcast the concert on the afternoon of Thursday, 2nd May, and 2FC the evening entertainment.

### Dandies

The Blue and Gold Dandies Revue Company, directed by Kingsley and Graham, which won their section in the New South Wales Broadcasting Company's Eisteddfod, promises an hour of song and story to gladden the hearts of 2BL's many listeners, on the evening of April 29. A well thought-out, and, if the term may be applied, a systematic show, which swings easily on the oiled hinges of theatrical knowledge and well-balanced judgment from the point of view of broadcasting. Listeners do well to watch the programme closely, for the welcome appearance of the Blue and Gold Dandies.

# Radio Echo Measures Aeroplane Altitude

(Continued from Page 6.)

General Electric Company, described a magneto compass that has distinct advantages over preceding instruments. The new compass weighs but one-fifth to one-sixth as much as does the present type of earth inductor compass. Since one horse-power is required for every 25lb. of weight in an aeroplane, the new instrument saves at least one-half a horse-power of the ability of the engine.

The lines of force of the earth's magnetic field are not horizontal—in the State of New York, where the experiments were made, they dip so that a freely-suspended magnetic needle points to the magnetic north at an angle of about 76 deg. with the horizontal. In the making of magneto and induction compasses it is necessary to take into account this angular direction of the magnetic lines of force, and the instruments are so designed that only the horizontal part of the magnetic force is used.

When a bar of iron is held in a horizontal position the number of magnetic lines of force induced in the bar, and, therefore, the intensity of magnetization in the bar, depends only on the direction in the horizontal in which the bar is facing.

In the magneto compass a bar of permalloy, a nickel-iron alloy that has the unusual ability of quickly changing its magnetic qualities according to the magnetic field in which it may be placed, is held constantly in a horizontal position by means of a pendulum which hangs vertically, irrespective of the angle at which the aeroplane may be flying. In a cavity within the bar of permalloy is placed an armature that is rotated at approximately 1200 revolutions per minute. Depending on the amount of magnetism in the bar of permalloy, the electricity produced in the armature varies. This varying current is indicated on a meter or other device in front of the pilot, so that any deviation from a predetermined course is at once apparent to the pilot.

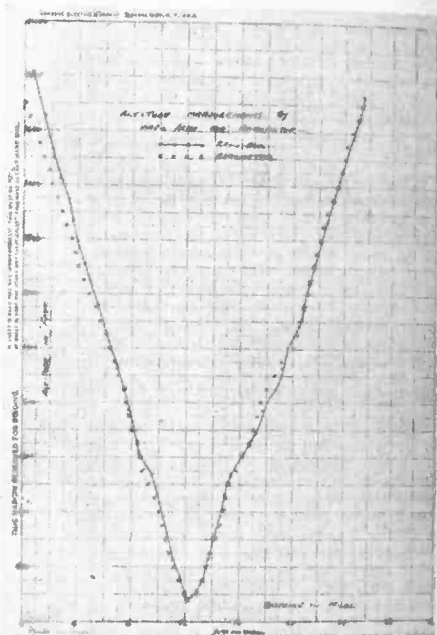
The laboratory model, which has been used in the experiments at the Schenectady airport, weighs only two pounds, and is mounted in the tail of the plane so as to be away from magnetic influence of the engine and

other steel and iron parts of the plane. The rotating armature is driven by a small propeller.

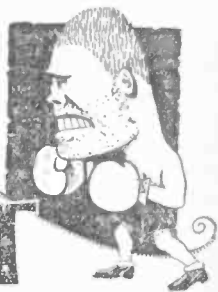
When the pilot wishes to set his course in a definite direction he sets the indicator to the desired position. Any deviation of the ship from the chosen course then results in the changed magnetic field, causing a difference in the electric current, and, therefore, in the reading of the indicator.

The magneto compass is adjusted so that the readings of the instrument are governed by the maximum voltages generated by the rotating coil, or armature. The zero voltage adjustment, used in some types of instruments, has a disadvantage of being affected materially by any variations resulting from armature brushes being out of adjustment; in the case of the magneto compass such a variation results only in less sensitivity of the instrument, and not in an error of indicated direction of flight.

In the experiments with the new direction indicator, Dr. Tear has also used permalloy, a cobalt-nickel-iron alloy, and other ferromagnetic substances possessing low coercive force, as the material for the bar; and in place of the rotating coil he has also employed a magnetron tube, the current passing through which is similarly affected by surrounding magnetic fields.



# HITTING BELOW the BROADCAST BELT



IN the hope of hearing further signals, indicating an attempt at communication from VMZAB, an all-night watch was kept at VK2NO-VK2AW on Friday to Saturday, April 6, with no success. It was an ideal night for all wave-bands, and in between times a look around was taken at the DX stations. From 3 a.m. to 7 a.m. the 20-metre band was simply alive with British, French, and Russian amateurs—some of them coming through at a good R6. At 3.30 a.m. KGO on his 23-metre wave was picked up at full loud-speaker volume, giving a talk on color schemes for decorating rooms, and at 5.30 a.m. 5SW was as a local station. 5SW was relaying the Liverpool station for a while through 2LO, London, and so powerful was the reception with the Air King that the intake of the announcer's breath could be heard as if he spoke alongside.

On this occasion 5SW was testing two aerial systems, which the announcer there called A and B, and asked for reports from listeners on the difference, with regard to fading. In my case antenna A was the best, although reception was very strong with both. This reception was phenomenal for its clarity and volume, and seemed rather incongruous that in my mail the next day a letter from a reader said, "The short waves are not all you crack them up to be."

The story below has nothing to do with the short-waves, but a lot to do with hitting below the belt. On this excuse I cannot refrain from telling it.

"Now, Miss Blunder," boomed Wm. W. Whurtle, president of the Whurtle Wireless Wonder Company, to his new stenographer. "I want you to understand that when I dictate a letter I want it written as dictated and not the way you think it should be. Understand?"

"Yes, sir," said Miss Blunder meekly. "I fired three stenogs for revising my letters, see?"

The next morning Mr. W. A. Waxman, of Waxed Wires, Limited, received the following:—

"Mr. A. W. or W. A. something—look it up—Waxman, President of — Waxman (what a name), Waxed Wires, Limited, Wellington—that's in W.A., isn't it?"

"Dear Mr. Waxman, hmmm,

"You're a terrible business man. No, start over. He's a crook, but I can't insult him or the cow'll sue me. The last shipment of wires you sent us were of inferior quality, and I want you to understand—no, scratch out I want you to understand. Ah, unless you can ship—no, furnish—us with your regular quality wires you needn't send us no more period or whatever the grammar is and please pull down your skirt. This d—clear is out again pardon me and furthermore where was I? Nice bob you have.

"Paragraph. The wire you send us wasn't fit for clothes lines, let alone aerial wires, and we're sending it back period. Your truly. Read that over, no, never mind. I won't waste any more time on that egg. I'll look at the carbon to-morrow."

From Mr. Crane.

A few words of advice from Mr. Russell Crane to the short-wave BCL have been very kindly forwarded by this enthusiastic gentleman, who is very successful in his searches

## Short-wave and Amateur Notes by VK2NO

around the nether (or higher regions). He says:—"These notes are essentially not for the expert or technical reader, but for those who are just starting to receive overseas transmission, or thinking of doing so.

### Advice to Short-wave Fans

THE first essential is, of course, the receiver, and I can assure your readers that any one of them who can use a soldering-iron and follow a circuit diagram can make for them selves a set capable of bringing in all the high-powered overseas stations on short-wave. It is desirable to purchase a short-wave kit, but not essential, as quite efficient coils can be home-made. The main condenser must be of good quality and fitted with a good vernier dial, or, better still, get a condenser which has slow motion incorporated in its construction. I will not enter into any details about construction or circuits, any of the throttle controlled circuits which have from time to time appeared, also those that will be found illustrated in any set of coils that may be purchased will be suitable. The one thing that the home constructor must get right is smoothness of operation. The set must just swish in and out of oscillation without any howl or squeal. Until this is attained it is useless to attempt overseas reception. In order to be sure of

my ground, I knocked together a two-valve set, using the cheapest set of coils on the market and one good condenser, the rest of the parts being very mediocre.

The aerial is not very important, with most short-wave sets the earth can be dispensed with, but this must be found out on any particular set by trial. With the set I speak of I have had on good strength, and sometimes loud-speaker strength, such stations as Bandoeng, Java, Sourabaya, Java, PCJ, PCL, and PHI, all from Holland, G5SW, from England, and 7LO, from Nairobi, British East Africa. Such a set for a beginning will give a tremendous amount of pleasure to the constructor. Later, if desirable, a screened grid stage could be added, and perhaps another transformer introduced, with a penthode valve. I have known of some listeners who have frequently looked for overseas stations and failed to get them. This is chiefly due to:—

- (1) The set not being in that perfect state of oscillation that I insist on.
- (2) Looking for stations when there is no one transmitting.

It is, therefore, very desirable to make out a schedule of stations that can be heard here, and the best times for receiving them. I suggest that the beginner looks for 2ME on about 29 metres on Wednesdays about 8 o'clock in the evening, and if they are working with Bandoeng, then look for that station on about 14 metres, the latter station comes in at tremendous strength, and can hardly be missed. Later in the evening Bandoeng will probably advise 2ME that they have a schedule with PCL, and then the beginner can listen to Bandoeng talking to PCL (Kootwijk), and then look for this latter station a little higher up the wave-length scale. PCL will be weaker, but if conditions are good will be quite audible. An evening spent with these stations will afford valuable experience in tuning, and they are all strong enough to be picked up with ease. It will be no use looking for G5SW in the evening. This is the short-wave station of the British broadcasting station. A few months back it could be heard best in the evening, but at the present time it can be tuned in with ease and certainty between 6 a.m. and 7 a.m.

To demonstrate this I arranged a little stunt this morning. I have a time switch on my receiver, and I set it for 6.30 a.m., and left the set tuned on G5SW. At 6.30 I was awakened by music, followed by the usual announcement, "This is 5SW, the short wave station, etc., etc." I may say that I had the loud speaker about five feet away from my bed, and the music and speech were beautifully clear. Year in, year out, G5SW is transmitting from 10.30 a.m. to 11.30 p.m. and early morning till 10 a.m. Sydney time, every day of the week, with the exception of Sunday and Monday. Here is, therefore, a splendid opportunity for the enthusiast to become thoroughly acquainted with his set whilst enjoying good music and interesting speech.

There are many other stations transmitting regularly in the early hours of the morning—7LO, PCJ, and others—occasionally

## Radio Competition

The following competitions have been arranged for the amateur section of the Radio and Electrical Exhibition, 1929:—

1. The best home-made piece of apparatus. First prize, £3/3/; second, £1/1/.
2. The best low-power transmitter. First prize, £7/7/; second, £3/3/.
3. The best designed short-wave receiver. First prize, £5/5/; second, £2/2/.
4. The most novel crystal set. First prize, £2/2/; second, 10/6.
5. Best crystal set made by a boy under the age of 18 years. First prize, £2/2/; second, 10/6.
6. Most novel valve set. First prize, £3/3/; second, £1/1/.
7. Best multi-valve set (main features to be ease of control, selectivity, sensitivity, attractive design). First prize, £5/5/; second, £2/2/.
8. Best piece of apparatus made by a member of a recognised Radio Club, and exhibited by the club. A Cup, valued at £10/10/, to be won in three separate years before it becomes the property of the club.

Exhibits entered for any one section also may be judged additionally by any other section, provided due notice is given.

No entrance fee will be charged to exhibitors.

All apparatus must be delivered to the Town Hall not later than 11 a.m. on Monday, April 29.

Americans may be heard. PCJ transmits with absolute regularity, and just now may be heard very well on Friday and Saturday afternoons between 3 and 4. Later they will be heard all the afternoon. Station PHL at Huizen, is perhaps the strongest station transmitting, but so far has not settled down to a regular schedule.

May I end with a word of warning on the subject of valves, batteries, and interference?

**VALVES.**—The detector valve is of the utmost importance, and should be followed by a good amplifier. I find that the pentode is far and away the best to use; in the set I spoke of above I used a 415 and a Phillips pentode.

**BATTERIES.**—The A supply should be

from a good accumulator kept right up to maximum charge. The B supply may be from either dry or wet accumulators or an eliminator. If an eliminator is used there will be a hum unless the filament is earthed, when the hum will completely disappear. Whatever source of supply is used, full voltages are essential. A run-down battery can cause more trouble than much static.

**INTERFERENCE.**—The interference caused by others cannot be avoided; a finely tuned set will help, as will a short aerial. Power leaks are often troublesome. Application to the council or company supplying the electricity will sometimes result in the trouble being traced to this source and corrected. Nearby motor cars and motor buses are a constant source of annoyance, and lately

aeroplanes have had me almost distracted during afternoon reception at Cronulla. Fortunately most of these troubles are reduced or non-existent during the evening or early hours.

The interference that you cause can be, and should be, stopped. If you allow your set to oscillate unnecessarily you are interfering with somebody else's pleasure, and doing yourself no good.

I suggest that all short-wave listeners should keep notes of their reception, and from time to time advise the stations they hear how they are being received. This not only assists the engineers in charge of these stations, but shows the broadcasting companies that listeners all over the world are taking an interest in their transmissions.

## "The CAPTAIN" TO HIS "COMRADIOS"

### Coming Events

Wednesday, April 17: Scots College O.B.U. annual dinner at The Carlton, 7 p.m.

Wednesday, April 24: Great Public Schools Regatta. Heats for championship "eights," "first fours," "second fours."

Saturday, April 27: G.P.S. Regatta. Final for "Head of the River, 1929."

Saturday, June 1: University Eights. Interstate championship for 1929, on the Yarra.

Friday and Saturday, May 10 and 11: G.P.S. of Victoria "Head of the River" heats and final.

Wednesday, June 26: Scots College O.B.U. annual dance at the Ambassadors.

### Letters

**DATES** of coming events should be sent to "The Captain" a month ahead. This will give me time to give every help over the air and through "Wireless Weekly" by notifying past scholars of functions which they would probably be sorry to miss.

Personal notes have reached me this week from J.B.L. (Orange), T.P. (Mosman), M.M. (Pennant Hills), K.R.M. (Lindfield), A.B. (Newcastle), L.M.K. (Goulburn). I have answered you all personally. Thank you for your interest.

### "Head of the River, 1929"

I HAVE had some delightfully cheeky letters from several of my comrades since a Bowral girl took it into her head to write and ask me which school would collect the title of this note. The boys are anxious for me to make a prophecy too, but "The Captain" is not to be drawn. Mind you, I know the winner all right, but, in fairness to everybody, I have decided to keep the information to myself until about 4 or 5 p.m. on Saturday, April 27. If you care to ring up 2FC and ask me then I promise to tell you!

### The Day of Days

**JOKES** aside, though, it is a great time, and a most exciting time in the school year, and next Wednesday will see the culmination of long weeks of training and the Paramatta alive with flaunting color. The heats will be decided, and the G.P.S. beehive will buzz with tremulous excitement all next day and until Saturday afternoon, when the final will be rowed to decide the "Head of the River" for 1929. Lucky people, all those who row and those who cheer! All your lives you will remember the days of March and April; the autumn days of training; the days of close companionship in the crew; days which form life friendships; days which are good to live, win or lose; days which will never come again, more's the pity.

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

### In Other States

I HAVE been fortunate enough to see G.P.S. rowing in Queensland, Victoria, South Australia, and West Australia, as well as New South Wales. Each carnival has its own peculiar charm, its local difference. But all possess the magic thrill which is the special attribute of rowing. In Victoria the conditions are usually very cold and wintry on the Henley course, but the contests are most exhilarating, all the same. On the narrow river there they row two crews in three heats, and the three heat-winners in the final, and enormous crowds, up to 100,000, line the Alexandra Drive and the Henley Reserve.

Here in Sydney, where we have the spacious waters of the Parramatta, the function is more picturesque, and more of the race is able to be seen from the scores of craft on the water. It is more truly an aquatic holiday. Perhaps we owe the present high standard of G.P.S. rowing to the Rev. H. Girdlestone, who put the spirit of Oxford-Cambridge rowing into the Adelaide schools when he was headmaster of St. Peter's. Then at Geelong Grammar School, that great Cambridge man, J. L. Cuthbertson, was responsible for the movement which in the end produced school eights in Victoria. The first eight-oared G.P.S. race in Melbourne was held in 1901. The New South Wales schools have reached a high standard in their rowing, but I would like to see the race reduced from 1½ mile to one mile.

### Is the Race Too Long?

**NO** one knows better than doctors who have been rowing men what a tremendous strain is imposed on any crew during a race. A mile is a big enough strain on a hefty crew of fully developed men. It is, therefore, a bigger physical test for boys who are some years short of fully-grown manhood. So I think the extra half-mile is a distinct risk. Also it is not likely to improve the rowing, though that is a detail compared with possible physical breakdown. The further the race the poorer the form, due entirely to exhaustion. Every rowing man will tell you that. Therefore, from any angle of the game, it would be better to limit the schoolboys' eights to the measured mile.

### About the Boats

**MANY** an argument is started over the size of a racing boat. The ladies, old and young, who think the crews look so pretty, and have no idea of the enormous effort the boys are putting forth, always look incredulous when informed that a racing eight is as long as the average big villa from front door to back. So here are some average measurements of racing boats:—

Eight-oar.—60 to 62 feet; beam, about 21 inches; canvas forward, 12 to 13 feet; canvas aft, 11 to 12 feet; outriggers, rowlock 2ft. 5½in. from centre of boat; oars, 11ft. 10½in. long.

Four-oar.—Length, 42 feet; beam, about 19½ inches; canvas forward, 10 feet; canvas aft, 9 feet.

The hull or skin is mostly made from Queensland cedar; the frame and fittings, of spruce and ash.

### The Captain's Book List

**THE** following Australian books have "The Captain's" special recommendation:—  
"Red Mask" (Edward Vivian Timms), 3/6.  
An exciting mystery story of the gold-rush days.

"Dog's Nose" (J. H. M. Abbott), 3/6.

Here is a yarn every schoolgirl and schoolboy will revel in. The title is the nickname of Billy Carfax, owing to his extraordinary sense of smell. This leads him into most laughable escapades at school, and most thrilling adventures in Sydney, Newcastle, and Port Stephens, when he is called on to assist a detective in running to earth a notorious criminal who has burgled the school near Parramatta. Mr. Abbott has written a most thrilling and amusing book, one of the best school-time adventures I have ever enjoyed. My advice to any girl or boy is: "Don't let father know about it until you have finished it, or he will grab it and read it first!" "Dog's Nose" is a tale any youth would be glad to advise his parents to read.

### An Australian Poem

**BEING** Boat Race time, I'll tell you the breezy poem by "M.A." called "Gig Fours." I found the poem in one of the "Bulletin" Reciters, a shilling collection of Australian poems. Listen in for it from 2FC on Sunday morning at 10.15 a.m.

### Greeting

**AND** now, time's up! Good wishes to you all, comrades. Cheerio!

—THE CAPTAIN.



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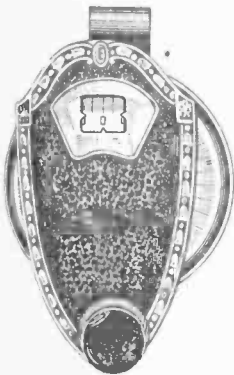
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# List of World's Broadcasting Stations Which Can be Received in Australia on Long and Short Waves

AUSTRALIA.		Metres. Watts.		Metres. Watts.		Metres. Watts.	
New South Wales.		Metres. Watts.		Metres. Watts.		Metres. Watts.	
1FC	N.S.W. Broadcasting Co. Ltd. Market St., Sydney. 0700-2230	443	5000	2103	Silent day	806	500
2BL	N.S.W. Broadcasting Co. Ltd., Market St., Sydney. 0800-2230	853	5000	4YA	Radio Broadcasting Co. of New Zealand. Dunedin. 1700-2200 Silent days Mon and Thurs	463	750
4DS	T. Deane's Physical Broadcasting Station, 29 Blitch St., Sydney. 1000-2200	816	3000	<b>FOREIGN</b>			
4KY	Trades and Labour Council, Goulburn St., Sydney. 0900-2200	280	1500	<b>GREAT BRITAIN.</b>			
2UW	Radio Broadcasting Ltd., Palling's Building, Ash St., Sydney. 1230-2230	207	500	21.0	British Broadcasting Co. Savoy Hill, London. 1900-0550	351.4	2000
2UE	Electrical Utilities Ltd., 818 George St., Sydney. 0700-2230	283	250	5XX	British Broadcasting Co. Daventry. 1900-0850	1604.5	5000 10000
3MK	Mockler Bros. Ltd., Hawick St., Bathurst	276	250	<b>UNITED STATES.</b>			
3HD	H. A. Douglas King St., Newcastle	283	100	KDKA	Westinghouse Electric and Manufacturing Co. E. Pittsburgh, Pa.	314.8	50000
3BE	Borgia Electric Co., 340 Kent St., Sydney. At present off the air	310	100	KFI	Earle C. Anthony Inc., 1000 So. Hope St., Los Angeles	448.5	5000
<b>Victoria.</b>				KGO	General Electric Co. Ltd., Oakland, California	394.4	5000
3LO	Dominion Broadcasting Co., 120A Russell St., Melbourne. 0715-2340	571	5000	KOA	General Electric Co. Ltd., 1310 Krameria St., Denver Colorado	328.9	5000 10000
3AK	Dominion Broadcasting Co., 120A Russell St., Melbourne. 1000-2200	484	5000	WEAF	National Broadcasting Co. 1950 Broadway, New York	491.5	50000
3DZ	O. J. Nilson and Co., Bourke St., Melbourne	319	100	WGY	General Electric Co., So. Scenecady, N.Y.	374.8	50000
3DB	Drelich Busch			WJZ	National Broadcasting Co., 195 Broadway New York	454.3	30000
<b>Queensland.</b>				<b>EUROPE.</b>			
5CI	Central Broadcasting Co. of New Zealand. Adelaide. 1100-2310	409	5000	FL	Riffe Tower, Paris France	2450	5000
5DN	DN Pty. Ltd., 24 Montpelier St., Brisbane	218	500	<b>JAPAN.</b>			
5KA	Sport Radio Ltd., 31 Kintore Av., Prospect	250	1000	JOAK	Tokio Central Broadcasting Co., Tokio, Japan. Jap. stations received best about midnight on Sunday	376	1000
<b>West Australia.</b>				JOBK	Osaka Central Broadcasting Co., Osaka	385	1000
6WR	Commonwealth Government Broadcasting Station Perth. 1220-2220	1250	5000 100	JOCK	Nagoya Central Broadcasting Co., Nagoya	380	1000
<b>Tasmania.</b>				JOJK	Keljo Broadcasting Co., Keljo, Japan	345	1000
7ZL	T. A. S. on a plan Broadcasters Pty., 95 Elizabeth St., Hobart 1130-2200	635	3000	<b>DUTCH EAST INDIES</b>			
<b>NEW ZEALAND.</b>				1FC	Batavia'sche Radio, Jereeninging, Batavia	220	40
1YA	Radio Broadcasting Co. of New Zealand. 419 Queen St., Auckland. 1500-2203 Silent day Mon	323	500	<b>PHILIPPINE ISLANDS</b>			
1YA	Radio Broadcasting Co. of New Zealand. Wellington. 1500-2200. Silent day Wed.	420	5000	KZRM	Radio Corp. of the Philippines, Manila	413	1000
1YA	Radio Broadcasting Co. of New Zealand. Christchurch 1500-			KZKZ	Radio Corp. of the Philippines, Manila	370	800
				KZIB	Radio Corp. of the Philippines, Manila	350	500

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

AUSTRALIA.		Metres.		Metres.		Metres.	
1MK	A.W.A. (Syd.), relays 2FC times irregular, usually Mtn. from 0430-0500	31.28		2400	Sat. 0100-0400 Sun and Fri. 0200-0500; Sat. 0900-2400; Sun. 0100-0400	21	
2YG	Ray Allison (Syd.), relays 2HL times various	32.5		PCU	The Hinguet 0200-0600, Wed and Fri. 0900-2400 Sat. 0100-0400 Sun.	27	
3MC	A.W.A. (Melb.), relays 3LO times various, usually heard about 0430-0530	32.9		<b>UNION OF SOVIET SOCIALIST REPUBLICS.</b>			
4CF	W. E. Coxon (Perth), relays 6WF Times various, usually 2100-0200 daily			RPN	U.S.S.R. Moscow	29	60.50
<b>GREAT BRITAIN.</b>				RPM	U.S.S.R. Siberia	60.	30
5W	Marconi Co (London) relays 3LO 0400-0800 daily except Sun. and Mon. From 0930 on alternate Saturdays and 2100-2230 daily	32.8	28	<b>ITALY.</b>			
6Y	Marconi Radio, Portland Times various 25.42	32.8	28	IMI	Milan	40	
7SM	Jerald Marcus, Carham Street, 1700-0400-0500 (Sun) 1000, Thurs and Sat	15.7		IPQ	Italy	31.5	
8W	Beam Station, all times (Dorchester)	15.7		IRX	Rome	16	
9LQ	Beam Station, all times throughout day (Glasgow)	15.9		IRMA	Rome 0700 Sun. 0300-0530 Mon	34.8	
10RH	Beam Station (Glasgow) (Beam Station) all times	15.9		<b>SOUTH AFRICA.</b>			
<b>UNITED STATES.</b>				JR	Johannesburg	30.	25
11X	G.E.C. Schenectady Relays WGY, 0830-1300 Mon 0400-0500 Tues and Fri. 0500-1300 Thurs and Sat	21.90		<b>JAPAN.</b>			
12Z	Bondbrook Relays WJZ	69.90		JHRR	Iharakiken, nightly	37.5	
13V	Council Bluffs Relays Columbia Broadcasting Stations	61.04		JIPP	Tokio	20	
14BA	Newark, N.J. Relays WAAM, 1700-1500 Wed, Fri. and Sun.	65.18		JIAA	Izutsuki	20	
15F	Cleveland, daily from 1500	66.04		JKZR	Tokio	20	
16T	Inglewood daily			<b>GERMANY.</b>			
<b>INDO-CHINA.</b>				AGI	Nauen Daily.	5.50	5.7
17VA	Hanoi Daily 1900-2000 and 2200-2300	30.10		AGN	Nauen Press and news reports to ships 19	25.4	
<b>HOLLAND.</b>				AGC	Nauen Press and news, daily	25.3	
18PCL	Kootwijk, 2240-2400 Wed. and from 0500 Thurs	21.94		ACC	Nauen Throughout day	17.2	
19PCM	The Hague, irregular	35		AFK	Debergh Tues. Thurs Sat. 0500-0800 (Call sounds like "ARK-Can")	37.65	37.65
20PCJ	Eindhoven, 0500-0600 Wed and Fri. 0500-2400 Sat. 0100-0400 Sun	31.4		<b>NORWAY.</b>			
21PCT	Kootwijk, 0500-0600 Wed and Fri. 0500-			LQN	Bergen. 0900, irregular	30.	31.25
				POZ	Nauen. Press and news reports to ships 19	25.4	
				STV	Stavanger. News bulletins 0100	12.14	
				<b>DENMARK.</b>			
				1MK	Copenhagen, irregular	39.2	32.8
				1RI	Copenhagen	42.12	
				<b>TUNIS.</b>			
				1KR	Constantine Sun. only. 0500-1000	42.9	
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# Local Programmes, Friday, April 19

## 2FC

### EARLY MORNING SESSION.

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

### MORNING SESSION.

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

### MIDDAY SESSION.

Announcer: A. S. Cochrane.  
 12.0: "Big Ben" and announcements. 12.1: Stock Exchange, first call. 12.3: Official weather forecast; rainfall. 12.5: Studio music. 12.10: Summary of news, "Sydney Morning Herald." 12.15: Rugby wireless news. 12.18: A reading. 12.30: Studio music. 1.0: "Big Ben." Weather intelligence. 1.3: "Evening News" midday news service; Producers' Distributing Society's report. 1.20: Studio music. 1.28: Stock Exchange, second call. 1.30: Popular studio music. 2.0: "Big Ben." Close.

### AFTERNOON SESSION.

Announcer: Laurence Halbert.  
 Accompanist: Ewart Chapple.  
 2.30: Programme announcements. 2.32: The Book Lover's Corner. 3.0: "Big Ben." Studio items. 3.15: A talk on "Milk Week Campaign." 3.25: Popular music. 3.30: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams. 3.40: From the studio—Anne Luciano, soprano. 3.46: A reading. 4.0: Edith Harrison, pianist, winner of the under 16 years in the recent Radio Elsteddfod, conducted by the N.S.W. Broadcasting Co. Ltd. 4.7: Popular music. 4.15: Anne Luciano, soprano. 4.21: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams. 4.31: From the studio—Edith Harrison, pianist, winner in the Radio Elsteddfod. 4.38: Studio music. 4.45: Stock Exchange, third call. 4.47: Popular items. 5.0: "Big Ben." Close.

