



You can now replace

**ANY VALVE
BATTERY OPERATED
or 4 VOLT A.C WITH
ITS EQUIVALENT
in the
BRITISH BUILT
AND BETTER**

**Osram
Valves**

BRITISH GENERAL ELECTRIC CO., LTD.,

Head Office and Public Showrooms: 104-114 Clarence Street, Sydney.
Branches at Newcastle, Melbourne, Adelaide, Perth, Christchurch, Wellington,
Auckland.

Sole Agents at Brisbane and Hobart.



PURCHASE
YOUR
RADIO
REQUIREMENTS
FROM
SYDNEY'S
MOST
RELIABLE
STORE
"PRICE'S."

Now Showing !!!
THE ULTIMATE IN RECEIVERS
"PHILIPS RADIOPLAYER FOUR"

(THE EQUAL OF ANY SIX.)
TWO STAGES SCREEN-GRID H.F.
DETECTOR.

SPECIAL 300v PENTHODE

£39/10/0

AMPLIFIER.

TERMS.

YOUR
RADIO
FRIENDS
WILL
ALWAYS
RECOMMEND
PRICE'S
FOR A
FAIR DEAL

HYDRA
CONDENSERS

.5 2/6
1 2/6
2 3/-
4 5/-

500v. TESTED.

SIX SIXTY
CONE SPEAKER
UNIT.

A REAL SURPRISE.

12/6

SUPER
ELIMINATOR.

(Operates Nine
Valves),

95/-

INCLUDING UX 280.

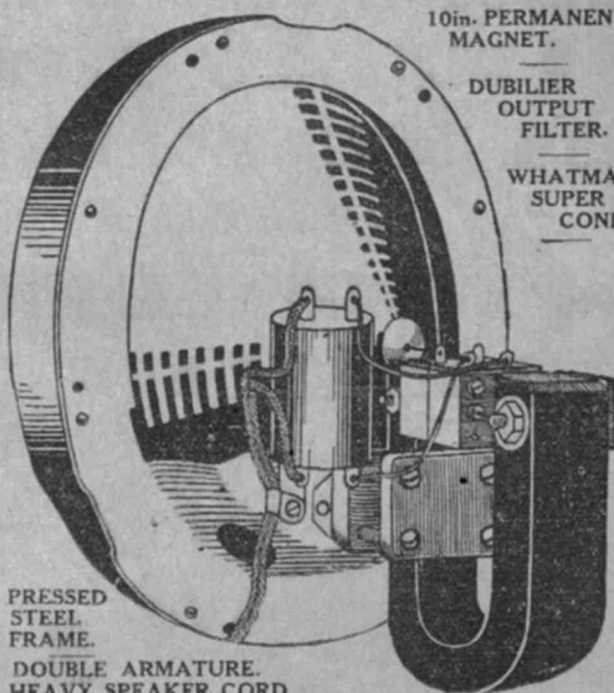
THREE VALVE
RECEIVER
CHASSIS

(No Panel).

15/-

Transformers alone
guaranteed double
price asked.

ASK THE
MAN WHO
OWNS ONE !!!



THE "TIMMONS" UNIT
THE TONE OF A DYNAMIC—NO FIELD CURRENT.

63/-

BAFFLE SUPPLIED.

B.T.H.
GRAMOPHONE
PICK-UP
THE WONDER UNIT.

Usually £9/10/-.

90/-

SWAN
NEUTRODYNE
KIT.

Bakelite Space Wound
Coils,

10/6

SPEAKER
EXTENSION
CORDS.

Tipped both ends.
20ft. 2/3
30ft. 3/3
50ft. 4/3

CONNECTORS 1/6.

DIORA
MIDGET
VERNIER
DIALS.

A REAL GOOD JOB.

3/6

PROMPT
RETURN
POST
SERVICE.

PRICE'S RADIO SERVICE

"PRICE'S CORNER."
ANGEL PLACE.

B4146.

BOX 3326 P.P.

ADD
POSTAGE
TO
AVOID DELAY.

What Does it Cost?



Who provides the enormous revenue expended upon American Broadcasting? Who pays the thousands of pounds required to provide one hour of entertainment?



DURING 1928 the National Broadcasting Company of America spent £1,000,000 on talent in their programmes, and £400,000 for the rental of wires to carry these programmes to associated stations. The figures for 1929 are not yet available, but are expected to exceed the preceding year's figures.

Remembering that American listeners do not pay licence fees, the question immediately occurs: Who provides the N.B.C. with this amount of money? The cost is borne by American industry, and some extraordinary figures are revealed. This is how it is done:—

The Blank Company, which manufactures, say, coffee, wishes to take advantage of broadcasting as an advertising medium. It books one hour a week on the National Broadcasting Company network. Each week, at the commencement of what becomes known as "The Blank Hour," the announcer makes a statement something like this:—"And now we introduce to the radio audience the Blank Quartet, which will entertain you for an hour by courtesy of the Blank Company, manufacturers of Blank coffee. The first item will be . . ." That is all. For an hour the announcements relate to items on the programme only. At the end of the hour, the announcement which concludes it runs something like this:—"That, ladies and gentlemen, concludes the programme of the Blank Quartet, which comes to you by courtesy of the Blank Company, manufacturers of Blank Coffee."

What does this hour cost the Blank Company?

The most important item to be thought of first is, of course, the actual cost of a station's time on the hour. And by glancing over the rate card of the National Broadcasting Company of the United States, one finds that an hour's time can be purchased for sums ranging from £38 for stations in such towns as Des Moines and Hot Springs to £150 for WEA and WJZ, New York.

But, of course, one must be a sport if he is going to put on a programme, and so naturally he would want a network. If he

should choose the Red network, with WEA as key station and nineteen other broadcasters hooked to it, this would cost £978. If, however, he is of a more conservative nature, the producer would select the Blue network, with WJZ as key station, and ten stations linked along the way; this would cost only £670.

If, however, the prospective programme producer wants to insure himself national

four stations, offers no basis for comparison, either in cost per station or coverage. The so-called basic network, with WABC as the key station and nineteen associates, is listed at £943 an hour, and supplemental stations are listed at from £25 for a station such as Harrisburg, Pa., to £65 for Montreal.

Thus it's no cheap amusement that the American listener tunes in night after night in the most casual sort of manner. But oftentimes it happens that the air doesn't even approach the talent in cost.

For example, it is said that Maurice Chevalier, the actor-talkie star, asks £3000 for a single performance. Van and Schenck, for performing before the microphone, received £400 for a quarter of an hour's turn; Paul Whiteman received £1000 for a similar time; Fanny Brice gets £500 for singing for fifteen minutes; and Al Jolson, for a quarter of an hour's work, gets £1000. Franklyn Baur, the Firestone tenor, receives £200 a week, and it is understood that Vaughn de Leath, soprano on the same hour, receives £150 a week, the same salary which, it is said, that Olive Palmer receives.

These salaries for singers range all the way down, of course, to £3, which sum is paid many of the singers in choruses and small groups.

Prices paid for orchestras rise into the hundreds of pounds, of course depending on the reputation of the ensembles. It is understood that the Old Gold-Paul Whiteman orchestra is paid £1600 for a single performance; that Rudy Vallee receives £600 for his appearance on the Fleischmann Hour, and it was stated recently that Vincent Lopez will receive £500 a week for his appearances on the Pure Oil programmes.

Actors receive from £10 to £30, and the salaries of announcers range from nominal sums to £50 a job; which sum, it is reported, Graham McNamee, "the dean of American announcers," receives.

How much, then, would it cost to produce the Palmolive, Philco, General Electric, Lucky Strike Hours, each of which has half a dozen or so such artists and announcers?

2FC-2BL COT

On January 20, the Australian Broadcasting inaugurated the 2FC and 2BL Birthday League, in which children were invited to send in 2/6 for a birthday call during the various children's sessions, which, without deduction, went towards naming a 2FC and 2BL cot in the Children's Hospital when the sum of £60 was realised.

So great was the response of the children to the idea that on Wednesday, February 26, barely five weeks after the idea was mooted, the first 2FC and 2BL Children's Hospital Cot became an established fact. The cot will be named in the grounds of the Children's Hospital, Camperdown, on Wednesday, March 15, at 3.30 p.m., when the proceedings will be broadcast by 2FC.

Each subsequent £60 raised will name a further 2FC and 2BL Cot in the Children's Hospital.

audiences with stations dotting the country at less gaping intervals, he may choose the basic networks.

The basic Red network, with forty-seven cities, which is used for several well-known programmes, is listed at £2036, and the basic Blue network, with thirty-eight cities, is quoted at £1728.

The Columbia Broadcasting System, whose list card claims for it a network of fifty-



PAUL WHITEMAN

got £1000 for a quarter of an hour on the air.



AL JOLSON

also received £1000 for the same time on the air.



MAURICE CHEVALIER

wants £3000 for a single broadcast performance.

IT SEEMS TO ME

BUILD a short-wave set and listen to the world." Yes, it's a fine thought—something like those that the highly imaginative writers get hold of. "Dine in Sydney one day and in London the next," they say, and then go on to tell of the marvellous developments in giant aircraft that will make this possible. My own short-wave experiences would suggest some amendments to the much repeated slogan about listening to the world. I think it should go like this: "Build a short-wave set; and if your location is a quiet one; and if the set is any good; and if you have the ability to split hairs in tuning; and if you happen to listen at the right time; and if conditions at the moment happen to be good, well then, it is quite probable that you will be able to hear garbled words and mushy music from some foreign country.

But this, we hasten to insist, is not intended to discourage prospective short-wave listeners. I have listened from time to time on the short-waves for the past six or seven years and freely admit that fiddling around with a short-wave set can be much more absorbing even than listening on the broadcast band. What I do say, though, is that it is interesting or absorbing particularly because of the problems which must be overcome before one can listen to the music of a half-dozen foreign countries.

Until the other day I had not listened on the short-wave for about six months. But stories of all the wonderful new stations on the air made it impossible for me to stay away any longer. So I put in a short-wave set—quite an excellent affair, though I do say it myself. And when it was all fixed up, I grabbed hold of the knobs in anticipation of hearing all sorts of foreign stations crashing through at fine strength. Unfortunately, someone near-by had a refrigerator running and all I could hear was the harsh roar of its motor. Eventually the thing stopped and I tuned carefully from about 14 metres up to 50. Yes, there were the same old commercials blating about; and the amateur bands were filled with the usual brilliant array of chirps and squawks. I concluded that it was a fine night; that I would make a careful search for these so far elusive broadcasters. I did. For a mere four hours I tracked across the band with all possible caution, stopping to investigate anything that sounded at all like a 'phone carrier. The entire bag for the night comprised a rather squashy Dutch 'phone conversation (which I decided was the Java-Holland link) and two broadcasters of which the speech and music was just so near to being unintelligible that it didn't matter. And, believe me, there was nothing wrong with the set. Stations like WIZ, on the east coast of America, and many of the eastern American amateurs could be copied well with the detector out of oscillation.

Normally I have little spare time, but the possibility of hearing some of these wonderful new stations drew me to the set night after night, and held me twiddling those knobs for longer periods than I could really afford. And the result, after almost a week of odd hours and half hours of listening, is that I have yet to hear any speech or music which at all compares with that we used to hear from old KDKA almost six years ago.

The whole trouble, of course, is that I have not listened at the right times, and that conditions when I have listened have not been the best. The KGO station, judging from the only schedule I can find, has changed its operating periods. W2XAF, it would seem, has changed its habits, and is no longer to be found when I thought it should. G5SW, very clearly, is working at some times with which I am not familiar. All in all there is nothing much to hold on to. If I were content and able to listen continuously (as Mr. R. N. Shaw must) I would probably hear something worth while. As it is, I must switch on the thing whenever I am passing it in the hope that at last I will happen to strike one of the more powerful stations at the right time.

All of which makes me wonder why the deuce it is that these short-wave broadcasters, most of which operate for the purposes of propaganda and NOT for experiment, should not be able to plan a schedule ahead of time, make it generally known throughout the world, AND THEN STICK TO IT. "Ah, ha," the broadcasters would say, I suppose, "We operate purely for experimental work with the aim of collecting data on the

phenomena associated with high-frequency transmission. We conduct experiment which is of consequence only to our special observers in other parts of the world. To the devil with these amateur eavesdroppers!" As a matter of fact, it has already been said. And it is, without doubt, just so much drivel. Of course, many of the stations really are serving in research into high-frequency phenomena part of the time. Just the same, most of them don't have to put on fully-fledged programmes for academic performance studies; and columns of blah-blah in the world's press about their marvellous results in reaching far distant countries (always with the name of the company operating the station splashed around) have no particularly obvious connection with recondite researches.

• • • • •

BUT while we think of it and while we are on the subject we simply must express some of our thoughts about rotten broadcasting stations and rotten navy and commercial transmitters—thoughts which were generated as we wandered through the maze of harmonics that clutter up all the short-wave bands. We have, throughout the world, a continual scramble for short-wave channel allocations. Commercial concerns and private individuals in every country are out to grab off a few frequencies for their own use at any cost. And, we are told, there simply are not enough frequencies to go round. The amateurs of the world, to conserve space, have been packed up into small areas and all non-essential experiment or communication has had the lid put on it; all with the idea of keeping the short-waves exclusively for work of undisputed importance.

After the last few years of spring cleaning on the short-waves it is to be hoped that at least some countries have justified all the restriction and control that the short-wave experimenter has had to bow to. Australia, very definitely, has not. The short-wave territory, as casually examined from the vantage point supplied by any good receiver, is a hideous mess. Rotten broadcasting transmitters spew harmonics across the entire gamut of useful frequencies, and equally antiquated naval stations belch in staggering Morse their interminable traffic. With all the international conferences; with all the restriction and control; with all the advances in the technique of transmission, individual Australian stations continue to bluster their wretched signals across whole bands of frequencies wide enough to accommodate a dozen modern transmitters. What amazes me is that the Australian amateur experimenters have stood the racket for so long. Cramped in narrow slices of the valuable territory which they so aided in developing, these keen operators just sit still (and possibly swear) when some station of "undisputed importance" blots out great chunks of their own private frequencies. That amateurs should continue to suffer such conditions is just a little more evidence of the pitiful weakness of organised amateur radio in this country.

• • • • •

TWENTY-FOUR hours have elapsed since I wrote the stuff that precedes this. And in the interval I spent yet another evening listening on the short waves. Last night I attained success. I listened on the right wavelength at the right time under the right conditions. W2XAF was testing with our own 2ME and with 2YA. The Schenectady station was tearing in at fine strength with voices that were full and crisp. Fading was so slight as to be of little consequence, and we filled up the moving-coil speaker with everything that happened. And we all (for there were several of us) got a mighty fine kick out of it. This morning, in cold blood, as I reflect on the KDKA or the 2XAF of four or five years ago, I am impressed by the unfortunate way in which Government interference and inertia have limited technical advances—let alone their application to world-wide broadcasting and telephone services.



Amos

How SUN SPOTS Affect Radio

A short article on a peculiar phenomenon, which affects reception on your receiver.

By INIGO JONES

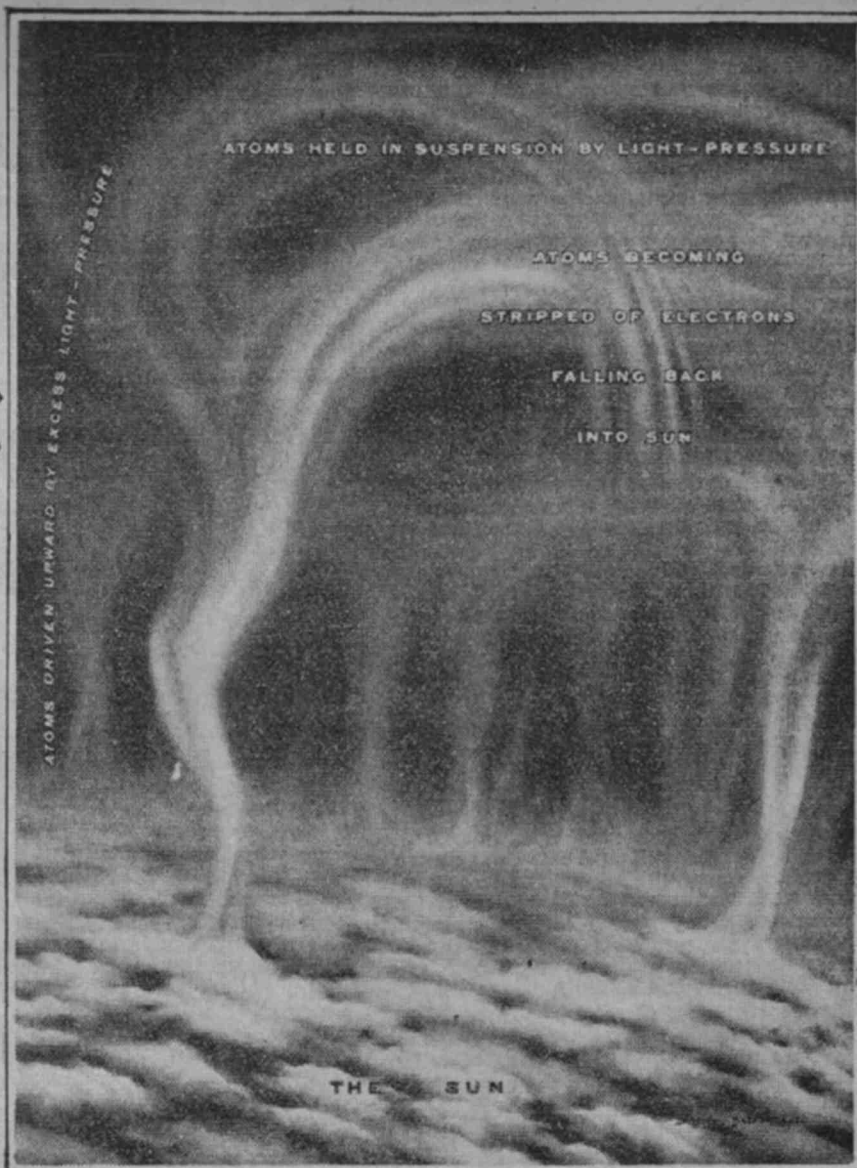
(Director of the Bureau of Seasonal Forecasting, Queensland)

THERE was a short article in this paper lately on the effect of sunspots on radio reception, in which it was stated that there should be an improvement owing to the fact that the sunspot maximum was passed and that, as the minimum, or time of least sunspot frequency drew near, very little trouble is likely to be noticed, and radio patrons would get clear definition in their items. This is quite likely to be borne out, and I shall endeavor to explain how this happens.