### EARLY EVENING SESSION.

Announcer: A. S. Cochrane.  
 5.40: The chimes of 2FC. 5.45: The Children's Session, conducted by the "Hello Man"; letters and stories; music and entertainment. 6.15: Farmyard Fire, from Kookaburra Gully. 6.30: Dalgety's market reports (wool, wheat, and stock). 6.40: Fruit and vegetable markets. 6.43: Stock Exchange information. 6.45: Weather and shipping news. 6.48: Rugby wireless news. 6.50: Late sporting news by the 2FC Racing Commissioners. 7.0: "Big Ben." Late news service. 7.10: Specially-selected recital of dinner music; records.

### EVENING SESSION.

Announcer: Laurence Halbert.  
 Accompanist: Ewart Chapple.  
 7.40: Popular music.  
 7.45: Programme announcements.  
 7.48: Studio items.  
 8.0: From the Theatre Royal, by arrangement with J. C. Williamson Ltd., the Theatre Royal Orchestra.  
 8.20: Leo Rowan, tenor—  
 (a) "Duna" (McGill).  
 (b) "The Crown" (Rae).  
 8.27: Alf Lawrance and Nell Crane, entertainers.  
 8.37: David Craven and Maisie Oattie, in popular numbers—  
 (a) Song, "Two Lips" (Warren).  
 (b) Piano novelty, "Meditation" (Sims).  
 (c) Song, "I'm Lonely" (Coates).  
 (d) Piano novelty, "Over the Ice" (Wignes).  
 8.47: Dismal Desmond, comedian.

8.54: From the Theatre Royal, by arrangement with J. C. Williamson, Ltd., the Theatre Royal Orchestra.  
 9.14: From the Studio—Weather report.  
 9.15: Novel programme arranged by James Donnelly—The Seven Ages of Speed.  
 9.30: Leo Rowan, tenor—  
 (a) "Woman is Fickle" (Verdi).  
 (b) "Brown Bird Singing" (Wood).  
 9.37: Dismal Desmond, comedian.  
 9.44: David Craven and Maisie Oattie, in popular numbers—  
 (a) Song, "Time to Go" (Sanderson).  
 (c) Song, "Underneath the Blue" (Con-billy).  
 (d) Piano novelty, "Fashionette" (King).  
 9.54: Alf Lawrance and Nell Crane, entertainers.  
 10.4: From the Theatre Royal, by arrangement with J. C. Williamson, Ltd., the Theatre Royal Orchestra.  
 10.28: From the Studio—Late weather and to-morrow's programme.  
 10.30: National Anthem. Close.

Studio music. 5.35: Producers' Distributing Society's report. 5.37: Features of the evening's programme.

### EARLY EVENING SESSION

Announcer: Basil Kirke.  
 5.40: Children's Session, conducted by Uncle Bas. Music and entertainment. Letters and stories. 6.30: "Sun" news and late sporting. 6.40: Special dinner music recital. 7.7: Australian Mercantile, Land, and Finance Co's Report. Weather report and forecast by courtesy of Government Meteorologist. Producers' Distributing Society's Fruit and Vegetable Market reports. Grain and fodder report ("Sun"). Dairy produce report ("Sun"). 7.25: Mr. Pim and Miss Pam in Advertising Talks, Handy Hints, and nonsense. 7.53: An ad. special. 7.55: Programme and other announcements.

### EVENING SESSION

Announcer: Basil Kirke.  
 Accompanist: G. Vern Barnett.  
 8.0: G.P.O. chimes. Topical chous.  
 8.2: The Light Orchestra, conducted by Horace Keats—  
 (a) "The Student Prince" (Romberg).  
 (b) "By the Blue Hawaiian Waters" (Ketelby).  
 8.20: Rowell Brydon, baritone.  
 8.27: A Debate by the Sydney School of Arts Debating Society, winners in the recent Radio Elsteddfod conducted by the N.S.W. Broadcasting Company, Limited.  
 8.37: Aime Firth, mezzo soprano—winner in the Radio Elsteddfod recently conducted by the N.S.W. Broadcasting Company, Limited.  
 9.4: Weather report.  
 9.55: The Light Orchestra, conducted by Horace Keats—  
 (a) Suite, "The Pixies" (Dunhill).  
 (b) "L'Arlesienne No. 2" (Bizet).  
 9.23: Kingsley and Graham, entertainers.  
 9.33: Rowell Brydon, baritone.  
 9.40: C. R. Dexter will speak on General Sporting.  
 9.55: The Light Orchestra, conducted by Horace Keats—  
 (a) Phantasy, "The Three Bears," from the Fairy Story (Coates).  
 (b) "Mosaic of Famous Melodies" (arr. Sanders).  
 10.9: Aime Firth, mezzo soprano—winner in the Radio Elsteddfod.  
 10.16: Kingsley and Graham, entertainers.  
 10.26: Late weather.  
 10.28: Savoyans Dance Band.  
 10.57: To-morrow's programme.  
 10.59: Savoyans Dance Band.  
 11.30: National Anthem. Close.

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## 2BL

### MORNING SESSION

Announcer: A. C. C. Stevens.  
 8.0: G.P.O. chimes. Metropolitan weather report. 8.1: State weather report. 8.2: Studio music. 8.15: G.P.O. chimes. News service from the "Daily Telegraph Pictorial." 8.30: G.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. 10.0: G.P.O. chimes. Close down.

### MIDDAY SESSION

Announcer: A. C. C. Stevens.  
 11.0: G.P.O. chimes. 2BL Women's Sports Association Session, conducted by Miss Gwen Varley. 11.30: Advertising Hints. Talk on "Diet and Health," by Miss Dorothea de Cleghorne. 11.40: Women's session, conducted by Mrs. Cranfield. 12.0: G.P.O. chimes. Special ocean forecast and weather report.  
 12.3: Studio music. 12.30: Shipping and mails. 12.35: Market reports. 12.48: "Sun" midday news service. 1.0: Studio music. 1.3: Talk to children and special entertainment for children in hospital. 2.0: G.P.O. clock and chimes. Close down.

### AFTERNOON SESSION

Announcer: A. C. C. Stevens.  
 Accompanist: Kathieen Roe.  
 3.45: G.P.O. chimes. Popular music. 4.0: G.P.O. chimes. Captain A. C. C. Stevens will give a talk on "With the W.A.F.F.'s—Bush Fighting in Northern Nigeria." 4.15: Studio items. 4.25: Avicé Garth, mezzo—(a) "My Ships" (Barrett), (b) "Dear Hands" (Russell). 4.32: "Sun" news service. 4.37: Popular music. 4.47: Avicé Garth, mezzo—(a) "Forever and Forever" (Tosti), (b) "Alah Be With Us" (Woodford-Finden). 4.52: Studio items. 5.0: G.P.O. chimes. Pianoforte reproduction. 5.15: "Sun" news service. 5.20:

## 2GB

10 a.m.: Music. 10.10: Happiness talk by A. E. Bennett. 10.20: Music. 10.30: Women's session, by Miss Helen J. Beegling. 11.30: Close down. 2.0 p.m.: Music. 2.5: Women's Radio Service, by Mrs. Dorothy Jordan. 2.50: Music. 3.15: Close down. 5.30: Children's session, by Uncle George. 7.0: Music. 7.30: Feature Story. 8.0: Mr. Edward Barry, baritone. 8.7: Mr. Gregory Valentine, violinist. 8.15: Miss Gwen Selva, soprano. 8.25: Instrumental music. 8.30: Humorous interlude by Mr. Jack Win and Mr. Heath Burdock. 8.35: Mr. Cecil Houghton, tenor. 8.45: Address. 9.0: Weather report. 9.3: Mr. Edward Barry, baritone. 9.13: Mr. Gregory Valentine, violinist. 9.23: Miss Gwen Selva, soprano. 9.33: Mr. Heath Burdock, Shakespearean recital. 9.45: Instrumental music. 9.55: Mr. Cecil Houghton, tenor. 10.5: Dance music. 10.30: Close down.

## 2UW

### MID-DAY SESSION.

12.30: Music. 1.0: G.P.O. clock and chimes; music. 2.30: Close down. 4.30: Musical programme.

### EVENING SESSION.

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

# Interstate Programmes, Friday, April 19

## 3LO

### EARLY MORNING SESSION.

7.15: Morning Melodies and exercises. 7.30: Stock reports. Stock Exchange Information. Market reports. General news. Shipping and sporting information. 8.0: Melbourne Observatory time signal. 8.1: Morning Melodies. 8.15: Close down.

### MORNING SESSION.

11.0: To-day's Radio Recipe. Passionfruit Cream. 11.5: Grace Tyers will speak on "Great Russian Writers and their Stories." "Turgeniev." 11.20: Musical interlude. 11.25: "Au Fait" will speak on "Fashions." 11.40: Musical interlude. 11.45: Under the auspices of the Health Department, Dr. Vera Scantlebury will speak on "Some Aspects of Infant Welfare."

### MIDDAY SESSION.

Announcer: Renn Miller. Accompanist: Agnes Fortune. 12.0: Melbourne Observatory time signal. 12.1: Prices received by the Australian Mines and Metals Association from the London Stock Exchange this day. British official wireless news from Rugby. Reuters' and the Australian Press. Association cables. "Argus" news service. 12.15: Newmarket stock sales. Special report by the Associated Stock and Station Agents, Bourke Street, Melbourne. 12.20: The Station Orchestra. 12.30: E. Mason Wood, baritone. 12.37: Stock Exchange information. 12.40: Marion Lightfoot. 12.47: The Station Orchestra. 1.4: Meteorological information. Weather forecast for Victoria. New South Wales, South Australia, and Tasmania. Ocean forecasts. River reports. Rainfall. 1.15: E. Mason Wood, baritone. 1.22: The Station Orchestra. 1.32: Marion Lightfoot. 1.40: Close down.

### AFTERNOON SESSION.

2.15: General programme, including the Station Orchestra. Clella Genoni McNeil, Ella Riddell (contralto), Bertha Jorgensen. Miss Frances Fraser will speak on "The Songs of the Hebrides." by Mrs. Kennedy Fraser, and the talk will be illustrated by Miss Ella Riddell (contralto). 4.50: News service. Stock Exchange information. 5.0: Close down.

### EARLY EVENING SESSION.

6.0: Answers to letters and birthday greetings, by "Edly Bunny." 6.30: Captain Donald MacLean, "Another Adventure Story."

### EVENING SESSION.

6.50: Madame Soward. "French Without Tears." 7.5: Stock Exchange information. 7.15: Official report of the Newmarket stock sales by the Associated Stock and Station Agents, Bourke Street, Melbourne. Latest truck orderings for next week's markets. Fish market reports by J. R. Borrett, Ltd. Rabbit prices. River reports. Rainfall. Weather synopsis. Market reports by the Victorian Producers' Co-operative Company, Ltd. Poultry, grain, hay, straw, jute, dairy produce, potatoes, and onions. Market reports of fruit by the Victorian Fruitgrowers' Association. Retail prices. Wholesale prices of fruit by the Wholesale Fruit Merchants' Association. Citrus fruits. 7.30: The Imperial Russian Trio (Aved Nord, violin; Ivan Berzinskiy, cello; Vassil Ester, piano). "Berceuse" (Jaruffield). "Gavotte" (Gosse). "Lieslelied" (Kreiser). "Moment Musical" (Schubert). "Marche Miniature" (Kreiser). 8.0: Community singing, assisted by Ern Hall's Radio Revelers, with Hugh Huxham.

### NIGHT SESSION.

Announcer: John Stuart. Accompanist: Agnes Fortune. 8.30: Collingwood Citizens' Band. March, "Trumpeter Bob." Fox Trot, "Sonny Boy." 8.40: Ella Riddell (contralto)—"Hail, Caledonia" (Strouss). "The Road to the Isles" (Kennedy Fraser). 8.47: Collingwood Citizens' Band—Selection, "Rose Marie." 9.0: University Symphony Orchestra, conducted by Professor Bernard Henze—Orchestral, "Symphony No. 8" (Beethoven), University Symphony Orchestra. Soprano: (a) "To be Sung on the Waters" (b) "Death and the Maiden" (Schubert), (Ethel Forshaw). Orchestral: "Madrigal" (Simonetti), (First performance in Melbourne). "Hungarian Dance, No. 1—G Minor" (Brahms), University Symphony Orchestra. Soprano: (a) "The Heart Worshippers" (Holst), (b) "Golden Hair" (Bridge), Ethel Forshaw. Orchestral: "Melody for cello and orchestra" (Glazunov), (First performance in Melbourne). "Cello", Owen Prockter, University Symphony Orchestra.

Soprano: "True Love" (Brahms). "In Summer Fields" (Brahms), Ethel Forshaw. Orchestral: Overture, "Euryanthe" (Weber). 10.0: Collingwood Citizens' Band—Cornet solo, "Salut d'Amour." 10.3: Stella Lamond (soubrette), with her ukulele. 10.12: Collingwood Citizens' Band—Novelty number, "The Whistler and his Dog." 10.20: Ella Riddell (contralto)—Two request numbers. 10.27: Collingwood Citizens' Band—March, "The Victor's Return." Fox Trot, "Get Out and Get Under the Moon." 10.35: "Argus" news service. Britain's official wireless news from Rugby. Meteorological information. Head notes supplied by the Royal Automobile Club of Victoria. Announcements. 10.40: Stella Lamond (soubrette) with her ukulele. 10.47: Ern Hall's Radio Revelers, with Hugh Huxham—Down by the Old Front Gate" (Kussall). "I Don't Know Why I Do It" (Vale). "Fun and Strum." "Maybe I'm Wrong" (Harris). "Constantinople" (Harris). "That Melody of Love" (Donaldson). "There's a Rainbow Round My Shoulder" (Johnson). "Mississippi Mad" (Harris). "Oh, Is She Mad at Me?" (Friend). 11.20: God Save the King.

## 3AR

### MORNING SESSION.

10.0: G.P.O. clock says, "Ten." 10.1: Market reports. Farm and station produce. Fruit, fish, vegetables. 10.25: Shipping reports. Ocean forecast.

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10.30: Mail notices. Express train information. 10.35: News service. 10.59: Weather forecast. 11.0: The Radio Revelers. 11.20: Beautiful Ballads. 11.30: The Radio Revelers. 11.50: Beautiful Ballads. 12.0: The Radio Revelers. 12.20: British official wireless news. Announcements. 12.30: Close down.

### MORNING MUSICAL SESSION.

3.0: Canoned Music. 3.35: The Imperial Russian Trio. Selection of the Works of Schubert. 4.0: Captain Donald MacLean, "Feats of the Mighty." 4.15: Canoned Music. 4.30: Close down.

### EVENING SESSION.

6.0: The Discus Ensemble. 7.30: News service. Announcements. Acceptances and barrier positions for the Victorian Club races at Moonee Valley on Tuesday, April 23, 7.43: Birthday greetings. 7.46: Under the auspices of the Department of Agriculture, P. de Castella, viticulturist, will speak on "Hints on Vine Culture." 8.0: Victorian Football Association. To-morrow's matches. 8.5: H. K. Love will speak on "Technicalities." 8.20: Eric Welch will speak on to-morrow's races at Caulfield.

### NIGHT SESSION.

Announcer: Frank Hatherley. 8.30: Transmission from Central Hall, Geelong. 10.30: From the Studio. "Afr" news service. Announcements. God Save the King.

## 4QG

1.0: Market reports and weather information. **EARLY MORNING SESSION.** 7.43: Time signals. 7.45: News service. 8.0: Electric records. 8.15: News service. 8.30: Close down.

### MORNING SESSION.

11.0: Music. 11.5: Social news. 11.15: Lecturette on cookery and household talk by "The Etiquette

Club." 11.30: Music. 11.35: More social news. 11.45: Wurlitzer organ. 12.0: Close down.

### MIDDAY SESSION.

1.0: Market reports and weather information. 1.20: Lunch-hour music. 2.0: Close down.

### AFTERNOON SESSION.

3.4: A programme of records. 3.30: Mail train running times. 3.31: A recital by Mr. George Sampson, F.R.C.O. (City Organist). 4.15: Afternoon news. 4.30: Close down.

### EARLY EVENING SESSION.

6.0: Mail train running times; mail information; shipping news. 6.5: Dinner music. 6.25: Commercial announcements. 6.30: Bedtime stories conducted by "The Sandman." 7.0: News in brief. 7.5: Stock Exchange news. 7.8: Metal quotations. 7.7: Market reports. 7.30: Weather information. 7.31: Frueick's stock report. 7.40: Announcements. 7.45: Standard time signals. 7.48: To-morrow's sporting fixtures reviewed.

### NIGHT SESSION.

Announcer: A. V. James. A programme arranged by Mr. Erich Joh. 8.0: Group I—Grand Opera Instrumental Quartette—Waltz (from "Faust"—Gounod). Double Quartette—"Opening Chorus" (from "Robert the Devil"—Meyerbeer). Mrs. Robert Bell (soprano)—"Elizabeth's Prayer" (from "Tannhauser"—Wagner). Instrumental Quartette—"Einfache Gavotte" (from "Mignon"—Thomas). 8.20: Group II—Folk-songs of Bohemia: Double Quartette—"I Thought Not Sincere" Stanley Tamblin (baritone)—"The Man Without Tears." Double Quartette—"I Love Thee If I Thought Love Me" Mildred Bell and Audrey Bell (contraltos)—Duet, "The Message." Male Quartette—"Straightway I Come from the Tavern." Instrumental Quartette—"Hungarian Dance No. 9" (Brahms). 8.40: Group III—Sacred Songs—Double Quartette—"I Take Me to Thy Sacred Heart." W. W. Crisp (tenor) and Stanley Tamblin (bass-baritone)—"O Thine Love" (from "Crucifixion"—Stainer). Double Quartette—"Blessed Are They That Do His Commandments" (Erich Joh). Instrumental Quartette—"Largo" (Handel). Meteorological weather forecast. Week-end road information for motorists, officially supplied by the Royal Automobile Club of Queensland. 9.0: Group IV—Classical: Dorothy Mowlan (soprano)—"Sonata" (Schubert). W. W. Crisp (tenor) and Stanley Tamblin (bass-baritone)—"My Bark's Bounding to the Gale" (Mendelssohn). Mildred Bell (contralto)—"Love and Death" (Brahms). Double Quartette—"Walden's Night Song" (Schumann). Instrumental Quartette—"Gavotte" (Gluck). 9.20: Group V—Miscellaneous: Double Quartette—"Plantation Song." Mrs. Robert Bell (soprano)—"Joyous Heroes" (Smith). Jack Job (tenor)—"Sandal" (Preston). Double Quartette—"Legend of the Bulls" (Pianquetti). Instrumental Quartette—"Butterfly Dance" (Julia Nixon). 9.40: Group IV—Mexican Love Songs—Double Quartette—"Buzza Peccia." Stanley Tamblin (bass-baritone)—"Archetu" (Scherzinger). W. W. Crisp (tenor) and Double Quartette—"O Ye Live in Your Heart" (Mexican serenade by Erich Joh). Double Quartette—"Dance" (Lugli). Erich Joh. Close down.

## 5CL

11.0: L. Norris. 11.0: Chiff and Menu. 11.15: Kitchen Crawl and Menu. 11.30: Mr. L. G. Gann will give a talk on "The Work of the John Ambulance Association." 12.1: Midday Music. 12.15: General news service. 12.52: B.A. Railway Information. S. C. Ward and the Victorian Co's Stock Exchange Information. Meteorological Information. 1.1: Lunch-hour Recital. 1.18: Result of Flora Hurdle Race. Hamilton Cup meeting. 1.33: Result of Second Hurdle Race. Wagga Gold Cup meeting. 1.53: Result of Handicap Trial Stakes. Hamilton Cup meeting.

### AFTERNOON SESSION.

3.0: Chimes. General programme, including the Solomon Sisters (instrumentalists), John D. Fraser (baritone), Dave Howard (saxophonist), Elda Hambaritone), Dave Howard (saxophonist), 4.15: A short lecturette with illustrative recordings by Hor-

ace Perkins, Mus. Bac. A.M.U.A. 4.45: Stock Exchange information. 5.0: Close down.

**EVENING SESSION.**

6.0: Chimes. 6.1: Birthday greetings, correspondence. 6.30: "Laria." Talks from the Post. 6.45: An Interlude of dinner music. 7.0: Chimes. 7.1: Stock Exchange information. 7.6: General market reports. 7.15: SCL's sporting service, supplied by "Sivius." 7.27: Mr. Keith Minchin. 7.42: Adelaide wool sales report. 7.51: Musical interlude.

**NIGHT SESSION.**

8.0: G.P.O. chimes.  
8.1: Studio Orchestra—  
Overture, "Marionette" (Montgomery).  
Suite, "Sunny Spain" (Cova).  
8.11: Marcella Berardi (soprano)—  
"When Chloris Sleeps" (Homers).  
"Chanson Indoue" (Korsakov).  
8.18: Tom O'Dea (comedian).  
In Humorousities.  
8.26: Studio Orchestra—  
Fox Trot, "Sally of My Dreams" (Kernell).  
"Melodie, "By Firelight" (St. Clair).  
8.34: John D. Fraser (baritone).  
"A Brown Bird Singing" (Wood).  
"Loving Smile" (Counod).  
8.40: William and Florence Davey (xylophonists).  
"Hawallah Sunset" (Yandersfoot).  
"For Old Times' Sake" (Henderson).  
8.46: Norah Shirley (contralto).  
"I Love You Truly" (Bond).  
"Love's Old, Sweet Song" (Molloy).  
8.52: Studio Orchestra—  
"Casse Naisette Ballet," part 1 (Tschalkowsky).  
9.0: G.P.O. chimes.  
9.1: Meteorological information, including Senia-  
phor tides.  
9.2: Overseas grain report.  
9.3: Mr. C. T. Madigan, M.A., B.Sc., F.G.S. will  
give the third of his series of talks on "Life in  
the Antarctic."  
9.18: Studio Orchestra—  
suite, "The Willow Plate" (Victor Herbert).  
9.24: Marcella Berardi (soprano)—  
"Mad Scene" from "Hamlet" (Thomas).  
"A Bush Lullaby" (Blythman).  
9.30: Tom O'Dea (comedian)—  
More Comicalities.  
9.36: Studio Orchestra—  
Love Song, "The Gentle Dove" (Bendix).  
9.48: William and Florence Davey (xylophonists)—  
"Down South" (Myddleton).  
"Aloha."  
9.54: Mr. P. H. Nicholls, assisted by Bessie Francis,  
in a Shakespearean interlude, "Hamlet."  
10.9: Studio Orchestra—  
Selection, "Vanities" (Carroll).  
10.15: General news service.  
Meteorological information.  
10.20: SCL's sporting service, supplied by "Sivius,"  
including a review of to-morrow's races at Cheltenham and Ascot.  
10.30: Modern dance numbers by the "Radio  
Revelers."  
11.0: Close down.

**6WF**

12.30: Tune in. 12.35: Markets, news, etc. 1.0: Time signal. 1.1: Weather bulletin supplied by the Meteorological Bureau of Western Australia. 1.3: Music from the studio, including items by the Studio Trio, comprising Miss Audrey Dean (pianist), Miss Edna Waterman (cellist), Miss Vera Waterman (violinist). 2.0: Close down. 3.30: Tune in. 3.35: Musical programme relayed from the Primrose Cafe de Luxe; vocal items from the studio. 4.30: Close down. 6.45: Tune in. 6.48: Bedtime stories by Uncle Duffy. 7.5: Light music by the Perth Piano Trio, comprising Mr. A. Lynch (violin), Mr. R. Brearley (cello), Mr. H. Shirley (piano). 7.30: Commercial and general information. 7.45: Racing talk by the Sporting Editor of the "Truth" Newspaper Co., Ltd. 8.0: Time signal. 8.1: First weather bulletin. 8.3: Items by the Karoola Duo, including violin and piano-forte solos. 8.50: Late news items by courtesy of the "Daily News" Newspaper Co., Ltd.; station announcements; ships within range announcement; late weather bulletin. 8.58: Gardening talk by Mr. James Conarty. 9.15: Description of wrestling match by the Sporting Editor of the "Truth" Newspaper Co., Ltd., relayed from the ringside, Subiaco Oval. 10.30: Close down.  
104.5 Metre Transmission.—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres, commencing at 6.45 p.m.

**7ZL****MIDDAY SESSION.**

11.30: Selections. 11.34: Midlands weather forecast. 12.1: Shipping information; ships within wireless range; mail notices; housewives' guide; commercial news. 1.30: Close down.

**AFTERNOON SESSION.**

3.0: Chimes. 3.1: Selections. 3.4: Weather information. 3.15: The Discus Ensemble in selections, by Paul Whiteman and his orchestra. 4.15: Readings from the "Weekly Courier." 4.30: Close down.

**EARLY EVENING SESSION.**

6.15: Selections. 6.30: "The Story Lady." 7.0: Birthday greetings. 7.10: News session.

**EVENING SESSION.**

7.15: Sid Jones will speak on "Football Prospects 1929 Season."  
8.2: J. M. Counsel, "A Musical Hour with the Old Masters: The History and Development of Music."  
9.52: News session.  
10.0: Chimes.  
10.1: Close down.

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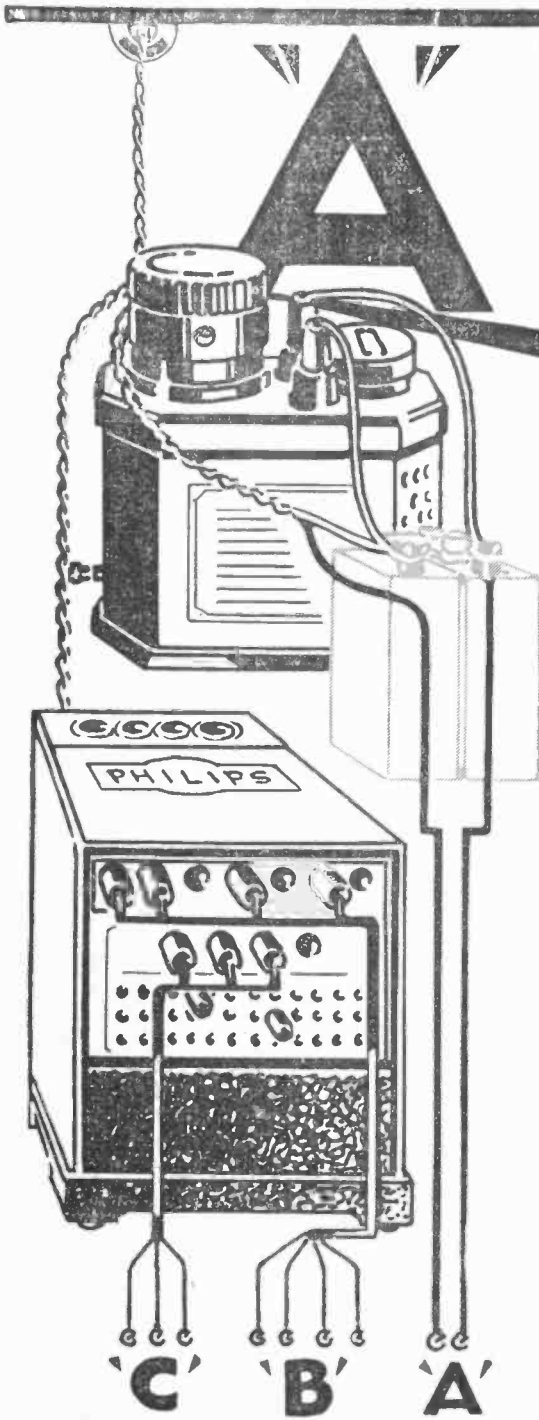
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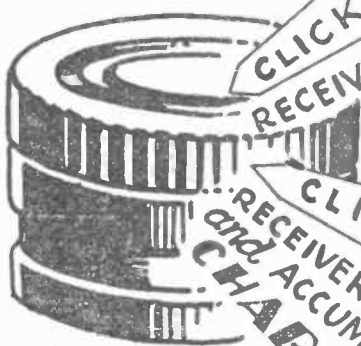
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# PHILIPS

RADIO APPARATUS

## Local Programmes, Saturday, April 20

### 2FC

#### EARLY MORNING SESSION.

Announcer: A. S. Cochrane.

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

#### MORNING SESSION.

Announcer: Eric Bessemer.

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

#### MIDDAY AND AFTERNOON SESSIONS.

Announcers: Laurence Halbert, Ewart Chapple.

12.0: "Big Ben" and announcements. 12.2: Stock Exchange information. 12.4: Studio music. 12.10: "Sydney Morning Herald" news service. 12.15: Rugby wireless news. 12.20: Studio music. 12.45: Popular music. 12.50: From Moorefield and Victoria Park, results of the races will be given during the afternoon. During the intervals music from the studio by "The Idlers." 4.45: Racing resume. 5.0: "Big Ben." Close.

#### EARLY EVENING SESSION.

5.40: The chimes of 2FC. 5.45: The Children's Session, conducted by the "Hello Man"; letters and stories; music and entertainment. 6.40: Stock Exchange information. 6.43: Weather and shipping news. 6.45: Rugby wireless news. 6.48: Late sporting news. 7.0: "Big Ben"; late news service. 7.10: The 2FC Dinner Quartette conducted by Horace Keats—(a) "Spring Thoughts" (Slizer); (b) "Two Eastern Songs" (Lang); (c) "Serenade" (Tossell); (d) "Two Syncopated Pieces" (Coates); (e) "Still as the Night" (Bohm).

#### EVENING SESSION.

Announcer: Laurence Halbert.  
Accompanist: Ewart Chapple.

7.40: Popular music.  
7.45: Programme announcements.  
7.48: Studio items.  
8.0: From the N.S.W. Blind Institute, William Street—Hospital Concert Party, directed by W. E. Lewis, and assisted by Dorrie Ward and the Mellow Fellows.  
9.30: From the Studio—Weather report.  
9.31: The Studio Dance Band, conducted by Cec. Morrison.  
9.43: Peggy Peat, popular vocalist.  
9.50: The Studio Dance Band, conducted by Cec. Morrison.  
10.5: Peggy Peat, popular vocalist.  
10.12: The Studio Dance Band, conducted by Cec. Morrison.  
10.30: Late weather.  
10.32: The Studio Dance Band, conducted by Cec. Morrison.  
10.57: To-morrow's programme.  
10.59: The Studio Dance Band, conducted by Cec. Morrison.  
11.30: National Anthem. Close.

### 2BL

#### MORNING SESSION.

Announcer: A. C. C. Stevens.

8.0: G.P.O. chimes. Metropolitan weather report. 8.1: State weather report. 8.2: Studio music. 8.15: G.P.O. chimes. News from the "Daily Telegraph Pictorial." 8.30: G.P.O. chimes. News service continued. 6.40: Information, mails, shipping, arrivals, departures, and sailings. 8.45: Studio music. 9.15: Half an hour with silent friends. 9.45: Studio music. 10.0: G.P.O. chimes. Close down.



The Lotus Lily—or Sacred Buddha of Japan—growing in the Melbourne Botanical Gardens about which Mr. Cooper will speak from 2BL to-day.

#### MIDDAY SESSION.

Announcer: A. C. C. Stevens.

11.0: G.P.O. chimes. Women's Session, conducted by Mrs. Cranfield. 11.20: What's on at the Pictures and Theatres. A talk on "Milk Week" Campaign. 11.30: Advertising Hints. 11.40: Women's Session continued. 12.0: G.P.O. chimes. Special ocean forecast and weather report. 12.3: Pianoforte reproduction. 12.30: "Sun" news service. 12.40: Studio music. 1.30: "Sun" midday news service. 1.40: Studio music. 1.57: Cricket scores. 2.0: G.P.O. chimes. Close down. Note: Race results will be given of Moorefield and Victoria Park races at regular intervals during the afternoon, by courtesy of "Sun" Newspapers.

#### AFTERNOON SESSION.

Announcer: Basil Kirke.  
Accompanist: Kathleen Roe.

3.0: "Big Ben." From the Sydney Cricket Ground: Description of the Rugby League Football Match. During intervals from the Studio, Kitty Pool in popular numbers. Dance music from Romano's. Race results will be given from Victoria Park by courtesy of "Sun" Newspapers. 5.37: Features of the evening's programme.

#### EARLY EVENING SESSION.

Announcer: Basil Kirke

5.40: Children's Session, conducted by Uncle Bas. Music and entertainment. Letters and stories. 6.30: "Sun" news service. 6.40: 2BL Dinner Quartette—(a) "Badinage" (Warner), (b) "Minuetto" (Borensen), (c) "Chopiniana" (arr. Finck), (d) "Agnus Dei" (Bizet), (e) "An Old Adobe" (Schetzinger). 7.7: Complete sporting and racing resume. 7.30: Mr. Pim and Miss Pam in Advertising Tanks, Handy Hints, and nonsense. 7.53: An ad. special. 7.55: Programme and other announcements.

#### EVENING SESSION.

Announcer: Basil Kirke.

Accompanist: G. Vern Barnett.

8.0: G.P.O. Chimes. Topical Chorus.  
Alf. Lawrence and Nell Crane, entertainers—

(a) "Live for All You're Worth" (Darowski).  
(b) "Providing" (Lawrance).  
(c) "You Know and I Know" (Lawrance).

8.10: The Troubadours.

8.23: Novelty Whistling Act by Lillian Williams.

8.30: Popular Programme.

9.30: Late weather.

9.31: Alf. Lawrence and Nell Crane, entertainers—

(a) "Child Impressions" (Lawrance).  
(b) "Little Maori Whare" (Lawrance).  
9.41: The Troubadours.  
9.56: Lillian Williams, novelty whistling act.  
10.2: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams.  
10.41: Billie Cresswell, popular items.  
10.21: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams.  
10.31: Late weather.  
10.33: Billie Cresswell, popular items.  
10.38: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams.  
10.57: To-morrow's programme.  
10.59: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams.  
11.30: National Anthem. Close.

### 2GB

5.30: Children's session, by Uncle George.  
7.0: Dance music. 8.0: Request evening. 9.0: Dance music. 10.0: Close down.

### 2UW

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

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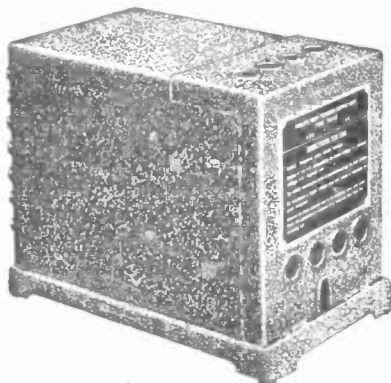
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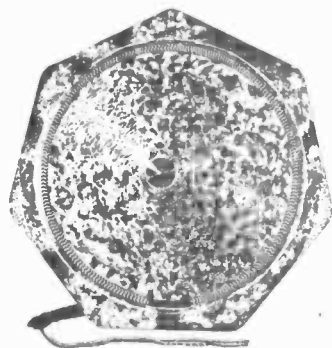
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# Interstate Programmes, Saturday, April 20

## 3LO

### EARLY MORNING SESSION.

7.15 to 8.15: See Friday.

### MORNING SESSION.

Announcer: Renn Millar. Accompanist: Agnes Fortune. 10.50: Eric Welch will speak on to-day's races at Caulfield. 11.0: The Strad Trio. 11.39: **Clelia Genoni M'Neill**. 11.32: Cecil Parkes, violin. 11.25: Clelia Genoni M'Neill. 11.46: The Strad Trio. 11.57: Announcements.

### MIDDAY SESSION.

12.0: Melbourne Observatory time signal. 12.1: Metal prices, etc. 12.20: The Radio Revellers. 12.30: Ella Randell (contralto). 12.37: Stock Exchange Information. 12.40: The Radio Revellers. 12.50: Jack Stocks, "The Woman Hater." 12.57: The Radio Revellers. 1.7: Ella Randell (contralto). 1.14: The Radio Revellers. 1.24: Meteorological information, etc. 1.31: Jack Stocks. 1.38: The Radio Revellers. 1.45: Close down.

### AFTERNOON SESSION.

Announcer: Renn Millar. Accompanist: Agnes Fortune. 3.0: The Station Orchestra. 3.10: Ella Randell (contralto). 3.17: Marlon Lightfoot (baritone). 3.24: Sammy Shields, 3.34: The Imperial Russian Trio. 3.54: Ella Randell (contralto). 4.4: The Station Orchestra. 4.12: Will Davies (bass) and Emily Davies (piano). 4.41: The Station Orchestra. 4.45: Close down.

### EARLY EVENING SESSION.

6.0: Sporting results. 6.5: Answers to letters and birthday greetings. 7.5: "Little Miss Kookaburra" 6.30: Musical Interlude. 6.35: "Little Miss Kookaburra" will tell her tiny Kookaburres about "Mr. and Mrs. Waino," and then give the Introduction to a new serial story—"Guides and Scouts"—are you ready? This story will interest you.

### EVENING SESSION.

7.5: Stock Exchange information. 7.15: Market reports. 7.30: The Station Orchestra. 7.35: Sammy Shields. 7.42: The Station Orchestra. 7.52: Sammy Shields. 8.0: The Imperial Russian Trio (Arved Norst, violin; Ivan Bezinsky, cello; Vassil Ilster, piano)—"Entracte Music from "Rosamunde" (Schubert). "Syncope" (Kreiser). "Waize Melancholique" (Darzin). "Melodie in F" (Rubinstein). "Hungarian Dance No. 2" (Brahms).

### NIGHT SESSION.

Announcer: John Stuart. Accompanist: Agnes Fortune.

8.30: The Station Orchestra. Selection: "A Persian Princess" (Jones). 8.40: "We Four" Quartette. "Cull John" (Brewer). Claude Schilling (baritone)—"Songs My Mother Sang" (Orinshaw). 8.47: Percy Code (trumpet)—"I Passed by Your Window." 8.52: Record feature of the week. 8.56: **Clelia Genoni M'Neill** (soprano)—"Some Day" (Prhm). "Serenata" (Darzin). 9.3: Lindsay Biggins (piano)—"Gigue in E Minor" (Rameau). "Fantasie in O Minor" (Mozart). "Impromptu in G Minor" (Schubert). "Moment Musical" (Schubert). "Waltzer in Suite Form" (Schubert-Prokofiev). 9.40: "We Four" Quartette— "De Ole Bonito" (Scott Gatty). Edwin E. Hooke (tenor)—"At Night" (Rachmaninoff). 9.40: The Station Orchestra—Ballad music. "Coppelia" (Delibes). 9.47: **Clelia Genoni M'Neill** (soprano). "Lo! Here the Oentle Lark" (Bishop). "Sweet Miss Mary" (Weldinger). 9.54: The Station Orchestra—"Southern Tone Poem" (Holmer). 10.0: Stella Lamond (soubrette) will entertain with her ukulele. 10.7: The Station Orchestra—"Hymn to the Sun" (Korsakov). 10.12: "We Four" Quartette—"In the Silence of the Night" (Rachmaninoff). 10.12: "We Four" Quartette—"De Mockin' Bird" (Strickland). Walter D. Burleigh (basso)—"The Mighty Deep" (Judge). 10.20: The Station Orchestra—Selection: "Our England" (German). 10.30: Late Sporting. 10.35: Stella Lamond (soubrette) will entertain with her ukulele. 10.41: Ern Hall's Radio Revellers, with Hugh Huxham—"What a Girl" (Sanders). "The Dance of the Blue Danube" (Fisher). "Rosalinde" (Hill). "Me and the Man in the Moon" (Monaco). "Nebraska" (Sissell). "When You Said Good-night" (Donaldson). "Little Irish Rose" (Zamecnik). "Crossing the Milestones" (Tilsley). Selected. 11.30: God Save the King.

## 3AR

### MORNING NEWS SESSION.

10.0 to 10.59: See Friday.

### MORNING MUSICAL SESSION.

11.0: Operatic selections. 11.50: British official wireless news. Announcements. Rates of exchange as supplied by Messrs. Thos. Cook and Sons. 12.0: Close down.

### AFTERNOON SESSION.

1.28: Description of Kharطوم Hurdle Race, 2 miles 65 yards. Caulfield races, by Eric Welch. 2.28: Description of Katandra Two-year-old, 7 furlongs. Caulfield races, by Eric Welch. 2.41: Description of football match, Northcote v. Preston, at Northcote Park, by Rod McGregor. 3.2: Description of Glenhaviour Handicap, 1 mile 3 furlongs. Caulfield races. 3.15: Description of football match, Northcote v. Preston, at Northcote Park. 3.35: Quarter-time scores of Northcote v. Preston football match, and scores of League and Association football matches. 3.38: Description of Neerim Steeplechase, 2 miles 3 furlongs. Caulfield races. 4.10: Half-time scores of Northcote v. Preston football match, and scores of League and Association football matches. 4.13: Description of Glenferrie Handicap, one mile. Caulfield races. 4.20: Description of football match, Northcote v. Preston, at Northcote Park. 4.40: Description of football match, Northcote v. Preston at Northcote Park. 4.45: Three-quarter time football match, Northcote-Preston, and of League and Association football matches. 4.48: Description of Brighton Handicap, 6 furlongs. Caulfield races. 4.52: Description of final quarter of football match, Northcote v. Preston, at Northcote Park. 5.40: Final scores of all football matches. 5.45: Close down.

### EVENING SESSION.

Announcer: Frank Hathley. 6.0: Songs. 7.15: News session. 7.25: Birthday greetings. 7.29: Out of the Past. 7.30: Edward Prescott. "Grasses, part 2." 7.45: "A Master of History." 7.46: Dr. J. A. Leach will speak on "Thornhill Warders." 8.0: Our Tasmanian letter from the "Weekly Courier." Launceston. 8.3: All sporting results.

### NIGHT SESSION.

Announcer: Frank Hathley.

8.30: Brunswick City Band—Selection, "The Bohemian Girl" (Rimmer). 8.40: Jack Stocks, the Woman Hater (by permission Tivoli Theatres, Ltd.). "Weary Willie Whimpers." 8.47: The Brunswick City Band—Overture, "La Coquette" (Le Due). 8.56: Harold Webb (baritone)—"Harp of the Woodland" (Martin). "Gargoes" (Clarke). 9.3: Sea Wrack. Captain Donald McLean. "Feats of the Mighty." 9.18: Brunswick City Band—Fantasia, "A Military Church Parade." 9.28: Jack Stocks, the Woman Hater. "A Real Soft Story." 9.35: Marlon Lightfoot and her steel guitar. 9.42: Harold Webb (baritone)—"Because" (D'Hardelle). "When Thy Blue Eyes" (Lassen). 9.49: Marlon Lightfoot. "More steel guitar items." 9.54: Brunswick City Band—"March Ever Tonian." Selected. 10.30: Organ Recital—Transmission from St. Peter's Church, Eastern Hill, by O. E. Montleath, F.R.C.O. "Imperial March" (Eigar). "Largo from Xerxes" (Handel). "Gavotte" (Exandt). "Andante from String Quartette" (Spohr). "Short Prelude and Fugue No. 6 in G Minor" (Bach). 10.38: From the studio—News service. Announcements. Late sporting results. God Save the King.

## 4QG

### EARLY MORNING SESSION.

7.43 to 8.30: See Friday.

### MORNING SESSION.

11.0: The complete morning service will be relayed from the Seventh Day Adventist Church, Buranda. 12.16: Close down.

### AFTERNOON SESSION.

3.0: A musical programme. 4.30: Close down.

### EARLY EVENING SESSION.

6.15: "Queenslander" bi-weekly news service for distant listeners. 6.30: Bedtime stories, conducted by "Uncle Ben." 7.15: To-day's race results in brief. 7.30: General sporting notes. 7.30: Sailing notes by Mr. Fred Smith.

### NIGHT SESSION.

Announcer: H. Humphreys.

8.0: From the Savoy Theatre—Overture by the Savoy Orchestra. 8.10: From the Studio—Stanley Tamblin (bass-baritone)—"Land of Delight" (Sanderson). "The Admirals' Yarn" (Rubens).

8.18: Enid Stuart (violinist)—"Eitencello and Allegro" (McCunn). 8.24: Doris M'Innes (soprano)—"A Southern Song" (Ronald). 8.28: Ernest Harper (baritone)—"A Vagabond Song" (Cundell). 8.32: From the Savoy Theatre—Orchestral Music. 8.40: From the studio—Isobel Andrews (contralto)—"O the Smile of the Spring Time" (Gounod). 8.44: Enid Stuart (violinist)—"Romance" (McCunn). 8.48: Ernest Harper (baritone)—"The Stars Have Eyes" (Sanderson). 8.52: "Doris M'Innes (soprano)—"Down in the Forest" (Ronald). 9.0: From the Speedway—motor cycle races. 9.30: From Lennon's ballroom—dance music. 10.0: From the studio, news, weather. Close down.

## 5CL

### MORNING SESSION.

12.0: Chimes. 12.1: Late selection for Aspendale Races, supplied by Mr. Eric Welch. 13.0: Probable starters and selections for Cheltenham Races, by "Silvius." 12.45: General news service. 12.45: Midday melodies. 1.0: Close down.

### AFTERNOON SESSION.

Between descriptions of the races at Cheltenham, a general programme, including: Station Quartette; Margaret Pirie, contralto: The Cotton Pickers, banjoists; John D. Fraser, baritone; Mary Edson, soprano. 2.1: 2.33: 3.1: resume of Aspendale Park and Cheltenham Park race results. 3.30: From Outer Harbour, running description of the Orflith Cup Race (hydroplane championship of Australia). 3.45: Aspendale Park race result—Aspendale Park Handicap. 4.1: Resume of Aspendale and Cheltenham race results. 4.3: Aspendale Purse. 4.33: Aspendale Welter Handicap. 4.55: Stock Exchange information. 5.0: Chimes. 5.1: Resume of Aspendale Park and Cheltenham races.

### EVENING SESSION.

6.0: G.P.O. Chimes. 6.1: Birthday greetings, correspondence, songs and stories by "The Watle Lady." 6.30: An interlude of dinner music. 7.0: Chimes. 7.1: Stock Exchange information. 7.10: Rev. G. E. Hale, B.A., will speak on "Genius and Insanity." 7.25: Popular songs. 7.35: C. O. Reilly will talk on "Items of Interest." 7.45: 5CL's sporting service by "Silvius."

### NIGHT SESSION.

8.0: G.P.O. Chimes. 8.1: Allan's Mouth-Organ Band; conductor, Mr. R. Dutton—"March of the Croakajacks" (Miss Grace Edwards). "Mary Lou," with vocal chorus. 8.10: Leonora Mira, soprano—"Sympathy." "Mighty Lak a Rose" (Nevin). 8.16: Marcus Tozer and Bondi Randall, Hawaiian Duo, in enchanting melodies. 8.22: John D. Fraser, baritone—"Fanfare of Damascus" (Trallien). "After Drought" (Trallien). 8.28: James Glennon, viola—"Abendlied" (Schumann). "Evensong" (Martin). 8.33: Gwen Collett, contralto—"O Flower Divine" (Wood). "Doan Yer Liss" (Bond). 8.40: Williams and Smith, banjoists—"Fanfare des dragons" (Kennedy). "Southern Melodies." 8.46: Charles Baggott, tenor—"Mulatter of Malagar" (Tolere). "To Be Near You" (Coote). 8.52: Allan's Mouth-Organ Band—"Nocturne" (Denz). "Medley of Popular Songs." 9.0: G.P.O. Chimes. 9.1: Meteorological information, including Semaphore lides. 9.2: Overseas grain report. 9.3: Leonora Mira, soprano—"Love's Garden of Roses." "Mah Linn Lou." 9.9: Phil Yeatman, Glockenspiel—Selected numbers. 9.12: "Bobs Trent." 9.14: John D. Fraser, baritone—"Before the Dawn" (Lang). "She is Far from the Land" (Lambert). 9.20: Marcus Tozer and Bondi Randall, Hawaiian Duo—More fascinating Hawaiian numbers. "Characters—A comedy, entitled "Dinner Here." Charles Hubert Ashe (an author) ..... Lloyd Taylor Owendoline Ashe (his wife) ..... Bobs Trent Scene—"The Ashe's drawing room with telephone on wretchedly-furnished room with telephone on table. The lease, which plays open, the telephone rings. Enter Hubert. Time, evening, before dinner. 9.40: Allan's Mouth-Organ Band—"Minnut in G" (Constboven). "Hi-Ho-Merrio" (Conrad). 9.47: Gwen Collett, contralto—"Mate o Mine" (Ellcott). "Melissande in the morning" (Goets). 9.53: James Glennon, viola—"Faraphase on Two Russian Songs" (Kremer). "Song Without Words" (Squire).



9.58: Charles Baggott, tenor—  
 "The Blind Ploughman" (Clarke).  
 "Sometimes in Summer" (Benetts).  
 10.4: Williams and Smith, banjoists—  
 "Bonnie Scotland" (Ke-medy).  
 "Sweet Lavender."  
 10.9: Allan's Mouth-Organ Band—  
 "Fifty Million Frenchmen Can't be Wrong."  
 with vocal chorists.  
 "Winning Fight March."  
 10.15: SGL's sporting service, by "Silvius." Includ-  
 ing the race results at Cheltenham and Ascendale.  
 Meteorological information.  
 10.30: Modern dance numbers, by the "Radio Re-  
 veliers."  
 11.0: Close down.

**6WF**

12.0: Tune in. 12.5: Racing anticipations repeated for the benefit of our country hateners. 12.7: Piano-forte solos by Miss Audrey Dean, station pianist.  
 12.50: Markets, news, etc. 1.0: Time signal. 1.1: Weather bulletin supplied by the Meteorological Bureau of Western Australia. 1.2: Close down. 2.30: Tune in; results of races run at the Perth race-course will be broadcast during the afternoon, also other sporting results. 5.30 (approx.): Close down.  
 6.45: Tune in. 6.48: Bedtime stories by aunty Amy. 7.12: Sports results. 7.30: Commercial and general information. 7.45: Music. 8.0: Time signal. 8.1: First weather bulletin. 8.3: Dance music by Merv Lyon and his Symphonic Orchestra, relayed from the Temple Court Cabaret; vocal items from the studio.  
 8.50: Late news items by courtesy of the "Daily News" Newspaper Co., Ltd.; station announcements; ships within range announcement; late weather bulletin. 9.5: Programme continued from Temple Court Cabaret and the studio.  
 10.4.5 Metre Transmission.—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres commencing at 6.45 p.m.

**7ZL**

**MIDDAY SESSION.**

Announcer: Jack Broadbent.

11.30: Music. 11.34: Midlands weather forecast. 11.35: Last minute selections for Melbourne and Sydney races. 12.55: News service. 2.15: Running description of Hurdle Race, 2 miles, Ascendale, Melbourne. 2.45: Running description of Maiden Plate, 5 furlongs, Ascendale, Melbourne. 2.50: Close down.

**AFTERNOON SESSION.**

3.0: Chimes. 3.15: Running description of Ascendale Plate, 6 furlongs. 3.20: Transmission from the North Hobart Oval—Football match, Cananore v. North Hobart, described by Sid Jones. 3.45: Description of Ascendale Park Handicap, 1 mile. 3.50: Football match, Cananore v. North Hobart. 4.15: Description of Ascendale Purse, 7 furlongs. 4.20: Football match, Cananore v. North Hobart. 4.45: Description of Welter Handicap, 1 1/4 miles. 4.50: All sporting results to hand. 5.0: Close down.

**EARLY EVENING SESSION.**

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

**EVENING SESSION.**

7.30: Roy Johnson will speak on "Manual Training."  
 7.45: J. M. Counsel will speak on "European Affairs."  
 8.0: A concert programme arranged by Madame Helen George and M'elie Columbia. Madame Helen George, piano solo.  
 9.50: News session. All sporting results to hand. British official wireless news. Tasmanian district weather report. Bowling, homing, and tennis. Close down.

**2UW**

**Wednesday, April 24**

**MID-DAY SESSION.**

12.30: Music. 1.0: G.P.O. clock and chimes; music. 2.30: Close down. 4.30: Musical programme.

**EVENING SESSION.**

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

**Thursday, April 25**

**MID-DAY SESSION.**

12.30: Music. 1.0: G.P.O. clock and chimes; music. 2.30: Close down. 4.30: Musical programme.

**EVENING SESSION.**

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

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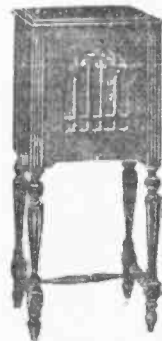
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# Local Programmes, Sunday April 21

## 2FC

### MORNING SESSION.

Announcer: A. S. Cochran.

- 10.0: "Big Ben" and announcements.
- 10.2: Studio music.
- 10.15: News service.
- 10.30: Studio music.
- 11.0: "Big Ben." From Christ Church St. Laurence—Morning service, conducted by Rev. Father John Hope.
- 12.15 (Approx.): Close.

### AFTERNOON SESSION.

Announcer: C. R. Hall.

- 2.30: Programme announcements.
- 2.32: Children's Session, conducted by Uncle Frank, of the Cheer-up Society.
- 3.0: "Big Ben." From the Lyceum Hall, Pitt Street—Pleasant Sunday Afternoon Service arranged by the Central Methodist Mission, Dulwich Hill Salvation Army Band, Heather Kinnaird, Amy Firth.
- 4.30: From the Studio—Musical items.
- 5.0: "Big Ben." Close.

### EVENING SESSION.

Announcer: Laurence Halbert.

- 6.0: "Big Ben" and programme announcements.
- 6.2: S. H. Bowden will speak on the Sistine Chapel.
- 6.20: A short recital by Mr. and Mrs. Horace Keats—

Piano duet:

"German Round" in E Flat (Moskowsky).

Songs:

(a) "A Dream Has Made Me Weep" (Phillips).

(b) "Sunset" (Moore).

Piano solo:

"Sonata Op. 57" (Beethoven).

Songs:

(a) "A Sea Lullaby" (German).

(b) "Blossom Song" (O'Neill).

Piano duet:

"Valse" (Moskowsky).

- 7.0: From the Lyceum Hall, Pitt Street—Evening service arranged by the Central Methodist Mission, 45th Anniversary. Special preacher: Rev. Norman Dunning, M.A., LL.B., of England, Organist: Miss Constance Bardsley, L.T.C.L., Choirmaster: Mr. V. W. Peterson, B.A., B.Ec.

Service conducted by Rev. H. C. Foreman, M.A.

Anthem, "Be Not Afraid" (Elijah).

Introit, "Jesu, Stand Among Us."

Hymn 469, "Stand Up, Stand Up for Jesus."

Prayer, Rev. A. J. Gould.

Hymn, "O Love That Wilt Not Let Me Go."

Lesson.

Solo, Miss May Craven.

Intimations and Anthem, "Jesu, the Very Thought of Thee" (Bairdstone).

Hymn, "Fight the Good Fight."

Sermon, Rev. Norman Dunning, M.A., LL.B.

Hymn 645, "The Day Thou Gavest."

Benediction and Vesper.

Hymn 331, "Lord, I Hear of Showers of Blessing."

- 8.30: From the Studio—Weather report.
- 8.31: From the Manly Band Rotunda, Manly Beach—The Manly Municipal Band, conducted by James Pheloung.
- 9.30: From the Studio, Ila Turnbull, soprano—
  - (a) "Angels Ever Bright and Fair" (Handel).
  - (b) "Thou Art Like a Flower" (Liszt).
- 9.37: Eileen Boyd, contralto.
- 9.44: Ila Turnbull, soprano—
  - (a) "My Lovely Celia" (Wilson).
  - (b) "The Fuchsia Tree" (Quilter).
  - (c) "An Irish Lullaby" (Stanford).
- 9.51: Eileen Boyd, contralto.
- 9.58: To-morrow's programme.
- 10.0: Record recital.
- 10.30: National Anthem. Close down.

## 2BL

### MORNING SESSION.

Announcer: A. C. C. Stevens.

- 11.0: G.P.O. chimes.
- From the Newtown Methodist Mission—Anzac Morning Service, conducted by Rev. A. E. Walker—



EILEEN BOYD, contralto, who will be heard from 2FC to-night.

Hymn 812—Methodist Hymn Book.

Prayer.

Hymn 624.

Salm Responses.

Solo—George Haggerty.

Children's Hymn 462.

Children's Address—Chaplain Rev. Milis-Robson.

Scripture Reading.

Offering and Anthem.

Hymn 1037.

Address—Chaplain Rev. Milis-Robson.

Hymn 807.

Benediction.

12.15 (approx.): From the Studio: "Sun" news service.

12.30: Studio music.

2.0: G.P.O. chimes. Close down.

### AFTERNOON SESSION.

Announcer: Basil Kirke.

3.0: G.P.O. chimes.

A talk by E. J. Davidson on the Toc H Movement.

3.10: Studio music.

3.30: From the Manly Band Rotunda, Manly Beach: The Manly Municipal Band, conducted by James Pheloung.

5.0: G.P.O. chimes. Close down.

### EVENING SESSION.

Announcers: Basil Kirke, G. Vein Barnett.

6.0: Children's session, conducted by Uncle Bas.

6.30: From Newtown Congregational Church: Organ and Orchestral Recital—

Organist: Allan Weekley.

Orchestral Leader: Miss Howsen.

Orchestra: "Faust."

Orchestra: "Patriotic Airs."

Orchestra: "Patriotic Airs."

Organ Solo: "March of the Israelites" (Costa).

7.0: Anzac Evening Service from Newtown Congregational Church—

Minister: Rev. Mearns Massie.

Organist: Allan Weekley.

Orchestral Leader: Miss Howsen.

Call to Worship—Doxology—Short Prayer—

— Gloria (chant).

Hymn No. 73—"Australia of the Free."

Scripture Lesson.

Healing Prayer.

Quartet: "The Songs the Soldiers Sang" (Mr. Gibb and Friends).

Hymn No. 75, "The March of the Anzac Men."

Messages to Sick Friends.

Announcements. Questions for April.

Offertory Anthem: "Conquering Kings Their Titles Take" (Mauder).

Hymn No. 74: "Our Fathers Crossed the Rolling Seas."

Quartet (Mr. Gibb and Friends).

Silent Prayer.

Anzac Sermon: "Deeds That Never Die,"

Rev. Mearns Massie.