In the research conducted by this bureau, the chief thing taken into consideration is the effect of the sun and the easiest way to tell how that effect is changing is by taking note of the sunspots from day to day, and by comparing the present with those observed in the past. When this is done it is found that there is a period in the sunspots, and it is found that, to a large extent, this period is also found in the weather, and by finding the exact relation between them, it is hoped to be able to forecast the seasons for long periods in advance, and the tests that have been conducted have been very encouraging in this respect.

It has long been noticed that when there is a sudden outbreak of sunspots, which are similar to cyclones, and in some respects to volcanoes, on the earth, there is a sudden increase in atmospheric, or static, and the larger the group the more disturbing these are, and, as we know that the magnetic force fluctuates in direct ratio to the sunspots, it is easy to believe that the wireless may be affected, also; and that the sun is largely responsible is also clear from the fact that reception is generally better at night and in winter, and careful research into these facts reveal some very curious features.

In this seasonal research, if the sunspots were to be the centre round which the cycles of repetition turned, then it must be found, if possible, what caused the sunspot



This extraordinary illustration from the "Illustrated London Times," taken from observatory photographs, gives a clear idea of the surface of the sun. Mr. Scriven Bolton, writing about these photographs, says:—"Some very interesting deductions have been made concerning the remarkable influence of light-pressure upon the clouds which surround the sun. The rays of light emitted by the sun exert a pressure, or 'push,' upon any solid body upon which they fall. So enormous is this pressure that even at the earth's great distance from the sun the 'push' upon the sunlit hemisphere is equivalent to 75,000 tons. And it has been calculated that, although gravitation at the sun's surface exceeds terrestrial gravity some twenty-seven times, yet it is less than the upward 'push' of light, so that the atoms comprising the solar clouds (chiefly the atoms of hydrogen, helium, sodium, and calcium) are driven upward by light-pressure, and become suspended at a height where the 'push' of light and the 'pull' of gravity exactly balance one another. Here they often remain in suspension for months, and even years. Indeed, there would apparently be nothing to disturb their equilibrium were it not that they ultimately become ionised, or stripped of electrons. Henceforth they lose the support of light-pressure, and fall back into the sun under the 'pull' of gravity. Thus the general upward movement of atoms under excess light-pressure exactly compensates the atoms which are continually falling, or getting into an ionised state. The impact which the falling atoms make upon the heavier atoms below may cause them to be again flung up to a great height."

To go fully into this would be too technical for this present article, but the general principle is that the sun and all its phenomena are of an electro-magnetic nature, and that, therefore, the sunspot tide must be controlled in that way. After careful consideration and analysis of the data, it was found most probable that it was the action of the planets in a certain position with reference to the sun's own motion that produced this effect, and that the main effect was due to the giant planet Jupiter, and when the dates were compared it was found that this was so close as to be certainly the main determining cause. If this is so, then the next minimum, or time of almost no spots, will be in 1936, and if radio improves from that cause, then it will go on getting better till nearly 1937.

The reason of this is more curious still. It has been found that the amount of ozone in the upper air varies very greatly, and it is also believed to act as a blanket to the earth. Recent researches by Dr. Harrison show that there is, in England, least ozone in the upper air in the late summer

and most in early spring. He also found, as others had, that the ultra-violet light tends to destroy the ozone, and this ray is given off very much more when there are many as against the time when there are few sunspots. Ozone is oxygen in a special state.

Now we must consider another well-known fact. The earth's seasons are regulated by the tilt of the earth's axis, which is constant as regards the universe, but, therefore, changes as regards the sun, so that the sun is high overhead in the summer and low in the sky at midday in winter. NOW THE SUN'S AXIS IS TILTED TOO; and in just the same way it first shows us one of its poles and then the other, so that for six months we cannot see the North Pole of the sun, and then for the same period we are unable to see the south. It also happens that the sun's southern hemisphere and that of the earth are turned towards each other in the late summer in this country and away from each other in our winter.

Now comes another important fact into bearing: the sunspots are not scattered all

over the sun, but are confined to two belts, not far from the sun's equator. It will be seen that in summer we and also Europe and America in their turn, are directly bombarded by the emanations of the sunspots, consisting of the ultra-violet rays and others. The sunspots being immense vortices from which are projected into space incalculable volumes of these electronic matters. The effect, then, is clear, in the summer being the time of greatest juxtaposition the ozone blanket is greatly reduced, and the fullest penetration is permitted to sunspot influence, which, being of an electro-magnetic character, therefore increases the static, whistling and other troubles, and increasing the difficulty of fading adds to the troubles of radio, and it is also clear that, as the sunspot activity declines, as it must do in the next six years, reception must steadily improve, till a maximum of clearness comes with the next sunspot minimum, about 1936.

Stomer has shown, in several articles in "Nature," that whistling and echoes are due to the sun and the sun alone, and, therefore, must be due to sunspot activity, and the Meteorological Office in Switzerland is actually using atmospherics to predict a certain type of heat that occurs in that country, and it is now proposed to extend this to other meteorological features, whereby short length forecasts may be given of great accuracy.

The identity of the sunspot period and the period of Jupiter make the forecasting of these matters in general easy, and it has been found that the sweep past the sun's path of Jupiter is the critical time of the sunspot minimum. The great luminary, once supposed to be the still and immovable ruler of our system, is as incapable of rest as all other stars, and speeds for ever north at the tremendous rate of twelve miles per second, entering ever new fields of finest electro-magnetic corpuscular matter whereby its life and activity are sustained.

There are some suggestions now possible, if one follows up the work of Einstein. If his conclusions are correct, and it seems very probable that they are, then the Heavi-

side layer is not a sure hypothesis, but transmission is controlled by the earth's gravitational field and the observed facts in short-wave transmission seem to indicate this possibility. The reception tests made some time ago round Melbourne also seem to bear the interpretation of the deflection upwards, due to the contour lines round the station and the subsequent pulling down of the waves by the gravitational field of the earth.

The question offers a very interesting opening for careful research. The ozone feature seems to present a fairly conclusive case, and is of special interest in my individual work, as giving another clear proof of immediate connection between earth and sun.



DR. H. C. BUSING,
German Consul, who
will give the second of
the "League of Na-
tions" series of talks
from 2BL on March
13.

THE business world is making a good deal of use of the wireless picture service recently inaugurated across the Atlantic. Two or three incidents have already occurred where forged documents have been detected when the service was used. For example, the Deutsche Bank in Berlin was recently saved \$12,000 by being able to discover a forgery when a picture of a document was wirelessed across from New York.

AGAIN the Australian Broadcasting Company will present a community singing night from the Ashfield Park on March 10 through 2BL.

EXPERIMENTERS TO EXPLORE NEW REALMS.

American radio amateurs, who won acclaim a few years ago by discovering the value of short waves, are to try their talents in a new field.

The Federal Radio Commission has assigned the frequency band from 14,000 to 14,300 kilocycles for amateur experimentation in voice. On these channels during the daylight hours it is possible to hold radiophone conversations with all parts of the world.

Owing to the danger of interfering with radio telegraph communication on wave lengths near these channels the commission has decided to restrict their use to a select group of expert amateurs. They will include about fifty who hold "extra first-class amateur operators'" licenses, and others who can show "special technical qualifications and ability."

One purpose of the experiments is to ascertain if the channels are suitable for future use by commercial communication enterprise.

The danger of interference is said to be much greater from voice transmission than from code and consequently the transmitting sets used will have to be equipped with the most modern frequency control apparatus.

In the past the amateurs have been restricted to three bands for radio telephone communications. None of these is suited for international communication.

MR. E. J. FLEMING, who has commenced a series of talks on that famous American humorist, Mark Twain, will deliver his second talk from 2BL on Friday, March 14.

WHAT'S ALL THIS ABOUT A.C. SETS?

AN ARTICLE FOR BEGINNERS

SOME people have the very peculiar idea that everyone who takes an interest in radio should first have some experience with battery-operated sets before proceeding to build or to acquire a set operated from the lighting mains. This, of course, is utterly foolish. Should the prospective buyer live in the suburban areas he might well learn what he wants to know about the a.c. operated sets just as if the battery type of set had never existed. After all, a person who is to build a crystal set does not require a knowledge of magnetic detectors and other relatively crude devices that were developed and used before the crystal came along.

As a general rule, the a.c. operated set is just as simple to build and just as easy to understand as the battery set. As a matter of fact, we think that the average beginner is more likely to make a successful job of his first a.c. set than of his first battery set. At any rate, the a.c. set, for a given number of valves, is always capable of a better performance than a battery set—just providing it is designed properly and provided with an effective power-pack.

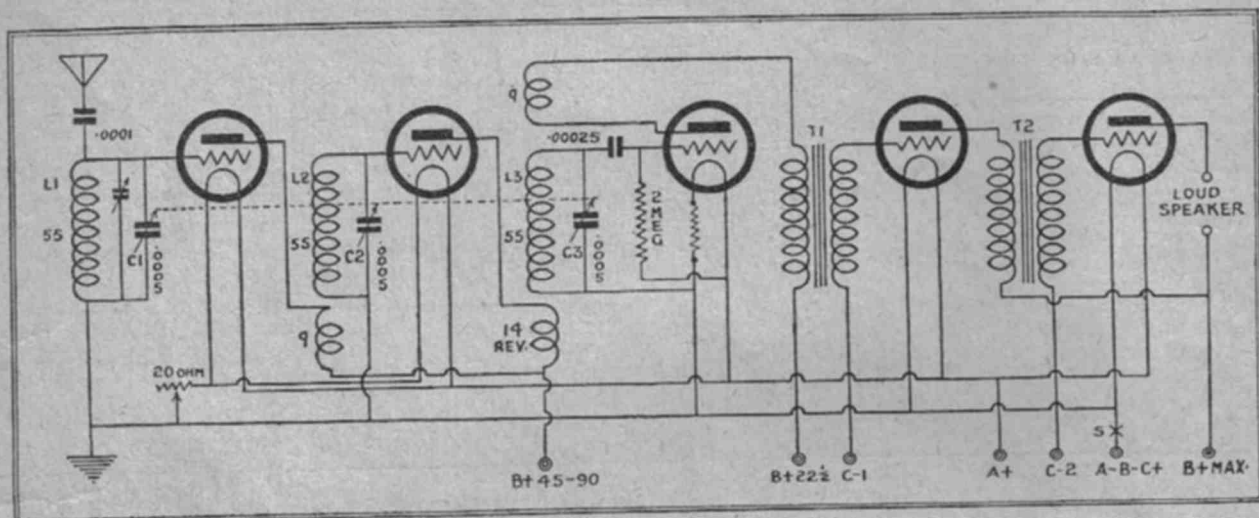
There would appear to be considerable confusion over the various terms that are used in connection with sets operated from the lighting mains. Quite often they are called "all-electric" sets. The trouble with this term is that even the battery-operated sets are covered by it. Even though it is from batteries the supply is still electricity. The English term is "mains-operated," and this really is a particularly suitable one since it includes

the sets that run from direct current mains as well as alternating current supply systems. From this it can be seen that a "mains-operated" set is not necessarily an "A.C." set. The latter is probably the most generally used term in Australia, the "A.C. Set" being understood to be a receiver that obtains its entire power supply (filament, plate, and bias voltage) from the a.c. mains. It need hardly be said that the a.c. mains are the house lighting wires that supply alternating current.

Sets that have a "B Eliminator" operated from the mains, but which depend on a battery for the filament supply really are not "A.C. Sets" in the correct sense of the term. At the same time, the "A.C. Set" does not necessarily use "A.C. Type" valves. Some sets (though they are now out of date) use an "A" or filament battery eliminator which permits the use of the battery type valves. It is not a good plan, however, on account of the considerable complications involved in producing a satisfactory "A" eliminator, and because of the much greater simplicity and better performance that can be had by using the a.c. type valves. These valves have a filament which is heated by alternating current stepped down to a suitable voltage by means of a small filament transformer. Unlike the battery type valves, this filament is not exposed inside the valve and does not directly take any part in the valve's functioning. The thing that

takes the place of the battery type filament is a tiny cylinder or cathode inside which the heater is hidden. The heater or filament just serves to heat up the cylinder or cathode so that it may emit electrons and function in the manner that the filament of the battery valve does. Of course, the filament of the battery type valve is really a cathode. In scientific circles it is discussed by that name. The a.c. valve is able to function with an a.c. supply on the filament or heater whereas the battery valve would not simply because the cathode that does the functioning and the filament that does the heating are isolated. In other words, the heating of the cathode is indirectly accomplished. The valve is an indirectly heated valve. In the modern a.c. set these indirectly heated valves are used in all positions in the set except the last audio amplifier—the output valve or power amplifier as it is variously called. If directly heated valves are used anywhere else in the a.c. set it is almost certain that trouble will be had from hum. This hum, of course, is caused by the alternations of the alternating current supply. The supply current chases back and forth at 50 or more cycles per second, and if all sorts of precautions are not taken these rapid fluctuations or alternations will make themselves heard in the speaker as hum. It may be mentioned that any really modern set is so free from this humming noise that it can be heard only when the listener is very close to the speaker and only when there is no sound being received from a broadcast station.

For Battery Operation



A SIMPLE 5 Valve Receiver.

By R. J. EDMONDS

ALTHOUGH the modern receivers of today demand a.c. and s.g. circuits, many readers are still in quest of the good old straight-out r.f. with d.c. valves. This article presents a five-valve receiver which was published in the January, 1928, issue of "Radio." Owing to its popularity, and the continual demand for the circuit and particulars, a republication of it, with a few improvements, is thought to be in order.

The "Edmonds 5" is very inexpensive to build, although it possesses excellent qualities for such a simple, straight-forward circuit. Extreme ease of control, selectivity, tone, volume, and distance are its features, which are verified by the hundreds of letters received from all parts of Australia and New Zealand. Some claim 500-mile daylight loud-speaker reception, while a letter from Port Moresby states: "We are approximately 2000 miles airline from Melbourne, and the volume on a good night is enormous." A letter from Mr. W. Cowen, of Swansea, mentions 3 N.Z. and 4 Jap. stations received with good speaker strength.

CONSTRUCTIONAL DETAILS.

The coils may be either home-made or purchased in kit form. They consist of three separate formers 2½ inches in diameter and about 3½ inches long. L1 consists of 55 turns of 22 d.s.c. wire, L2 55 turns the secondary and 9 turns the primary, with ¼ inch space between windings; 24 d.s.c. is used for this coil. L3 has three separate windings, 55 turns the secondary, 9 the tickler, and the primary has 14 turns wound in the reverse direction to the other coils; 24 d.s.c. is also used, and ¼ inch spaces left between the windings. Leave a good 12 inches

at the start and finish of each coil, so that the leads can be covered with spaghetti and run direct to the components.

These are left to the readers' discretion. The parts are arranged so that the wiring is kept as short as possible and plate and grid wires do not run parallel close together. Also keep the coils at reasonable distance apart, and do not pass coil leads or any other wires through the coils. The sub-panel is the best method of wiring. Use rubber-covered flex, and run wires underneath the baseboard, as short as possible, from one component to the other.

The three-gang, single-drum control is the most suitable tuning device to use for this receiver, as the condensers run in line parallel to the panel, leaving the baseboard clear. If a double-drum control is used the compensating condenser is not required.

THE FIRST TEST.

Check over wiring thoroughly, and see that all joints are well soldered. Now connect up batteries or eliminator, etc., but before inserting valves test the filament circuit from each valve socket with a small globe or an old bright emitter valve, to ensure against error in wiring.

The condensers are first tuned on 2FC. Turn the plates of the midget condenser about three-quarters way in; then loosen plates of the second and third condensers, so that they may be shifted with the fingers. Each condenser is then adjusted to the peak or loudest point. The midget condenser is left untouched. Now tighten the moving plates of the condensers and try for 3LO and 4QG. When a whisper of one of these is heard loosen again the third condenser only.

Dear Sir,—Having followed the progress of wireless through "Wireless Weekly" I would like to suggest that more sets be published and be brought up-to-date and in line with modern ideas. I am working an Edmonds five published in Radio, January, 1928. This set is truly remarkable as a distance getter and a producer of sweet, natural music, and if up-to-date methods and latest discoveries can improve this set, owners of this job would greatly benefit by the re-publication of same.

Yours, etc.,

"A.J.R."

My set is located in Hamilton, N.Z., and no station within seven hundred miles carrying a kick can dodge the loud-speaker in daylight. All Australian stations, A and B class, together with a number of amateurs and a few Japs., are easy at good speaker strength in the evening. Hoping the time is not far distant when a start will be made with re-publications of important sets.

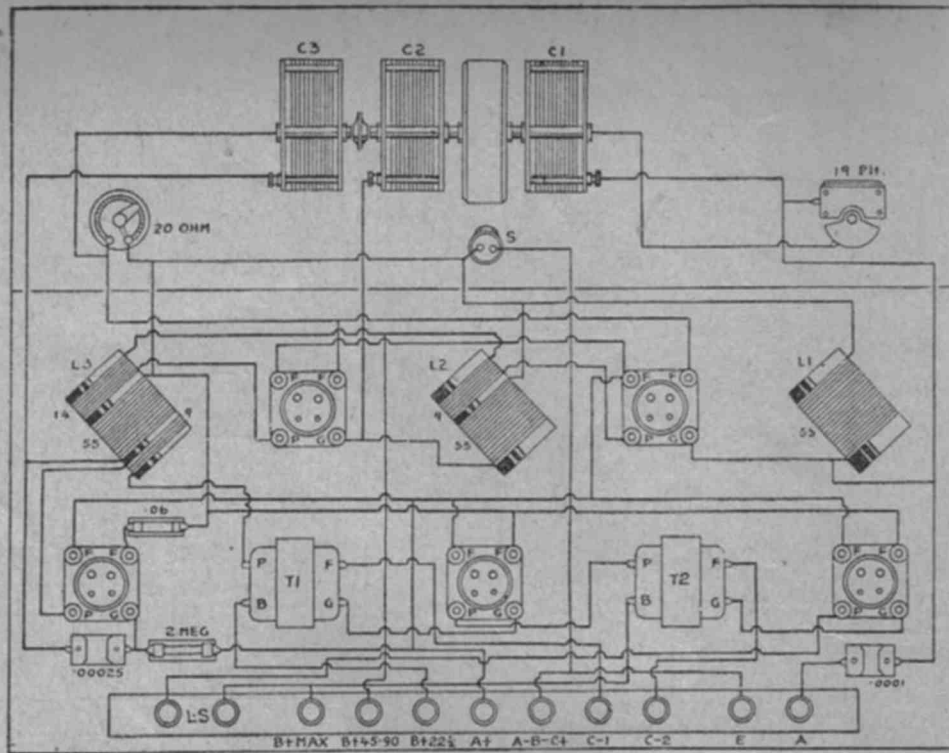
Hamilton, N.Z. (February 11, 1930).