Hymn No. 72, "National Anthem."

Benediction.

Retiring Hymn No. 75, "March of the Men of Harlech."

8.30: From the Studio: Robert Gilbert, baritone.

8.33: Leonore Gotsch, soprano—

(a) "My True Love" (Trary).

(b) "A Poor Maid's Quest" (Bunten).

(c) "Villanelle" (Acqua).

8.40: From the Victory Theatre, Kogarah.

Leslie Harvey at the "Christie" Organ.

9.0: From the Studio. Weather report.

Robert Gilbert, baritone.

9.4: From the Victory Theatre Kogarah: Leslie Harvey at the "Christie" Organ.

9.24: From the Studio: Leonore Gotsch, soprano—"Memories" (Kjerulf).

9.28: From the Victory Theatre, Kogarah: Leslie Harvey at the "Christie" Organ.

9.48: From the Studio: Robert Gilbert, baritone.

9.55: Leonore Gotsch, soprano—"Hal, France, My Country" (from the "Daughter of the Regiment") (Donizetti).

9.58: Resume of following day's programme.

10.0: National Anthem. Close down.

## 2GB

- 10.0: Music from St. Alban's Church, Redfern.
- 10.15: Morning service, from St. Alban's Church.
- 12.0 noon: Close down.
- 3.0: Musical session 5.30: Children's session by Uncle George.
- 7.0: Lecture from Adyar Hall.
- 8.0: Music from studio.
- 8.15: Rosenkranz piano solos.
- 8.23: Miss Heather Kinnaird, contralto.
- 8.30: Mr. Leonard Brewer, violinist.
- 8.38: Mr. William Green, tenor.
- 8.45: Miss Elsie Brown, soprano.
- 8.52: Rosenkranz piano solos.
- 9.0: Miss Heather Kinnaird, contralto.
- 9.7: Mr. Leonard Brewer, violinist.
- 9.15: Mr. William Green, tenor.
- 9.22: Miss Elsie Brown, soprano.
- 9.29: Rosenkranz piano solos.
- 9.35: Close down.

## 2UW

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

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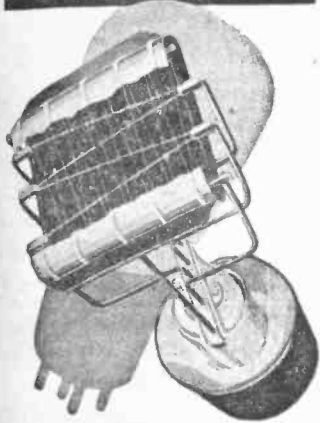
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E

**Interstate Programmes, Sun., April 21**

**3LO**

Announcer: Frank Hatherley.—10.30: Bells from St Paul's Cathedral. 10.45: Express train information; British official wireless news from Rugby; news from yesterday's papers. 11.0: Morning service from Central Mission, Wesley Church, Lonsdale Street, Melbourne, conducted by Rev. J. H. Cain. 12.15: Close down.

**AFTERNOON SESSION.**

2.0: Sonora recital of the world's most famous records. 3.0: Pleasant Sunday afternoon service, transmitted from Wesley Church, Central Mission, Lonsdale Street, Melbourne. Chairman, Rev. J. H. Cain. 4.30: Close down. Children's Hour. 5.45: Shipping information. 5.47: Answers to letters and birthday will tell the children about "Joseph, the Prime Minister," "Bobby Bluegum," 6.25: "Brother Bill" lster. 6.45: Adult birthday greetings and programme announcements. 6.47: Bells from St. Paul's Cathedral, Melbourne.

**EVENING SESSION.**

7.0: Evensong (choral) from St. Paul's Cathedral, Melbourne, third Sunday after Easter.

**NIGHT SESSION.**

- 8.30: Mrs. Dorothy Silk—"Five minutes for the 3LO Woolies" Appeal.
- 8.35: Malvern Tramways Band—Overture, "Martha" (Flotow).
- 8.43: Moran Hillford, basso—"Les Rameaux" (Faure). "Ave Maria" (Coppet).
- 8.51: Malvern Tramways Band—"Palmer House" (Pettes).
- 8.56: The Smith Girls. Lindsay Biggins, piano—Hammer, recorded in the Scala Theatre, London.
- 9.5: Professor Bernard Heinze, violin; Helen "Double Concerto" (Bach). "Suite, Op. 7" (Moszkowsky).
- 9.38: Moran Hillford, basso—"The Watchman" (Squires). "My Rosary for You" (Ball).
- 9.45: Malvern Tramways Band—Fantasia, "A Military Church Parade" (Ord Hume).
- 9.55: News service; announcements.
- 10.0: God Save the King.

**3AR**

11.0: Morning service from Scots Church Collins Street Melbourne. 12.15: Express train information; British official wireless news. 12.20: Close down.

**AFTERNOON SESSION**

3.0: The mechanical interpretation of the master musicians of the past by the master musicians of to-day, Sir Henry J. Wood and the New Queen's Hall Orchestra, recorded in the Scala Theatre, London. "Symphony, No. 3, In E Flat" ("Eroica") (Beethoven). 4.30: Close down.

**EVENING SESSION**

5.0: "Brer Rabbit." 5.30: Close down.

**NIGHT SESSION**

- Announcer: John Stuart. Accompanist: Vera Howe.
- 8.0: The Strad Trio (Cecil Parkes violin, Myra Montague piano, Frank Johnstone 'cello). "Trio, Opus 25, in G Major" (Hummel), allegro con brio, minueto, rondo scherzando.
- 8.12: William J. Cadzow, tenor. "Angels Guard Thee."
- "Don't You Mind the Sorrows."
- 8.19: Cecil Parkes, violin. "Sonata in G Minor" (Brahms).
- 8.29: The De Reske Four. "Deep River" (Wright).
- "Stars of the Summer Night" (Woodberry).
- 8.39: Frank Johnstone, 'cello. "Hungarian Rhapsody" (Popper).
- 8.46: Charles Trewavlis, bass-baritone. "The Vagabond" (Vaughan Williams). "Bright is the Ring of Words" (Vaughan Williams).
- 8.53: Cecil Parkes, violin. "Nocturne in E Flat" (Chopin). "Liebesfreud" (Kreisler).
- 9.1: Starring Betty Ross-Clarke in "Readings from the Psalms."
- 9.8: The Strad Trio. "Ave Maris Stella" (Grieg). "Menuett" (Haydn). "Swedish Folk Song" (Svendson). "Guitar Player" (Schytte). "Marche Militaire" (Schubert).
- 9.20: The De Reske Four. "Holy Night" (Beethoven).
- 9.30: The Strad Trio. Request item.
- 9.35: William Cadzow, tenor. "All Hail, Thou Dwelling" (Gounod). "Wonderous Art My Lovely Queen" (Brahms).
- 9.42: Myra Montague, piano. Selected.
- 9.50: News session. God Save the King.

**4QG**

**MORNING SESSION.**

11.0: The complete morning service will be relayed from St. John's Anglican Cathedral. 12.15: Close down.

**AFTERNOON SESSION.**

3.15: The concert by the South Brisbane Band will be relayed from the Botanic Gardens. 4.30: Close

down.

**EARLY EVENING SESSION.**

5.30: Greetings from little listeners and replies to letters.

**NIGHT SESSION.**

7.30: The complete evening service will be relayed from St. John's Anglican Cathedral. At the conclusion of the church service the concert by the Brisbane Municipal Concert Band will be relayed from Wickham Park. 9.30: Close down.

**5CL**

**MORNING SESSION.**

10.15: Carillon of bells from Adelaide Town Hall. 11.1: Divine service from Maughan Methodist Church, Franklin Street. 12.15: British official wireless news. 12.20: Close down.

**AFTERNOON SESSION.**

3.0: G.P.O. chimes. 3.15: Pleasant Sunday afternoon service from Maughan Church. 4.0: G.P.O. chimes and close down.

**EVENING SESSION.**

Announcer: C. J. O'Connor. 5.0: G.P.O. chimes. 5.15: Birthday greetings, correspondence, songs and stories by "Miss Wireless." 6.30: "The Bird Lady" and "The Sunning Songsters" will entertain the children. 7.1: A religious service from St. Peter's Cathedral.

**NIGHT SESSION.**

- Announcer: C. J. O'Connor. Accompanist: Jean Kinlay.
- 8.25: Holden's Silver Band. Conductor: Mr. O. Summerton. Overture, "Richard III." (Edward German). Flugel horn solo, "Home, Sweet Home" (Bishop).
- 8.37: "Our Bluejackets" (Meachum). Patrol. "Linda Wald, soprano—" "Drink to Me Only with Thine Eyes" (old English air).
- "Oh, the Oak and the Ash" (old English air).
- 8.43: Holden's Silver Band. Conductor: Mr. O. Summerton. Selection, "Echoes of England" (arr. Greenwood).
- 8.52: Fred. Williamson, tenor—"Come Into the Garden, Maud" (Balfe). "Good-night, Beloved" (Balfe).
- 8.59: Holden's Silver Band. Conductor: Mr. O. Summerton. Hymn, "Lead, Kindly Light" (Rev. J. B. Dykes). (Late Queen Victoria's favorite.) Trombone solo, "When Other Lips" (Balfe). Petite selection, "Mariann" (Wallace).
- 9.11: Linda Wald, soprano—"The Ballad of the Daughter of Islangton" (old English). "The Banks of Allan Water" (old English).
- 9.17: Holden's Silver Band. Conductor: Mr. O. Summerton. Descriptive, "Sailor's Life" (arr. Cope).
- 9.27: Fred. Williamson, tenor—"Sally in Our Alley" (Carey). "Then You'll Remember Me" (Balfe).
- 9.34: Holden's Silver Band. Conductor: Mr. O. Summerton. Euphonium solo, "Land of Hope and Glory" (Elgar). Quickstep, "God Bless the Prince of Wales" (Richard). 9.40: Mr. P. H. Nicholls will tell you, in talk, "Stories of Old English Songs."
- 9.52: General News service. 10.0: Close down.

**6WF**

10.25: Tune in. 10.30: Special half hour for the enthusiastic listener. 11.0: Morning service relayed from the Baptist Church. 12.15: Close down. 3.30: Tune in. 3.35: Musical programme from the studio, including items by the Studio Trio; vocal items. 4.39: Close down. 7.0: Tune in. 7.5: Chimes from St. George's Cathedral and selected numbers from the studio. 7.30: Evening service relayed from St. Andrew's Church, Perth. 8.45: Band concert relayed from the Government Gardens, Perth, by the Perth City Band, conducted by Mr. Les. Price. 10.5: Close down. 104.5 Metre Transmission.—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres, commencing at 7.0 p.m.

**7ZL**

**MORNING SESSION.**

10.45: Transmission from the Trinity Church, Hobart. 11.0: Transmission from the Melville Street Methodist Church, Hobart. 12.30: Close down.

**AFTERNOON SESSION.**

3.30: A programme of sacred music by the Discus Ensemble. Choir of the Temple Church, London. Maertje Offers (contralto). W. H. Squire (cello solo). John Bonnes (the boy soprano). Organ solo by Patman Cornet solo with grand church organ. Address in verse, General Booth. Clara Butt (contralto). 4.30: Close down.

**EARLY EVENING SESSION.**

6.15: Chorus singing. 6.45: Bertha Southey Bram-mall.

**EVENING SESSION.**

7.0: Transmission from the Memorial Congregational Church, Brisbane Street. 8.25: Programme of sacred and classical music. 9.45: News service. 9.50: Close down.

# Local Programmes, Monday, April 22

## 2FC

### EARLY MORNING SESSION.

Announcer: A. S. Cochrane.

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

### MORNING SESSION.

Announcer: A. S. Cochrane.

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

### MIDDAY SESSION.

Announcer: A. S. Cochrane.

12.0: "Big Ben" and announcements. 12.2: Stock Exchange, first call. 12.3: Official weather forecast, rainfall. 12.5: Musical items. 12.10: Summary of news, "Sydney Morning Herald." 12.15: Rugby wireless news. 12.18: A reading. 12.30: "Evening News" midday news service. 12.50: Studio music. 1.0: "Big Ben." Weather intelligence. 1.3: Producers' Distributing Society's market report. 1.5: From the Aeolian Hall—Lunch-hour chamber music recital by the Sverjensky Instrumental Ensemble. 1.50: From the Studio—Stock Exchange, second call: studio music. 2.0: "Big Ben." Close.

### AFTERNOON SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

2.30: Programme announcements. 2.32: The Booklover's Corner. 3.0: "Big Ben." Studio music. 3.30: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams. 3.40: From the Studio, Cliff Hanney, violinist—(a) "Pierrot, Serenade" (Randelgeger). (b) "Berceuse" (Townsend). 3.45: A reading. 4.0: "Big Ben." Mrs. A. P. Welling, pianist—"Ballade G Minor" (Chopin). 4.7: Studio items. 4.20: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams. 4.30: From the Studio, Cliff Hanney, violinist—(a) "Song Without Words" (Kreisler). (b) "Aragones" (Herrmann). 4.37: Mrs. A. P. Welling, pianist—(a) "Two Dances" (Gadadost). (b) "Recit du Pecheur" (de Falala). 4.45: Stock Exchange, third call. 4.47: Popular music. 5.0: "Big Ben." Close.

### EARLY EVENING SESSION.

Announcer: A. S. Cochrane.

5.40: The chimes of 2FC. 5.45: The Children's Session, conducted by the "Hello Man"; letters and stories; music and entertainment. 6.30: Dalgety's market reports (wool, wheat, and stock). 6.40: Fruit and vegetable markets. 6.43: Stock Exchange information. 6.45: Weather and shipping news. 6.48: Rugby wireless news. 6.50: Late sporting news. 7.0: "Big Ben." Late news service. 7.10: The 2FC Dinner Quartette, conducted by Horace Keats—(a) "Serenade Coquette" (Barthelemy). (b) "Only the River Running By" (Hopkins). (c) "Tango in D" (Albeniz). (d) "Three Irish Dances" (Ansell). (e) "A Summer Night" (Goring-Thomas). (f) "The Dancers" (Fletcher).

### EVENING SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

7.40: Popular music. 7.45: Programme announcements. 7.48: Studio music. 8.0: "Big Ben" Studio Orchestra, conducted by Horace Keats—(a) "Suite II. of Ballet Music La Source" (Delibes). (b) "Madame Pompadour" (Fall). 8.20: Charles Nicis, tenor—(a) "Ave Maria" (Luzzi). (b) "Placer D'amor" (Martini).

8.27: Lindley Evans, pianist—

(a) "Whims" (Schumann).

(b) "Evening" (Schumann).

(c) "Rhapsody in G Minor" (Brahms).

8.37: Edith Cowley and Ian Maxwell, entertainers.

8.47: Linda Hartge, contralto—

(a) "Slave Song" (Del Riego).

(b) "Love of Mine" (Seymour).

8.54: Studio Orchestra, conducted by Horace Keats—

(a) Overture, "Egmont" (Beethoven).

(b) "Schubertiana" (arr. Finck).

9.14: Weather report.

9.15: Lucille Bryntnell will speak on "Madame Tussaud's."

9.30: Lindley Evans, pianist—

(a) "Waltz in D" (Stojowski).

(b) "Barcarolle" (Liadow).

(c) "Scherzo" (Bocini).

9.40: Charles Nicis, tenor—two Arias from "The Bohemian Girl"—

(a) "When Other Lips" (Balfe).

(b) "Without Friends" (Balfe).

9.47: Studio Orchestra, conducted by Horace Keats—selection of favorite melodies.

9.57: Linda Hartge, contralto—

(a) "Misanthry" (Forster).

(b) "From the Land of the Sky Blue Water" (Cadmian).

10.4: Edith Cowley and Ian Maxwell, entertainers.

10.14: Studio Orchestra, conducted by Horace Keats—selected.

10.28: Late weather and to-morrow's programme.

10.30: National Anthem. Close.

(f) "Barcarolle" (Offenbach). 7.7: Australian Mercantile Land and Finance Co.'s report, weather report and forecast, by courtesy of Government Meteorologist; Producers' Distributing Society's fruit and vegetable market report; grain and fodder report ("Sun"); dairy produce report ("Sun"). 7.23: Mr. Pim and Miss Pam in advertising talks, handy hints and nonsense. 7.53: An ad special. 7.55: Programme and other announcements.

### EVENING SESSION.

Announcer: Basil Kirke.

Accompanist: G. Vern Barnett.

8.0: G.P.O. Chimes. Topical Chorus.

8.2: Frederick Scott Fox, baritone—

(a) "Love Me or Not" (Secchi).

(b) "She is Far from the Land" (Lambert).

8.9: The Harmony Girls.

8.17: Hazel McPherson, contralto, winner in the Radio Elsteddfod—

(a) "Lie There, My Lute" (MacCunn).

(b) "Five Little Piccaninies" (Anthony).

8.24: Charles Lawrence, entertainer.

8.34: From David Jones—a description of the Shakespearean Ball, arranged by the English Speaking Union.

9.0: From the studio—weather report.

Frederick Scott Fox, baritone.

(a) "Trusting Eyes" (Gartner).

(b) "Walt" (D'Hardelot).

9.7: The Harmony Girls.

9.15: Hazel McPherson, contralto, winner of the Radio Elsteddfod—

(a) "Haste" (Davies) (Blythman).

(b) "A Bush Lullaby" (Blythman).

9.22: From David Jones—Description of the Shakespearean Ball. Dance music by Cec Morrison's Band.

9.37: From the studio—Charles Lawrence, entertainer.

9.47: C. J. Hill. "The Idiosyncrasies of the

10.20: From David Jones—Dance music and Motor Car." description of the Shakespearean Ball.

10.17: From the studio—Late "Sun" news service: weather report.

10.30: From David Jones—Dance music and description of the Shakespearean Ball.

10.57: From the studio—to-morrow's programme.

10.59: From David Jones—Dance music and description of the Shakespearean Ball.

11.30: National Anthem. Close.

## 2BL

### MORNING SESSION.

Announcer: A. C. C. Stevens. 8 a.m.: G.P.O. chimes. Metropolitan Weather report. 8.1: State weather report. 8.2: Studio music.

8.15: G.P.O. Chimes; news from the "Daily Telegraph Pictorial." 8.30: G.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.

10.0: G.P.O. chimes. Close down.

### MID-DAY SESSION.

Announcer: A. C. C. Stevens. 11.0: G.P.O. chimes. 2BL Women's Sports Association Session, conducted by Miss Gwen Varley.

11.30: Advertising Hints: talk on "Diet and Health," by Miss Dorothy de Cleghorne.

11.40: Women's Session, conducted by Mrs. Cranfield. 12.0: G.P.O. chimes; special ocean forecast and weather report. 12.3: Studio music. 12.30: Shipping and mails. 12.35: Market reports. 12.48: "Sun" mid-day news service. 1.0: Studio music. 1.30: Talk to children and special entertainment for children in hospital. 2.0: G.P.O. chimes. Close down.

Note—Race results of the Trots will be broadcast by courtesy of the "Sun" newspapers.

### AFTERNOON SESSION.

Announcer: A. C. C. Stevens. Accompanist: Kathleen Roe. 3.45: G.P.O. chimes and popular music. 4.0: G.P.O. chimes; Captain Aarons will speak on the "National Aspect of Home Life." 4.15: Leo Packer, baritone. 4.22: Popular music. 4.32: Jeannette Rooney, contralto—(a) "Quiet" (Sanderson). (b) "How Many a Lonely Caravan" (Woodforde-Findon). 4.39: "Sun" news service. 4.45: Leo Packer, baritone. 4.52: Studio items. 5.2: Jeannette Rooney, contralto—(a) "The Little Silver Ring" (Chaminade). (b) "When the Ships Come Home" (Oliver). 5.9: Pianoforte reproduction. 5.19: Popular music. 5.30: Complete racing resume. 5.37: Features of the evening's programme.

### EARLY EVENING SESSION.

Announcer, Basil Kirke. 5.40: Children's Session, conducted by Uncle Bas. Music and entertainment; letters and stories. 6.30: "Sun" news and late sporting. 6.40: 2BL Dinner Quartette—(a) "Amoretten Tanze" (Gungl). (b) "Come" (Dazar). (c) "As Once in Happier Days" (Popper). (d) "At the Play" (Bowen). (e) "Gipsy Melody" (Knight).

## 2GB

10.10: Music. 10.20: Happiness talk by A. E. Bennett. 10.30: Women's session, by Miss Helen J. Beegling. 11.30: Close down. 2.0: Music. 2.5: Women's Radio Service, by Mrs. Dorothy Jordan. 2.50: Music. 3.15: Close down. 5.30: Children's session, by Uncle George. Movie Know All. 7.0: Music. 8.0: Miss Kathleen Cracknell, contralto. 8.7: Miss Jeannette Paterson, pianiste. 8.15: Mr. Victor Earle, baritone. 8.22: Instrumental music. 8.30: Humorous interlude by Mr. Jack Win and Mr. Heath Burdock. 8.35: Miss Elsie Peerless, soprano. 8.45: Address. 9.3: Miss Kathleen Cracknell, contralto. 9.15: Miss Jeannette Paterson, pianiste. 9.23: Humorous interlude by Mr. Jack Win and Mr. Heath Burdock. 9.30: Mr. Victor Earle, baritone. 9.40: Instrumental music. 9.50: Miss Elsie Peerless, soprano. 10.0: Dance music. 10.30: Close down.

## 2UW

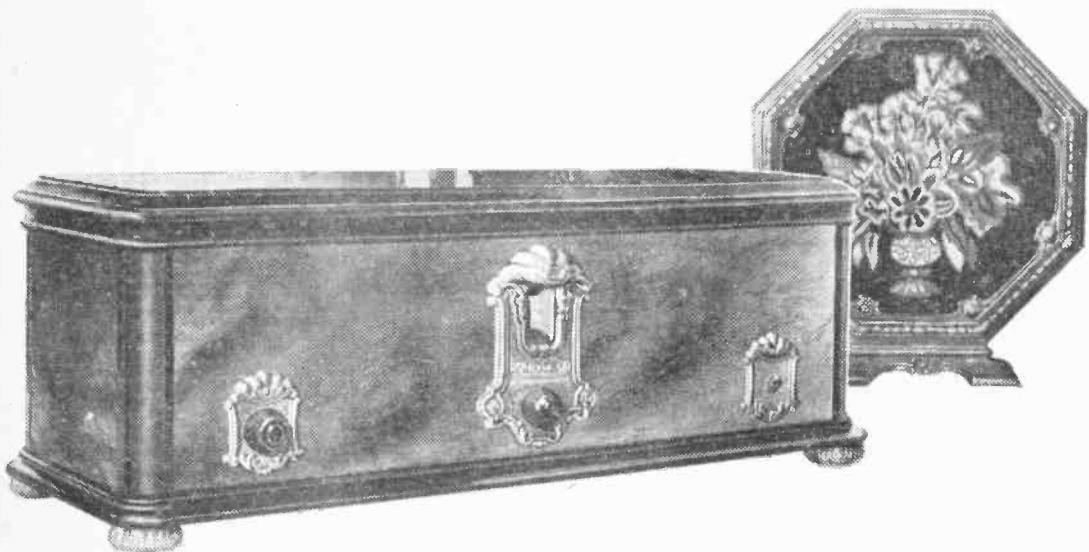
### MID-DAY SESSION.

12.30: Music. 1.0: G.P.O. clock and chimes.

music. 2.30: Close down. 4.30: Musical programme.

### EVENING SESSION.

5.30: Children's Hour, conducted by Uncle Jack. 6.30: Close down. 7.0: G.P.O. clock and chimes. 7.45: Wireless Talk: Hints and advice by Mr. E. Homfray. 8.0: Music. 8.0: G.P.O. clock and chimes. Comments on Foreign Affairs by Mr. J. M. Prentice. 9.19: Musical and request numbers. 10.30: Close down.



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# Interstate Programmes, Monday, April 22

## 3LO

### EARLY MORNING SESSION.

7.15 to 8.15: See Friday.

### MORNING SESSION.

11.0: To-day's Radio Recipe—Maitre d'Hotel Sauce  
11.5: Miss Olga Parker will speak on "Stories to  
Tell the Children—The Works of E. Nesbitt." 11.25:  
Under the auspices of the St. John Ambulance Assoca-  
tion Miss Edith Wells will speak on "Home Nurs-  
ing." 11.45: Under the auspices of the National  
Safety Council of Victoria H. J. Book will speak on  
"Some Aspects of Safety."

### MIDDAY NEWS SESSION.

12.0: Melbourne Observatory time signal. 12.1:  
British official wireless news from Rugby; Reuter's  
and the Australian Press Association cables. "Argus"  
news service. 12.15: Newmarket stock sales en-  
tire for the market for Tuesday, Wednesday and Thurs-  
day, by the Associated Stock and Station Agen-  
cies, Burke Street, Melbourne. 12.20: Community sing-  
ing, transmitted from the King's Theatre, Russell  
Street, Melbourne, conductor, G. J. Mackay, En-  
Hull's Radio Revelers, with Hugh Huxham. 12.40:  
Stock Exchange information. 12.43: Community  
singing resumed. 1.45: Meteorological information,  
weather forecast for Victoria, New South Wales,  
South Australia, and Tasmania; ocean forecasts;  
River reports; rainfall.

### AFTERNOON SESSION.

2.15: General programme, including the Station  
Orchestra. "The Smith Girls"; Myrtle Walscott,  
contralto; A. Anderson, clarinet; Tom Semple, tenor;  
The Strat Trio; 4.42: Special weather report for the  
benefit of listeners in the Bendigo district. 4.50:  
"Herald" news service; Stock Exchange information.  
5.0: Close down. Children's Hour. 6.00: Answers to  
letters and birthday greetings by "Billy Bunn." 6.25:  
Musical Interlude. 6.30: P. M. Groves knows more  
about "The Peter Pan of the Pacific."

### EVENING SESSION.

7.5: Stock Exchange information. 7.15: Market re-  
ports. 7.30: News session. 7.43: Birthday greetings.  
7.45: Out of the Past. 7.48: Under the auspices of  
the Department of Agriculture, J. M. Ward, Superin-  
tendent of Horticulture, will speak on "Fruit Grow-  
ing: Seasonal Hints." 8.2: A Maker of History.

### NIGHT SESSION.

Announcer: Rene Millar.  
Accompaniste: Agnes Fortane.  
8.1: Programme announcements.  
8.2: Enn. Hall's Radio Revelers—  
"Rio Rita" (Tierney).  
"The Kink-a-Jou" (Tierney).  
"Next to Me I Like Me Next to You"  
(Bito).  
8.12: Bob Molyneux, baritone—  
"My Angelina."  
8.15: The Radio Revelers—  
"Anywhere in Heaven" (Brady).  
"Down, where the Sun Goes Down" (Jones).  
"Can You Blame Me?" (Goodwin).  
8.25: Bob Molyneux, baritone—  
"You Are So Beautiful."  
8.28: The Radio Revelers—  
"I Want to be Alone with Mary Brown"  
(Leslie).  
"Ten Leaves" (Nichols).  
"Forty-nine" (Ginger-headed Sailors"  
(Sarony).  
"High Tension" (Bee).  
8.41: Bob Molyneux, baritone—  
"My Blue-eyed Eyes."  
8.45: Hoffman's Dance Band—  
Waltz, "La Paloma."  
8.52: Hugh Huxham's Serenaders—  
"Finniculi Funiculi" (Donza).  
8.55: Hoffman's Dance Band—  
Barn Dance, "Coster Girl."  
9.3: Hugh Huxham's Serenaders—  
"Queen of My Heart" (Cellier).  
9.6: Hoffman's Dance Band—  
Quadrille, "Pleasantly."  
9.24: Old Time Choruses—Graham Burgin and  
the Boys of the Village, introduced by Rene  
Millar; Mrs. Campbell at the piano.  
9.30: Hoffman's Dance Band—  
Valta, "Night of Gladness."  
9.37: Hugh Huxham's Serenaders—  
"Home to Our Mountains" (Verdi).  
9.41: Hoffman's Dance Band—  
Schottische, "Any Rags."  
9.46: Announcements and greetings to all "Old-  
Timers."  
9.53: Hoffman's Dance Band—  
Lancers, "Gondoliers."  
10.10: Hugh Huxham's Serenaders—  
"O, Don Golden Slippers" (Blend).  
10.14: Hoffman's Dance Band—  
Waltz, "The Belle of New York."  
10.21: Old-time Choruses—Graham Burgin and  
the Boys of the Village.  
10.27: News service; meteorological information; Brit-  
ish official wireless news from Rugby.  
10.38: Hoffman's Dance Band—  
About the Party Melodies.  
10.55: Old-time Choruses; Graham Burgin and the  
Boys of the Village.  
11.1: Hoffman's Dance Band—  
Karschdan.  
11.11: Hugh Huxham's Serenaders Quartette—  
"Gypsies Laughing Trio" (Glycer).  
11.15: Hoffman's Dance Band—  
"Royal Irish."  
11.30: God Save the King.