So we yielded to the demand of "A.J.R." and publish herewith Mr. Edmond's receiver in a modernised form. The circuit is a straightforward piece of design, and will greatly please those who prefer the older canons of radio development. It will also please the country reader who wants a simple battery receiver.

and shift slightly backwards and forwards, at the same time adjusting the dial and midget condenser until the loudest point is reached. Now tighten up the lock-screws again and the receiver can be tuned to any station without further adjustment, with the exception of the compensator, which is only critical on distant stations. If the receiver oscillates badly reduce the r.f. plate voltage. If not inclined to oscillate, and lack of volume is noticed, place a small fixed condenser (about .0001) across the primary of the first transformer.

The author will be glad to answer any questions in reference to the "Edmonds 5" sent with enclosed stamped and addressed envelope to 124A Burwood Road, Burwood.

"SECRET OF MUSCULAR STRENGTH" is the title of a very interesting booklet on how muscular strength and great development have been obtained by the world's leading wrestlers, weight-lifters, and strong men. It explains how strength and development may be acquired by anybody. The book is written by Alfred J. Britton, and is profusely illustrated and full of gripping articles on health and strength. A copy may be obtained free by writing to the author, 107 Pitt Street, Sydney. Enclose sixpence in stamps to cover postage.



INTERSTATE PROGRAMME NEWS

3LO

SONG scenes are becoming increasingly popular with listeners, and provide a welcome relief from the old style stereotyped programme. "The Little Corporal," an incident in the life of Napoleon, will be produced from 3LO on March 12, and will reveal the little-known side of the Emperor's character, which endeared him to every soldier in his army, and gained for him the affectionate sobriquet of "The Little Corporal." Many drinking and marching songs of the period will be introduced, and fact and fiction will be harmoniously combined.

DURING his talks on current happenings in sport, at 10.30 on the mornings of Thursday, March 6, and Saturday, March 8, Eric Welch will broadcast his selections for the races to be held at Flemington on each of those afternoons. To meet with the requirements of interstate listeners who will not be able to tune-in to 3LO during the day the selections will be broadcast during the night news session at 10.15 on Monday and Wednesday nights.

CRICKET enthusiasts must not forget to tune into the talk by Mr. R. H. Campbell, the veteran cricketer, who will give listeners his opinion of Mr. W. M. Woodfull—the hero of many matches—from 3LO on March 8. Mr. Campbell, who saw the first Test match ever played at Lord's, is said to have no equal as a statistician of the game.

THE "at home" session for Captain Donald MacLean at 3LO is likely to become one of the most eagerly anticipated during the week. It has been arranged for the captain to entertain various author friends, who will be introduced to listeners. It is to be made possible for listeners to hear their favorite writers speak over the air, to discuss their work, past, present, and future, and also to glean a little information about their early struggles and later successes.

OF great interest to the majority of racegoers are the annual yearling sales held in Melbourne during the Victoria Racing Club's autumn meeting. This year the sales will be held on Monday, March 3, and Friday, March 7, and throughout each day 3LO will broadcast the more-important sales effected.

A BRIEF talk on the tragic life of the famous English poet, Francis Thompson, will be given from 3LO on March 7 by the Rev. William Bottomley.

3AR

"THE Odd Men Out" have prepared another interesting discussion, entitled "You're No Gentleman," which will be given from 3AR on March 13. The sketch concerns the story of a coffee stall-keeper, with a heart of gold, and the various types of customers that he serves, from the man about town to the beggar.

FROM 3AR on March 15, Mr. A. A. Downs will speak on "Elephant Catching and Taming." Mr. Downs has had many years' experience as a big game hunter and has many tales to tell of the intelligence of the elephant. One of the outstanding features in training is the remarkable memory possessed by the animals.

ONCE again the Royal Scots will be at 3AR on March 8, in some songs of "Bonnie Prince Charlie," with special annotations.

On Tuesday, January 7, at 8.30 p.m. New York time (approximately midday Monday, Australian time), a world-wide programme on behalf of "Libby's," New York, was broadcast through WJZ on the short wave. Any listener who heard this programme is invited to communicate with the J. Walter Thompson Company, 65 York Street, Sydney

4QG

SINCE the Australian Broadcasting Company took over the control of Station 4QG, broadcasting from the racecourse has been resumed.

DURING the past five years, contractors, builders, and decorators have been working hard in connection with the construction of the new City Hall, which is being erected in Brisbane. As a result of these efforts, a fine edifice is now nearing completion. During the month of April the building will be opened by His Excellency the Governor of Queensland (Sir John Goodwin) and the Mayor of Brisbane (Alderman W. A. Jolly, C.M.G.), has decided to allow the ceremony to be broadcast.

DURING the first fortnight of the Australian Broadcasting Company's control of 4QG, no less than 80 different individual artists contributed to the programmes. This number was arrived at by counting bands, choirs, quartettes, etc., as one artist, and not as several.

THE new Carlton Cabaret in Brisbane will open on Saturday, March 15, and a special orchestra of ten players, under the direction of Ernest G. Mitchell, has been engaged. 4QG will broadcast.

THE annual dinner of the Queensland Irish Association is always a notable Brisbane event, and this year the speeches will be broadcast by 4QG. It will take place on Saturday, March 15.

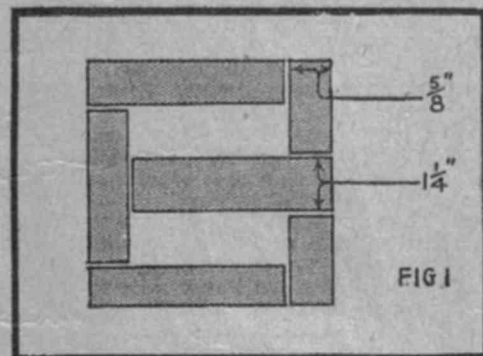
THE 4QG programme for Thursday, March 6, will be set apart entirely for a broadcast of classic music. Mr. George Sampson, F.R.C.O. (City Organist), and conductor of the Queensland State and Municipal Orchestra, has agreed to supervise fortnightly classic programmes from 4QG.

The Design and Construction of POWER TRANSFORMERS

An informative article for the advanced radio enthusiast on a subject of first class importance.

By ROSS A. HULL

THE design and construction of transformers for the supply of power to the a.c. set or for the charging of batteries is not the sort of work that will appeal to any but the most advanced enthusiasts. Certainly it is not the sort of work which can be accomplished successfully unless the builder has definite mechanical ability and a well-equipped workshop. For these reasons we must discourage, right at the start, those enthusiasts who have had no mechanical experience or no workshop facilities. Transformers can be built on the kitchen table by re-



latively inexperienced persons, but the usual result in the long run is a greater expenditure of money and time than is justified, together with the ownership of a transformer that is neither pleasant to look at nor satisfactory in operation. In any a.c. set the transformer is really the heart. It must supply the life-blood to the whole affair. And unless it is designed and built with the care that only specialists can usually give it disappointing results are very likely to be the outcome.

And so we write this brief outline exclusively for the purpose of providing some odd data for enthusiasts whose mechanical ability enables them to build transformers for the pleasure of it. We will give no attention whatever to small transformers rated at less than 50 watts or capable of supplying less than 250 volts for plate supply, since we firmly believe that such apparatus is not likely to provide the basis of a supply system of any genuine worth.

As is generally known, a transformer for this sort of work consists of an iron core with two or more windings. The primary winding is connected to the alternating current mains, and the flow of current magnetises the core in accordance with the alternations of the supply. This continual change in the magnetic flux induces currents in the other windings which are around the core, the induced voltage depending upon the number of turns in the secondary winding relative to those in the primary.

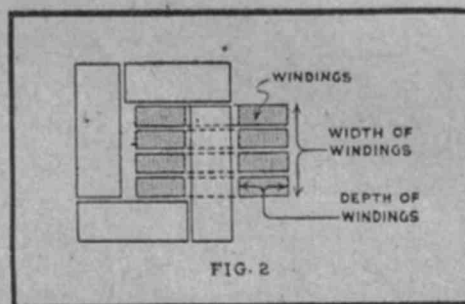
The iron core is invariably made up of laminations of thin iron or special steel alloy. Ordinary iron will operate fairly satisfactorily in small transformers, but for high efficiency "Stalloy" or some similar steel alloy should be used. Commercially-made transformers invariably make use of specially shaped stampings which permit the construction of a core that will not vibrate in operation and that will not have serious flux leakage. The fact that these stampings are not

usually available to the amateur is one reason why the amateur-made transformer is not likely to be the equal of the factory-made job. However, by assembling rectangular pieces of core material it is possible for quite a good core to be built.

A very excellent type of core is that illustrated in the sketch of Fig. 1. It is called the "shell-type" core. It will be seen that the centre piece, on which the windings are mounted, is larger than the outside pieces which enclose the windings. The sketch is incorrect in that the sectional area of the centre piece is not twice that of the outside legs, as it should be. Of course, an odd relation between the sectional areas as shown could be used, but it would unnecessarily complicate the computation for windings. The disadvantage of this type of core for amateur work is that it may need as many as four different sizes of strips. Also it is disadvantageous on account of the added difficulty in assembling the core. It must be mentioned that alternate layers of the core are reversed, so that the gaps on successive layers do not coincide. In the first layer the centre piece may project to the right, but in the second it should project to the left. On the fourth layer it will project to the right, on the fifth to the left, and so on.

The same applies to the second type of core, illustrated in Fig. 2. On the first layer the top piece will project to the right. On the second layer it will project to the left, and so on. Because of its simplicity and its effectiveness we would suggest the use of the second type of core.

The first work will be to make sure of a



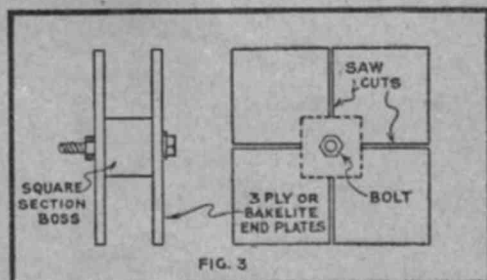
supply of "Stalloy," though not to buy any for the moment. Many radio stores sell the material, and some of them have the facilities to cut it to any specified size. In designing the transformer, we will assume that any size may be obtained, though in some cases it will be desired to build the transformer on a core that is already on hand. The procedure will be much the same in either case.

The determination of the power that a given core will be capable of handling satisfactorily involves a great many complications that we cannot discuss here. It is sufficient to know that a core with a section measuring 1 1/2 in. square is suitable for a power of about 50 watts. An appropriate rating for a core of 1 in. square section is 30 watts. This, of course, is the lowest power with which we are likely to be concerned in the design of a modern power-pack transformer. Smaller cores of, say, 3/4 in. square

section may be of some use for a trickle charger, but they certainly are unsuitable for a power-pack.

If we assume that the transformer is to feed five four-volt indirectly-heated valves, a power valve, a rectifier, and also to supply 250 volts of plate power at about 50 milliamperes, we find that every one of the 50 watts that a 1 1/2 in. square section core will permit us will be necessary. Even the three-valve set with a similar plate supply hardly gets down to the 30-watt stage, where a 1 in. square section core would really do the job. Of course, the three-valve set with some half-hearted power valve and about 150 volts of plate supply does; but we are not concerned about that sort of rig.

As an example, let us assume that we are to supply four four-volt valves, a 2.5-volt



power valve, a four-volt rectifier, and that we require a total of 300 volts for plate and bias supply.

The total power will go something like this: Four volts at 4 amperes for the four indirectly-heated valves—16 watts; 2.5 volts at, say, 2 amperes for the power valve—5 watts; 4 volts at 2 amperes for the rectifier—8 watts; 250 volts at 40 milliamperes for plate supply—10 watts. The total is 40 watts, and, since we allowed some margin on the filament windings, we can assume that the 1 1/2 in. square section core will be satisfactory.

And now for the windings. Fortunately, there is a simple and approximate formula which will help us decide on the number of necessary turns. It runs like this:—

$$\frac{V}{T} = \frac{ABn}{349 \times 10^6}$$

In it, V over T equals the volts per turn in all windings. A is the cross sectional area of the core in square inches. B is the magnetic flux in lines per square centimetre, and n is the frequency of the supply.

The only troublesome term is the "B." General practice in small transformers with proper transformer steel is to operate at a figure of about 8000 lines per square centimetre, and it is this figure which has been used in deciding that the 1 1/2 in. square section core will stand up to the work. Consequently we will use it in the calculations.

When we work out the V over T at a frequency of 50 cycles per second we find that it is 1 over 5.8. In other words, for every volt in all windings we will need 5.8 turns. If we are to operate the transformer from 240 volts we will therefore need 1344 primary

turns. As it happens, the voltage of the mains is almost always greater than 240 volts, and it will be as well to provide some tappings for the various voltages that may be met with. Thus, for 230 volts the required turns will be 1288; for 250, 1400; and for 260, 1456. The primary will then be a winding of 1456 turns, with tappings at 1400, 1344, and 1288 turns. Since this winding is to carry 50 watts as an approximate maximum, the current through it will be 50 divided by 240, or about .2 amperes. Some wire tables, which are found in all sorts of text-books and electrical pocket books, give the current carrying capacity of the different gauges for continuous work, but we can still find the necessary gauge if the cross-sectional areas alone are given. For continuous work it is desirable to allow 1200 amperes to the square inch of copper. The area we will need for the primary wire will therefore be .2 divided by 1200, or 0.000167 square inches. From the wire table we find that 28 s.w. gauge has this area. Enamelled wire might well be used for this winding, provided due care is taken to see that the insulation is not scraped off during the winding. The actual amount of wire necessary, as well as the space it will occupy, can be determined by means of any complete wire table, but we will consider neither of those things for the moment. For the 4-volt winding which is to supply the indirectly-heated valves as well as for all other secondaries we will need 5.6 turns per volt. The four-volt winding will then have 22.4 turns. As a matter of fact, the number to be used will be above this, since the drop in the winding must be taken into consideration. At 1200 amperes per square inch we need 4 divided by 1200, or .0033 square inches. No. 16 s.w.g. wire fills the bill. If we were to work out the length of wire, and from that its resistance (as we really should), we would find that there would be a drop of perhaps .3 volts, or slightly more. This would necessitate the use of about two extra turns, or a total of 24.5, to give the desired voltage on load. This winding might well be of double cotton-covered wire, which is more useful than enamelled in the larger sizes.

RECTIFIER WINDING.

The four-volt winding for the rectifier may be wound with 18-gauge wire, and, since the drop will be slightly lower at the lower current, we can estimate that about 24 turns will be necessary. The 2.5-volt winding can also be of the same wire, the number of turns necessary being slightly more than 2.5 times 5.6, or about 15.

Since we probably will use full-wave rectification, we will need two windings on the high-voltage secondary. The voltage from this winding will suffer a drop due to the resistance of the windings, the resistance of the choke, and that of the rectifying valve. Without getting into hot water, it is difficult to compute these drops accurately and to allow for the increase in effective voltage that the filter condensers will provide. However, from experience we can estimate that, if the r.m.s. voltage of the secondary on load is about 325, there will be ample output for the bias and plate voltages of the 245 or whatever similar power valve is used.

Allowing for a 10 per cent. drop in this winding (which is quite likely), we will need 2000 turns for each half of the secondary. Allowing for the current of 50 m.a., we find from tables that 36 s.w.g. wire will serve. And we know that enamelled covering will be suitable, providing the winding is done carefully.

Having decided on the number of turns required, it is now necessary to find out how much space the windings are to occupy. If the windings are done in layers this can be determined from the wire tables which tell the number of turns per inch of the various types of wires. However, if the windings are to be done rather sloppily in the form of pies (as will probably be the case), it is usually simpler to wind the coils first, and then decide on the necessary dimensions of the core. Since few have the facilities to layer-wind the transformer, we will assume that the latter is the case. At the same time it will be as well to look into the wire tables in order to see the relationship between the space to be occupied by the primary and the various secondaries. Then the width of the various pies can be proportioned, so that they will all be roughly the same height. The total width of all the pies, with a core of this section, might well be 3in.

FORMER REQUIRED.

For the winding process some sort of former will be necessary similar to that shown in Figure 3. It consists of a square section wooden boss just slightly larger than the section of the core (to allow for insulation between the core and windings). The side plates of bakelite or three-ply are large enough to cover the finished coils, and are provided with saw-cuts as indicated. A piece of thread is dropped into each of these cuts before the winding is started, so that the winding can be tied up before the end plates are removed. The winding should be done in a manner as near to layer-winding as is possible, and the greatest care must be taken to see that the upper turns do not slip down to the bottom. On account of the high voltages developed in the high-voltage secondaries it will be as well to make each half in two pies. Of course, the direction of winding

and the connections between these pies must be watched in order that the finished winding will be continuous in the same direction. The completed pies may be taped up with strip empire cloth, or, if this is not available, they may be covered with ordinary tape and given several coats of shellac. Insulation must be looked to very carefully, particularly between the rectifier filament winding and the others. The actual sequence of pies on the core does not matter much, but it is often very desirable to place a static shield between the primary winding and the others, and also between the rectifier filament winding and the others. These shields may be in the form of discs of copper sheet, with a narrow slice cut as a radial to avoid the disc becoming a closed loop. These discs will be threaded on the core between the necessary pies, and later grounded.

When the windings have been completed the length of the end pieces of the core can be estimated, the idea being to make the whole unit as compact as possible, for electrical reasons as well as considerations of appearance.

The clamping of the laminations and the construction of a mounting hardly require mention, since everyone has the opportunity of having a close look at some manufactured transformer and devising for himself some mounting suited for his purposes.