## 3AR

Announcer: Maurice Dudley.  
10.0 to 10.50: Market reports; farm and station  
produce; fruit, fish, vegetables; shipping reports;  
ocean forecast; mal-edges; express train informa-  
tion; news service; weather. 11.0: Vocal selections.  
11.30: The Imperial Russian Trio, tríos, "Valse  
Triste" (Sibelius), "Serenata" (Toselli), "Chant Sans  
Paroles" (Tschalkowsky), "Oriental" (Gau), "Sol-  
veig's Song" (Grieg). 12.20: British official wireless  
news; announcements. 12.30: Close down.

### AFTERNOON SESSION.

3.0: Masterpieces from Handel, Mozart, Brahms,  
and Schubert, vocal and orchestral. 4.30: Close  
down.

### EVENING SESSION.

6.0: Dance and bright orchestral music. 7.10:  
News service; announcements. 7.20: Sonorous semi-  
tones sustained.

### NIGHT SESSION.

8.30: The Station Orchestra—  
"La Reine de Saba" (Gounod).  
8.42: Victor Harding, bass-baritone.  
"Valcan's Song" (Gounod).  
"She Alone Charms My Sadness."  
8.49: The Station Orchestra.  
"Philemon and Baucis" (Gounod).  
9.1: The Royal Victorian Liedertafel (conductor, J.  
Sutton Crow) transmission from rehearsal room at  
the Athenaeum.  
March, "Zut Zut" (Eskart).  
Unaccompanied part-song, "Holy Night" (Bee-  
thoven). "Absence" (Bartton).  
Part-song, "Rolling Down to Rio" (German).  
"Hunter's Joy" (Ascholz).  
Unaccompanied part-song, "Lullaby" (Brahms).  
"Gondole's Serenade" (Schubert).  
part-song, "Rolling Down to Rio" (German).  
9.31: The Station Orchestra.  
"Funeral March" (Chopin).  
9.55: Victor Harding.  
"Ave Maria" (Gounod).  
Selected.  
9.42: "Levity Lane," Stella Lamond and her ukule-  
le.  
9.49: Syd. Roy's Lyrics, the Prince of Wales' own  
entertainers, in "A Hurricane of Harmony."  
10.13: Stella Lamond and her ukulele.  
10.26: News service; announcements; Eric Welch's  
selections for Victorian Club's races at Moonee  
Valley on Tuesday.  
"God Save the King."

## 4QG

EARLY MORNING SESSION.  
7.13: Time signals. 7.45: News service. 8.0: Re-  
cords. 8.15: News service. 8.30: Close down.

### MORNING SESSION.

11.0: Music. Social news. Lecturette, etc. 12.0:  
Close down.

### MIDDAY SESSION.

1.0: Market reports and weather information. 1.20:  
Lunch-hour music. 2.0: Close down.

### AFTERNOON SESSION.

Announcer: J. Tyson. 3.0: Orchestral music by  
the Tivoli Operatic Orchestra, under the baton of  
Mr. C. Groves. 3.30: Mail train running times. A  
programme of records. 4.0: Orchestral music. 4.15:  
News. 4.30: Close down.

### EARLY EVENING SESSION.

Announcers: A. W. Huxham and H. Humphreys. 6.0:  
Mail train running times, mail information, ship-  
ping news. 6.5: Wurlitzer organ. 6.25: Commercial  
announcements. 8.30: Bedtime stories, conducted  
by "The Sandman." 7.0: News in brief. 7.5: Stock  
Exchange news, etc. 7.45: Lecturette, "The Child-  
ren's Music Corner," conducted by "The Music  
man."

### NIGHT SESSION.

Announcer: H. Humphreys.  
8.0: The Studio Orchestra (conductor, A. R.  
Fetherstone)—  
Overture, "Titus" (Mozart).  
8.8: Jean Taylor (contralto)—  
"Your Eyes Have Told Me So" (Hardy).  
8.13: Kenyon the entertainer—  
Ten minutes' fun.  
8.23: The Studio Orchestra—  
Valse, "Passing of Salome" (Joyce).  
8.28: Annie Adams (soprano)—  
"Down the Vale" (Mort).  
8.35: Harry Borradaile (solicitor)—  
"The Call of the Land" (Barnaby).  
8.40: E. F. Fougere (soprano) (Anou).  
"Do You Remember" (Arphorn).  
8.47: Vera Parker (contralto)—  
"I Did Not Know" (Trotter).  
"There's a Little Bird" (Lilient), accompanied by  
the Studio Orchestra.  
8.55: S. P. Bacon (tenor)—  
"Somewhere a Voice is Calling" (Tate).  
9.0: Metropolitan weather forecast.  
9.1: The Studio Orchestra—  
Novelty rag, "Teasing the Cat" (Johnson).  
9.5: Harry Collins and the orchestra—  
Ten minutes' fun.  
9.15: Mrs. M. C. Williams (violinist)—  
"Valse Silhouette" (Finstone-Koestner), accom-  
panied by the Studio Orchestra.  
9.20: Fred Smith of the piano—  
Ten minutes' syncopation.  
9.30: The Studio Orchestra—  
Intermezzo, "Tender Heart" (Con Baga).  
9.36: Harry Humphreys and mirth.  
A Dickens reading, "Daniel Quilp Returns Home  
Unexpectedly" (from "The Old Curiosity  
Shop").  
9.46: Annie Adams (soprano)—  
"Just" (Bradford).  
9.51: S. P. Bacon (tenor)—  
"Sympathy" (Marshall).  
9.56: The Studio Orchestra—  
March, "The Governor's Own" (Adams).  
10.0: News, Weather. Close down.

4QG TUESDAY APRIL 23 CMR.u.xu

## 5CL

### AFTERNOON SESSION.

3.0: G.A.O. chimes. General programme, in-  
cluding the Wattle Dance Band; Mrs. Leslie Mal-  
thews, contralto; Jack Stocks, the "Woman  
Hater"; Frank R. Thomas, baritone; William  
Davery, xylophonist. 3.55: A one-act comedy me-  
lody "The Happy Couple." 4.50: Stock Ex-  
change information. 4.5: Close down.

### EVENING SESSION.

6.0: Chimes. 6.1: Birthday greetings, corre-  
spondence, songs and stories by "Aunt Peggy."  
6.20: Dinner music. 6.55: Stock Exchange infor-  
mation. 7.0: Chimes. 7.1: General market reports.  
7.19: Under the auspices of the South Australian  
Agricultural Department Mr. J. E. Morrow (Law  
Stock Superintendent, Roseworthy College) will  
speak on "The Breeding of Stock." 7.30: The SCL  
"Swimber Boys' Club."

### NIGHT SESSION.

Announcer: C. J. O'Connor.  
Accompaniste: Jean Finlay.  
8.0: A Wagnerian concert by the Foxhall Rob-  
inson Opera Co., assisted by Studio Orchestra, in-  
cluding excerpts from "Parsifal," "The Flying  
Dutchman," "Tannhauser," "The Flying  
Lull Wallace, Alceba Wallace, Jessie Le Coran, and  
Mrs. Lucy Hill; Messrs. Hedley James and Gundry  
James.  
9.1: Meteorological information, including semi-  
phore ideas.  
9.2: Overseas gram report.  
9.3: Jack Stocks, the "Woman Hater."  
9.11: An old-time dance night.  
9.16: Hoffman's Dance Band—Schottische, "Any  
Rags."  
9.18: Announcements and greetings to all "Old-  
timers."  
9.21: Hoffman's Dance Band—Lancers, "Gondol-  
iers."  
9.40: Hugh Huxham's Serenaders—"O Dem  
Golden Slippers" (Blend).  
9.44: Hoffman's Dance Band—Waltz, "The Belle  
of New York."  
9.51: Old-time choruses, Graham Burgin and  
the Boys of the Village.  
9.57: General news service; meteorological in-  
formation; announcements.  
10.8: Hoffman's Dance Band—Aberis, popular  
melodies.  
10.25: Old-time choruses, Graham Burgin and  
the Boys of the Village.  
10.31: Hoffman's Dance Band, "Marsoviana."  
10.41: Hugh Huxham's Serenader Quartette,  
"Gypsies Laughing Trio" (Glycer).  
10.45: Hoffman's Dance Band, "Royal Irish."  
11.0: Close down.

## 6WF

12.30: Tune in. 12.35: Markets, news, etc. 1.0:  
Time signal. 1.1: Weather bulletin supplied by the  
Meteorological Bureau of Western Australia. 1.3:  
Panatote hour, relayed from Messrs. Musgrove's  
Ltd., Lyric House, Perth. 2.0: Close down. 3.30:  
Tune in. 3.35: Afternoon tea programme relayed  
from the Carlton Cafe. 4.30: Close down. 6.45: Tune  
in. 6.48: Bedtime stories for the kiddies by Uncle  
Duffy. 7.15: Hugh Huxham's Serenader Quartette,  
comprising Miss Audrey Dean (piano), Miss Edna  
Waterman (cello), Mr. H. Newton (violin). 7.30:  
Commercial and general information. 7.45: Talk by  
Lieutenant-Colonel Le Souef, Director of the Zoo-  
logical Gardens, South Australia. 8.0: Time signal. 8.1:  
First weather bulletin. 8.3: Concert by the R.S.L.  
Band, conducted by Mr. George Mellor—March, "6  
VP" (Unsworth); Waltz, "The Quaker Girl" (Monck-  
ton); popular, "Oxy a Rose" (Fisher); selection,  
"The Mikado, No. 2" (Sullivan); novelty, "Parade of  
Tin Soldiers" (Jessell); fantasia, "Operatic Beauties"  
(Greenwood); fox trot, "Four Walls" (Dreher); se-  
lection, "Trene" (Turner); march, "Reinhold"  
(Carter). 8.50: Late news items by courtesy of the  
"Daily News" Newspaper Co. Ltd.; station announce-  
ments; ships within range announcement; late  
weather bulletin. 9.5: Band concert continued from  
the R.S.L. Institute. 10.30: Close down.  
104.5 Metre Transmission—Simultaneous broadcast  
on 104.5 metres of programme given on 1265 metres,  
commencing at 6.45 p.m.

## 7ZL

### MIDDAY SESSION.

11.30 to 1.30: See Friday.

### AFTERNOON SESSION.

Announcer: Jack Broadbent. 3.0: Chimes. 3.4:  
Weather information. 4.15: Fashion talk. 6.30:  
Close down.

### EARLY EVENING SESSION.

6.30: Little Magviny.  
7.0: Answers to letters and birthday greetings by  
"Uncle David." 7.15: News session.

### EVENING SESSION.

7.30: Cec. Collis, Tasmania's champion wrestler,  
will speak on "Physical Culture."  
A concert programme arranged by James Marsh,  
a well-known Tasmanian organist.  
9.50: News session.  
10.0: Chimes.  
10.1: Close down.

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# Local Programmes, Tuesday, April 23

## 2FC

### EARLY MORNING SESSION

Announcer: A. S. Cochrane.

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

### MORNING SESSION

Announcer: A. S. Cochrane.

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

### MIDDAY SESSION

Announcer: A. S. Cochrane.

Note: Race results from Gosford. 12.0: "Big Ben" and announcements. 12.2: Stock Exchange, first call. 12.3: Official weather forecast; rainfall. 12.5: Musical items. 12.10: Summary of news, "Sydney Morning Herald". 12.15: Rugby wireless news. 12.18: A reading. 12.30: Studio music. 1.0: "Big Ben"; weather intelligence. 1.3: "Evening News" midday news service; Producers' Distributing Society's market report. 1.20: Studio music. 1.28: Stock Exchange, second call. 1.30: Studio music. 2.0: "Big Ben"; close.

### AFTERNOON SESSION

Announcer: Laurence Halbert.  
Accompanist: Ewart Chapple.

2.30: Programme announcements. 2.32: The Book Lover's Corner. 3.0: "Big Ben"; popular music. 3.30: Roger Jones, tenor. 3.37: Studio items. 3.45: A reading. 4.0: Turner Ross, monologues. 4.7: Popular music. 4.17: Mrs. Scott will give a reading on the character of Henry V. in connection with the Intermediate Examinations this year. 4.30: John Warren, tenor. 4.37: Turner Ross, monologues. 4.45: Stock Exchange, third call. 4.47: Popular music. 5.0: "Big Ben"; close.

### EARLY EVENING SESSION

Announcer: A. S. Cochrane.

5.40: The chimes of 2FC. 5.45: The children's session, conducted by the "Hello Man," assisted by Aunt Eily; letters and stories; music and entertainment. 6.30: Dalgety's market reports (wool, wheat, and stock). 6.40: Fruit and vegetable markets. 6.43: Stock Exchange information. 6.45: Weather and shipping news. 6.48: Rugby wireless news. 6.50: Late sporting news. 7.0: "Big Ben"; late news service. 7.10: The 2FC Dinner Quartette, conducted by Horace Keats—(a) "Frisolette" (Ring), (b) "Gavotte" (Louis XIII.), (c) "Cantiene" (Ganne), (d) "The Fortune-Teller" (Herbert).

### EVENING SESSION

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

7.40: Popular music.

7.45: Programme announcements.

7.48: Studio items.

8.0: G.P.O. chimes.

### Metropolitan Band—

(a) Overture, "Jupiter" (Greenwood).

(b) Waltz, "Syringa" (Raymond).

8.20: Rowell Bryden, baritone.

8.27: Alexander Sverjensky, pianist—

(a) "Fantasie" (Mozart).

(b) "Princess" (Grieg).

(c) "Nocturne" (Grieg).

(d) "Cobold" (Grieg).

8.40: Brunton Gibb—"Oh, by the Way—"

8.52: Metropolitan Band—

Selection "Gems of Sullivan" (Hume).

9.7: Weather report.

9.8: Winifred Batchelor, soprano—

(a) "The Last Hour" (Kramer).

(b) "The Enchanted Forest" (Phillips).

9.15: Albert Cazabon, violinist—

"All'erretto Alla Romanza" and Finale from S-mata for Violin and Piano in C Minor (Grieg).

9.25: Rowell Bryden, baritone.

9.32: Alexander Sverjensky, pianist—

(a) "Isolda's Death" (Liszt).

(b) "Spring Night" (Liszt).

(c) "11th Rhapsody" (Liszt).

9.47: Metropolitan Band—

Selection, "Memories of the Opera's" (Rimmer).

10.7: Winifred Batchelor, soprano—

(a) "Trees" (Tours).

(b) "A Blackbird Singing" (Head).

10.14: Albert Cazabon, violinist—

(a) "Hindu Song" (Kriesler).

(b) "Serenade" (Cazabon).

(c) "Sans Gene" (Cazabon).

10.24: The Studio Dance Band, conducted by Cec Morrison.

10.34: Late weather report.

10.36: The Studio Dance Band, conducted by Cec Morrison.

10.57: To-morrow's programme.

10.59: The Studio Dance Band, conducted by Cec Morrison.

11.30: National Anthem.

Close.

## 2BL

### MORNING SESSION

Announcer: A. C. C. Stevens.

8.0: G.P.O. chimes. Metropolitan weather report. 8.1: State weather report. 8.2: Studio music. 8.15: G.P.O. chimes. News service from the "Daily Telegraph Pictorial." 8.30: G.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. 10.0: G.P.O. chimes. Close down.

### MIDDAY SESSION

Announcer: A. C. C. Stevens.

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

### AFTERNOON SESSION

Announcer: A. C. C. Stevens.

Accompanist: Kathleen Roe

3.45: G.P.O. chimes. Popular music. 4.0: G.P.O. chimes. From Paline's Concert Hall, a recital by the students of Walter Thorman. 5.0: From the studio. G.P.O. chimes. "Sun" news service. 5.7: Popular music. 5.20: Pianoforte reproduction. 5.30: Racing resume. 5.37: Features of the evening's programme.

### EARLY EVENING SESSION

Announcer: Basil Kirke.

5.40: Children's session conducted by Uncle Bas. Music and entertainment. Letters and stories. 6.0: Mr. Norman speaks to the bigger boys. 6.45: 2BL Dinner Quartette. (a) "Fairy Feet" (Finck) (b) "The Love Waltz" (Harold). (c) "Czardas" (Michiels). (d) "At Gretta Green" (Fletcher). (e) "Bourne and Musette" (Morgan). (f) "Serenade Espagnole" (Albeniz). 7.7: Australian Mercantile, Land, and Finance Co's report. Weather report and forecast, by courtesy of Government Meteorologist. Producers' Distributing Society's Fruit and Vegetable Market report. Grain and fodder report ("Sun"). Dairy produce report ("Sun"). 7.25: Mr. Pim and Miss Pam in advertising talks. Handy hints and nonsense. 7.53: An ad. special. 7.55: Programme and other announcements.

### EVENING SESSION

Announcer: Basil Kirke.

Accompanist: G. Vern Barnett.

8.0: G.P.O. chimes.

Topical chorus.

8.2: G. Vern Barnett. A programme arranged by Mr. G. Vern Barnett in honor of Shakespeare's anniversary. The works of the immortal bard which have been set to music, will be included. Assisting artists: Reta Lancaster's choir, Leonard Gotch, Lennie Jeffry, Amy Ostinger, Raymond Beatty, Bryce Carter, Loyd Davies.

9.0: Weather.

9.1: S. H. Bowden will give a short talk "Shakespeare Once Again."

9.15: Second part of the programme arranged by G. Vern Barnett.

10.15: Late "Sun" news service.

10.28: Late weather and to-morrow's programme.

10.30: National Anthem.

Close.

## 2GB

10.0 Music. 10.10: Happiness talk by A. E. Bennett. 10.20: Music. 10.30: Women's session by Miss Helen J. Beegling. 11.30: Close down. 2.0: Music. 2.5: Women's Radio Service, by Mrs. Dorothy Jordan. 2.50: Music. 3.15: Close down. 5.30: Children's session by Uncle George. 7.0: Music. 7.30: Talk from the Radio Service by Mr. Stan Crittenden. 8.0: Robert Scott, tenor. 8.7: Mr. Reginald Duncan, violinist. 8.15: Miss Gladys Verona, soprano. 8.22: Instrumental music. 8.30: Mr. Austin Punch, baritone. 8.40: Humorous interlude by Mr. Jack Win and Mr. Heath Burdock. 8.45: Miss Ada Brook, pianist. 8.50: Mr. Robert Scott, tenor. 9.0: Weather report. 9.3: Address. 9.15: Miss Gladys Verona, soprano. 8.25: Mr. Reginald Duncan, violinist. 9.35: Humorous interlude by Mr. Jack Win and Mr. Heath Burdock. 9.40: Instrumental music. 9.50: Mr. Austin Punch, baritone. 10.0: Dance music. 10.30: Close down.

## 2UW

### EVENING SESSION

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



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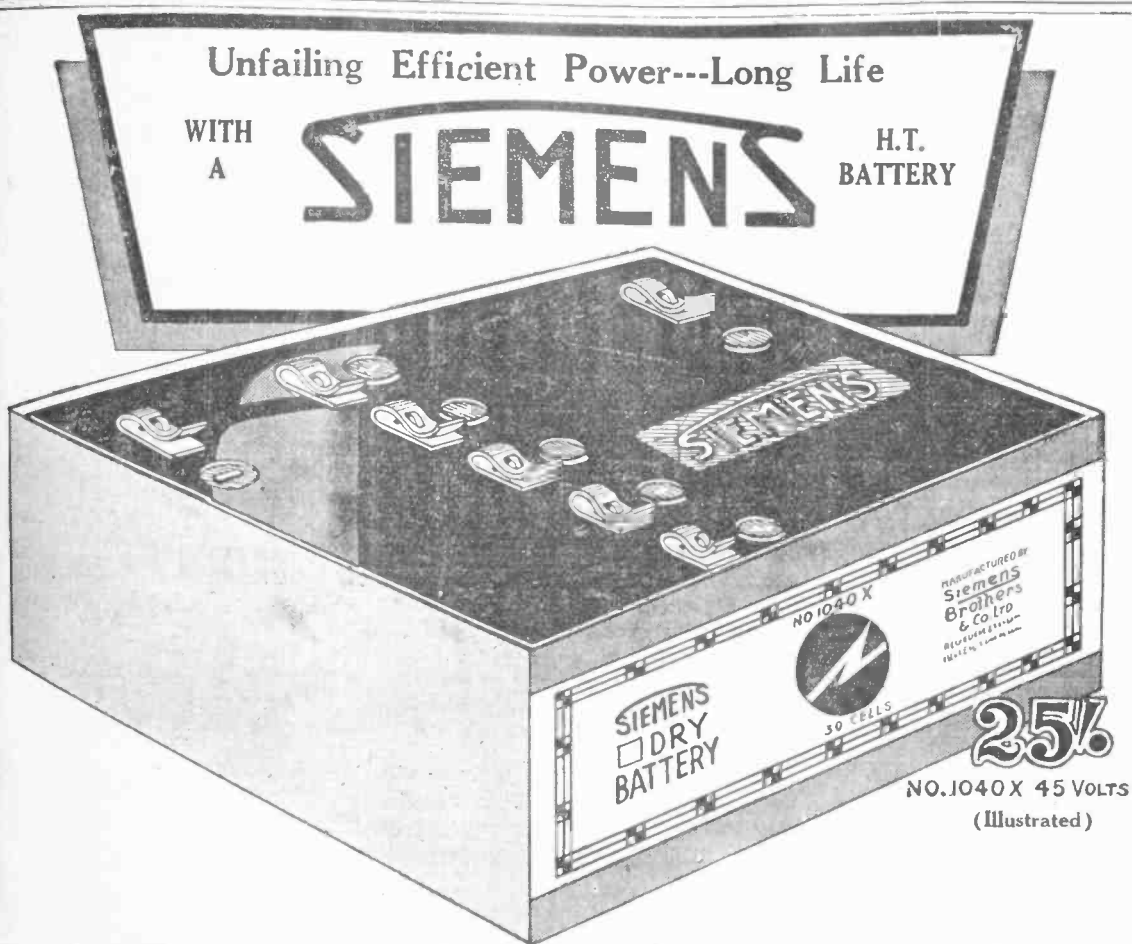
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# Interstate Programmes, Tuesday, April 23

## 3LO

### EARLY MORNING SESSION.

7.15 to 8.15: See Friday.

### MORNING SESSION.

10.50: Sporting—Eric Welch will speak on to-day's Victorian Club races at Moonee Valley. 11.0: To-day's Radio Recipe—Salad. 11.5: Miss E. Noble will speak on "Gas Cookery" 11.25 Mrs Dorothy Silk will speak on "Homecrafts" 11.45 Miss Doreen Berry will speak on "The Prices of Pretty Things in London and Paris."

### MID-DAY NEWS SESSION.

12.0: Melbourne Observatory time signal 12.1 Prices received by the Australian Mines and Metals Association from the London Stock Exchange this day: British official wireless news from Rugby; Reuters and the Australian Press Association cables. 12.15: Newmarket stock sales; official report of the sheep market by the Associated Stock and Station Agents, Burke Street, Melbourne. 12.30: General programme, including the Station Orchestra; Mollie Warden, soprano; J. Alexander Browne, baritone; the Imperial Russian Trio. 1.21: Meteorological information: weather forecast for Victoria, New South Wales, South Australia, and Tasmania; ocean forecasts: river reports: rainfall. 1.45: Close down.

### AFTERNOON SESSION.

1.52: Description of Hurdle Race, two miles, Victorian Club races, at Moonee Valley, by Eric Welch 2.5: The Radio Revellers. 2.14: "The Smith Girls." 2.28: Description of Two-year-old Handicap, 5/4 furlongs, Victorian Club races, at Moonee Valley 2.35: Victor Harding, bass-baritone; the Radio Revellers: Stella Lamond. 2.58: Description of High-weight Handicap, six furlongs, Victorian Club races, at Moonee Valley. 3.5: The Radio Revellers; Stanley J. Allen, tenor; the Radio Revellers: "The Smith Girls." 3.28: Description of Victorian Club Handicap, 1 1/4 miles, Victorian Club races, at Moonee Valley. 3.45: The Radio Revellers; Victor Harding, bass-baritone; the Radio Revellers. 4.18: Description of Trial Handicap, one mile, Victorian Club races, at Moonee Valley. 4.25: Stanley J. Allen, tenor; the Radio Revellers. 4.38: "Herald" news service; Stock Exchange information. 4.48: Description of April Handicap, seven furlongs, Victorian Club races, at Moonee Valley. 5.3: Close down.

### CHILDREN'S HOUR.

6.0: Answers to letters and birthday greetings by "Little Miss Kookaburra." 6.30: "Little Miss Kookaburra." 6.50: "Bobby Bluegum."

### EVENING SESSION.

7.5: Stock Exchange information. 7.15: Market reports. 7.30: News session. 7.43: Birthday greetings 7.45: Out of the West. 7.46: Under the auspices of the University Extension Board, Professor D. B. Copland, Dean of the Faculty of Commerce at the University, will speak on "Migration."

### NIGHT SESSION.

Announcer: Rohm Miller. Accompanist: Agnes Fortune.

- 8.1: J. Howlett Ross will speak on "Shakespeare."
- 8.15: The Radio Revellers—  
"High Tension" (Beer).  
"A Bungalow, a Radio, and You" (Dempey).  
"Back in your Own Backyard" (Johnson).
- 8.24: Stella Drede, soprano—  
"A Heart That's Free" (Robyn).
- 8.27: The Radio Revellers—  
"My Heart Stood Still" (Rodgers).  
"Give your Baby Lots of Lovin'" (Burke).  
"When and Where" (Baden).
- 8.36: "M'Haggis, the Australian Scot"—  
"In Something Different."
- 8.39: The Radio Revellers—  
"I'm Sorry, Sully" (Kahn).  
"My Blackbirds are Bluebirds Now" (Friend).  
"Casablanca" (Evans).
- 8.40: "The Smith Girls."
- 8.51: The Radio Revellers—  
"Oh, Isabella" (Schuster).  
"Sweet Forget-me-Not" (Lorenzo).  
"Pansies" (Nichols).
- 9.0: Alan Eddy, baritone—  
"Star Eyes" (Speaks).
- 9.3: The Radio Revellers—  
"You Ought to Hear Olof Laft" (Beer).  
"In my Bouquet of Memories" (Lewis).  
"Mexican Serenade" (Terese).
- 9.12: Stella Drede, soprano—  
"The Piper of Love" (Carew).
- 9.15: The Radio Revellers—  
"Down by the Old Front Gate" (Kassal).  
"I Don't Know Why I Do It" (Vall).  
"When and Where" (Meyer).
- 9.24: "M'Haggis, the Australian Scot"—  
"In Something Different."
- 9.27: The Radio Revellers—  
"Maybe I'm Wrong" (Harris).  
"Constantinople" (Carlton).  
"My Angelina" (Wayne).
- 9.36: "The Smith Girls."

### 399 The Radio Revellers—

- "There's a Rainbow round my Shoulder" (Johnson).
- "Mississippi Mud" (Harris).
- "Oh, Is She Mad at Me" (Friend).
- 9.48: Alan Eddy, baritone—  
"Tally Ho" (Leon).
- 9.51: The Radio Revellers—  
"High Up on a Hilltop" (Baer).  
"When Love Comes Stealing" (Rapee).  
"Sounder, Somewhere" (Rapee).
- 10.0: News service; British official wireless news from Rugby; meteorological information announcements.
- 10.15: The Radio Revellers—  
"To-day, To-morrow, Forever" (Nichols).  
"Who Knows" (Dixon).  
"Tin Pan Parade" (Gillespie).
- 10.24: Stella Drede, soprano—  
"The Robin's Song" (White).
- 10.27: The Radio Revellers—  
"I'm Crazy Over You" (Lewis).  
"Old Man Sunshine" (Dixon).  
"Wlpin' the Pan" (Baer).
- 10.36: "M'Haggis, the Australian Scot"—  
"In Something Different."
- 10.39: The Radio Revellers—  
"My Dream Sweetheart" (Hall).  
"Guess Who's in Town" (Razalf).  
"That Stolen Melody" (Fisher).
- 10.48: "The Smith Girls."
- 10.51: The Radio Revellers—  
"Lenora" (Melody).  
"Japanese Mammy" (Donaldson).  
"There's a Ricketty, Racketty Shack" (Turk).
- 11.1: The Radio Revellers—  
"That's What You Mean to Me" (Davis).  
"All by Yourself in the Moonlight" (Wallis).  
"She's Got a Great Big Army of Friends" (Nelson).  
"Queer as" (Simon).  
"Falling in Love with You" (Wayne).  
"I Love to Dunk a Hunk of Sponge Cake" (Castili).  
"I Just Jog Along" (Rose).  
"The Voice of the Southland" (Austin).  
Selected.
- 11.30: God Save the King

## 3AR

10.0 to 10.59: See Friday. 11.0: Ballet music from "Petroushka" by the Royal Albert Hall Orchestra, conducted by Eugene Stravinsky, in eight parts, and selections from "The New World Symphony" (Dvorak). 12.20: British official wireless news; announcements. 12.30: Close down.

### AFTERNOON SESSION.

3.0: A classical concert, the master musician of the past (Beethoven) interpreted by a master musician of the present, William Murdoch at the piano. "Sonata Pathétique in C Minor, Op. 13" (Beethoven), in four parts. "Sonata Appassionata, in F Minor, Op. 57" (Beethoven), in three parts. 4.30: Close down.