This article is necessarily incomplete. In it we have just outlined the method of arriving at the correct number of turns and of estimating the general dimensions. We think that anyone who is capable of making a successful transformer will certainly have the ability to apply the procedure to his own particular problems, and that his enthusiasm will cause him not only to acquire some complete wire tables, but to use them in the detailed mechanical design of the windings.

COOKING WITH ELECTRICITY

ACCORDING to Benjamin Franklin's own papers, he succeeded in killing a turkey electrically by means of a high-tension electrostatic discharge. He was greatly pleased with the experiment, and predicted that

eventually that method would be the only one used in killing animals for food. It appeared, according to Franklin, that the flesh of such an animal was more tender than that of animals slaughtered in the customary way. He thought this was possibly due to the disruption of the cells because of the violence of the electrical discharge.

His prediction has not yet come true, but it appears that something else in the line of electrical devices may be offered to the chef. This is electrical cooking—not in the sense of cooking by the heat generated by electricity, but of cooking with the current directly. In this method a piece of meat, for example, would be put between two electrodes and the current turned on. The meat would be cooked with heat from the current passing through it.



TALKIE TECHNIQUE HAS CAUSED MANY YOUNG HOLLYWOOD STARS TO PAY MORE ATTENTION TO THE RADIO. HERE ARE RUTH TAYLOR, "BUDDY" RODGERS, PHILLIP R. HOLMES, AND NANCY CARROLL TAKING A LESSON IN ENUNCIATION FROM THE RADIO ANNOUNCER.

MUSICAL WEEK

Judging by the forward programme features noticed below, the coming week is likely to be the best musically that we have had for some time.



MR. LIVINGSTONE MOTE, of the Conservatorium, who will be responsible for the arrangement of the special musical programme from 2BL on March 11.



DR. L. G. H. HUXLEY, the Tasmanian scientist, who will deliver the feature talk from 2FC on March 9. His subject will deal with "Atmospherics."



The Week's Talks



THROUGH 2BL, on March 11, Mr. Livingstone C. Mote, M.A., the well-known Conservatorium teacher of organ harmony, counterpoint, and composition, will arrange a night of musical contrasts for listeners, in which the first half of his presentation will consist of music by the old masters, and will introduce Mr. Richard McLelland, the well-known basso, singing Bach's "Ye Happy Flock."

Bach as a composer is very popular with the people of to-day, as so much of his vocal music has been re-edited and sung in English. Mr. Lloyd Davies, violinist, will introduce "Minuet and Allegro," by Handel, who was a master of beautiful melody. Most of his solos are direct in appeal, because they would seem to have arisen so spontaneously and flow along so easily. Ila Turnbull, soprano, will sing two Handel numbers, Madame Ely Borlyos, a Hungarian pianist, will introduce numbers by old masters. A vocal octet conducted by Mr. Livingstone Mote, who is also conductor of the Conservatorium Choir, will sing "Madrigal," by Palestrina, which will conclude the first half of the musical contrast programme.

Mr. Livingstone Mote will then present a programme of modern composers, which will introduce Mr. Richard McLelland in Bantock's "As I Ride," a vigorous setting of Browning's galloping poem, "Sons of the Sea," by Coleridge Taylor. Mr. Lloyd Davies, violinist, will play the "First Movement Sonata" by Caesar Franck, the great Belgian composer, who lived most of his life in retirement as an organist of a great church in Paris. The Sonata is regarded as one of the greatest violin works extant.

Miss Ila Turnbull will sing a setting of Tennyson's "Sweet and Low" by a living British composer (Shaw), and "So White, So Soft," by Frederick Delius, considered by critics as one of the most original living composers. He has lived in France for many years, and is blind, and returned to England recently to attend a special Delius music festival held in his honor in London.

Madame Ily Borlyos will introduce some modern pianoforte numbers, whilst the Vocal Octet will sing "Carol" and "I Know My Soul," both by Parry, who was the father of the English musical renaissance, and made music an integral part of the life and culture of Oxford University.

ON Sunday afternoon, March 9, Wilfrid Thomas, who will be announcing at 2FC Studio, will present a lecture recital during the two intervals between the broadcasting of the State Theatre organ. He has chosen as his subject, "The Folk Songs of Hungary."

A PROGRAMME of organ music from the Pitt Street Congregational Church, arranged by Miss Lillia Frost, will provide a pleasant evening for the music-lovers who

SUNDAY, 9
2FC: Feature speaker, Dr. L. G. H. Huxley will speak on "The Recent Investigation on Atmospherics," at 8.40.
2BL: C. N. Baeyeritz, "Philosophic Thought from Bacon to Bergson," 5.0.

MONDAY, 10
2FC: V. C. Bell, "The Public Forum," noon. 3.0: Mrs. Meredith Atkinson, "Louis Pasteur," 4.0: George Black, "Smoking, is it Hurtful?"
2BL: Illustrated music lecture by Ernest Frank, 4.15. 9.33, George Portus, "Then and Now."

TUESDAY, 11
2FC: Francis Jackson, "What to Read—Book Reviews," noon. 2.48: Lucille Bruntnell, "The Glories of Paris," 4.0: H. M. Bowden, "Australian Opal Fields."
2BL: Mel Ward, "The Great Barrier Reef," 3.15: 4.15, The Storyteller "Peeps into the Post Bag—Some letters of the Great."

WEDNESDAY, 12
2FC: Sister Mary Jacob, "Over Feeding Infants," noon. 9.2, C. N. Baeyeritz, "Whistler—the Amazing Jimmy."
2BL: To-night's Personality, Lieutenant-Colonel G. E. Hughes, C.B.E., "The Memorial War Graves."

THURSDAY, 13
2FC: Tom Gurr, "The Holy Cities of India," noon; 3.0, Dr. Harold Norrie, "Jack and the Beanstalk," 4.0, Digger Frank Downs, "The Brightness of Blind Life."
2BL: Rev. F. H. Raward, "Windsor, the Country Home of His Majesty," 3.15.

FRIDAY, 14
2FC: Wilfrid Thomas, "The Aristocrat of the Luncheon Table," noon; 3.0, J. R. Kinghorne, "Snake Bites and Snake Venom."
2BL: Dorothy Richards, "How to Write a Friendly Letter," 3.15; 4.15, Captain Fred Aarons, "The Story of the Great Ice Age"; 8.59, E. J. Fleming, "Moments with Mark Twain"; 9.48: Claude Corbett, "Sporting."

A REPRESENTATIVE programme of Russian art, arranged by Gordon Ireland, will be presented from 2FC by Ewart Chapple on March 13. Mr. Ireland will be also responsible for a dramatisation of the climax of Tolstol's great novel "Resurrection," as an example of Russian literature. This powerful story is familiar to most people, and the scene in the prison, where Dmitri makes amends and follows Katuscha to Siberia is a moving and elevating one.

Songs of Russia are represented by that so popular traditional air, "The Volga Boatmen," which will be sung by the A.B.C. Male Quartet, and Rachmaninoff's "Night" and "Lilacs," sung by Bessie Blake. "The Beetle," a quaint little song composed by Arensky, will also be included in the programme. Tschaiakowski, of course, takes a prominent place. An orchestral rendering of his patriotic "Marche Slav" will open the programme, and some of his chamber music will be rendered by the String Quartet.

Ewart Chapple will speak on "The Evolution of the Russian Ballet," which has played so great a part in the development of combined dancing and music. The "Schererazade," by Rimsky Korsakoff, about the best example of this type of composition, also finds place in the programme, and the delightful romance movement from the violin Concerto in D Minor, written by Henry Wieniawski, the Imperial virtuoso, will be played

THE fourth of the series of orchestral concerts arranged by the Professional Musicians' Union, in association with the State Government, the Civic Commissioners, and the Australian Broadcasting Co., will take place from the Sydney Town Hall on March 15, when Professor Bernard Heinze, Ormond Professor and Director of the Melbourne University Conservatorium and Director-General of Music of the Australian Broadcasting Co., who is making a special visit to Sydney for the occasion, will conduct the orchestra of 60 players.

The concert will be broadcast by 2FC, and the assisting artists will include Oliver King, noted basso and organiser of the Associated Music Clubs of Australia, and Miss Gladys Verona, the well-known soprano, who has not long returned from a successful vocal career abroad.

DR. NORMAN LYONS' 2BL Boys' Club will inspect the Hobsons Bay from Dalgety's Wharf, Miller's Point, on Saturday morning, March 15. Mr. Lyons will also broadcast a description of the vessel from 10.10 to 10.40 a.m. through 2BL. Every part of the ship will be described—the lounge, dining, smoke rooms, verandah cafe, library, cabins, bathrooms, promenade and sun decks, and so on.

MEMBERS of the Boys' Aero Club will be interested to learn that Mr. Norman Lyons has arranged for Captain Geoffrey Hughes, president of the Aero Club of N.S.W., to give a talk during the aero session on Monday, March 10, when he will choose as his subject "The Progress of Aviation."

A PROGRAMME of light classical songs, including two of Schumann's, "The Two Grenadiers" and "Intermezzo," will be featured by the Melbourne singer, Alban Whitehead, when he will appear from 2BL on Saturday evening, March 14. Many listeners remember his appearance from the A.B.C. a few months ago, and will welcome him again.

THE noted Tasmanian scientist, just returned from a tour of England, Dr. L. G. H. Huxley, will be the celebrity speaker from 2FC on March 9, from 6.40 to 7 p.m., when he will speak on "Recent Investigations on Atmospherics." As Dr. Huxley has come to Sydney to conduct an investigation on atmospherics, his talk will be an opportune one. It will be a non-technical account of work which has been done in England, and to indicate the line of investigation which is to be adopted in Australia.

ON Monday, March 10, 2FC will broadcast Cec. Morrison and his Band in "A Dip in the Blue." Cec. is delving through music files for all the musical numbers he can lay hands upon which include the word "blue" in their titles. They include:—"Blue Skies," "Blue River," "The Blue Danube," "Am I Blue?" "So Blue," "Blue Over You." "My

THE second of "The League of Nations" series of broadcasts will be given from 2BL on March 13, when Germany will speak through the medium of her Consul in Sydney. Dr. Busing, the German Consul, has been connected with the German Foreign Office since 1907, and was stationed in West Africa at the outbreak of war, but happened to be on leave in Germany. He was transferred to Australia from Canton, China, where he was Consul-General, in 1923, and he has been part of the time in Melbourne and part in Sydney since then. His wide experience has given him many opportunities to encourage harmonious relationship which exists between Germany and Australia and his talk is the official statement concerning Germany's attitude towards those peace problems which vex Europe to-day.

The address will be followed by a programme of German Lieder arranged by Madame Emily Marks and Madame Evelyn Grieg, and include, besides traditional folk songs, the "Verdorgenheit" (Wolf) and "Ich hab ein Kleinerleid erdacht" (Bungert). The programme will conclude with a rendering of the first movement of the "Kreisler Reine" (Schumann) and the overture from "Der Rosenkavalier" (Strauss).

WE go through life suffering from all sorts of queer illusions or fancies. It is interesting and helpful to hear these pointed out and discussed. In the series of talks, "Life's Facts and Fancies," to be delivered from 2FC on Sunday, March 9, by Dr. Loftus Hills, the noted Australian scientist, the facts will be differential from the fancies.

Some of the illusions are:—

That the winters are not so cold as they used to be.

That we are a highly intelligent people.

That the dew falls.

A white Christmas is the usual European Christmas.

That the traffic cop regulates motors and not pedestrians.

These talks are not only entertaining and instructive, but will be given by a broadcast lecturer whose reputation from 3LO (Melbourne) will be repeated from the A.B.C. stations in Sydney during his stay here.

THE subject of Dr. Loftus Hill's talk from 2BL on Tuesday, March 11, is the "Ancient Hunters." This series of talks deals in an arresting and fascinating way with the development of human weapons, tools, in-



ALBAN WHITEHEAD, contributing a programme of light classical songs to 2BL on Saturday.

telligence, complexion, and habits. It traces the hunting methods used by the first primitive man to the highly-skilled user of the bow and arrow.

MR. WILFRID THOMAS will be heard from 2FC on March 14 discussing the "Aristocrat of the Luncheon Table" (part 1). This talk, which is divided into two parts, consists of topical observations (mostly of a witty nature) of a man-about-town, and embracing a very wide range of subjects, including all the origin and history of many of the dishes and goods we all meet at the luncheon table, current art and literature, sport and fashions, stories and personalities, will also be discussed.

ON March 14, from station 2BL, Captain Fred Aarons will tell the story of "The Great Ice Age" in the light of investigations by Lyell, Lubbock, and other accredited authorities, as to its causes, extent in time and space, its effects on life and topography, its relationship to pre-historic men and animals, and its recession and final effects. This talk will be told in a purely narrative form.

A HUMOROUS three-scene musical farce will be presented from station 2FC on March 10 entitled "Stop Flirting," written especially for broadcasting by Gordon Ireland. The story concerns a henpecked husband, Mr. Pepper by name, who goes to a party arranged by his friend Reggie, with his wife, and the unusual train of coincidences lead to an amusing finish.

THE old rural England, land of simple pleasures and sweet content, is enshrined in the songs which will be introduced into the scene, "Merrie England," to be broadcast from 2FC on March 10. The name itself suggests the nature of the piece.

SAXOPHONE solos, even the most difficult of Weidoff numbers, will be played by Al Hammett, well-known saxophonist and conductor, through 2FC, on March 14.

LIONEL HART, the eminent musical conductor, will broadcast a programme on Sunday, March 9, through 2FC. He will be assisted by Miss Eva Hart (soprano), Robert Irvine (cellist), and Florence Paton (pianist). Mr. Hart has an enviable record of musical successes, and has done splendid work in moulding theatre orchestras into their present form.

LINDLEY EVANS will be responsible for a programme of classic music to be broadcast through 2BL on Sunday, March 9.

THE personality to appear on 2BL'S programme for Thursday, March 12, will be Lieutenant-Colonel C. E. Hughes, C.B.E., Deputy-Controller of the Eastern District Memorial War Graves Commission, who is on a short visit to Sydney from Tasmania.

THE second episode in the series of bush-ranging scenes which James J. Donnelly is presenting from 2BL on March 12 will deal with Mick Howell, the untamed and ruthless outlaw, who recognised the law only unto himself, living up to the last letter of his picturesque title, "The Governor of the Ranges."

COMMENCING March 13, from 2FC, Dr. Harold Norrie, the well-known radio speaker will begin a series of interesting talks under the title of "Tales Retold." On Thursday, March 13, he will retell the story of "Jack and the Beanstalk."

A.B.C. WOMEN'S ASSOCIATION SESSION

SPEAKERS AND THEIR SUBJECTS.
FRIDAY, MARCH 7.

10.30 a.m.: "Interior Decoration. Color in the Home," by Miss G. Varley. To understand the true blending and harmony of color in one's home is often a problem faced by the housewife who is doubtful of her ability and taste in color scheme. Miss Varley will endeavor to help many of her listeners in this respect.

10.45 a.m.: "The Wife of an Australian Pioneer," by Miss Varley. How many women ever think beyond the lives of the pioneers, read in Australian history—what of their wives, who played a heroic part towards the pioneering of Australia? Miss Varley will take her listeners back to the pioneer days, and introduce them to some of the women, wives of the early settlers, who played such a courageous part in the making of early Australian history.

MONDAY, MARCH 10.

10.30 a.m.: "Golf Etiquette," by Miss Varley. The A.B.C. Golf Club resumed on Wednesday, February 26, and several new members were enrolled. This is likely to be the commencement of many new members, especially as the weather grows cooler. In order that golf novices may know a little of golf etiquette Miss Varley has arranged a series of golf talks, which should be of value to the beginner.

10.45 a.m.: Thrift talk, "Planned Saving—the Key to Success," by Miss Janet Mitchell. This is the third talk of a series given by Miss Janet Mitchell, the thrift expert of the Government Savings Bank.

TUESDAY, MARCH 11.

10.30 a.m.: Health Talk, by Miss Varley. As a

(Conducted by Miss Gwen Varley)

result of the many inquiries from her listeners for exercises and diet instructions Miss Varley will discuss the set of exercises she has given them, and by so doing help her followers to feel confident they are doing them correctly. Diet will also be discussed.

10.45 a.m.: "The Care of Your Child," by Miss Varley. Miss Varley's talks on mothercraft, based on information from an expert on child welfare, are proving popular.

WEDNESDAY, MARCH 12.

10.30 a.m.: "Tennis Coaching," by Miss Varley. Judging by the applications received for membership in the A.B.C. Tennis Clubs the tennis season promises well. Constant news of the activities of the clubs helps to spread the interest and bring in new members.

10.45 a.m.: "Single Auction Bridge for Beginners," by Mrs. E. Johns. This is the second of Mrs. John's talks on auction bridge.

THURSDAY, MARCH 13.

10.30 a.m.: "You and Your Dog," by Miss Varley.

10.45 a.m.: "Leathercraft," by Miss Varley. Miss Varley is giving a course of instruction on leathercraft, explaining step by step the production of leather articles.

AFTERNOON SESSIONS.

MONDAY, MARCH 10.

2.30 p.m.: "Men and Marriage," by Miss Varley. Just which type are the men attracted to amongst

the thousands of girls living to-day unattached? This is the question Miss Varley will deal with.

2.55 p.m.: "Expressing Your Personality in the Home," by Miss Margo Heales. Miss Heales, who so successfully turned her hobby into a business through her ability in needlecraft, is an expert on her subject.

3.10 p.m.: "Home Production of Vegetables, Tomatoes," by Mr. John Douglas, of the Agricultural Bureau. The Agricultural Bureau has consented to supply speakers on various subjects, especially of interest to the women in the country. These talks on vegetables during March will be most helpful.

WEDNESDAY, MARCH 13.

2.30 p.m.: "Homeless Women," by Miss Varley. Miss Varley will endeavor to show something of the inside life for women who are homeless and are faced with an empty year in front of them all.

"The Fight of the Opium Traffic by the League of Nations," by Mrs. E. Glanville. Mrs. Glanville, one of our most eloquent speakers, will discuss the great fight the League of Nations is putting up against the opium traffic. She has visited countries where the poppy is cultivated for this terrible trade.

A.B.C. YOUNGER SET SESSION.

TUESDAY, MARCH 11.

6.45 p.m.: Girl Guides Session. "Guide Law," by Lady David. Lady David will once again speak to the thousands of guides, and impart to them the law of the Girl Guide.

THURSDAY, MARCH 13.

"Girls' Radio Club," by Miss Varley. Each week further activities crop up regarding the Girls' Radio Club, and Miss Varley instructs the new chums, not forgetting subjects of interest to old ones in addition.

Curves Ahead

MORE ABOUT THE DIRECT-COUPLED AMPLIFIER



IT is mightily unusual for anyone with anything approaching a novel idea to come forward with it just because it is interesting to him and of possible interest to others. It would seem that most experimenters who get any sort of a brain-wave imagine that it must be worth money, and consequently hold it tightly until they are able to discover some market for it. And long before they do, of course, the idea has long since been exploited and discarded in the more progressive circles. All of which is rather beside the point. However, because of the particular significance of it, we wish to place on record a fact that at least one experimenter has done some thinking of his own in connection with the direct-coupled amplifier, and, what is more, has been good enough to write us a bit of comment. Mr. T. Bushby, VK2TW, is the experimenter, and here are his words:—

"In response to your request for experiences with the direct-coupled amplifier I am making a few notes on experiments with this idea. The method of coupling the valves and obtaining grid bias for the last stage has been very clearly explained, but some more information on the operating characteristics of the s.g. valve would be much appreciated.

"Not having the necessary gear to duplicate your version, I have had to make some alterations, and perhaps others similarly placed may be interested. You will note that the main difference is in the use of an independent source of supply for each valve. This avoids the voltage drop and watts loss in the last stage supply.

"In operation, filament and plate supply of A442 is switched on and bias adjusted for a flow of about .2 mil., which gives the required drop over R1. When F704 is switched in normal current should flow, but A442 bias is very critical, and I had to shunt the end cell of the block with a 400-ohm potentiometer. About 10.5 volts is right in my case. It would probably be better to obtain bias from 3002 by means of a resistance.

"This arrangement compares very favorably with the previous hook-up, using two transformers. I did not notice any marked improvement in tone; but, as you suggest, this is probably due to the shortcomings of the pick-up and speaker. The F704 can be overloaded with an average record without the pick-up being "all-out," so that the amplification obtained is about the same in each case. Soft-tone needles were used, and the pick-up has a pretty good frequency range, but the only speaker available is an old model, horn type.

"This amplifier is now being used as a modulator for a UX210, and I have just had a very flattering report on the transmission. I hope to get a few reliable checks shortly."

Following the Trends of Technical Progress with
ROSS A. HULL (M.J.R.E.)

ELIMINATING HUM



ONE of the biggest and most interesting problems in the design and construction of the a.c. set is the elimination of hum introduced from the mains that supply the power. And quite the most complete and illuminating treatment of the problem we have yet seen is that of B. F. Miessner, which appears in the January issue of the "Proceedings of the Institute of Radio Engineers." Never losing sight of practical considerations, Mr. Miessner covers the whole territory comprising the causes of hum, its analysis and measurement, and methods for its elimination. The paper is recommended to serious experimenters as an important one for study. Speaking of the causes of hum, Mr. Miessner says:—

"While the power transformer is usually the worst offender with respect to a.c. leakage field, there are also other important sources which must not be overlooked. Among these particularly is the first filter choke. This choke, unless preceded by a very large condenser, carries an a.c. component of considerable magnitude superimposed on its already saturating d.c. component. This, coupled with the use of air-gaps in the magnetic circuit to reduce saturation for maximum inductance, sets up a rather strong a.c. leakage field. Due account must be taken of this in the physical design of the receiver.

"Of less importance, yet still to be considered, is the a.c. magnetic field set up by other chokes, such as the output coupling choke sometimes used for speaker circuits, and output transformers, which, because of no succeeding amplification, may carry a considerable filter ripple component without developing objectionable hum in the speaker.

"Filament feeder leads carrying several amperes of alternating current may cause some hum if run very close to the first audio transformer of a good two-stage amplifier. Only in such cases need the two feeder leads be twisted. The twisting of these filament supply leads has unnecessarily been much overdone in the past.

"It is hardly necessary to state that the first audio transformer in the usual two-stage

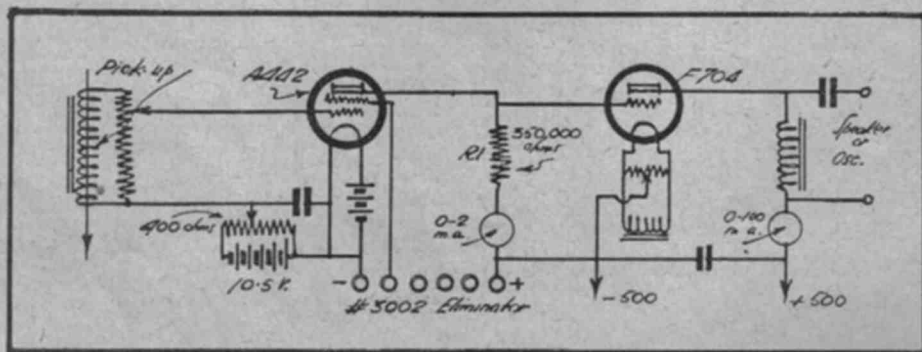
audio system is the most susceptible target for these alternating leakage fields. This is easily understood when it is remembered that any alternating voltage introduced therein will be amplified ordinarily about a hundred-fold by the succeeding amplification. Good amplifiers, of course, demand greater care in lay-out with respect to induction than poor ones. A poor amplifier may have but little amplification at the predominant frequency of 120 cycles obtained with the usual full-wave rectifier, while at 60 cycles it may be practically nothing. Consequently power transformer induction requires but little consideration, unless power line harmonics, or harmonics introduced in the transformer itself, are large enough to cause saturation. In this case higher frequencies capable of good amplification by poor low-tone amplifiers are picked up and amplified to objectionable proportions in the loud-speaker.

"High-quality amplifiers require extreme care in respect to induced hums. I recall one particular amplifier in a broadcast receiver which picked up and amplified into a loud hum the 60-cycle magnetic field of an alternating current soldering iron at 2 feet distance!

"While the first audio transformer is naturally the most susceptible to these stray alternating magnetic fields, the second transformer must also be given some consideration. It must further be remembered that the electron streams in the tubes themselves are as susceptible to the magnetic field produced by external sources as they are to the fields of the internal filament or heater, and must therefore not be unduly exposed to them. This applies especially to the tube in the detector, first audio, and radio-frequency stages.

"Not to be forgotten here is the electrodynamic speaker. The present speakers of this type, when supplied with unfiltered or poorly filtered field current, develop a strong hum caused by induction into the moving-coil circuit of alternating currents produced by the alternating component of the field current. Also the field coil and frame possess a strong a.c. leakage field under this condition, and must therefore be kept at a distance or properly oriented with respect to those parts of the receiver affected by such fields.

"Separately-excited speakers sometimes also develop hum caused by induction from the field magnetic circuit to the signal input



transformer, or from the rectifier power transformer to the input transformer. I have in mind one of the most recent designs of an important dynamic speaker manufacturer, in which this last condition was found in pronounced degree. The induction hum in dynamic speakers caused by the pulsating field current has in the past caused considerable hum troubles when used with receivers otherwise free of hum. The usual methods of reducing this hum by bucking coils, shading rings, and condensers are not very satisfactory. Measurements which I have made indicate that the normal bucking coil will reduce the induced current in the moving-coil system only to about one-third of its unneutralised value; a heavy copper shading ring will reduce it to about one-half; a 2000-uf. condenser of the dry electrolytic type, in the case of a low-voltage rectifier type of field supply, will reduce it only about 30 per cent.

The writer has perfected several neutralising methods for this type of hum in dynamic speakers, having neutralising factors of the order of 500. These will be described in detail at some future time.

ELECTROSTATIC INDUCTION.

"Hum caused by induction of low-frequency electrostatic fields arises almost wholly in the audio system—that is, in the detector and audio-amplifier circuits. The radio tubes have very low audio-frequency impedances from grids and plates to ground, and therefore have low sensitivity to these fields.

"Hum of this type occurs mostly at the higher audio frequencies because of the fact that the amount of electrostatic coupling commonly present favors them. Any unshielded conductor carrying high alternating or pulsating voltage components may act as the source of these disturbing hums. Chief among these are the rectifier tube and its associated filament and plate supply circuits, the wiring and devices associated with the input side of the filter, and the primary

circuit of the power transformer. These have pulsating or alternating voltage components of considerable magnitudes above ground potential, and therefore produce rather strong electrostatic fields. The rectifier circuits require particular attention, because the rectifier tube distorting characteristic develops considerable voltages at higher audio frequencies, which are favored by the fixed electrostatic couplings and by the higher amplifying ability of the receiver.

"Although gaseous type rectifiers have been practically abandoned in present designs, it may be remembered that they usually introduce, in addition to the audio-frequency hum effects above mentioned, radio-frequency disturbances capable of affecting the radio end of the receiver. Care must therefore be exercised in their use with respect to this characteristic.

"As with magnetic induction, the chief targets for the low-frequency electrostatic fields lie in the detector and first audio stages. With the now customary grid detection, the grid of the detector tube and the grid ends of the grid leak and condenser connected to it are separated from ground potential by very high audio-frequency impedances—namely, the grid leak and condenser, so that these portions of the detector input circuit are highly susceptible to audio-frequency electrostatic fields. Suffice it to state that a capacity of the order of 1 uuf. between this grid input and the rectifier filament or plates, or some other of the previously mentioned sources, may cause an entirely objectionable hum to appear in the reproducer. I have in mind a broadcast receiver which had a very objectionable buzzy type of hum because the detector tube was mounted within a few inches of the rectifier tube.

"To lesser degrees the detector leads and first audio grid leads are also subject to this type of induction. The degree of susceptibility, of course, is determined by the amount of amplification following the induction input point.

"Unless the filament of heater windings of the audio or detector tubes are very close to ground potential—that is, with but little or no audio-frequency impedance between them and ground—capacitive coupling between the rectifier windings and these filament windings in the power transformer may introduce hum, particularly in the detector stage.

CURRENT SUPPLY TO TUBE ELEMENTS

"Omitting the filament supply current, which has previously been discussed as a hum cause in receiver tubes, it is clear, I believe, that unsteady plate or grid voltages caused by insufficiently-filtered current supply are a very common cause of hum in electric sets.

"The question of the current supplied to plate and grid circuits as a design problem for most effective use of a given amount or cost of apparatus has apparently not found its most effective solution in many receivers now available.

"While not actually a part of the power-supply apparatus, the filament or heater potentiometers may introduce hum-producing voltages in the grid or plate circuits of the receiver tubes if improperly adjusted or fixed. While the early electric receivers were equipped with two or three variable filament potentiometers, the most recent tendency has been to use fixed potentiometers or mid-tapped filament windings altogether. This is not advisable because of the variations in tubes with respect to the best adjustment of this potentiometer. This is especially true of detector tubes.

"Some designers have used filter elements lavishly, in many cases actually introducing hum by improper placement of by-pass condensers or by use of improper circuits; others have succeeded in producing very quiet receivers with a smaller amount of hum-eliminating apparatus, and also without impairing the fidelity characteristic of the receiver as a whole."

SOME ADDITIONS to the VALVE FAMILY

DETAILS AND CHARACTERISTICS OF THE NEW TYPES

THE "Osram" Valve Works have recently produced four types of a new series of 4-volt indirectly heated A.C. mains valves, together with a rectifier for use with this series.

The new series will be known as the "Osram" "M" Series of A.C. valves. The types of these new valves are as follows:—MS4, MH4, MHL4, ML4, and the rectifying valve will be known as the "Osram" U9.

The characteristics of the new series of valves are as follows:—

Type MS4—Screen-grid R.F. amplifying valve, with indirectly heated cathode.

Filament volts 4.0, filament current 1.0 amps. approx., plate volts 200, screen-grid volts 70, amplification factor 350, impedance 500,000 ohms, mutual conductance 1.1 m/amps per volt.

Type MH4—R.F. or audio frequency amplifying valve, and detector valve under certain conditions, with indirectly heated cathode.

Filament volts 4.0, filament current 1.0 amps. approx., plate volts 200, amplification factor 35, impedance 23,000 ohms, mutual conductance 1.5 m/amps. per volt.

Type MHL4—R.F. or audio frequency amplifying valve, and detector valve under certain conditions, with indirectly heated cathode.

Filament volts 4.0, filament current 1.0 amps. approx., plate volts 200, amplification factor 16, impedance 8000 ohms, mutual conductance 2.0 m/amps. per volt.

Type ML4—Audio frequency amplifying and small power valve with indirectly heated cathode. The characteristics are:—

Filament volts 4.0, filament current 1.0 amps. approx., plate volts 200 max., amplification factor 6, impedance 3000 ohms, mutual conductance 2.0 m/amps. per volt.

The U9 Rectifying Valve has these characteristics:—

Filament volts 4.0, filament current 1.0 amp., plate volts R.M.F. 250 plus 250, impedance 220 ohms, max. rectified current (unsmoothed) 75 m/amps.

From these characteristics it can be seen that the new valves are suited for any role in the receiver other than the output amplifier.

The MS4, for instance, is a high magnification factor screen-grid radio frequency amplifying valve, and particular circuit conditions under which the valve is used will determine whether "parallel," "tuned plate," or transformer coupling is used.

The MH4 is a valve which is very suitable as a neutralised radio frequency amplifier, and as an anode bend detector, followed by either resistance capacity coupling or a transformer with a high impedance primary winding, while the MHL4 is a valve with a medium impedance and amplification factor, and is specially recommended as a detector valve.

The ML4 will give ample volume as an output valve for all average sets, but should a bigger valve be required, a valve such as the "Osram" P425, P625, P825A, or L85A or L86A, should be used. Extremely satisfactory

factory results can be obtained when the filament of the last two types is run off a.c., although it will be appreciated here that an additional filament tapping is required on the transformer.

In addition to the above new range, there is the new rectifying valve U9, which is a 4-volt rectifier giving a maximum rectified current unsmoothed of 60 milliamperes.

The new "M" series of A.C. valves will be available either with U.Y. base or the Continental 5-pin base, with the fifth pin in the centre. The U9 will be available either in U.X. or English base.

THE NEW RADIOTRONS.

A valve of particular interest is the new R.C.A. power amplifier Radiotron, the UX245, which is capable of delivering a power output equal to that of the UX210, but at a plate voltage not exceeding 250 volts. It is not interchangeable with the UX171A or any other power amplifier Radiotron.

The filament in the new UX245 is of the coated ribbon type, which assures great strength and high emission. To keep the high plate current of this Radiotron from the loud-speaker windings, it is essential to use some form of loud-speaker coupling, such as an output transformer or a choke coil and condenser.

The characteristics of the UX245 follow:—
Plate voltage 250 volts, negative grid bias 50 volts, plate current 32 milliamperes, plate resistance 1900 ohms, mutual conductance 1350 micromhos, amplification factor 3.5, undistorted power output 1600 milliwatts. Filament volts 2.5, 1.5 amperes.

The R.C.A. has also developed a new four electrode, screen grid amplifier valve, Radiotron UY224, containing a 2.5 volt heater element, which permits operation from alternating current.

The fourth electrode—the screen—in the new UY224, makes possible the attainment of very high, stable amplification per stage.

The characteristics of the UY224 follow:—
Plate voltage, maximum and recommended 180 volts, negative grid voltage 1.5 volts, screen voltage, maximum 75 volts, plate current 4 milliamperes, screen current 0.3 milliamperes, plate resistance 400,000 ohms, amplification factor 420, mutual conductance 1050 micromhos. Heater, volts 2.5, amperes 1.75.

SOME NEW PHILIPS VALVES.

Owners of American all-electric receivers will be pleased to hear that Messrs. Philips Radio have announced a special series of valves for these sets.

If application be made to Messrs. Philips Radio, 69-73 Clarence Street, full particulars will be sent of the correct Philips valves to use in any standard American all-electric set.

The new series consists of:—F109, high frequency and first audio amplifier; F209, high frequency and detector; C503, power valve; F704, super power (20 watt) valve; 1560, full wave rectifier; 1562, half wave rectifier.

SUPERLATIVE WORKMANSHIP

in this

HOME-BUILT RECEIVER



THE SET AS IT STANDS IN MR. BRINDLE'S HOME

THOUSANDS upon thousands of home-built sets have been produced in Australia. Year after year they have been churned out, most of them the same to look at, and most of them similarly erratic in operation. A great many knobs; a wooden base with parts here and there; wires everywhere—they are all much the same. This one, however, is different. It is the sort of set which would serve as an inspiration to any home-builder of sets. It is a super set in more ways than one.

The builder of it is a modest fellow, Mr. W. Brindle, who came into the office one day to ask us something about intermediate frequency transformers or something. He just happened to mention that he was building a set; that he had been working at it for some considerable time; that maybe we would like to see it. Most people ask us to see their sets at some time or other, but we have seen so many sets that it isn't much fun any more looking at just another one. But there was something about this fellow that made us think that perhaps there would be something in his set. So we went to see it.

The receiver turned out to be quite the finest piece of work we have seen. We were fairly staggered by the first impression of its appearance and its performance. The illustrations on this page may give some idea of the general arrangement of the receiver, but naturally they fail to disclose the extraordinary finish and attention to detail that is apparent on examination of the receiver itself.

In general, the outfit is a combined radio receiver and gramophone amplifier which,

together with the speaker and turntable, and built into a cabinet of unusually splendid design. Not only was the cabinet designed by Mr. Brindle, but the whole affair, including the carved ornament and all the fittings and fixtures, was built by him in his spare evenings.

In the view of the front of the cabinet, the arrangement of the components can be seen. Incidentally, the view is taken with the doors folded back along the sides of the cabinet as they are permitted to do by specially-made hinges. At the top on the left side is the grille of the speaker baffle. The Magnavox speaker behind it is built in a frame of soft, sound-absorbing material of the type that is used for

sound-proofing walls. This frame avoids the transmission of vibration to the set itself, and prevents the possibility of howls which would ordinarily result with slightly microphonic valves. The cabinet work at the side and behind the speaker is left open to avoid any resonance effect. Alongside the speaker is the electrically-driven turntable. It is in a little compartment by itself, in the roof of which is provided a long, thin lamp of the type sometimes seen in show-cases.