### EVENING SESSION.

6.0 to 7.55: General programme by station orchestra.

### NIGHT SESSION.

- Announcer: John Stuart. Accompanist: Reg. Brown.
- 8.0: Under the auspices of the Town Planning Association, S. Cumpston will speak on "Design and Lay-out."
- 8.15: A. W. Jackson will speak on "Golf."
- 8.30: Syd. Roy's Lyrics.
- 8.50: Scenes from Shakespeare (arranged by Winifred Moverley). Scene from "Romeo and Juliet," act 3, scene 5; Juliet, Winifred Moverley; Romeo, T. Bernard Lambie. Nurse, Marjorie McLeod; Lady Capulet, Adeline Strain; Capulet, Norman E. Blackler.
- 9.15: J. Alexander Browne, baritone. Three Shakespearean songs.  
"Come Away, Death" (Quilter).  
"O Mistress Mine" (Quilter).  
"Blow, Blow, Thou Winter Wind" (Quilter).
- 9.25: Three scenes from "Othello."  
Act 4, Scenes 2 and 3. Act 5, Scene 2.  
Othello, T. Bernard Lambie; Emilia, Winifred Moverley; Desdemona, Adeline Strain.
- 9.50: Piano recital by Lindsay Higgins.  
"Scenes from Childhood," Op. 15.  
"Romance in F Sharp."  
"Prophet Bird."  
"Solitary Flowers."  
"Fughetta."  
Selected.
- 10.20: News service; announcements.  
"God Save the King."

## 4QG

### EARLY MORNING SESSION.

7.43: Time signals. 7.45: News service. 8.0: Records. 8.15: News service. 8.30: Close down.

### MORNING SESSION.

11.0: Music. Social news, etc. 12.0: Close down.

### MIDDAY SESSION.

Announcer: R. Wright. 1.0: Market reports and weather information. 1.20: Wurlitzer organ. 2.0: Close down.

### AFTERNOON SESSION.

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

### EARLY EVENING SESSION.

6.0: Mail train running times, mail information shipping news. 6.5: A law talk. "Responsibility for Animals," by a Barrister-at-Law. 6.15: Records. 6.25: Commercial announcements. 6.30: Bedtime stories, conducted by "Uncle Ben." 7.0: News in brief. Stock Exchange news, etc. 7.45: Lecture, a talk on "Photography," by Mr. F. L. South manager, Kodak, Ltd.).

### NIGHT SESSION.

Announcer: H. Humphreys. The first portion of to-night programme will be provided by Mrs. Matthews' Cadenza Plectral Club and Banjo Band.

- 8.0: From the studio—  
Mrs. Matthews' Cadenza Plectral Club—  
"Titania" (Hildreth).  
Mrs. L. Hunter (soprano)—  
"When Song is Sweet" (San Souci), accompanied by the Cadenza Plectral Club.  
Mrs. Matthews' Banjo Band—  
"Down Main Street" (Weidt).  
Clara Matthews (violinist)—  
"Midnight Bells" (Greisler).  
Cadenza Plectral Club—  
"Over the Waves" (Rosas).  
Leo Crumby with Mrs. Matthews' Banjo Band—  
"Popular Number."  
Cadenza Plectral Club and Banjo Band—  
"Stepping Out" (Weidt).
- 9.0: Metropolitan weather forecast.
- 9.1: The Rio Grande Serenaders—  
Selected Hawaiian melodies.
- 9.6: Irene Elphinstone (contralto)—  
"Now Sleeps the Crimson Petal" (Quilter).  
"Hebrenian Love Lull" (Fraser).
- 9.14: Claude Walker—  
Eight minutes with Henry Lawson.  
9.17: Phyllis Dault (soprano)—  
"Spring's Awakening" (Sanderson).
- 9.25: The Rio Grande Serenaders—  
More melody.
- 9.38: A recital by Arthur Sharman (pianist) and Ivy Plane (soprano)—  
Ivy Plane (soprano)—  
"The Star" (Rogers).  
"Morning and Evening" (Aylward).  
A. Sharman (pianist)—  
"Des Abenda"—Evening (Schumann).  
"Aufschwung"—Soaring (Schumann).  
"Warum" (Schumann).  
"From 'Phantasia Pieces'").  
Ivy Plane (soprano)—  
"Bluebell Waly" (Brahe).  
"Touchee Have" (Lehmann).  
Arthur Sharman (pianist)—  
"Pastorale" (Scarletti-Tanste).  
"Polichinello" (Rachmaninoff).
- Ivy Plane (soprano)—  
"A Heart That's Free" (Robyn).
- 10.0: News. Weather. "Queenslander" bi-weekly news service for distant listeners. Close down.

## 5CL

### MORNING SESSION.

11.0: Chimes. 11.1: "Morning Melodies." 11.15: Kitchen craft and mental talk. 11.30: More Morning melodies. 11.45: Mary and Drew will speak about "Women's Whims." 12.1: Maggie Tulliver will speak on "The Pica of the Midsummer Fairies" a story for Shakespeare's Day, by Thomas Hood. 12.15: General news service; British official wireless news. 12.40: More midday music. 12.52: S.A. Railway information. Stock Exchange information. Meteorological information. 1.0: Chimes. 1.1: Lunch-hour recital. 1.35: Moonee Valley race result, Trial Hurdle race. 1.36: Luncheon recital. 1.59: Meteorological information. 2.0: Close down.

### AFTERNOON SESSION.

3.0: Chimes. 3.1: Resume of previous race results. 3.2: Rev. O. E. Hale, B.A., will speak on "Gratitude." 3.15: Moonee Valley race results, Victorian Club Handicap. 3.16: General programme, including: Red Hot Peppers Dance Band. Frank R. Thomas (baritone). Jack Stacks (The Woman's Water). Elizabeth Wylie (mezzo-soprano). 4.41: Resume of previous race results. 4.5: Tom Durling (bass). Norman Shirley (contralto). 4.33: Moonee Valley race results, April Handicap. 4.53: Stock Exchange information. 5.0: Close down.

### EVENING SESSION.

Announcer: J. L. Norris. 6.0: Chimes. 6.1: Birthday greetings, correspondence, songs and stories by "The Wattle Lady." 6.30: "Laria"—Talks from the Far North. 6.45: An interlude of dinner music. 6.57: Resume of Moonee Valley race results. 7.1: Stock Exchange information. 7.6: General market reports. 7.10: 5CL's sporting service, by "Silvius." 7.20: Miss Laurie McLeod will speak on "The Art of Dancing." 7.40: Dr. Herbert Basedow, in an interesting Australian talk.

### NIGHT SESSION.

Announcer: J. L. Norris. 8.0: Chimes. 8.1: Studio orchestra, conducted by Lisette Foglia. "Midsummer Night's Dream." 8.10: Albert Newlyn (soprano), "Where the Bee Sucks" (Tempesi).



8.14: P. H. Nicholls will give a toast to William Shakespeare.  
 8.21: Fred. Williamson (tenor). "Who is Sylvia?" (Schubert).  
 8.24: Frank Part—A recital. "Henry's Speech Before Agincourt" (from "Henry V." Act 14. Scene 4).  
 8.30: Aileen Newlyn (soprano). "Orpheus with His Lute" (Sullivan).  
 8.34: Studio orchestra, conducted by Lizette Foglia, orchestral selections.  
 8.40: Fred. Williamson (tenor). "Sigh No More, Ladies" (Stevens).  
 8.44: Aileen Newlyn (soprano). "Should He Upbraid" (Bishop).  
 8.48: Studio orchestra, conducted by Lizette Foglia, orchestral selections.  
 8.55: Jack Stocks (entertainer).  
 9.3: Meteorological information.  
 9.4: Overseas grain report.  
 9.5: Studio orchestra, conducted by Lizette Foglia, orchestral selections.  
 9.10: Misses Beryl Alford and Bessie Francis and Messrs. P. H. Nicholls and Frank Part, in the Court Scene from "The Merchant of Venice" (Act 4, Scene 1). Portia, Nerissa, Shylock, Antonio, Bassanio and others.  
 9.40: Studio orchestra, conducted by Lizette Foglia, orchestral selections.  
 9.48: Aileen Newlyn (soprano), and Fred. Williamson (tenor), in a duet. "It Was a Lover and His Lass" (Mozart).  
 9.53: Beryl Alford in a recital—extract from "Henry VIII."  
 10.0: Fred. Williamson (tenor). "Hark, Hark the Lark" (Schubert).  
 10.4: Aileen Newlyn (soprano). "Lo Here the Gentle Lark" (Bishop), with flute obligato by Alfred Noske.  
 10.8: Studio orchestra, conducted by Lizette Foglia, orchestral selections.  
 10.11: General news service. British official wireless news. Resume of Moonee Valley race results.  
 10.50: Modern dance numbers by the "Radio Retainers."  
 11.0: Close down.

**6WF**

12.30: Tune in. 12.35: Markets, news, etc. 1.0: Time signal. 1.1: Weather bulletin supplied by the Meteorological Bureau of Western Australia. 1.3: Musical programme, including items by the Studio Trio; vocal items. 2.0: Close down. 3.30: Tune in. 1.35: Musical programme from the studio—Pianoforte solos by Miss Audrey Dean and violin solos by Mr. Frank Romaine. 4.30: Close down. 6.45: Tune in. 6.48: Bedtime stories by Uncle Duffy. 7.5: Light music by the Station String Trio. 7.30: Commercial and general information. 7.45: Talk by Dr. J. S. Batty, B.A., LL.B. 8.0: Time signal. 8.1: First weather bulletin. 8.3: Orchestral concert relayed from the Perth Town Hall; Metropolitan Orchestral Society, conducted by Mr. H. Vowles, F.R.C.M. 8.50: Late news items by courtesy of the "Daily News" Newspaper Co., Ltd.; ships within range announcement station announcements; late weather bulletin. 9.5: Programme continued from the Town Hall. Perth. 10.30: Close down.  
 104.5 Metre Transmission.—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres, commencing at 6.45 p.m.

**7ZL**

**MIDDAY SESSION.**

11.30 to 1.0: See Friday. 1.5: P. D. O'Reilly will speak on "Rowing in Tasmania." 2.0: Running description of Trial Hurdle Race, 2 miles, Moonee Valley, Melbourne. 2.30: Running description of Two-Year-Old Handicap, 5 1/2 furlongs, Moonee Valley, Melbourne. 2.35: Close down.

**AFTERNOON SESSION.**

3.0: Running description of Highweight Handicap, 6 furlongs, Moonee Valley, Melbourne. 3.40: Running description of Victorian Club Handicap, 1 1/2 mile, Moonee Valley, Melbourne. 4.20: Running description of Trial Handicap, 1 mile, run at Moonee Valley, Melbourne. 4.25: An educational talk on "New Zealand's Shipments to U.S.A." 4.50: Running description of April Handicap, 7 furlongs, Moonee Valley, Melbourne. 4.55: All sporting results to hand. 5.0: Close down. 6.10: Moonee Valley race results.

**EARLY EVENING SESSION.**

6.15: Records. 6.30: Basil Sproule (pianist) will play "Fairy Lance" (Lohr), "In a Monastery Garden" (Kitelby). 6.45: "The Story Lady." 7.0: Answers to letters and birthday greetings, by "Uncle David" and "The Story Lady." 7.15: News session.

**EVENING SESSION.**

7.30: Under the auspices of the Agricultural and Stock Department, L. B. Steele will speak on—"Top Dressing."  
 7.45: W. E. Fuller will speak on—"Literary Lapses and Library Lists."  
 8.15: A dance programme by Reg. Jones and his orchestra (interspersed with Gramophone records).  
 8.15: Reg. Jones and his orchestra.  
 8.24: Belle Cutler (soprano).  
 8.27: Reg. Jones and his orchestra.  
 8.36: Steward Gardner (baritone).  
 8.43: Reg. Jones and his orchestra.  
 8.52: Edna Thornton (contralto).  
 8.59: Reg. Jones and his orchestra.  
 9.8: Garda Hall (soprano).  
 9.15: Reg. Jones and his orchestra.  
 9.24: Donald Lindley (cornet solo).  
 9.31: Reg. Jones and his orchestra.  
 9.40: Alma Clark (soprano).  
 9.45: News session.  
 10.0: Chimes.  
 10.1: Close down.

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# Local Programmes, Wednesday, April 24

## 2FC

### EARLY MORNING SESSION

Announcer: A. S. Cochrane.

7.0: "Big Ben" and announcements. 7.2: Official weather forecast; rainfall, river reports, temperatures, astronomical memoranda. 7.7: "Sydney Morning Herald" summary. 7.12: Snapping intelligence, mail services. 7.15: Studio music. 7.23: Investment market, mining sharemarket, metal quotations, wool sales, breadstuffs markets, Inter-State markets, produce markets. 7.40: Studio music. 8.0: "Big Ben"; close down.

### MORNING SESSION

Announcer: A. S. Cochrane.

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

### MIDDAY SESSION

Announcer: A. S. Cochrane.

Note: Race results from Ascot will be transmitted. 12.0: "Big Ben" and announcements. 12.1: Stock Exchange, first call. 12.3: Official weather forecast; rainfall. 12.5: Studio music. 12.10: Summary of news. "Sydney Morning Herald." 12.15: Rugby wireless news. 12.18: A reading. 12.30: Studio music. 1.0: "Big Ben"; weather intelligence. 1.3: "Evening News" midday news service: Producers' Distributing Society's report. 1.20: Studio music. 1.28: Stock Exchange, second call. 1.30: Description of the first event in the Great Public Schools Regatta. 2.0: "Big Ben"; close.

### AFTERNOON SESSION

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

2.30: "Big Ben"; programme announcements. 2.32: Description of events in the Great Public Schools Regatta: from the studio, during intervals, musical items and a talk by C. S. Yarwood on "Adam Lindsay Gordon." 5.0: "Big Ben"; close.

### EARLY EVENING SESSION

Announcer: A. S. Cochrane.

5.40: The chimes of 2FC. 5.45: The children's session, conducted by the "Hello Man," assisted by Uncle Ted and "Sandy"; letters and stories; music and entertainment. 6.30: Daley's market reports (wool, wheat, and stock). 6.40: Fruit and vegetable markets. 6.43: Stock Exchange information. 6.45: Weather and shipping news. 6.48: Rugby wireless news. 7.0: "Big Ben"; late news service. 7.10: The 2FC Dinner Quartette, conducted by Horace Keats—(a) "Mauresque" (Coates). (b) "Poupee Valsante" (Poldini). (c) "Sizillett" (Von Blon). (d) "Summer Days" (Coates). (e) "Serenade" (Gounod). (f) "Romance" (Sibelius). (g) "Nymphs of the Nile" (Hersonal).

### EVENING SESSION

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

7.40: Popular music. 7.45: Programme announcements. 7.48: Studio items. 8.0: "Big Ben"; Frank Hutchens and Cyril Monk a classical programme arranged by Frank Hutchens and Cyril Monk; assisting artists, Clement G. Williams, Florence Yates, Rosamund Cornford. Piano solos, Frank Hutchens— (a) "Sonata" (Searlatt). (b) "Rondo in C Major" (Beethoven). Songs, Clement G. Williams, Bergerettes (Weckerlin)— (a) "Phyllis Plusavare que Tenore." (b) "Menuet d'Exandet." Violin solos, Cyril Monk— (a) "Aria" (Porpora-Corte). (b) "Scherzo" (Dittersdorf-Kreisler). Songs, Florence Yates— (a) "The Unlucky Fisherman" (Schubert). (b) "Hedge-roses" (Schubert). Trio, Cyril Monk, Rosamund Cornford, Frank Hutchens—

Violoncello and Piano (Arensky). 1st Movement.

Piano solos, Frank Hutchens—

(a) "Serenade" (Arensky). (b) "Intermezzo in C Major" (Brahms).

9.0: "Big Ben"; weather; The Storyteller.

9.16: Songs, with accompaniment for piano and strings, Clement G. Williams—

(a) "O, Men from the Fields" (Hughes). (b) "In the Silent Night" (Rachmann-off).

(c) "The Moon Cradle" (Hughes).

Violin and Piano, Cyril Monk and Frank Hutchens—

"Slow Movement from Sonata in E" (Sjogren).

Song, Florence Yates—

"Cradle Song" (Brahms).

Piano solos, Frank Hutchens—

"Amberley Wild Books" (Ireland).

Violin, Cello, and Piano, arranged by Frank Hutchens—

"Etude in C Sharp Minor" (Chopin).

Song, Clement G. Williams—

"The Fair" (Stanford).

Songs, Florence Yates—

(a) "From Afar" (Scott). (b) "Nebbie" (Respighi).

Violin solo, Cyril Monk—

"Esquisse Andulose" (Morales).

Trio, Violin, Cello, Piano—

(a) "Siesta" (Gibbs). (b) "The Open Road" (Gibbs).

10.15: A Celebrity record.

10.28: Late weather and to-morrow's programme.

10.30: National Anthem.

Close.

## 2BL

### MORNING SESSION.

Announcer: A. C. C. Stevens.

8.0: G.P.O. chimes. Metropolitan weather report. 8.1: State weather report. 8.2: Studio music. 8.15: G.P.O. chimes. News service from the "Daily Telegraph Pictorial."

8.30: G.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. 10.0: G.P.O. chimes. Close down.

### MIDDAY SESSION.

Announcer: A. C. C. Stevens.

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

### AFTERNOON SESSION.

Announcer: A. C. C. Stevens.

Accompanist: Kathleen Roe.

3.45: G.P.O. chimes. Popular music. 4.0: G.P.O. chimes. From Paline's Concert Hall, violin recital by the students of Mischa Dobrinski. Accompanist, Madame Dobrinski. Phyllis Bateman. (a) "Romance" (Beethoven). (b) "Hejre Kati" (Hubav). Maurice Abeshouse. "Canzonetta" (d'Ambrosio). Sophie Freedman. (a) "Londonderry Air" (Kreisler). (b) "Spanish Dance" (Granados-Kreisler). Songs, Brenda King (from the studio of Miss Lois Zucker). (a) "An Old Italian Aria" (Poffe). (b) "Butterfly Wings" (Phillips). Tom Bateman. "Andante Cantabile" (Dittersdorf). Phyllis Bateman "Romance" (Sitt). Laura Allum "Menuet" (Mozart). William Hillman "Liebslied" (Kreisler). Songs, Brenda King (from the studio of Miss Lois Zucker). "The Isle of Innesfree" (Lennacuck). "Phyllis has Such Charming Graces" (Kreisler). (b) "Czardas" (Monti). 5.0: From the studio. "Sun" news service. 5.5: Popular music. 5.20: Piano-forte reproduction. 5.30: Racing resume. 5.37: Features of the evening's programme.

### EARLY EVENING SESSION.

Announcer: Basil Kirke

5.40: Children's session, conducted by Uncle

Bas. Music and entertainment. Letters and stories. 6.30: "Sun" news and late sporting.

6.40: 2BL Dinner Quartette. (a) "Pas des Volles" (Delibes). (b) "Bird Songs at Evening" (Coates). (c) "The Blue Danube" (Strauss). (d) Selection of melodies from Sullivan's operas (Chappell). (e) "Softly Awakes My Heart" (Saint-Saens). 7.7: Australian Mercantile, Land, and Finance Company's report. Weather report and forecast by courtesy of Government Meteorologist, Producers' Distributing Society's Fruit and Vegetable Market report. Grain and fodder report. "Sun". Dairy produce report ("Sun"). 7.25: Mr. Plum and Miss Pam in advertising talks. Handy hints and nonsense. 7.53: An ad. special. 7.55: Programme and other announcements.

### EVENING SESSION

Announcer: Basil Kirke

Accompanist: G. Vern Barnett.

8.0: G.P.O. chimes.

Topical chorus.

H. W. Varna will produce Sir James Barrie's play, "Mary Rose." Cast—

Mr. Morland ..... Foster Dean

Mrs. Morland ..... Mrs. Pat Barton

Mary Rose (their daughter), Meg Service

Simon (her husband) ..... H. W. Varna

Harry (her son) ..... H. W. Varna

Mr. Amy (Morland's old friend) ..... Charles Curran

Cameron (Highlander) ..... William Hume

Mrs. Obery (housekeeper), Muriel Curran

Act I, scene 1: The Morland Home, present.

Scene 2. The Same. 25 years in the past.

Act II. The Island that Likes to be Visited—Outer Hebrides.

Act III. The Morland Home, past and present.

9.0: G.P.O. chimes.

Weather report.

9.1: Alf Lawrance and Nell-Crane (entertainers).

(a) "Shooops a Daisy" (Darewski).

(b) "Sinbad the Sailor" (Lawrance).

(c) "I Said, 'Ow Are Yer?'" (Lawrance).

9.11: G.P.O. chimes.

James Peddle (novelty pianist).

9.18: Claude Corbett will speak on general sporting.

9.33: Alf Lawrance and Nell-Crane (entertainers)—

(a) "My Jim's Comin' 'Ome" (Lawrance).

(b) "Lost My Heart in Maoriand" (Lawrance).

9.43: G.P.O. chimes.

James Peddle (novelty pianist).

9.50: The Savoyans.

10.5: Rae Foster (popular vocalist).

10.12: The Savoyans.

10.22: Late "Sun" news service.

Late weather report.

10.32: Rae Foster (popular vocalist).

10.38: The Savoyans.

10.57: To-morrow's programme.

10.59: The Savoyans.

11.30: National Anthem.

Close.

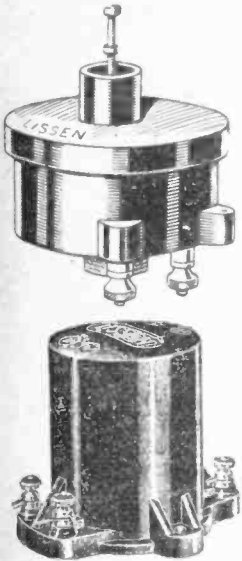
## 2GB

10.0: Music. 10.10: Happiness talk by A. E. Bennett. 10.20: Music. 10.30: Women's session by Miss Helen J. Beegling. 11.30: Close down. 2.0: Music. 2.5: Women's Radio Service, by Mrs. Dorothy Jordan. 3.0: Labor Saving Demonstration, from Nock and Kirby. 4.0: Close down. 5.30: Children's session by Uncle George. 7.0: Music. 7.30: Short talk by Miss Beegling. 8.0: Mrs. Howard Seymour, contralto. 8.7: Mr. Cedric Ashton, cellist. 8.15: Mr. Peter Templeton, baritone. 8.22: Instrumental music. 8.30: Humorous interlude by Mr. Jack Worrie, soprano. 8.45: Address. 9.0: Mr. Marjorie Cole, soprano. 9.3: Mrs. Howard Seymour, contralto. 9.13: Mr. Cedric Ashton, cellist. 9.23: Humorous interlude by Mr. Jack Worrie. 9.30: Mrs. Marjorie Cole, soprano. 9.40: Instrumental music. 9.50: Miss Marjorie Cole, soprano. 10.0: Dance music. 10.30: Close down.

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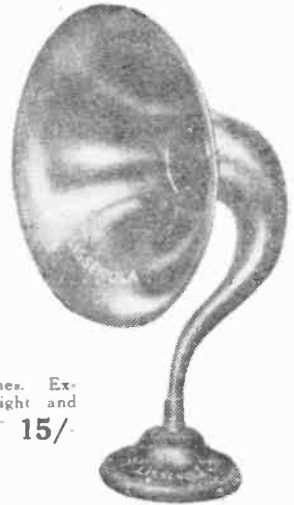


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 Resistance Coupling Units, each ..... 5/6  
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 2 cell ..... 1/3  
 Flat, 4.5-V., each ..... /9



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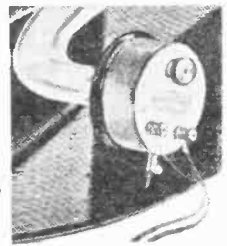
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# Interstate Programmes, Wednesday, April 24

## 3LO

### EARLY MORNING SESSION.

7.15 to 8.15: See Friday.

### MORNING SESSION.

Announcer: Frank Hatherley.—11.0: To-day's Radio Recipe—Apple Charlotte. 11.5: Miss I. D. Beaven will speak on "Home-made Confectionery." 11.25: Mrs. M. Callaway Mahood will speak on "The Art of Decoration." 11.45: Mrs. Clarence Weber will speak on "Physical Culture for Women."

### MIDDAY NEWS SESSION.

12.0: Melbourne Observatory time signal. 12.1: Metal prices received from the Australian Mines and Metals Association from the London Stock Exchange this day; British official wireless news from Rugby; Reuter's and the Australian Press Association cables; "Argus" news service. 12.15: Newmarket stock sales; detailed sales report; bullocks and calves, by the Associated Stock and Station Agents, Bourke Street, Melbourne.

### MIDDAY MUSICAL SESSION.

12.20: General programme, including the Radio Revelers; Dorothy Eytton-Jones, contralto. 1.1: Meteorological information; weather forecast for Victoria, New South Wales, South Australia, and Tasmania; ocean forecasts; river reports; and rainfall. 1.30: Speeches transmitted from the Rotary Club luncheon at the Freemason's Hall, Collins Street, Melbourne. 2.0: Close down.

### AFTERNOON SESSION.

Announcer: Frank Hatherley. Accompanist: Agnes Fortune.—2.15: General programme, including the Station Orchestra. Freda Northcote, contralto; Ernest Wilson, baritone. 3.0: Dr. Loftus H. His will speak on "Topics of the Week." 3.15: Fritz Hart will speak to students of music. 3.30: Rev. Wm. Bottomley will conduct his series of talks on "Sigurd, the Volsung." 4.4: Special weather report for the benefit of listeners in the Redcliffs district. 4.45: News service; Stock Exchange information. 4.55: Close down. During the afternoon results of the Baeuchus Marsh and St. Amands races will be given as they come to hand.

### CHILDREN'S HOUR.

6.0: Answers to letters and birthday greetings by "John, the Piper's Son." 6.30: Captain Donald MacLean. 6.50: "John, the Piper's Son."

### EVENING SESSION.

7.5: Stock Exchange information. 7.15: Market reports. 7.45: Out of the Pact. 7.46: Under the auspices of the Department of Agriculture, R. T. M. Pescott, Science Field Officer, will speak on "Wheat-growing—Louise Smut Control."

### NIGHT SESSION.

Announcer: Renn Millar. Accompanist: Agnes Fortune.  
8.0: Programme announcements.  
8.1: Coburg City Band—  
"March, 'Denise' Boney" (Alford).  
"Song March, 'Where are the Boys of the Old Brigade'"  
8.10: Harold Webb, baritone—  
"The Trumpeter" (Dix).  
"A Castilian Lament" (Del Riego).  
8.17: Coburg City Band—  
Descriptive, Fantasia, "Trooping the Colors."  
8.25: Syd. Roy's Lyrials—  
"The Prince of Wales's Own Entertainers."  
8.50: "The Smith Girls."  
8.57: The Imperial Russian Trio (Arved Norst, violin; Ivan Berzinsky, cello; Vassili Ister, piano).  
"Trip In F Sharp Minor" (Franck).  
"Andante Con Moto."  
"Barcarolle" (Tchaikowsky).  
Andante from "Symphonie Pathetique" (Tchaikowsky).  
9.22: The Postal Institute Choir.  
9.32: The Coburg City Band—  
Waltz Militaire, "Grenadier" (Rimer).  
10.0: News service; meteorological information; British official wireless news from Rugby; announcements.  
10.10: Harold Webb, baritone—  
"The Art Risen, My Beloved" (Cole-Clide Taylor).  
Selected.  
10.17: Coburg City Band  
March, "Great Little Army" (Alford).  
10.27: Stella Lamond, soprante, will entertain with her ukulele.  
10.38: Ern. Hall's Radio Revelers—  
"Where the Cot. Cot. Cotton Grows" (Kleim).  
"Climb-a-Cake" (Bernard).  
"My Fleurette" (Klimbrough).  
"Avalon Town" (Brown).  
"Shake that Thing" (Jackson).  
"Old Rag Doll" (Ager).  
"You are Wonderful" (Ash).  
Selected.  
11.30: Kod Save the King.

## 3AR

10.0 to 10.59: See Friday. 11.0: Music, grave and gay. 12.20: British official wireless news. 12.30: Close down.

### AFTERNOON SESSION

3.0: Sir Hamilton Harty, conducting the Halle Orchestra, "Symphony No. 4, in B Flat" (Beethoven).

4.0: Selections from the works of Strauss and Ketelby. 4.30: Close down.

### EVENING SESSION

8.0: "Symphony No. 6," "The Pastoral" (Beethoven), in ten parts. Op. 68. 7.10: News service; announcements.

### NIGHT SESSION

Announcer: John Stuart. Accompanist: Reg. Brown.  
8.0: Captain C. H. Peters. "Books, Wise and Otherwise."

8.0: Under the auspices of the Boy Scouts' Association, W. D. Kennedy, "Observation and Deduction."

8.30: The Station Orchestra.  
"A Dream of Egypt" (Finden).  
8.42: Freda Northcote, contralto.  
"Yo San" (Finden).  
"There are Mildens in Japan" (Finden).

8.48: The Station Orchestra.  
"Stars of the Desert" (Finden).  
9.0: Herbert Sanderson, baritone.  
Two more of Amy Woodforde-Finden songs.  
Half an hour with Sanderson.

9.7: The Station Orchestra.  
Selection, "Sanderson's Songs," Part 1.  
9.13: Freda Northcote, contralto.  
"You Aong C. Les" (Sanderson).  
"All Joy be Thine" (Sanderson).

9.20: The Station Orchestra.  
Selection, "Sanderson's Songs," Part 2.  
9.24: Herbert Sanderson, baritone.  
"Shipmates of Mine" (Sanderson).  
"Selected" (Sanderson).

9.34: The Victoria Theatre Orchestra, under the baton of Henri Penn, transmission from the Victoria Theatre, St. Kilda.

10.30: News service; announcements.  
"God Save the King."

## 4QG

### EARLY MORNING SESSION.

7.43: Time signals. 7.45: News service. 8.0: Records. 8.15: News service. 8.30: Close down.

### MORNING SESSION.

11.0: Music, social news. 11.15: A talk on "Artistic Uses of Sealing Wax and Crepe Paper," by "Denise." 12.0: Close down.

### MIDDAY SESSION.

Announcer: R. Wight. 1.0: Market reports and weather information. 1.15: The Postal Institute Orchestra. 2.0: Close down.

### AFTERNOON SESSION.

3.0: Orchestral music, by the Tivoli Operatic Orchestra, under the baton of Mr. C. Groves. 3.30: Mail train running times. A programme of records. 4.0: Orchestral music. 4.15: Afternoon news. 4.30: Close down.

### EARLY EVENING SESSION.

8.0: Mail train running times, mail information, shipping news. 8.5: Dinner music. 9.25: Commercial announcements. 9.30: Bedtime stories, conducted by "Little Miss Brisbane." 9.30: News in brief. Stock Exchange news, etc. 1.45: Lecture, "A Live Stock Subject," by Mr. A. J. McKenzie (Queensland Agricultural High School and College).

### NIGHT SESSION.

Announcer: H. Humphreys.  
8.0: Alf. Featherstone and his dance orchestra—Medley Fox Trots.  
"Dixie Ditties" (arr. Black).  
"Tittles and Heather" (arr. Black).

8.10: Mr. Norman Mighel (president of the Returned Sailors and Soldiers' Imperial League of Australia) will deliver an address on "Anzac Day." 8.20: Alf. Featherstone and his dance orchestra—Fox Trots.  
"Sh-Shivering" (Doody).  
"All By Yourself in the Moonlight" (Wallis).

8.30: Rev. Canon D. J. Garland (hon. secretary, Citizens' Anzac Commemoration Committee) will speak on "Anzac Day."  
8.40: Alf. Featherstone and his dance orchestra—Jazz-Waltz, "Spanish Moon" (Banley).  
8.50: Laurie and Rayne—  
"Ten minutes' novelty."  
9.0: Metropolitan Weather forecast.

Movements of lighthouse steamers.  
9.1: Alf. Featherstone and his dance orchestra—Fox Trots.  
"I Don't Know Why I Do It, But I Do" (Val).  
"Down by the Old Front Gate" (Rose).  
9.10: Doris McInnes (soprano)—  
"The Robin's Song" (White).

9.20: Alf. Featherstone and his dance orchestra—One-steps.  
"Floating Down to Cotton Town" (Klickmalm).  
"Back to Alabama in the Spring" (Palmer).  
9.30: A. W. Peck (baritone)—  
"The Lute Player" (Allisen).

9.40: Alf. Featherstone and his dance orchestra—Old-time waltz, "Rose Queen" (Brahms).  
9.50: Alice Gill (contralto)—  
"Silent Moon" (Vaughan Williams).  
10.0: "The Daily Mail" news, "The Courier" news, weather information.

10.15: Alf. Featherstone and his dance orchestra—Quarters of an hour's dance music.  
11.0: Close down.

## 6WF

12.30: Tune in. 12.35: Markets, news, etc. 1.0: Time signal. 1.1: Weather bulletin supplied by the Meteorological Bureau of Western Australia. 1.3:

Talk by Dr. Winifred Holloway, of London. 1.20: Music. 1.30: Close down. 3.30: Tune in. 3.35: Afternoon tea music relayed from the Primrose Cafe de Luxe; vocal items from the studio. 4.30: Close down. 6.45: Tune in. 6.48: Bedtime stories by Ueda Duffy. 6.5: Light music by the Station String Trio. 7.30: Commercial and general information. 7.45: Talk by Mr. Hal. McKell on a Popular Science 48 Time signal. 8.1: Firts weather bulletin. 8.3: Dance music by Ron Moyle and his Orchestra, relayed from the Y.A.L. Ballroom; vocal and instrumental items from the studio. 8.50: Late news items by courtesy of the "Daily News" Newspaper Co. Ltd.; station announcements; ships within range announcements; 1st weather bulletin. 9.5: Programme continued from the studio and Y.A.L. Ballroom. 10.30: Close down. 104.5 Metre Transmission.—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres, commencing at 6.45 p.m.

## 7ZL

### MIDDAY SESSION.

11.30 to 1.30: See Friday. 1.30: Transmission from the Imperial Hotel, Collins Street, Hobart; speeches at the Rotary Club Luncheon. 2.0: Close down.

### AFTERNOON SESSION.

Announcer: Jack Broadbent. 3.0: Chimes. 3.4: Weather information. 3.5: A mandolin and steel guitar concert by Monsieur Sonora. 4.15: Readings from the "Illustrated Tasmanian Mail." 4.30: Close down.

### EARLY EVENING SESSION.

6.15: Records. 6.45: Little Miss Mather, recitation. "An Old Romance." "Her Name." 7.0: Answers to letters and birthday greetings. 7.15: Rev. Snowden-Hey, Bishop of Tasmania, will have a chat with the wee folk. 7.15: Advice on fruit sales from Melbourne; news session.

### EVENING SESSION.

7.30: Major Harry Trouselot, Superintendent of the Hobart Fire Brigade, will speak on "Slide Lights." 7.45: Geo. Nation, will speak on "Latest Garden Additions."

8.0: G.P.O. clock chimes the hour.  
8.5: Recital of instrumental and vocal items by leading international artists supplied by Paton's Music Warehouse.

9.45: News session. Close down.

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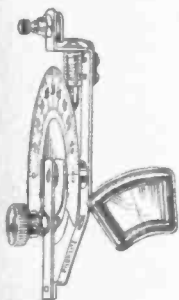
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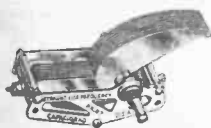
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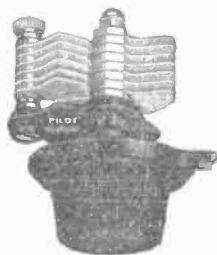
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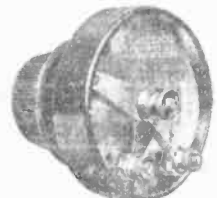
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# Local Programmes, Thursday, April 25

## 2FC

### MORNING SESSION.

Announcer: A. S. Cochrane.

10.0: "Elg Ben" and announcements. 10.2: Studio Music. 10.15: "Sydney Morning Herald" news service. 10.30: From Canberra—The inauguration of the Australian War Memorial; detailed description of the arrival of the Naval and Military representatives. 10.55: Fantasia, "In Memoriam" (Rimmer), Canberra City Band. 11.5: His Excellency the Governor-General will arrive; Royal Salute; His Excellency will inspect the Guard. R.A.N. Cadet-Midshipmen, R.M.C. Cadets, and Returned Soldiers, and will then take up position on date. 11.10: Hymn "O God, Our Help in Ages Past," Methodist Chaplain. 11.12: Prayer; Commemoration of the Fallen, Presbyterian Chaplain; The Lord's Prayer, to be said by all. 11.14: Prime Minister will invite His Excellency to unveil the Commemoration Stone. 11.19: His Excellency will deliver a brief address and unveil the Commemoration Stone. 11.26: "Stand Fast" sounded on bugle; One Minute Silence. 11.30: "Let Posa. 11.27: "Reveille" sounded; His Excellency as Commander-in-Chief will place a wreath on stone; the Federal President, R.S.S.I.L.A., will place a wreath on stone. 11.29: The Blessing, Anglican Chaplain. 11.30: National Anthem, sung by public; Canberra City Band. 11.31: His Excellency will depart. 11.32: Returned Soldiers, Junior Red Cross Detachments, Boy Scouts, etc., will retire. 12.0: From the Studio—"Big Ben," studio music. 12.30: Close.

### AFTERNOON SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

2.30: "Big Ben," programme announcements; from Christ Church, St. Laurence—Organ recital of Australian compositions by Christian Helleman. 3.0: "Big Ben"; from the basement of the Town Hall—Soldiers' entertainment under the auspices of the Anzac Fellowship of Women. 4.30: "Big Ben" Studio—Record recital. 5.0: "Big Ben"; close.

### EARLY EVENING SESSION.

Announcer: A. S. Cochrane.

5.40: The chimes of 2FC. 5.45: The Children's Session, conducted by the "Hello Man"; letters and stories; music and entertainment. 6.15: Captain Arons—"The Meaning of Anzac." 6.30: Dalgety's market reports (wool, wheat and stock). 6.40: Fruit and vegetable markets. 6.43: Stock Exchange information. 6.45: Weather and shipping news. 6.48: Rugby wireless news. 6.50: Late sporting news. 7.0: "Big Ben"; late news service. 7.10: The 2FC Dinner Quartette, conducted by Horace Keats—(a) Three Dances, "Tom ones" (German). (b) "Traumer" (Schumann). (c) "Sun Flakes" (Phillips). (d) "The Desert Song" (Romberg). (e) "Gipsy" (Signorelli).

### EVENING SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

7.40: Popular music. 7.45: Programme announcements. 7.48: Studio items. 8.0: "Big Ben." On this, Australia's National Day, we have concentrated on an all Australian programme. The songs and musical compositions are as far as possible by Australian composers. 8.1: From Pitt Street Congregational Church—Organ and pianoforte recital by Lillian Frost and Esther Kahn. 9.16: From the Studio, Marsh Little, well-known Australian Composer—(a) "The Glorious 3rd Brigade" (Little). (b) "They Were There, There, There" (Cohen). 8.23: Result of the Interpretation Competition held last Thursday. 8.25: Graham Kent will recount stories of famous bridge games "On the Other Side." 8.40: Peggy Dunbar, contralto. 8.47: Charles Lawrence, entertainer. 8.57: Weather report. 9.0: "Big Ben" from Canberra—an address by the Honourable the Prime Minister, Mr Bruce.

9.15: From Pitt Street Congregational church—Organ and pianoforte recital by Lillian Frost and Esther Kahn.

9.30: From the Studio, Marsh Little, popular songs—

(a) "Boys of the Dardanelles" (Little). (b) "On the Shores of the Aegean Sea" (Little).

9.37: Charles Lawrence, entertainer. 9.47: From Pitt Street Congregational Church—Organ and pianoforte recital by Lillian Frost and Esther Kahn.

9.57: From the Studio, Peggy Dunbar, contralto.

10.4: From the Hotel Australia, Cec Morrisons Dance Band.

10.14: From the Studio, Nan Kain, popular items—

(a) "Dolorosa" (Phillips). (b) "Was it a Dream?" (Coslow and Spier).

10.21: From the Hotel Australia, Cec Morrisons Dance Band.

10.30: From the Studio, late weather.

10.32: Nan Kain, popular items—

(a) "Rose of Flanders" (O'Hagan). (b) "Girl of My Dreams" (Clapp).

10.39: From the Hotel Australia, Cec Morrisons Dance Band.

10.57: From the studio, to-morrow's programme.

10.59: From the Hotel Australia, Cec Morrisons Dance Band.

11.30: National Anthem. Close.

## 2BL

### MIDDAY SESSION.

Announcer: A. C. C. Stevens.

11.0 G.P.O. chimes. From Queen's Square, Anzac Day Commemoration Service. 12.15: From the studio, A radio tribute to the memory of the men of Anzac, presented in the form of music and narration selected from notable Empire melodies and poems which have endeared themselves to the heart of the nation. Specially arranged and directed by Captain A. C. C. Stevens, in association with Mr. V. Upton Brown, St. Margaret's chimes peal, an Anzac greeting. 12.18: Captain A. C. C. Stevens, Prologue, "Anzac Anniversary." 12.23: Big Ben heralds the crowds to St. Margaret's. 12.26: Band of H.M. Coldstream Guards (conductor, Lieut. R. G. Evans), Grand Parade, "Favorite Army Songs." 12.30: "Songs of the Future" (A. B. Paterson). 12.35: Band of H.M. Coldstream Guards and Scots Guards Pipes, Grand Parade, "Favorite Army Marches." 12.39: "Here Died" (Henry Lawson). 12.44: Christchurch Choir (conductor, Stanior Robinson), "Eternal Father, Strong to Save" (Dykes). 12.47: "The Ballad of the Clamphedown" (Rudward Kipling). 12.52: Band of H.M. Lifeguards, March, "Pomp and Circumstance" (Sir Edward Elgar). 12.56: "For England" (J. D. Burns). 1.0: Australian Commonwealth Military Band, "La Marseillaise." 1.5: Major-General Sir Charles Rosenthal, K.C.B., C.M.G., D.S.O., V.D., one of the Anzacs' most famous leaders, tells of the "Spirit of Anzac." 1.15: Mark Andrews grand organ, "Hallelujah Chorus" (Handel). 1.19: "My Son" (E. G. Murphy). 1.22: His Majesty's Chapel Royal Choir (conductor, Stanley Rofer), (a) "Abide With Me" (Monk). (b) "Flight the Good Fight" (Bovd). 1.25: "The Only Son" (Sir Henry Newbolt). 1.29: "Homeland Chimes, "O Come, All Ye Faithful," with grand organ. 1.31: "The Last Parade" (A. B. Paterson). 1.34: Christ Church Choir (conductor, Stanford Robinson), "Onward, Christian Soldiers" (Sir Arthur Sullivan). 1.37: "The March of the Dead" (Robert Service). 1.41: Band of H.M. Coldstream Guards (conductor, Lieut. R. G. Evans), "Favorite March Tunes of the Army." 1.48: H.M. Chapel Royal Choir (conductor, Stanley Rofer), "Fierce Raged the Tempest" 1.51: "Not Understood" (Thomas Brackan). 1.56: Band of H.M. Coldstream Guards (conductor, Lieut. R. G. Evans), "Songs and Rhythms of the Anzacs." 2.0: God Save the King. Close down.

### AFTERNOON SESSION.

Announcer: A. C. C. Stevens.

Accompanist: Kathleen Roe.

3.45: G.P.O. chimes. Popular music. 4.0:

G.P.O. chimes. Basil Kirke, "Reminiscences of the Landing in Gallipoli." 4.15: A programme arranged by Johnny Marks. 4.45: Popular music. 5.0: "Sun" news service. 5.10: Studio items. 5.23: From the Centenary Martin Place, "The Last Post." 5.26: Studio items. 5.37: Features of the evening's programme.

### EARLY EVENING SESSION.

Announcer: Basil Kirke.

5.40: Children's session, conducted by Uncle Bas. Music and entertainment. Letters and stories. 6.30: "Sun" news and late sporting. 6.40: 2BL Dinner Quartette. (a) "Scena Espagnole" (Lacombe). (b) "Romance Sans Paroles" (Goens). (c) "Veronique" (Missaeger). (d) "Minuet" (Beethoven). (e) "Wienlied" (Per Winge). (f) "Mazurka" ("Wieling"). 7.7: Australian Mercantile Land and Finance Co.'s report. Weather report and forecast, by courtesy of Government Meteorologist. Producers' Distributing Society's Fruit and Vegetable Market report. Grain and fodder report ("Sun"). Dairy produce report ("Sun"). Weekly traffic bulletin. 7.58: Mr. Pim and Miss Pam I. advertising talks. Handy hints and nonsense. 7.53: An ad. items. 7.55: Programme and other announcements.

### EVENING SERVICE.

Announcer: Basil Kirke.

Accompanist: G. Vern Barnett.

8.0: G.P.O. chimes.

Topical chorus. From the Capitol Theatre, the Capitol Unit entertainment.

8.20: W. E. Lewis (baritone).

3.27: 2BL and "Wireless Weekly" competition. We invited listeners to send in an authentic story of Gallipoli sufficient to cover the back of a postcard, and we have pleasure in announcing the winners to-night, and Mr. Scott Alexander will read the successful stories which were submitted.

8.35: Dorrie Ward, well remembered for her work with the "Cheer-o" Society in the days of the war.

8.42: Johnny Marks (comedian), who claims without exaggeration he is a familiar figure to every Australian soldier.

8.50: Alexander Spouse (mouth organ).

8.57: Weather report.

8.59: W. E. Lewis.

9.6: Scott Alexander will present an original Coddington Ball radio comedy, entitled "Lovers' Lane."

The Digger ..... Scott Alexander  
The Girl ..... Ruth Wilson

Sc 1: Lovers' Lane, 1915—The Farewell.  
Sc 2: Lovers' Lane, 1929—The Reunion.

9.16: Foreword to the next item.

9.17: From the Capitol Theatre.

9.32: From the studio, The Right Hon. W. M. Hughes, P.C.

9.47: Dorrie Ward.

9.54: Johnny Marks (comedian).

10.1: Alexander Spouse (mouth organ).

10.8: From the Capitol Theatre.

10.28: From the studio, Late weather and to-morrow's programme.

10.30: National Anthem.

Close down.

## 2GB

10.0: Music. 10.10: Happiness talk by A. E. Bennett. 10.20: Music. 10.30: Women's Service, by Miss Helen J. Beegling. 11.30: Close down. 2.0: Music. 2.5: Women's Radio Service, by Mrs. Dorothy Jordan. 2.50: Music. 3.15: Close down. 3.30: Children's session, by Uncle George. 7.0: Music. 7.30: Short talk by Mrs. Jordan. 8.0: Anzac Day programme, Mr. Cecil Houghton, tenor. 8.7: Mr. Leonard Brewer, violinist. 8.15: Madame Bennett North, contralto. 8.22: Instrumental music. 8.30: Mr. Heath Burdock, dramatic recital. 8.40: Mr. Clement Hosking, baritone. 8.50: Miss Ada Brook, pianist. 9.0: Weather report. 9.3: Address. 9.15: Mr. Cecil Houghton, tenor. 9.25: Mr. Leonard Brewer, violinist. 9.35: Humorous interlude by Mr. Jack Win and Mr. Heath Burdock. 9.40: Instrumental. Bennett North, contralto. 9.50: Instrumental music. 10.0: Mr. Clement Hosking, baritone. 10.10: Orchestral music. 10.30: Close down.

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# Interstate Programmes, Thursday, April 25

## 3LO

### EARLY MORNING SESSION

7.15 to 8.15: See Friday last.

### MORNING SESSION

10.45: Transmission of Anzac Day ceremonies at Canberra, ceremony of unveiling the Commemorative Stone by His Excellency the Governor-General 11.50: The Station Orchestra.

### MIDDAY NEWS SESSION

12.0: Melbourne Observatory time signal. The Station Orchestra: Percy Cook, trumpet; Oliver Peacock, baritone; Tom Semple, tenor. 1.12: Meteorological information: weather forecast for Victoria, New South Wales, South Australia, and Tasmania. 1.45: Close down.

### AFTERNOON SESSION

Announcer: Frank Hatherley. 2.0: Anzac Day march past the Cenotaph of returned soldiers and sailors, described from the Town Hall portico by Eric Welch, interpolations by J. Howlett Ross. 4.0: Special Anzac Day service, transmitted from the Exhibition Building, Melbourne. 5.15: Announcements: close down.

### CHILDREN'S HOUR

6.0: Answers to letters and birthday greetings by "Bobby Bluegun." 6.25: Captain Donald MacLean. "What Anzac Day Means to Boys and Girls." 6.45: "Bobby Bluegun."

### EVENING SESSION

7.30: News session. 7.45: Birthday greetings. 7.46: Prof. McGregor will speak on "Australian Footballers at the Great War."

### NIGHT SESSION

Announcer: Renu Millar. 8.0: Programme announcements. 8.1: "Réville" and band call. Bugler E. P. Taylor Brunswick City Band. March, "Martial Moments." Royal Caledonian Pipe Band (pipe major: Hugh Fraser). March, "Bonny Ann." Strathspey, "Benholm." Reel, "M'Allister's Dirk." Brunswick City Band. "Echoes of the Ocean." Elsternwick Methodist Male Choir. "Mademoiselle from Armentieres." "Till the Boys Come Home." "Australia Will Be There." "There's a Long, Long Trail." Brunswick City Band. "Khaki Camp." Revellie. Fall in. Regimental bands in the distance. Arrival of troops and shouts of welcome. Impromptu concert. Arrival of the V.C. hero. Nightfall. Last Post. All lights out. Break of the next day. Morning gun. Revellie Camp in motion. Departure of troops for overseas. Elsternwick Methodist Male Choir. "Good-bye." "Here We Are Again." "Sister Susie." Bugler E. P. Taylor, bugle calls. Fall in. Advances. Brunswick City Band. March, "The Victor's Return." Royal Caledonian Pipe Band. "Braves o' Bannachie." Brunswick City Band. "Sons of the Sea." Royal Caledonian Pipe Band. "Donald Day." Brunswick City Band. "Flying Squadron." Bugler E. P. Taylor. Bugle call, "Retreat." Brunswick City Band. "Sunday Parade." Early Morning. Chime of the clock. Revellie. Church call. Dressing bugle. Band in the distance. March to church. Band at the church gate. Organ. Voluntary. Hymnic. Conclusion of service. Organ music. Fall in. Homeward bound. Finales. Elsternwick Methodist Male Choir. "Evening Hallelujah." Brunswick City Band. Last Post selection. "To the Memory of the Brave." 9.30: J. Howlett Ross will speak on "Anzac Day." 9.45: An hour of memories, arranged by Syd. L. Exton. Portrayed by J. Alexander Browne, Bob Molyneux, Roy Simpson, Syd. Exton, Rorace Book, Chaplain-Capt. Chas. Teague. Trumpeters, Blessie and George. Assisted by the Brunswick City Band (conductor, Sergeant Hugh Nevin). The scene is a re-union at the home of one of the Diggers. Sixty minutes of songs, stories, and harmonies of the old days.

10.30: "Argus" news service; meteorological information; British official wireless news from Rugby; announcements. 10.40: Brunswick City Band. "Memories." 10.51: Brunswick City Band. Selection, "Britannia." 11.0: "God Save the King."

## 3AR

10.0 to 10.59: See last Friday. 11.0: Memorial service from St. Paul's Cathedral, Melbourne. 12.20: British official wireless news; announcements. 12.30: Close down.

## AFTERNOON SESSION

3.0: The Imperial Russian Trio (Arved Norit violin, Ivan Berzinsky cello, and Vassili Ilster piano), trios. "Menuetto" (Mozart), "O Sanctissima" (Corelli-Kreisler), "Andante" from "Orpheus" and "Gavotte" from "Orpheus" (Gluck), "Caprice Viennois" (Kreisler). 4.0: Syd Roy's Lyricals. 4.30: Close down.

## EVENING SESSION

6.0: Albert Sammons; violin, and William Murdoch, pianoforte, recorded in the Wigmore Hall. "Kreutzer Sonata, in A Major, Op. 47" in ten parts (Beehoven). 6.30: The Imperial Russian Trio (Arved Norit violin, Ivan Berzinsky cello, and Vassili Ilster piano). "Trio, B Flat Major" (Mozart), allegro. larghetto, allegretto. 7.20: News service; announcements.

## NIGHT SESSION

Announcer: John Stuart. Accompanist: Reg. Browne. 8.0: Dr. Loftus Hills, "Life's Facts and Fancies." 8.15: Under the auspices of the Nurses' Union and Seafarers' Association of Victoria. 8.30: Syd. Roy's Lyricals. 9.0: J. Howard King, bass-baritone. "Soldiers' songs." 9.7: Lindsay Bigalins, piano recital: "Five Preludes" (Scriabine). "Scherzo in B Minor" (Chopin). "Andaluzza" (Granados). "Orientale" (Amañ). "Claire de Lune" (Debussy). 9.32: Captain Donald McLean. "The Buccaneers and the Spirit of Anzac." 9.47: J. Howard King, bass-baritone. "The Voice of Anzac." 9.54: Scots' Church Choir. Organist and conductor, Mansley Greer; choir principals, soprano Annie Caddell, contralto Madame Greer Wood, tenor Colin Thomson, bass Leslie Paul. Annie Caddell, soprano. Solo and chorus from "The Requiem." "Ye Who New Sorrows" (Brahms). Mansley Greer, organ. "Cortège Funebre" (Dubois). Quartet and chorus from "The Last Judgment." "Bless are the Departed" (Spohr). Motet, "My Soul, There is a Country Far Beyond the Stars" (Parry). Anthem, "O Blest are They" (Shtchakowsky). Organ solo, "Marche Funebre" (Chopin). 10.24: News service; announcements. "God Save the King."

## 40G

### EARLY MORNING SESSION.

7.43: Time signals. 7.45: News service. 8.0: Records. 8.15: News service. 8.30: Close down.

### MORNING SESSION.

11.0: The official opening of the National War Memorial will be relayed from Canberra. The Prime Minister and other notables will take part in the ceremony. Guards of honor will be supplied by the Royal Australian and Naval Colleges. 12.0: Close down.

### MIDDAY SESSION.

Announcer: R. Wright. 1.0: Market reports and weather information. 1.15: A lunch-hour address. 2.0: Close down.

### AFTERNOON SESSION.

Anzac Day Celebrations. The afternoon transmission will consist of a relay of the Anzac Day celebrations arranged and controlled by the Returned Sailors and Soldiers' Imperial League. A microphone will be installed at a suitable point in the city, and the march-past of the returned men will be described. The rally will then be relayed from the Botanic Gardens. 2.30: From the saluting base, a description of the march. 3.0: From the Botanic Gardens, Anzac Day rally. 4.30: From the studio afternoon news. Close down.

### EARLY EVENING SESSION.

Announcer: R. Humphreys and A. V. James. 6.0: Mail train running times, mail information, shipping news. 6.5: Wurlitzer organ. 6.25: Commercial announcements. 6.30: Bedtime stories conducted by "The Sandman." 7.0: News of brief. 7.5: Stock Exchange news etc. 7.45: Lecture, "On the Walfaby," by Mr. J. F. F. Reid (editor, "Queensland Agricultural Journal").

### NIGHT SESSION.

#### ANZAC DAY CELEBRATIONS.

The Citizens' Anzac Day meeting arranged by and held under the auspices of his Worship the Mayor (Alderman W. A. Jolly, C.M.G.) will be relayed from the Exhibition Concert Hall. There will be addresses by His Excellency the Governor "Sir John Goodwin, K.C.B., C.M.G., D.S.O.), his Worship the Mayor (Ald. W. A. Jolly, C.M.G.), the Honorable the Premier (Hon. W. McCormack, M.L.A.), Mr. R. M. King, M.L.A. (Deputy-Leader of the Opposition), Mr. N. Mighels (State President, R.S.S.I.L.A.), Mr. J. E. Pumridge (president, Brisbane Chamber of Commerce). Choral items by the Curlew Male Choir, and Curlew Combined Choirs (conductor, Mr. R. Yorston). Solos by Mr. J. E. England.

The "Last Post" will be sounded by Sergeant J. Barnes, late 17th Battalion.

The Brisbane Municipal Concert Band (conductor, Mr. E. Jackson) will also render musical items.

8.0: From the Exhibition Hall—Citizens' Anzac Rally. 10.0: From the Studio—"The Daily Mail" news. "The Courier" news, weather news, movements of Travelling Dental Clinic. Close down.

## 6WF

12.30: Tune in. 12.35: Markets, News etc. 1.0: Time signal. 1.1: Weather bulletin supplied by the Meteorological Bureau of Western Australia. 1.3: Panatour hours, relayed from Messrs. Musgrove's, Ltd. Lyric House, Perth. 2.0: Close down, 3.30: Tune in. 3.35: Afternoon tea programme relayed from the Carlton Cafe; items from the studio. 4.30: Close down. 6.45: Tune in. 6.48: Bedtime stories by Unclea Duff and Percy. 7.5: Light music by the Station String Trio. 7.30: Commercial and general information. 7.45: Talk by Mr. Fred Alexander, M.A., on "Current Events in World Politics." 8.0: Time signal. 8.1: First weather bulletin. 8.1: Items by the C.T.A.'s Concert Party, orchestral section, conducted by Mr. M. Otto, relayed from the rehearsal room, C.T.A. clubhouse, St. George's Terrace, Perth. 8.50: Late news items by courtesy of the "Daily News" Newspaper Co., Ltd.; station announcements, ships within range announcement; late weather bulletin. 9.5: Programme continued from the C.T.A. Clubhouse. 10.30: Close down. 104.5 Metre Transmission.—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres, commencing at 6.45 p.m.

## 7ZL

### MIDDAY SESSION.

11.0: Transmission from St. David's Cathedral, Murray Street, Hobart. Anzac Service. 12.30: Close down.