The motor of this unit is fitted with the usual automatic stop, but since this stop permits the turntable to revolve for some time after the current has been switched off, a special additional-mechanical automatic stop was designed and fitted. Even the pick-up arrangement has been refined. The usual tone arm has been modified to take a counterweight, which allows precise and rapid adjustment of the effective weight of the pick-up on the record. If necessary, adjustment can be made to suit the particular record being played.

Two neat switches are to be found in this compartment. They serve to start or stop either the radio receiver or the electric gramophone.

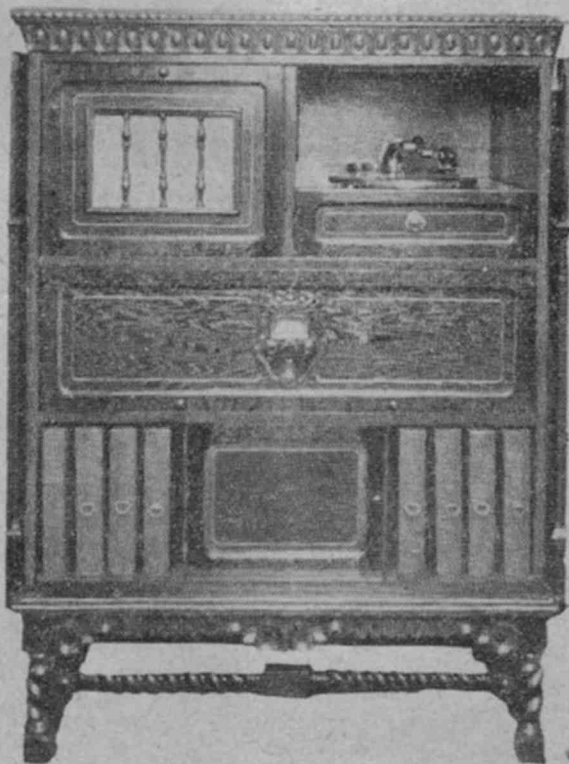
Extending across the entire centre portion of the cabinet is the receiver and the gramophone amplifier apparatus. The receiver is built from

the "Wireless Weekly" description of the "1930 Super Heterodyne." Every detail of the set has received the most careful consideration. There is not a poor connection or a floppy wire in the whole thing. Everything made has been made with care, and everything bought has been given just the same consideration. And as a result the receiver works—and works in a manner that is even better than the original model, concerning which we made so many claims. The musical reproduction, to say the least, is unusually fine. The performance on distant stations would, we think, make even the most hardened enthusiast sit up and take notice.

In the photograph it can be seen that the escutcheon does not correspond with anything one sees about town. Actually it is a beautiful carved wooden affair of refined design and an example of excellent craftsmanship. The design, of course, is the work of the builder of the set.

At the extreme right, on the same level as the receiver, is the gramophone amplifier. It is quite separate from the receiver, and operates from a separate power supply. It consists of a resistance-coupled stage feeding a second single valve stage, and then a push-bell stage with UX-245 valves. The three stages are necessary because the pick-up is of the low-output (and, incidentally

(Continued on Page 19).



THE SET WITH DOORS FOLDED BACK.

Wireless Weekly

Incorporating "Radio in Australia and New Zealand."

FRIDAY, MARCH 7, 1930.

"WE NEVER LISTEN"

THE British Broadcasting Corporation recently issued a bulletin on "The Art of Good Listening," part of which reads:—

- (1) Make sure that your set is working properly BEFORE you settle down to listen.
- (2) Choose your programmes as carefully as you choose which theatre to go to. It is just as important to you to enjoy yourself at home as in the theatre.
- (3) Listen as carefully at home as you do in the theatre or concert hall. You can't get the best out of a programme if your mind is wandering, or if you are playing bridge or reading. Give it your full attention. Try turning out the lights so that your eye is not caught by familiar objects in the room. Your imagination will be twice as vivid.
- (4) If you only listen with half an ear you haven't the quarter of a right to criticise.
- (5) Think of your favorite occupation. Don't you like a change sometimes? Give the wireless a rest now and then.

These five points tender eminently sensible advice to listeners-in, and we agree heartily with the A.B.C. in reprinting them in one of its recent bulletins for the benefit of Australian listeners. But we do not agree with the paragraph with which the A.B.C. prefaced the B.B.C.'s advice.

Some people have a most curious way of criticising the broadcasting programmes. They don't listen, and yet, strangely enough, feel perfectly competent to find fault with items they haven't heard.

"We never listen in to XYZ," they declare, "because the programmes are no good."

"But," you ask, "didn't you hear that programme that was put over the air on Friday night?"

"No, we didn't bother," is the usual reply. "But we're sure it wasn't up to much!"

The inference is, of course, that such criticism is the result of bad listening. Now, there is no doubt that much adverse criticism such as that so realistically quoted (the writer obviously draws on experience) exists as a result of bad listening, but we must also remember that much bad listening is the result of bad programmes.

A prejudice as powerful as that quoted is "curious" indeed; it is the result of something more curious than merely casual listening. It is the evidence of an apathy of listening, of a profound cynicism for promised things. It is despair.

And there are thousands of listeners-in who, having persevered and persevered with listening-in, are feeling just like that. The B.B.C.'s bulletin on the art of good listening does not explain this prejudice, nor does the A.B.C.'s prefacing paragraph persuade it away.

RADIO ROUND THE WORLD

THE Paris correspondent of "World-Radio" calls attention to the fact that many French listeners are now complaining that they receive too much English on the wireless; that although they like it in moderation they consider that the proportion of English which appears in French programmes is rather too high. At the same time nearly all Austria is learning English at the present time, and everything British is of interest, particularly to the broadcasting public. English proverbs are constantly quoted, and there are a number of conversational English clubs in existence. So far as Austria is concerned much of this English tendency is probably due to the very popular efforts of Professor Macallum, whose English lessons from the Vienna station have long been a programme feature of intense interest. In Norway also there has been a great demand for English instruction.

IN music-loving Munich, every telephone owner can listen to the opera performances each evening by telephone on payment of a fee. Apart from that, there are listening-rooms in a special building open to the general public, where one may listen to the opera for sixpence an hour with headphones.

CAMBRIDGE is believed to be the most "wireless" town in Britain, according to the local Post Office authorities. The number of wireless licences exceeds 13,000, representing one licence for about two and a half inhabited houses.

HEADPHONES to enable deaf people to hear the talking pictures are to be supplied by the Western Electric Company in all cinemas in England equipped with their apparatus. Members of the audience who suffer from deafness will be placed in special seats, and ushers will provide each of them with a set. Each set will be clamped into a plug on the back of the seat in front. The plug will be connected with the operating box, and listeners will be able to adjust the volume of the sound for themselves.

BY hearing with an eardrum vibrated by electricity, instead of by sound waves, a man in New York recently listened to music inaudible to other members of the audience witnessing the demonstration. The inventor was electrically connected to a powerful audio-frequency amplifier, and when he placed a finger tip against one ear of a member of the audience, using a sheet of paper as insulation, the effect was to produce a condenser type loud speaker with the finger tip as one pole and the eardrum and surrounding flesh as the other. This vibrated the drum of the stopped-up ear just as though sound waves were reaching it.

THERE is a broadcasting station in Canada operated entirely by one man. There is said to be real enthusiasm in the tones of the announcer as he introduces the comedian, the elocutionist, the singer, and the performer who does the piano interlude.—"Passing Show."

Can a Radio Producer Be Amiable?

THE musical gentleman with the amiable expression is Hugh Huxham. Personally we don't think he looks as amiable as that, but he thought he looked much more amiable than our original sketch; so, though we are sure that anyone whose opinion differs from ours must have been dropped on their head when an infant, we made his portrait as amiable as our nasty nature would allow.

That thing he has in his hands is not a leg of lamb; it is a musical instrument called a guitar. We don't know if he plays the guitar; it is just put in to symbolise his musical accomplishments. It is easier to draw than a harp, and doesn't take up so much room as a grand piano. But, if he doesn't play the guitar, it is about the only thing he doesn't do in the musical line. He is 3LO's musical producer, and is responsible for marshalling ukulele clubs and amateur choral societies before the mike, so that their dissilience on the air is to some extent mitigated. Also, he has the intriguing task of arguing with instrumentalists, arranging parts for musical novelties, and allotting parts for studio presentations—he is in fact, a man of many parts.

Only his native virtue and sweet disposition keep him from being very unpopular. But in this sphere, past experience stands him in good stead.

He has led the well-known Serenaders concert party through many a successful season at St. Kilda Beach, and in more civilised regions, such as Java, Singapore, India, and China. Now, tiring of the wonders of the East, he has returned to do his best with the local wonders who perform before the mike. Loth to forsake the scene of his former triumphs, he lives at St. Kilda. He has taken up motoring so that he won't be obliged to travel to the city on the electric tram, whose horridous jangle is so accurately reminiscent of the efforts of our local xylophone experts. He is also a good swimmer; he had to learn to swim to get out of reach of the other residents of St. Kilda who haunt him to ask whether Johnnie isn't a born comic, and wouldn't Amelia make a good soubrette. That's the worst of being a radio producer. We asked him if he thought our voice was as beautiful as our appearance—but just as we got started on what we considered to be "Mother Machree," he said, "Pardon me, till I close that door—it's creaking horribly." So we gave it up after that. We don't really think he's as amiable as he looks.





THE SAFETY VALVE

THE
PRESSURE
GAUGE
OF
PUBLIC
OPINION

TIN-CAN MUSIC IS DISHEARTENING TO THE COUNTRY MAN

Dear Sir,—I agree with "Super-Six" (W.W., 7/2/30) that the very vast majority of programmes put over the air are trash, and are not worth listening to.

For the man in the bush the wireless can be made the most perfect hobby to while away the loneliness of isolation. Yet the tin-can music put over the air is very disheartening. Jazz is all right for those who like it, but why feed everyone on the same chaff? My family and I, and numerous friends, heartily detest it, and still have had evenings where this chaff was fed to us from every "A" class station in the Commonwealth, and, in the finish, had to content ourselves with gramophone selections from 3UZ, Melbourne, to get away from it.

The best concert we have listened to for a very long time was that broadcast by 2FC Sydney, on Sunday, February 9, and arranged by Albert Cazabon, and it was during this concert that Miss Leonore Gotsch gave in all six songs. Undoubtedly, Miss Gotsch is the best soprano I have yet heard over the air. Is it not possible to put similar programmes on at more frequent intervals? Why should all stations broadcast similar programmes simultaneously? It is quite possible that better entertainment could be broadcast. For instance, let 2BL broadcast jazz for the fiends who like it, but then see that 2FC complies with other tastes. Similarly, the Melbourne and Adelaide stations could arrange their programmes so as not to clash similarly with each other and Sydney. Brisbane, of course, is a separate consideration, as they have to cater for a wide expanse of country, that, during several months of the year, cannot tune in with satisfaction to the southern stations.

Then again, news, which is so eagerly sought by all "bush-whackers," is almost non-existent—anyhow, at the times the countryman has at his disposal. 2FC is always awaited eagerly for the 7 a.m. short news session, and this is the limit of what we get. Sometimes a little oversea news of interest comes from 3LO or 5CL, but as the "Cocky" has to rise early, he is usually forced into sleep before this comes on. Why not let, say, 2FC broadcast local and oversea news from, say, 7.30 to 8 p.m. every evening. This is short enough, surely to goodness. News during the day is almost useless. How many cockies would have the time available to listen to it? The countryman's hours are from daylight to dark, not eight hours a day, or 44 a week, either—frequently sixteen hours a day, and for seven days a week. Stock must be attended to—they feed on Sundays just as on Mondays. Cows need milking whether it be the Sabbath or a holiday in the cities. Give us fellows a chance to get something out of life. The city dweller does not need it so much. He has theatres, dance-halls, etc., almost at a stone's throw. Many in the bush only see a moving picture show once in a blue moon, and then it often means the expense of putting up the whole family at

an hotel for the night, owing to the distance over precarious roads to home.

It almost appears that the most stuff that is put over is the very cheapest that it is possible to get. From some two-man bands in cheap places of amusement. It is not an encouragement to others to install a set for this. I, for one, have advised several of late that, for what they get and the expense to get it, they can put their money to better use, especially so as it is so hard to get nowadays.—Yours, etc.,

"COCKY"

CROOKWELL (February 11, 1930).

Hard to Hear

Dear Sir,—Would you kindly ask the announcer of the news from 2BL to speak slower and more distinctly, as, in the country districts, there are a large number of people who are a little hard of hearing, and, as the static is very bad, it would be a great help to everyone if the news were given clearer. As regards the news, this is a very important factor to country people

Yours, etc.,

B. MITCHELL

Taree (February 24, 1930).

Too Much Racing

Dear Sir,—May I refer Harry Thornton, Fairfield (who so kindly tried to answer my recent letter in your "Safety Valve") to the true text of such letter, and to stick strictly to facts as published, and not wander from the text of the letter in question? When he kindly asks me to tune in to the turf "wizard" of 2UE, he must allow for the thousands of listeners-in who are not interested in racing in any degree, as myself, but need not go to the extent of insulting people who do not just see eye to eye with himself, by saying they are "not sportsmen." I consider I am as good a sport as Mr. Thornton, and if he takes the trouble to refer carefully to the letter in question, he will see I was sport enough to allow him and all his racing friends "ONE" of the "A" class stations for racing, and the other for music. Is this un-sportsmanlike? . . . does he want all the stations? . . . Suppose we had the reverse—both "A" class stations on the music instead of the racing, I wonder if H.T. would be the one to sit tight and not complain? Be fair in "sport," Mr. Thornton.

Again he refers to sloppy, dreamy love music. Evidently H.T. is no judge of music at all, as if he again takes the trouble to refer to my letter, he will see I asked for good music by good composers. I don't think Mozart, Wagner, Chopin, Handel, etc., are credited with sloppy, dreamy love music. Finally, I inform H.T. that I, like thousands of others, would not install wireless if racing held sway, so again, H.T., be fair both ways, please.

Yours, etc.,

S.M.

Marrickville (February 23, 1930).

"Hunt up the Scabs"

Dear Sir,—I would like to know why the radio inspectors do not hunt up the scabs and prosecute them. By scabs I mean those people who have a wireless set and pay no licence fee—and there are a great many of them. Why should we pay licence fees to provide them with free music, etc.; and, also, why don't some of the wireless inspectors pay a visit to Maitland and prosecute some of them with crook wireless sets. There is one only a short distance from me, and the wireless inspectors have turned a deaf ear to my last complaint, two months ago. I think it is also about time all electric machines were compelled to be properly insulated and earthed, and then people with wireless sets would have a little peace.

Yours, etc.,

H. O. PRICE

West Maitland (February 24, 1930).

Appreciates Plays

Dear Sir,—I would like to say how very much myself and family appreciated the plays and sketches from the ever-popular station 2FC. I am glad to see they are reviving the old evenings again. The "Follies of 1930" was splendidly carried out under that very able person, Mr. Halbert. We are looking with interest to the next revue. I would like to know who the person was that hid under the name of Fallen Star. His voice is wonderful, and I wish he could be put on regularly. It was the best song I have heard for many a long day. Wishing both 2FC and 2BL every success.

Yours, etc.,

AN INVALID.

Belmore (February 17, 1930).

Enjoyed Musicians' Concert

Dear Sir,—With reference to the concerts being broadcast from the Sydney Town Hall by the members of the Musicians' Union. We thoroughly enjoyed the first concert, given on February 12, and are looking forward to the next one. Talking over the performance afterwards, the suggestion was made that we send a contribution to the funds of the orchestra, which we did—only a small one—but this brings me to the reason for this letter. We think that listeners-in should send, say, even 1/ per head to help the musicians, as a mark of their appreciation of the splendid music they gave us, and will continue to give us. I hope if this suggestion were adopted, it would mean a very substantial donation to the musicians' funds, and would not be felt by anyone.

Yours, etc.,

"HAYSEED."

GLEN INNES (February 21, 1930).

The "SILVER BELL"

SUPER POWER

B and C BATTERY ELIMINATOR

WILL SUPPLY POWER FOR ANY SET

Uses Philips Full Wave Rectifier No. 506
Four B+ Terminals for Detector, Radio,
Audio, and Power

Ten C— Adjustments Providing Exact Grid
Bias Required

Supplied Ready for Operation and with Twelve Months' Guarantee at

£6 : 15 : 0

Perfect Selectivity Any-
Where—No Hum—Volume
and Tone Unsurpassed!



You can have one demonstrated in your
own home without obligation.
NO AERIAL REQUIRED.

£21

Complete, with Speaker, and Installed.

THE ALL-STATION
SELECTIVE CRYSTAL
SET,
27/6

IF YOU ARE
WANTING THE
BEST FROM YOUR
RECEIVER HAVE
IT MODERNISED

*We Specialise in
All Electric
Apparatus*

LET US ADVISE
YOU. YOU WILL BE
SURPRISED TO FIND
HOW CHEAPLY AND
EASILY IT CAN
BE DONE.

SET BUILDERS!

We can supply you with quality parts
and expert advice on any problem.

A Guaranteed B Eliminator
For that 3-valve Set.
Anyone can Build it in One Hour.

The
Original Economic
B'liminator

Voltage to 150. Sold in Kit Form.

63/-



THE ECONOMIC B'LIMITATOR,
READY BUILT, WITH GOLD
LACQUER COVER,

73/-

ALL PARTS AND DIAGRAMS
FOR THE
Famous Renown Three
AND
The Renown Super Four

ECONOMIC RADIO STORES
25 ROYAL ARCADE, SYDNEY
Phone, M6138

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

Please mail more details of your
advt., 7/3/30, re
NAME
ADDRESS

Short Wave Notes

by **R. N. Shaw**

INTERESTING SYDNEY- AMERICAN DUPLEX TESTS



EASILY the most interesting tests of the past fortnight have been those conducted between 2ME (Sydney) and several American stations. These have taken place during the early evening, continuing until towards midnight. The hours of transmission have been highly suitable for listeners in Australia, both as regards satisfactory reception and convenient hours. To the beginner who has not had the pleasure of logging these stations during the tests I would say: Listen in between 9 p.m. and midnight on Tuesdays on wave lengths of 31, 28, and possibly on about 34 metres. Present indications tend to the belief that the interesting tests between 2ME and W2XAF will continue each Tuesday night for some time yet.

The tests referred to in my last notes were again continued on Tuesday, February 11, and proved one of the most interesting of the series. In all four stations took part in this notable "hook-up," as expressed by one of the American announcers. The stations were: 2YA (Wellington, N.Z.), 2ME (Sydney), W2XAF (New York), and W6XN (Pittsburgh, U.S.A.). The first portion of the test was between 2XAF and 6XN, the former on 31.7 and the latter on 34.5 metres. 6XN at 8.45 a.m. repeatedly called 2XAF, and remarked that he would play some more records till 6XN's signals "came up." The stations made contact shortly afterwards, but at 9.52 6XN reported that he had lost 2XAF completely. Here we were hearing both stations at good speaker. At 9.57 6XN was still calling 2XAF, the announcer from the former remarking to someone in the studio: "I think we ought to get our nickel back on this call!" (Laughter.)

The remarks heard from each station indicated that they were waiting for 2ME. At 10.5 6XN, after repeatedly calling 2XAF, said rather disgustedly: "Well, we'll put on the rebroadcast ourselves," and almost immediately 2ME's programme came back at strength of about R7. It had gone practically right round the world. A little later 6XN and 2XAF made good contact, and then came into the chain 2YA. The New York station called up 2YA through 2ME, and remarked that interference was bad on the New Zealand signals. Both Americans reported excellent reception of 2ME. 6XN then made the proposal to 2XAF that they should get the big "hook-up" with 2YA, through 2ME, thence through 6XN to 2XAF.

Another excellent test took place on Tuesday, February 18, between 2ME and W2XAF, excellent speaker volume being obtained on both stations from about 10.30 onwa #1s. The American announcer mentioned the temperature as being 20 degrees then (8 a.m.), but "it was down to 5 below zero on Sunday," he added. Mr. Rice chatted with Mr. Farmer, whom he said he had not spoken to for about a year, as cheerily and easily as if they were in the same room. At 10.50

2XAF announced that a gramophone record was being taken of the dual conversation. After asking Mr. Farmer if he noticed anything strange "about my accent" the New Yorker went on to ask many questions about the "big things" that interested Australians, drifting to sport. At 11 p.m. 2XAF announced that they were going to transmit a picture to Sydney, and asked that it be received, and then retransmitted to New York. The b-r-r-r of the television picture transmission lasted for some 15 or 20 minutes, and was loud and clear.

Some very excellent tests are also being carried out by W6XN, frequently on Monday nights, when a "hook-up" is sometimes made with 2ME. I have heard this station frequently on a wave length of 34 metres, and is good speaker strength at 10 p.m. On the night of the 18th February heard him also on 23 metres, sending out a test musical programme.

Foreigners

ON several evenings between 10 and 11 p.m. a foreigner, providing very fair music, with fair speaker strength, has been heard just above the amateur band, 42 metres, but no English announcement was heard. In fact very few announcements of any kind are heard, which tends to the belief that the station may be a Dutch one.

Another foreigner has been heard just above W2XAF on about 32 metres, about 10 p.m.

At 9.30 on Sunday a foreigner was heard transmitting music at good speaker strength on 37 metres.

5SW, KZRM, and Others

THE London station has not been heard with any great strength during the evening hours (10.30-11.30) of late, nor is there any marked improvement during the past fortnight in the morning transmission, which can only be classed as fair 'phones.

GBX still continues the tests with 2ME on varying wavelengths between 15 and 27 metres, the latter being the stronger.

KZRM is still on the move, and might be heard on any of his several wave lengths, such as 48.8, 31, 26, or a good harmonic on 24.

Trans-Atlantic 'Phone

FOR the benefit of those who may not have clearly obtained the call signs of the stations working the ship-to-shore service it might be mentioned that the American station WOO heard working the S.S. Olympic (G2GN) is a station better known as W2XD, New Jersey. It is controlled by the General Electric Co. WOO was the special call allotted for the tests with the Olympic. During the week another test was heard, apparently from another of the Atlantic liners, but no call sign was heard. Listeners interested in this service would do well to keep an "ear" on the 23 and 15-16 metre bands during the next couple of weeks, for which they will probably be amply rewarded.

Dutch Stations

FOR the week ended Sunday, February 21, the powerful Dutch station PHI carried out a series of special tests nightly until about 1.30 a.m. The station was easily logged about 11 p.m., a powerful carrier being on the air some minutes in advance of the announcement, which, as usual, was made in several languages, including English. The wave-length was again 16.88, and this was made very clear in announcements.

I have not heard PCJ for some time. I understand that the station is undergoing reconstruction, and this probably accounts for its signals not being heard.

Excellent musical programmes have again been heard from Amsterdam and other Dutch-Java 'phone stations, particularly PLE on 15 metres. Another station, PMB, has been coming in strongly, whilst a station heard on about 29 metres is apparently PLR. No announcement was heard from him.

VK Amateurs

EXCELLENT reception is being obtained of New South Wales and Queensland amateurs early on Sunday mornings and again on Sunday afternoons, whilst a few are heard during the evening. The only other inter-State station heard was VK6AG (Perth), who is very consistent. As late as 10.15 on Monday night I heard one lone VK in 4BB, transmitting excellently modulated music. He frequently requested reports.

KGO and 8XK

OUR old friend KGO (California) can now be heard consistently on Tuesday, Friday, and Sunday afternoons, but he still lacks the old-time punch. However, there should soon be considerable improvement. He has been subject to some high speed fading of late.

Continued from page 15.)

Home-built Receiver

high quality) type. The power supply for this amplifier is in the centre compartment at the bottom. The power supplies are duplicated to permit operation of the radio or the gramophone during possible experiment with one of them. To the left and right of the centre bottom compartment are containers for records. They can be seen clearly in the second photograph.

Altogether, as we said before, the set is the finest bit of work we have yet seen. Our description may sound as if we were rather wildly enthusiastic about the set; that is just how we wanted it to sound. We really don't know Mr. Brindle, and there surely is no ulterior motive behind what we have said. It is just that this enthusiast has built an extraordinarily fine receiver; that he has built it in his spare time purely for the love of doing it; and that we think his work should serve as an inspiration to other enthusiasts working along similar lines.

Local Programmes, Friday, March 7

2FC

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 151 Metres).

EARLY SESSION—7 to 8.15 a.m.

- 7.0: "Big Ben" and Programme Announcements.
- 7.2: Meteorological information for the man on the land.
- 7.5: This morning's news from the "Daily Pictorial."
- 7.10: Austradio Musical Reproduction
- 7.45: Mails and shipping.
- 7.51: What is on to-day.
- 7.53: Music from the Studio.
- 8.15: CLOSE.

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

- 10.30: Announcements.
- 10.32: To-morrow's Sporting Events by Oscar Lind.
- 10.45: HORACE WEBER AT THE GRAND ORGAN—
- 11.0: HOUSEHOLD HELPS: Cooking, by Miss Ruth Furst.
- 11.10: CABLES—(Copyright), A.P.A. and Sun-Herald News Service.
- 11.15: MORNING DEVOTION, conducted by Rev. Bernard Deane.
- 11.30: Austradio Musical Reproduction.
- 1.53: British Official Wireless News.
- 12.0: "Big Ben." Stock Exchange and Metal Quotations.
- 12.5: SISTER PARRY will tell Listeners about "Flies—How They Spread Disease, and How to Fight Them."
- 12.20: Midday weather forecast and weather synopsis. Special produce market session for the man on the land, supplied by the State Marketing Board
- 12.30: CLOSE.

THE LUNCH HOUR—1 to 2.30 p.m.

- 1.0: THE RADIO ENTERTAINERS—
- 2.0: Stock Exchange, second call.
- 2.2: A Glance at the afternoon "Sun"
- 2.7: Austradio Musical Reproduction
- 2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.

- 2.30: THE LIGHT ORCHESTRA— "Vagabond King Selection" (Friml)
- 2.42: IRENE DUNCAN, Soprano— (a) "Whatever is best" (Lohr) (b) "For Remembrance" (Woolmer).
- 2.49: DULCIE BLAIR, Violinist— "Legende" (Wieniawski).
- 2.56: THE LIGHT ORCHESTRA— Overture, "Bronze Horse" (Auber).
- 3.1: MAGIC SPINNER OF WORDS. THE STORYTELLER will tell of "Stolen Fame—Some Stories of Notorious Impostors."
- 3.15: IRENE DUNCAN, Soprano— "I Did Not Know" (Trotter).
- 3.18: JACK POST, Cellist— "Chanson" (Moussorgsky).
- 3.21: ANNIE HUGHES in a short sketch, entitled "Mary at the Talks."
- 3.28: CLIVE AMADIO, Saxophone Solos— "Chanson Melodie" (Friml).
- 3.31: THE LIGHT ORCHESTRA— Suite "The Enchanted Lake" (Tschai-kowsky).
- 3.38: IRENE DUNCAN, Soprano— "A Heart That's Free" (Robyn).
- 3.41: ANNIE HUGHES, in "Bride of Sighs"
- 3.48: THE LIGHT ORCHESTRA— "Quaker Girl" Selection (Monckton).
- 4.0: SUNSHINE AND FLOWERS. REDGUM talks about our Gardens.
- 4.15: Radio Rhythm.
- 4.23: Stock Exchange third call
- 4.30: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Children's "Goodnight" Stories, told by the "Hello Man."
- 6.0: The 2FC Hospital Birthday League.
- 6.10: The Farmyard Five will entertain.
- 6.30: The Serial Story.
- 6.45: FROM FARMER'S OAK HALL: Dance music.
- 7.20: A.B.C. Sporting Service, by the A.B.C. Racing Observer—M. A. Ferry.
- 7.30: Special Country Session. Stock Exchange Resume. Markets. Weather Forecast. Latest news service from the "Sun." Truck bookings.
- 7.58: To-night's Programme.

INDEX

To Local Programmes

Friday, March 7.		
2FC, 2BL	20	
3GB, 2UW, 2KY	21	
2UE	31	
Saturday, March 8.		
2FC, 2BL	24	
2KY, 2UW, 2UE	29	
2GB	31	
Sunday, March 9.		
2FC, 2BL	30	
2GB, 2UE, 2UW	31	
Monday, March 10.		
2FC, 2BL	32	
2GB, 2UW, 2KY	33	
Tuesday, March 11.		
2FC, 2BL	36	
2GB, 2UW, 2UE, 2KY	45	
Wednesday, March 12.		
2FC, 2BL	40	
2GB, 2UW, 2KY, 2UE	41	
Thursday, March 13.		
2FC, 2BL	44	
2GB, 2UW, 2KY, 2UE (same as Friday)	21	

To Interstate Programmes

Friday, March 7.					
4QG, 3LO, 3AR, 3DB	22				
5CL, 6WF, 7ZL	23				
Saturday, March 8.					
4QG, 3LO, 3AR, 3DB, 5CL, 6WF, 7ZL	29				
Sunday, March 9.					
4QG, 3LO, 3AR, 3DB, 5CL, 6WF, 7ZL	31				
Monday, March 10.					
4QG, 3LO, 3AR, 3DB, 5CL, 6WF, 7ZL	34				
Tuesday, March 11.					
4QG, 3LO, 3AR, 3DB, 5CL, 6WF, 7ZL	28				
Wednesday, March 12.					
4QG, 3LO, 3AR, 3DB, 5CL	42				
Thursday, March 13.					
4QG, 3LO, 3AR, 3DB, 5CL, 7ZL	46				

THE EVENING PRESENTATION—8 to 11.30 p.m.

A Programme of Organ Music from the Fullerton Memorial Church to-night, presents many pleasing features. There are songs by D. B. O'Connor; Harp Solos; Moments of Mirth and Melody; and, in connection with Humane Week, talk to be given at 9.6 by Mr. E. J. Lonsdale. At 9.15 we cross to 3LO for the Friday Night Programme of Band Music. Through 2BL Service there are Orchestral Numbers. Songs by Virginia Bassetti and Clifford Lathlean, an intriguing Something Different by Goodie Reeve, proves a typical and popular Friday Night Programme.

- 8.0: AN ORGAN RECITAL FROM FULLERTON MEMORIAL CHURCH. RONALD MARSTON AT THE ORGAN— (a) "Prelude and Minuet" from "Gothic Suite" (Boellman). (b) "Serenade" (Schubert).
- 8.10: FROM THE STUDIO: D. B. O'CONNOR, Baritone— (a) "Old Fashioned Locket" (Dale, Marvin Ford). (b) "Come Back to Erin" (Clarabelle).
- 8.17: SIGNOR BUTTA, Harp Solos— (a) "Baden Baden" (Bousquet). (b) "Rustling Spring" (arr. Butta).
- 8.24: FROM FULLERTON MEMORIAL CHURCH—Ronald Marston at the Organ— "Three Blind Mice" (Traditional air, arr. by R. Marston)— 1. Original Air. 2. As a Church Organist would have written it. 3. As Mendelssohn might have written it. 4. As Handel might have written it.
- 8.34: FROM THE STUDIO—IRISH SONGS D. B. O'CONNOR, Baritone— (a) "Dear Little Shamrock." (b) "Irish Immigrant."
- 8.41: SIGNOR BUTTA, Harp Solos— (a) "None-E Ver" (Never More) (Matto). (b) "Meditation" (Butta).
- 8.47: MOMENTS OF MELODY AND MIRTH. THE HIGH BROWS REVUE COMPANY present— VIOLET COLLINSON singing (a) "Ave Maria" (Kahn), Violin Obligato by Veta Wareham. (b) "Walt" (d'Hardelot).

GRACE QUINE and WALTER GEORGE in a little humor.

VETA WAREHAM, Violinist, plays, (a)

"Romance" (Wieniawski).

(b) "Variation" (Tartini-Kreisler).

GRACE QUINE, the Lady Baritone, sings—

(a) "Old Pals are the Best Pals" (Rose).

(b) "The Smile of Molly Maloney."

WALTER GEORGE sings "When Father

Fixed the Wireless."

VIOLET COLLINSON sings—

(a) "At Night" (Rachmaninoff).

(b) "The Answer" (Terry).

VETA WAREHAM, Violinist, plays—

(a) "Meditation" from "Thais" (Massenet)

(b) "Gavotte" (Gossic-Elman).

9.5: IS IT GOING TO BE FINE FOR THE

WEEK-END? THE COUNTRYMAN'S

WEATHER SESSION—

(a) "New South Wales Forecasts."

(b) "Interstate Weather Forecast."

Yachtsman's and Fisherman's Forecast."

9.6: BE KIND TO ANIMALS WEEK.—An

address by Mr. E. J. Lonsdale, "Our House-

hold Friend, the Cat."

9.15: RELAY FROM 3LO, MELBOURNE—

A Programme of Band Music.

9.16: COLLINGWOOD CITIZENS BAND

(conductor, F. C. Johnston), March, "Bril-

liante"; overture, "Faust."

9.25: "ROSES OF PICARDY." Characters:

Colinette, The Rose of Picardy; Pierre

Dubois, a street violinist; Jim, an ex-sold-

ier. Scene: The edge of a quiet village in

Picardy in the year 1925. Time: The close

of day.

9.35: COLLINGWOOD CITIZENS' BAND.

Selection, "H.M.S. Pinafore."

9.45: HE, SHE, AND A PIANO—Flashlights

in Frivolity.

9.53: COLLINGWOOD CITIZENS' BAND.

Trombone solo, "Songs of the Old Church

Choir"; march, "Dunroon."

10.0: "THE MASTER FOUR" MALE QUAR-

TETTE.

10.6: COLLINGWOOD CITIZENS' BAND.

Waltz, "Tesoro Mio."

10.15: FROM THE STUDIO: Announce-

ments.

Late Official Weather Forecast.

10.20: RADIO RHYTHM.

THE A.B.C. DANCE BAND.

11.30: CLOSE. NATIONAL ANTHEM.

2BL

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

OPENING SESSION—8.15 to 11 a.m.

- 8.15: G.P.O. Chimes and Announcements.
- 8.16: A Musical Interlude.
- 8.40: Meteorological Data for the Country.
- 8.45: Mails and Shipping Information.
- 8.50: Memory Melodies
- 9.0: Old Folks' Session.
- 9.30: Songs, Grave and Gay.
- 9.40: British Official Wireless Press.
- 9.45: New Music.
- 10.5: News from the "Daily Pictorial."
- 10.10: Austradio Musical Reproduction
- 10.30: THE AUSTRALIAN BROADCASTING COMPANY'S WOMEN'S ASSOCIATION conducted by Miss Gwen Varley. "Colour in the Home."
- "The Wife of an Australian Pioneer"
- 11.0: G.P.O. Chimes. Close Down

MIDDAY SESSION—12 Noon to 2.30 p.m.

- 12.0: G.P.O. Chimes and Announcements.
- 12.2: A Recital of Pianoforte Reproductions.
- 12.30: THE RADIO ENTERTAINERS.
- 1.0: Afternoon News, from "The Sun."
- 1.5: Songs of Yesterday and To-day.
- 1.20: Radio Rhythm.
- 1.45: New Dance Numbers.
- 2.0: Half an hour with Silent Friends

AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.

- 2.30: GEMS FROM THE GREAT MASTERS
- 2.45: TWO NEW SONGS.
- 2.52: AN AMPICO PIANOFORTE REPRODUCTION.
- 3.2: FROM FARMER'S OAK HALL—Dance Music.
- 3.12: FROM THE STUDIO—A Popular Bal-

3.15: THE MACCUNN STUDENTS, under the direction of H. W. VARNA, play "HONESTY THE BEST POLICY" (arranged by H. W. Varna).

CAST:

Joseph Masters H. W. Varna
Mary (his wife) Phyllis Clegg
The Lady Bountiful Miss Kenna
A Policeman Keith Sheather

SCENE: A tenement room in a London Lodging House.

3.30: FROM FARMER'S OAK HALL—Dance Music.

3.42: FROM THE STUDIO—Popular Orchestral Selections.

3.52: SELECTIONS FROM WELL-KNOWN LIGHT OPERAS.

4.15: CAPTAIN FRED AARONS will tell "A Story of the Cave Man and His Time"

4.30: FROM FARMER'S OAK HALL—Dance Music.

4.45: FROM THE STUDIO—The Trade Hour—Demonstration Music.

5.45: Weather Information, Close Down.