### AFTERNOON SESSION.

3.0: Transmission from the North Hobart Oval, Combined State School Anzac Sports, described by "Olympus." 4.30: Close down.

### EARLY EVENING SESSION.

6.15: Selections. 6.30: "The Story Lady." 6.45: Selections. 7.0: Answers to letters and birthday greetings. 7.5: Selections. 7.15: News session.

### EVENING SESSION.

7.25: Transmission from Hobart Council of Churches' United Thanksgiving Service. 8.25: A programme of sacred and classical music. 9.45: News session. Close down.

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The WIRELESS WEEKLY

RADIO INFORMATION

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

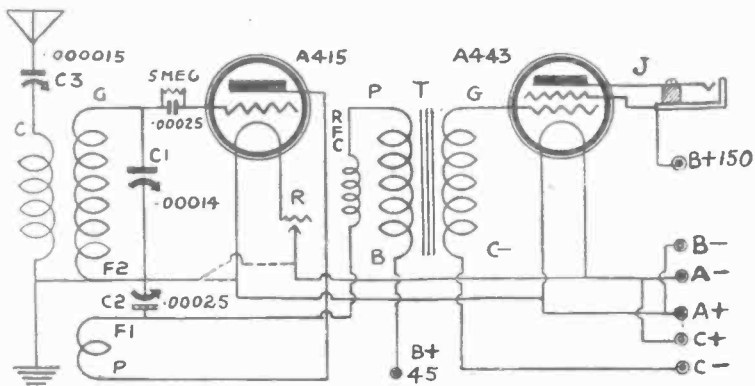
Correspondence Answered only through these Columns (See Coupon Below)

Service

GENERAL: Owing to the fact that our queries have increased enormously since the new "WIRELESS WEEKLY" appeared, and in accordance with many requests, queries will be answered in brief until those on hand are cleared. It is estimated that approximately 2,000 queries are outstanding, but if answered in brief, these will be cleared off within a few weeks.

F.W.W. (Collarenebri).—Repeat your queries. K.M.P. (South Coast).—Sold out of issue containing "Go-Getter" but the circuit was re-published last week. No doubt you now have a copy. G.S. (Vic.).—Sold out of this issue. Has any reader a spare copy of "W.W." dated July 13, 1928? If so, Mr. Geo. Snook, 5 Oxford Street, North Brighton, Vic., would like to get in touch with him. A.S.J. (Vic.).—"Go-Getter" article was re-published last week. A.E.B. (Plymouth).—Add two more fixed plates to your condenser. F.T.H. (Port Adelaide).—Your queries have been answered, and copies containing these answers have been forwarded as requested. No need to shield each condenser from the other. No need to insulate rotor plates from aluminium panel, as this is their ultimate connection. Amplifier mentioned O.K.

D.L. and K.W. (Coogee).—S.W. reception is very interesting. Your receiver is at fault. Bradley's set O.K. Try changing moving plates of condenser from A plus instead of A minus. W.E.W. (Peakburn).—Shielding would be an improvement. Screens must be large enough to allow 1/2 inches play all round coils. Not necessary to use S.G. valves, but would be an improvement. You should be able to remove R.F. valves and listen on detector and two audios to local stations. R.L.B. (City).—Allow an extra one-third number of turns, and adjust. N.J.C. (Wilmington).—Power valve N.G. for your purpose. Use proper rectifying valve. "GUS" (Darling Point).—Harrington's are agents for the Wasp Kit. Write them. Erection of television station indefinite. Advertise sale of meters in radio paper. Useful to amateurs. \* See below. GENERAL.—Please understand that our thanks for your good wishes are to be taken for granted until we have space to make special mention of that fact. C.A.L. (Goombungee).—Wind fifteen turns 24 gauge D.C. on a three-inch former. Connect aerial to first turn and earth to last turn. Place this coil near secondary, and adjust. This will make your set more selective. BAD SIGNATURE (Tweed Heads).—Broken-down condenser in set or faulty valve. Dry batteries every time for grid supply, no current taken—or very small. Wet batteries not worth the expense here. Wet batteries best for "A" and "B" supply. Use a neon lamp to obviate fluctuation of mains. Published recently. "Anyset Quality Amplifier" published recently. Your definition correct, with the exception that usually two or more Dynamic speakers are used. A.W.E. (Leichhardt).—Electrically set as proposed in question 1. Not necessary to place A.C. pack quite far away. Idea of this in eliminators is to eliminate or reduce A.C. hum. Pack can be placed as suggested in Q.3. W.S. (Brisbane).—Do not reconstruct set. Leave same as it is. Would like to publish rest of your set, but space forbids. C.N.B. (Lismore).—Number of turns on coils depends on circuit being used. Honeycomb and spiderweb coils out of date. Suggest (your set is probably a three-coil tuner) winding three coils on the one former and tuning by means of condensers. Aerial coil 20 turns on three-inch former. Space, 1/2-inch. Secondary, 47 turns, tuned by .0005 condenser. Reaction, 35 turns, tuned by .00025 condenser. Space between last two coils, 1/2-inch. Twenty-four gauge D.C.C. To tap coils, solder wire at that point at which it is desired coil to be tapped. J.D.B. (Banksia).—A detector and two audios are not suitable for inter-State reception, though it can be done. Increase length of aerial if there is no interference. C.J. (Brisbane).—Condensers O.K. for the Air King. Your supposition is correct. Ten turns in the aerial coil.



J.H.B. (Armidale) asks for a two-valve receiver using a coil kit that will cover all wavebands. The "All Wave" receiver shown here is one of the best yet developed. The Wasp kit was used in the original receiver, which is efficient on both short and long waves.

M. M'L. (Randwick).—Can any reader oblige H. M'Leod, 5 St. Mark's Road, Randwick, with a copy of "W.W." dated March 1, 1929? Suggest Countryman's One with stage of audio and a .0001 fixed condenser in aerial lead. Reason why set will not work until lightning arrester is switched off is because when this is on it provides a direct path to earth from the aerial. Evidently it is faulty. Look for an internal short. W.K.M. (Marburg).—The Tetrodyme is a Rice Neutrodyne adapted to S.G. valve and incorporating Reinhart's reaction. 42 At least 45 per cent. increase in volume using S.G. valve. 43 Distance would not nullify effect. F.C.D. (Singleton).—Have passed your letter on to Angus and Robertson, who will forward you a complete list. G.L.L. (Mosman).—Try reducing length of aerial to 80 feet. W.A.H. (Hamilton).—Try reversing leads to primary of first transformer, and also try .002 fixed condenser across secondary. Try R.F. choke in series with plate of detector valve. See that you are not placing too high voltage on detector. J.E.M. (Lismore).—Detector valve, reaction coil, or "B" battery faulty. The crackling may be static or flat "B" battery. J.R.H. (Boonah).—Condensers are too large. Would not advise reducing same.

ALFRED COATES (of Beach Avenue, Elwood, Vic.) wishes to know if any reader can supply him with a copy of "W.W." containing the S.W. Screen Grid Four. V.M.E.G. (Rose Bari).—Set is far from neutralized and is therefore unstable. Wastepaper will not help until set is balanced. Condensers will shortly be treated in "Proving Radio." Your theory wrong. G.R. (Redfern).—In order to satisfy your requirements, a special technical article would be required. See Mr. Allsop's article. D.H. (Armidale).—The reaction coil is mounted and wound inside the secondaries. Bolts and nuts (one each end). These act as a pivot, enabling the reaction coil to be moved round inside the secondary. C.D. (Lane Cove).—Use a very loose coupling to the aerial. J.K.C. (East Lismore).—Flat "B" batteries, loose connection, or faulty transformer windings. M.B. (Bargo).—This is to be treated in "Proving Radio" within a few weeks. R.H.M. (Tottenham).—Increased volume at night will show distortion if last valve, transformer, or speaker cannot handle it properly, or if you are

using too much reaction. Look also to grid bias of last audio valve. If necessary, use a power valve, 220 metres. Probably VK2LD or VK2AR. G.N. (Gordon).—Right! Your letter has been forwarded to the "Proving Radio Club's" organising secretary.

NO NAME (No Address).—Your error was in connecting the B plus maximum voltage to the B plus of the Grid on the S.G. valve. The S.G. takes about 80 volts on the additional grid. Circuit O.K. otherwise.

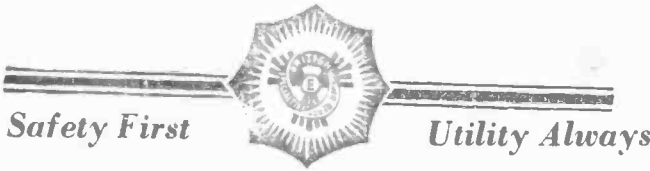
J.M.R. (Newcastle).—Bunkum! It would not be worth this firm's while to give you a valve that would only last for three weeks, especially when it is a Radiotron UX-20A. The fault is in your building. Write to the firm mentioned for further information on the rectifying valve. Re transformer: Faulty "B" supply. Re condenser: Add ten more turns to reaction coil.

"MIDGET" (Glebe).—Valve, battery, or transformer trouble. Have reprimanded 2NO as requested, and he is sending you a card. He is very busy just now.

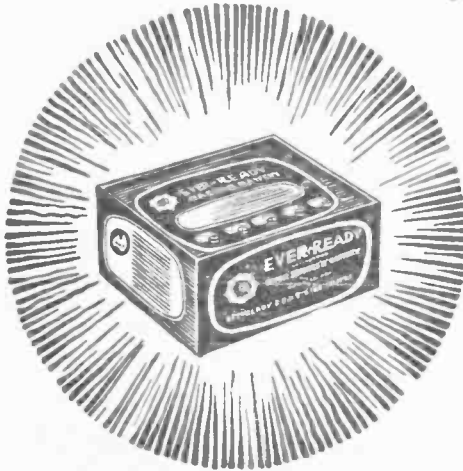
QUERY COUPON

If you are in difficulties about reception or set-construction, let us know, and we will endeavor to set you right. Make your questions brief to the point, and where possible show lay-out and wiring design. Under no circumstances will answers to queries be made by letter or by telephone. All answers will appear in the columns of this department in the order in which they are received.

To the Radio Information Service, W.W. (1929), 555 W. Park St., New York, N.Y. Please answer the accompanying queries in this coupon in order to hasten the time that I can a home-side reader.



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WEI

**J.E.B. (Bexley).**—Back of panel diagram of short wave adaptor is published in these columns as requested. You will require a .00025 variable condenser, a .00015 ditto, an R.F.C., coil kit, valve socket, two terminals, length of flexible wire, 1/2 dozen busbar, old valve base, panel, baseboard, .00025 fixed condenser, 10-meg grid leak.

**"PENAVOX"** (Erskinesville).—Stick to specifications. No; you are wrong. If the coil system suggested by you were the better, it would have been used. Fancy using slider system on a moderate transformer will have bigger step up than AF3. Don't use it as proposed, unless you want distortion. Two stages of audio at least will be necessary for best results. Speaker O.K. Eliminator mentioned O.K. for broadcast receivers up to three valves.

**N.B.O.B. (Alexandria).**—O.K. for bass notes. Not too favorable for high frequencies.

**C.E. (Beleny).**—Use No. 1 amplifier. Where resistance coupling is used, see that the primary is 100,000 ohms. First secondary 1 meg., second do 1/2-meg., third do 1/4-megohm. Anode Bend would be more suitable.

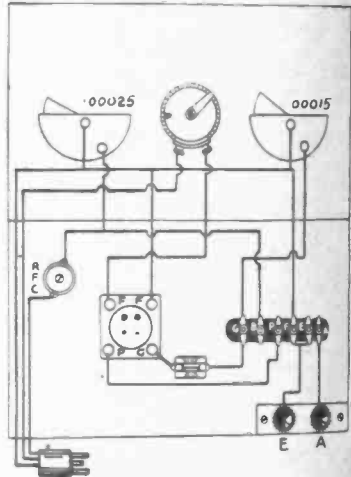
**G.G. (Sukstane).**—Wavetrap your only solution. Crackle is not the battery in your case, since it is apparent when filament is off. Most likely a loose lead. How long did it take you to write that letter? Took me long while to read it.

**J.B. (Bull).**—Circuit of S.W. set using one valve recently published in these columns, as was the other circuit requested. The amplifier may be used on either of the sets.

**A.M.M. (Brisbane).**—Adaptor O.K. Radiokes coil .30 ohm rheostat. R.F. choke, B406 Plug fits into detector socket of your Reimara. Deter for valve may be used in adaptor. No additional batteries. .00025 grid condenser, 10-meg. leak. Yes; only three connections to plug. Glad you liked wavetrap.

**A.M. (Blayne).**—A.C. Valves cannot be used off 240-volt mains. No; not available in Australia. No; 240 A.C. speaker would not work off D.C. You could procure a D.C. instrument.

**J.A.P. (Moonah).**—Build the short-wave adaptor appearing in these columns. The earth wire should be soldered to a clamp which is firmly placed round a water-pipe or tap. If the tap or water-pipe is not available, bury a pipe two feet in the ground (moist), and keep the lead as short as possible. See "Proving Radio" No. 16.



Back of panel wiring diagram of a good short-wave adaptor, asked for by a number of readers.

**W.B. (Roselle).**—"In a recent issue you gave an answer re adapting the screen grid valve to the Neutrodyne, but you didn't say just how the job is to be done. Now that is just what I want to know, and if the answer does not take too much of your space, would very much like to see same in next week's issue. Two radio and detector stages are in screening cans now."

**Answer:** The screen grid valve can be used in a Neutrodyne if required, but the set will no longer be a Neutrodyne. Why? Because the Neutrodyne is a set which depends on neutralisation for its DX qualities—whereas the S.G. valve does not normally require neutralisation. You must (first of all) have to leave out the neutralising condensers, and the coil system would have to be altered entirely. This would mean that the set would not be a Neutrodyne. The circuit would be the same as that given for the Screen Grid Marco Four, published in these columns March 8, 1929, or the 1229 Solodyne. Therefore, the circuit of the latter, which more closely resembles the Neutrodyne, will be published in these columns next week. The screens are shown by double lines. If you want any more information, write again.

**T.E. (Brisbane).**—"In 'Proving Radio,' which I find very interesting, having performed most of the experiments very successfully, I read with absorbing interest your remarks on the Heavyside Layer. You mentioned the fact that the refraction angle was equal to the angle at which the wave struck the Heavyside layer. Upon what is this angle dependent?"

**Answer:** The angle of deflection (as it is sometimes called) depends entirely upon the frequency at which the waves are travelling. The angle is less from the earth, which is assumed to be a parallel line. Thus, if the wave was sent straight upwards, it would have a deflection angle of 90 degrees. This frequency would be good for long distances, but practically no use for short distances, as the deflection angle would be 90 degrees. The following diagram explains. It has been exaggerated somewhat to make the meaning clear.

**C. W. McLean, Durham Downs Station, Thargomindah,** urgently requires a copy of "WIRELESS WEEKLY" containing a copy of the P1 circuit.

**Answer:** Sorry we have no copies, but there is your request. Thanks for your kind remarks, but there is regret we cannot publish them, owing to pressure of space. A few readers who doubted the recent photograph published of our queries basket, have been in to see for themselves!

**SOME BRIEF REPLIES.**

**L. MC. (Haberfield).**—Use a wiretrap. Several have been published not only in these columns, but also in articles, lately.

**C.B. (Lane Cove).**—You are using too high voltage on your bar amplifier, or the diaphragm has become cracked. On the other hand, the B1 battery of your set may be run down. This would cause the same effect. Yes, use a stage of audio amplification. Re the coil, depends on the quality of your home-made one, and the dielectric used. Radiokes (which you suggest) is very efficient. Yes, you could use any type of reaction you wish in the Receiving Letter to use a variable condenser than a fixed condenser.

**R.F.H. (Fiji).**—Chance of address noted. Use stage of resistance between transformer stages. Primary, 100,000 ohms resistance. Secondary, 10 megohms. Condenser, 5 m.f. D.C. B406. What comes have you missed? Your letter passed on to Back Number Dept. Since you have changed your address probably the numbers you missed await you there.

**G.R.S. (Lane Cove).**—Primary, 16 D.C.C. Secondary, 12 D.C. Ionised winding 14 D.C.C. 5 volt winding 14 D.C.C.

**"Ham" (Ballarat).**—No; you must not build a transmitter before you obtain your license. The 200 volt D.C. can be used on the plate of the transmitting valve. However, the 201A plate will not stand up to any long period of such high voltage. You will have to draw a circuit from memory of the Colpitts, Hartley, or other type of transformer. Work out some sums in connection with condensers, batteries, resistances, etc. Describe the theory of certain pieces of apparatus. Explain the procedure in sending and receiving messages. Know the abbreviations. Know the priority assigned. Pass a sending and receiving test in Morse code at 12 words per minute. Held every quarter. Write to P.M.G., Melbourne. Use a shield at back of panel, insulating components from it and connecting it to earth. Try reversing grid return.

**J.J. (Hopefield).**—You want a lot—but here you are. A108.4 A109—45, A406—45, A409—1.2, A411—3, A412—3, A425—1.2, A426—5, A441—1, B503—1.8, B402—2.4, B406—1.4, B409—2, B443—1.8. I should think 15 m.a. is a large consumption. The A442 slope in m.a. is only one, not 15 m.a.

**O.V.R. (Murstville).**—When readers make inquiries regarding queries will they please repeat their query.

**J.J.A. (Paddington).**—Aluminium from Colvett's store and from Sydney Sheet Lead Works. Loose leads cause resistance, demanding extra current, to push impulses through to speaker. Remedy to use thick or heavy gauge wire.

**J.J. (Lakemba).**—200 turns 28 D.S.C., tapped at 140th turn.

**W.B.S. (Newtown).**—Any short wave coils. See Go-Better article.

**F.T. (Abbotsford).**—"Go-Getter" published last week.

**S.J. (Kogarah).**—Aerial O.K. Take a few turns of coil (secondary).

**J.B.F. (Brisbane).**—Write to Economic Radio

**"Puzzled" (Dundee).**—Don't

**W.R.S. (Rose Park).**—(1) No. (2) 1-1 (3) 1-1. No. too high ratio.

**C.N. McI. (Durham Downs Station).**—No copies available under a licence containing the P1 three-valve, published three years ago. Inquirer, C. N. McLean, Durham Downs Station, Thargomindah.

**J.G.C. (Campbell).**—Glad you like half-hour character, N.G. for "A" batteries.

**H.V.L. (Queensland).**—Idea O.K. in theory, N.G. practice.

**Something St. L. (Mandy).**—You MUST use rheostat on R.F. and detector.

**J.L.W. (Stannmore).**—The easiest way to procure this transformer is to collect empty bottles until you have enough to cash for 20. Then buy one (a transformer). You do not have cross-sections, tips of iron to be used, or whether stator is to be used.

**H.A. (Cessnock).**—The All-Empire

**P.W.E. (Quirindi).**—Haven't received the pamphlet yet. Send it attached to another letter. Haven't time to search through 2000 letters containing them together.

**"Womt" (Bowral).**—(1) The Marnock Five. (2) 1-1. (3) No.

**W.D.R. (Croydon).**—Sorry, no room in queries section on this subject will appear in about a month's time.

**W.B. (Juncos).**—Try change of grid leak.

**A.B. (Lakemba).**—Test valves. Think you will see W. about renewing.

**H.C. (Dorrigo).**—There is no connection between primary and secondary, as the R.F. impulses are picked up by the secondary by means of induction

in "Proving Radio" experiments. Your receiver should be returned to the makers for attention, may be faulty grid leak or too high voltage on detector. Several readers have suggested publishing "Proving Radio" in book form, and the question is being considered.

**E.S. (Ashfield).**—When you'd make your letters more correct. Whistle quite in order.

**General.**—Will readers kindly assist by making their letters as brief as possible. More time is taken up finding out what the inquirer wants to know than in answering the query. Leave ex-

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2.50aect.	1 10 0	60v.	3 16 3	ACME ELIMINATOR	10 15 0
3v. 30aect.	2 10 0	80v.	5 1 6	ACME SUPER	15 15 0
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4v. 60aect.	4 10 0				

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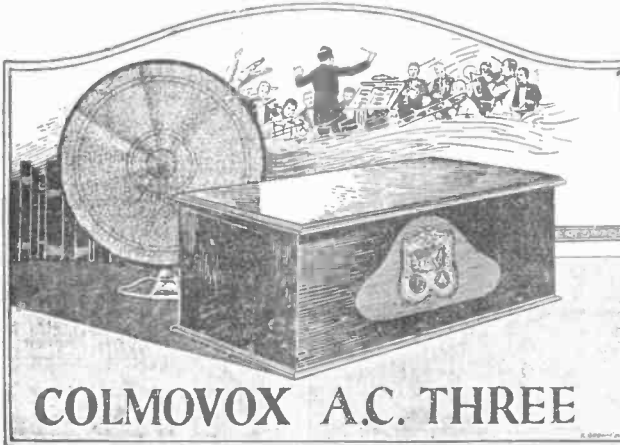
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Colmovox" Three-valve Receiver	17	10	0	3	0	0	6	2		
Colmovox" Four-valve Receiver	28	0	0	4	0	0	9	8		
Colmovox" Five-valve Receiver	33	10	0	6	0	0	11	8		
Colmovox" One-valve Receiver	5	10	0	0	10	0	5	0		
Colmovox" Crystal Receiver	3	10	0	0	7	0	3	6		

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## "AIR KING" RECEIVER

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planations till afterwards. Here is sample query, etc. (then follow with particulars.)

**J.H.A. (Queensland).**—Condensers O.K. Not necessary to have high-voltage transformer, but advisable. Condensers are sold in six-inch lengths. Cut away spare ends after coils have been wound, leaving enough spare edge for mounting. Fair results on speaker, though a three-valve set is not really suitable for inter-State reception.

**B.M.B. (Double Bay).**—Should oscillate easily. Try shortening out resistance.

**"Pacific" (Sydney).**—Ferranti 25-1. Not worth replacing north by a cone with the dia.

**S.O.S. ("Wireless Weekly")** containing article "Kug." Crystal Receiver urgently required by K. Fenson, 58 Wardell Road, Peterham. Can some reader kindly oblige?

**A.K. (Townsville).**—Yes, if you make it a resistance stage. See reply to another inquirer, whose reply is published this week. Yes, S.O. Suggest two stages. O.K. for inter-State. Circuit O.K. Your fault is your letters are too long.

**F.R.H. (Marrickville).**—Flat "A" battery. Why do readers want a list of parts published in columns when that list has appeared with the article? Many wave-traps have been published recently. See other query columns also.

**Enthusiast (Darlington).**—Quite O.K.

**D.C. (Brisbane).**—Aerial two, secondary three, reaction two turns. Other coils in proportion. Allow 10 metres overlap.

**E. McG. (Hurstville).**—Eliminator too near set, or leads from socket to eliminator too near aerial. See also below.

**F.C.R. (Newtown).**—See below.

**General.**—Many readers complain that, whilst they could receive inter-State stations easily with dry batteries, they encounter difficulty and tuning when using an eliminator. The reason is because the voltages on the older-type eliminators could not be carried to a matter of say five volts. This is necessary on inter-State work. The best idea is to use a variable resistance in series with the detector and R.F. leads. Where the R.F. tapping is placed on the same terminal as the detector tapping an R.F. choke should be included in the detector plus lead.

**W.B. (Manly).**—R.F. transmitting aerial is at Pennant Hills; 2B'S at Coogee; 2G'S at Manly; 2UW's in George Street, City. (2) No you would not get good results following this idea.

**R.F. (Tenterville).**—You could use one of the variable condensers, 00028; the fixed condenser; the variable grid leak; the rheostat; the Jack; the valves; the transformers. Salt-silvering solution is referred to. The crystals can be bought from any chemist's. The other variable condenser you mention has a capacity of .0065 mfd.

**Cat.M. (Glenview).**—Valve no better than the A409. The inquirer you mention wishes to know the correct R.F. 4-volt valve.

**T.C. (Thirroul).**—Mr. Allsop advises his amplifier article will be completed in the Exhibition number.

**C.D.P. (Summer Hill).**—Wind 70 turns and tap.

**F.B. (Dulwich Hill).**—Battery must be changed first. Rectifier of charger must be formed before it can be used to charge battery. See "Proving" (recent issue). Your circuit, O.K., with the exception that the lead you have marked negative should be positive, and vice-versa. This will probably explain why results were nil. Charger could be used in conjunction with smaller lamp to charge your accumulator.

**T.E.M.K. (Mosman).**—1½ amps field. Magnavox is made in U.S.A. Motor-boating is the term applied to the sound heard in some radio sets, particularly those that obtain power from eliminators. It usually occurs when an eliminator using a tapped resistance is used, because this resistance forms a common return path for the anodes and causes each valve in the receiver to interfere with the other. The trouble may be eliminated to a large extent by employing the maximum tapping of the eliminator, and employing the anode feed system. The voltage is reduced to the required output for each stage by means of an appropriate anode feed resistance. See two sets on one aerial—yes.

**W.H. (Enfield).**—Your transformer O.K.

**E.M.R. (Marrickville).**—Try placing choke in S.O. B plus lead.

**"New Reader" (Ballarat).**—No; there are no "Proving Radio" Clubs at Ballarat. Why not form one? Send full address and I will make mention of your efforts to form a club. Cannot place any of the stations you mention. Think you must have the calls wrong. Yes; you will have to understand generators, etc.

**C. Jones, 781 Edgeware Road, Marrickville,** asks if any reader can supply him with a copy of "WIRELESS WEEKLY" containing the Browning Deak circuit.

**M.E.H. (Hurstville).**—Incorrect voltages on S.O. valve.

**R.V. (Concord West).**—Shorted aerial. Advice single-wire type. Yes, used a semi-fixed crystal. Under your present arrangement you would get interference and would find your set insensitive. O.K. when both sets are tuned to same station. Try a .0001 fixed condenser in series with the aerial.

**S.H. (Lane Cove).**—Your letter has been passed on to Angus and Robertson, who, no doubt, will send you a list of books in connection with your inquiries. These will also be treated in "Proving Radio" in a similar manner to the theory of the "Iteration of the valve."

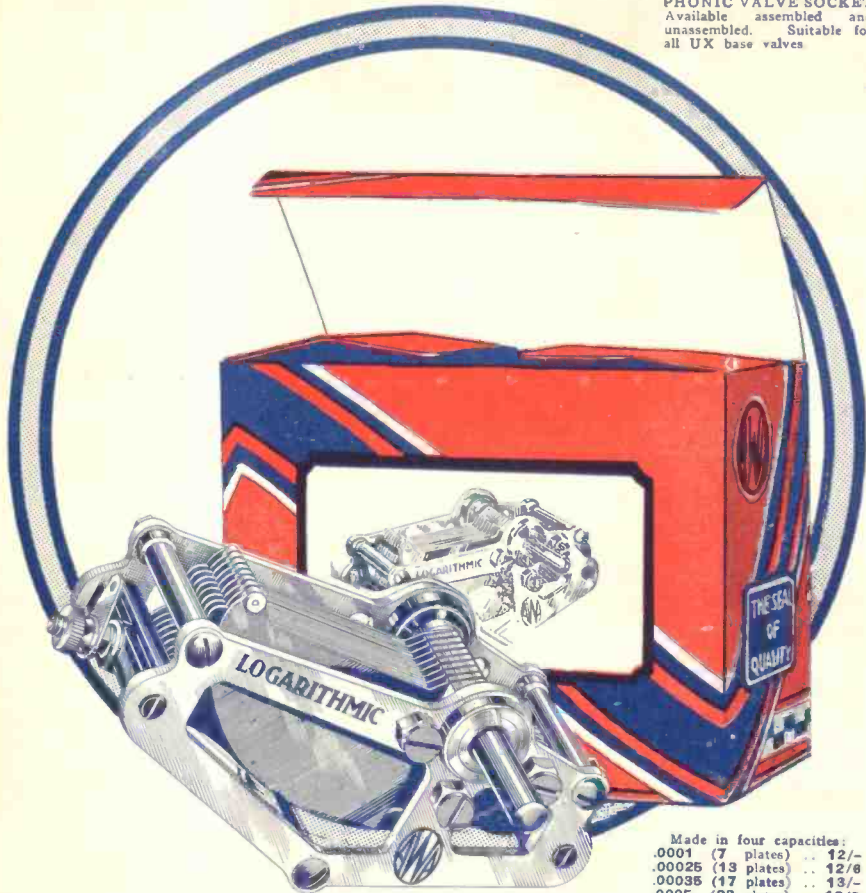
**A.H.M. (Bexley).**—Wind 70 turns and tap every ten.

**F.L. (Croydon).**—Do not work set too near oscillation point. Place receiver on books, and keep speaker away from set. See that speaker is not pointing towards set.

**J.C. (Queen'sland).**—3005 condensers too large. Build the Go-Getter, which appeared last week.

**E.T. (St. Leonard's).**—Use a Ferranti Output transformer, 25V. No, not necessary, but advisable for protection purposes. Good quality milliammeter is essential, or you will only get a factious reading from an eliminator. Milliammeter should have high resistance. Should only be switched in when required.

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