THE DINNER HOUR—6.15 to 7.55 p.m.

6.15: FROM FARMER'S OAK HALL—Dance Music.

6.45: THE BOY SCOUTS' CLUB, conducted by Mr. Norman Lyons.

7.5: The Country Man's Market Session—Wool, Wheat, Stock, Farm Produce, Fruit, and Vegetable Markets.

7.20: FROM FARMER'S OAK HALL—Dance Music.

7.45: Austradio Musical Reproduction.

7.55: What's on the air To-night.

TO-NIGHT'S PRESENTATION—8.0 to 10.30.

Friday Night's Programme is purposely built on popular lines, remembering the many listeners who are in town taking advantage of shops open late, and it is with this in mind the numbers are chosen easy to listen in, with a view to appealing to the man "in the street" in the fullest sense of the word. Goodie Reeve to-night will create interest in the intriguing "Something Different" she has prepared. There are songs by Clifford Lathlean and Virginia Bassetti, E. J. Fleming provides a humorous interlude, and Ida Tear, pianist, will give a short recital.

Through 2FC Service is the Melbourne Relay at 9.15. There is an organ recital from the Fullerton Memorial Church; D. B. O'Connor, Baritone, makes a welcome re-appearance. "High Brows" Revue Company speeds the merry moment; there are Harp Solos by Signor Butta, and, in connection with "Humane Week," a short address will be given at 9.5 by Mr. E. J. Lonsdale.

8.0: VIRGINIA BASSETTI, Contralto—

(a) "Sapphic Ode" (Brahms).
(b) "Sandyman" (Brahms).

8.8: IDA TEAR, Pianist—

"Theme Varie" (Paderewski).
A MELANGE OF FAVORITE OPERAS.

8.16: THE LIGHT ORCHESTRA—

"Master Melodies" from light operas (A. J. Roberts).

8.23: CLIFFORD LATHLEAN, Basso—

(a) "The Bells of Aberdovey" (Old Welsh Air).
(b) "The Men of Harlech" (Old Welsh Air).
(c) "All Through the Night" (Old Welsh Air).

8.30: VINCENT ASPEY, Violinist—

(a) "Menuet" (Handel).
(b) "Tambourin Chinois" (Kreisler).

8.37: THE INIMITABLE HUMORIST—

"MOMENTS WITH MARK TWAIN," by E. J. Fleming.

8.47: VIRGINIA BASSETTI, Contralto—

(a) "Time's Roses" (Barry).
(b) "Everywhere I Look" (Carew).

8.54: THE STUDIO ORCHESTRA—

(a) "Fifinette" (Percy Fletcher).
(b) "Folle Bergere" (Percy Fletcher).

9.0: IDA TEAR, Pianist—

(a) "Gavotte" (Gluck-Brahms).
(b) "Gavotte" (Levitki).
(c) "Valse" (Levitki).

9.8: CLIFFORD LATHLEAN, Basso—

(a) "The Wanderer" (Schubert).
(b) "Sea-Gypsy" (Cloueh-Leichter).

9.15: "SOMETHING DIFFERENT"—

GOODIE REEVE in an Original Sketch:
9.35: Weather Information for the Man of the Land.

9.37: THE STUDIO ORCHESTRA—

Selection, "The Chocolate Soldier" (Strauss).

9.50: FOR THE ATHLETE—

CLAUDE CORBETT will give a Sporting Talk.

10.10: THE STUDIO ORCHESTRA—

Selection, "You're in Love" (Friml).

10.25: NEWS SERVICE—
Late News from "The Sun."
Late Weather Forecast.
10.30: NATIONAL ANTHEM. CLOSE

2GB

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

10.0: Music.
10.10: Happiness Talk, by A. E. Bennett.
10.20: Music.
10.30: Women's Session, by Mrs. W. J. Stelzer.
11.30: Music.
11.45: Close down.
2.0: Music.
2.5: Women's Radio Service, by Mrs. Dorothy Jordan.
2.50: Music.
3.0: Address by Miss Mary Rivett.
3.15: Music.
3.30: Close down.
5.15: Children's Session, by Uncle George.
6.50: Metro-Goldwyn-Mayer Radio Movie Club Session.
7.0: Music.
7.45: Feature Story.
8.0: Mr. William Green (tenor).
8.10: Symphony Orchestra.
8.25: Miss Elsie Brown (Soprano).
8.35: Mr. Jack Win and Mr. Heath Burdock (Humor).
8.40: 'Cello Solos.
8.50: Mr. William Green (Tenor).
9.0: Weather Report.
9.3: Address.
9.15: Symphony Orchestra.
9.30: Miss Elsie Brown (Soprano).
9.40: Mr. Jack Win and Mr. Heath Burdock. (Humor).
9.45: Symphony Orchestra.
10.0: Instrumental Music.
10.30: Close down.

2UW

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

MIDDAY SESSION

12.30: Request numbers.
1.0: Chimes, Music.
1.15: Talk on Homecraft, by Miss Doreen Walsh.
1.40: Music and request numbers.
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: Chimes, Request numbers
8.0: Popular music
9.0: Comments on Foreign Affairs, by Mr. J. M. Prentice.
9.10: Music and request items.
10.30: Close down.

2KY

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

MORNING SESSION

10.0: From Trades Hall. Tune in to the ticking of the clock.
10.3: Popular fox-trots.
10.15: Calls and announcements.
10.30: From Bebarfald's New Studio--
WOMEN'S SESSION—Home hints and information, conducted by Mrs. GRAY.
11.0: Miss HARRISON, of Bebarfald's Home Planning Bureau.
11.15: Calls and announcements.
11.20: Musical interlude.
11.30: Request numbers.
11.40: Music and vocal items.
11.55: Where to go to-night.
12.0: Closing announcements.

CHILDREN'S SESSION

6.0 p.m.: From Trades Hall—Birthday calls, request numbers and Kiddies' Entertainment—UNCLE BERT.

EVENING SESSION

7.0: Musical interlude.
7.15: SPORTING FEATURE—Turf topics, Review of candidates for to-morrow. Mr. GEO. A. DAVIS.
7.40: Request numbers.
8.0: From Bebarfald's New Studio.
8.30: Music and vocal items.
9.10: SPORTING FEATURE—Presented by TOOTH and CO., LTD., KENT BREWERY, from McHugh's Leichhardt Stadium full description of main 15-round event—HERBERT BEAVER.
10.0: Closing announcements.

Tone!

The realism of speech—music—high notes—low notes, is brought to you with the new E.C.A. receivers and combination sets. Every inflexion of the human voice is reproduced perfectly—naturally—with the ROLA MOVING COIL SPEAKER. Your instinctive desire for the best that is in music is realised in the E.C.A. sets.

WITH ONE SMALL KNOB you control the volume at will. It's simplicity itself. You vary it instantly to any pitch from the merest whisper to sufficient to fill a large room.

Because E.C.A. sets incorporate the modern application of screened grid valves in both radio and audio stages, you have at your command a receiver capable of giving you reception over enormous distances, especially in the daylight. And no matter how poor the station is, you can improve the tone wonderfully with the variable tone corrector.

E.C.A. sets are foolproof. The interchangeable unit construction gives you instant accessibility to all parts.

THERE ARE NO AUDIO TRANSFORMERS IN E.C.A. SETS. THEREFORE, THERE ARE NO BREAKDOWNS AND NO DISTORTION.

The cabinet work of E.C.A. sets is richly finished to harmonise with the furniture design of any room.

ECA

RADIO AND COMBINATION SETS

Reliable service and a definite guarantee. Prompt service on Udisco and other sets.

DEALERS (ex Udisco and others): Write to us for details. A few territories still open.

ELECTRIC CORPORATION OF AUSTRALIA LIMITED,
62 KING STREET,
SYDNEY.

Phone: B 3080.

WORKS:—
PRIMROSE AVENUE, ROSEBERY.
MASCOT 723.

Interstate Programmes, Friday, March 7

4QG

Australian Broadcasting Co., Brisbane
(Wavelength, 385 Metres).

EARLY MORNING SESSION

7.30: The chimes. 7.31: Musical reproduction. 7.35: Weather information officially supplied by the Commonwealth Weather Bureau. 7.45: Musical reproduction. 7.50: Cable news. 7.55: News service. 8.0: Time signals. 8.1: Musical reproduction. 8.30: Close down.

MORNING AND MIDDAY SESSION

11.0: The daily broadcast service. 11.10: Musical reproduction. 11.23: Social news supplied by courtesy of the metropolitan newspapers. 11.30: A talk for womenfolk. 11.45: Musical reproduction. 11.55: What's on to-day. 12.0: The chimes. 12.1: Musical reproduction. 12.15: Items of interest to womenfolk. 12.30: Musical reproduction. 1.0: Market reports, weather information, midday news supplied by courtesy of the "Courier". 1.20: British official wireless news. 1.30: Musical reproduction. 2.0: Close down.

AFTERNOON SESSION

3.0: The chimes. 3.1: Musical reproduction. 3.30: Mail train running times. 3.31: Musical reproduction. 4.30: Close down.

EARLY EVENING SESSION

6.0: The chimes. 6.1: Railway, mail and shipping information. 6.10: Hilda Woolmer (pianist) and H. Scott McCallum (violinist). 6.30: Bedtime stories by "Uncle Ben" and "Uncle Jim". 7.0: Late news supplied by courtesy of "The Telegraph". 7.7: Market reports, weather news, and commercial information. 7.30: Lecturette. 7.43: Time signals. 7.45: A.B.C. sporting notes. 7.55: Programme announcements.

NIGHT SESSION

8.0 p.m. to 11.0 p.m.
The first portion of the programme for to-night will comprise the relaying of a combined organ and choral recital by Mr. Sydney May and his Octette. During the second portion another radio revue by Hermie Ward will be broadcast from the studio. The programme will conclude with dance music by the A.B.C. Dance Band.
8.0: Sydney May (organist)—"Fanfare" (Ascher).
8.6: Mixed Octette—Scotch Melodies (arr. Branscombe).
8.11: Sydney May (organist)—"Serenata" (Moszkowski).
8.14: Octette—Ladies. "Waltz" from "Faust" (Gounod).
8.18: Sydney May (organist)—"Largo" (Handel).

8.23: Mixed Octette—"Come Where My Love Lies Dreaming."
8.28: Sydney May (organist)—Overture from "Merry Wives of Windsor" (Nicolai).
8.34: Octette—Male voices. "Song of the Volga Boatmen."
8.39: Sydney May (organist)—"The Lost Chord" (Sullivan).
8.44: Mixed Octette—"The Last Rose of Summer" (Moore).
8.48: Sydney May (organist)—"In a Mopastory Garden" (Ketelby).
8.53: Mixed Octette—"Quandry Bay."
8.58: Sydney May (organist)—"To a Wild Rose" (McDowell).
8.58: Mixed Octette—"Solemn Night."
9.0: Metropolitan weather forecast.
PART II.—A RADIO REVUE. APPLE SAUCE.
Written mainly to produce a smile. Produced by George (Hermie) Ward and his Playars.
The cast will include: Hermie Ward, Kathleen Ward, Fred Monument, Bert Harrow, Mrs. R. Bell, Maizie Dane, and others. Incidental music by The National Broadcasting Orchestra (conductor, Hilda Woolmer).
10.0: News service, weather information.
10.15: A.B.C. Dance Band (conductor, Roy Baird)—Dance music.
11.0: Close down.

3LO

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

EARLY MORNING SESSION.

7.0: Time signal. 7.1: Shipping News. 7.3: Physical Exercises to Music. 7.20: Reproduced Music. 7.40: Mail Notices. 7.42: What's On to-day. 7.45: Market Reports. 7.53: Weather Forecast. 7.55: News Service. 8.0: Time Signal. 8.1: Arrival times of express trains. 8.4: Musical Interlude. 8.15: Close down.

MORNING SESSION.

10.30: Current Happenings in Sport, by Mel Morris. 10.45: Musical Reproduction. 11.0: Fish Market reports. 11.3: Musical Reproduction. 11.30: Morning Sales: Melbourne Stock Exchange; Metal Prices. 11.33: Musical Reproduction. 12.0: Time signal. 12.1: Resume of shipping activities, conducted by Mr. R. H. Owen. 12.15: News Service. 12.30: Close down.

MIDDAY SESSION.

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

EDUCATIONAL SESSION.

2.0: Rev. Wm. Bottomley will speak on: The Tragic Life of the Famous English Poet, Frances Thompson, author of "The Hound of Heaven." 2.15: Musical interlude. 2.20: Mr. Geo. Cowley will speak on "George and Robert Stevenson." 2.35: Musical interlude. 2.40: "The Mere Man" ponders on the subject, "Long or Short Skirts?" 2.55: Musical interlude. 3.0: Time signal.

THE RADIO MATINEE

3.0: Studio Light Orchestra selection. "Oh, Oh, Delphine" (Caryll). 8.10: J. Howard King, bass-baritone—"The Last Call" (Sanderson), "Provence" (Carne). 3.17: Tasma Tiernan, cello—"Salut d'Amour" (Elgar). 3.21: Studio Light Orchestra—"Guitarre" (Moszkowsky). 3.25: Violet Jackson, soprano—"The Robin's Song" (Toward White); selected. 3.32: Studio Light Orchestra—"Four Indian Love Lyrics" (Woodforde-Finden). 3.42: Norah O'Malley and a piano. 3.50: J. Howard King, bass-baritone, two request numbers. 3.57: Studio Light Orchestra—novelty number, "Rosette" (Claypolle). 4.7: Violet Jackson, soprano—selected. 4.14: Norah O'Malley and a piano. 4.20: Studio Light Orchestra—"Andante" (Lemare), "Love's Garden of Roses" (Haydn Wood). 4.30: Close down. Note:—During the afternoon details of the more important sales at the annual thoroughbred racehorse yearling sales at Newmarket will be broadcast at approximately 2.0, 3.0, 4.0, and 4.30.

THE CHILDREN'S CORNER.

5.45: "Plain Peter" and "Rollicking Rita" in their jolly opening chorus. "Billy Bunny" has a few words to say, and then we'll have the Children's News Bulletin. 6.0: Time signal. "Paul Jencks and his band—novelty numbers. "Billy Bunny" will tell another episode of "The Meeting Pool," by Mervyn Skipper. The second meeting, at which it is decided that the python shall kill the white man. The greatest race that ever was. "Plain Peter" and "Rollicking Rita" entertain again. 6.25: Birthday greetings from "Billy Bunny." 6.35: Musical interlude.

EVENING SESSION.

6.40: Captain Donald Maclean, "Buried Treasure." 6.55: Musical interlude. 7.0: Time signal. 7.1: Countrymen's session—Stock Exchange information, Corn Exchange report, Associated Stock and Station Agents' official report, Wool Exchange report, mines and metals, fish and rabbit prices, farm and dairy produce report, supplied by the Inter-State Dairy Produce Committee, wholesale fruit prices, supplied by the Wholesale Fruit Merchants' Association, retail fruit prices, supplied by the Victorian Fruit-growers' Association, citrus fruit prices, supplied by the Victorian Central Citrus Association, weather synopsis, river reports, rainfall data. 7.25: Mr. W. R. Hawkins will speak on "Pot Plant Culture." 7.40: News service. 7.45: Musical interlude. 7.55: Eric Akin will speak on "To-morrow's events at the Motordrome." 8.0: Time signal.

NIGHT SESSION.

8.0: "La Fiesta," "A Glimpse of Old Spain," an atmospheric presentation, introducing:—Orchestra, "Waltz" from "Carmen" (Bizet); soprano "La

Paloma" (Yradier), with castanet accompaniment and chorus; declamation, "Don Juan," with vocal background; tenor, "Hasta Manana"; declamation, "The Full Ring"; baritone, "Toreador's Song" from "Carmen" (Bizet); quartette, "Ay! Ay! Ay!" with Spanish guitar (Fricre); orchestra, excerpt "Capriccio Espagnol" (Rimsky-Korsakoff); contralto, "Gypsy Song" from "Carmen" (Bizet); talk, The Grandeur of Granada: finale, chorus, "Valencia" (Paddila).
8.80: A plantation scene, "Ma Mamma is Gone."
9.0: Reminiscences of vaudeville. Slight impressions of well-remembered songs and sketches, as rendered by favorite artists in the good old by-gone days.

9.16: Collingwood Citizens' Band (conductor, F. C. Johnston)—march, "Brilliant"; overture, "Faust."
9.25: "Roses of Picardy," Collette, "The Rose of Picardy"; Pierre Dubois, a street violinist; Jim, an ex-soldier. Scene: The edge of a quiet village in Picardy, in the year 1925. Time: The close of day.
9.35: Collingwood Citizens' Band—selection, "H.M.S. Pinafore."
9.45: He, She, and a Piano—flashlights in frivolity.

9.55: Collingwood Citizens' Band—trombone solo, "Songs of the Old Church Choir"; march, "Dun-tron."
10.0: "The Master Four" Male Quartette—popular numbers.
10.6: Collingwood Citizens' Band—waltz, "Tesoro Mio."
10.15: Eric Welch will speak on "To-morrow's V.R.C. Races at Flemington."
10.25: Collingwood Citizens' Band—cornet solo, "Softly Awakes My Heart" (Saint-Saens).
10.30: News session.

10.40: Paul Jeacle and his band—dance music.
11.30: Close down.

3AR

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

MORNING SESSION

8.15: Musical reproduction. 8.45: Weather data. 9.0: G.P.O. chimes. 9.1: News service. 9.5: Australian musical reproduction. 10.0: Chimes. 10.1: British Official Wireless news. 10.10: Announcements. 10.20: Arnold Coleman at the Wurllitzer. 10.40: Late announcements. 10.45: The daily broadcast service. 11.0: Close down.

MIDDAY SESSION

12.0: G.P.O. chimes. 12.1: Love affairs of literary men—Percy Bysshe Shelley—Miss Agnes St. Clair. 12.15: Fifteen minutes' synopation. 12.30: Luncheon music, supplied by the Studio Light Orchestra. 2.0: G.P.O. chimes.

AFTERNOON SESSION

2.1: The Six Jumping Jacks—Orchestral. 2.3: Al Jolson, comedian. 2.5: Rudy Wiedoff, saxophone. 2.9: Bessie Brown, soubrette. 2.12: The Six Jumping Jacks—Orchestral. 2.15: Frank and James McCravy. 2.18: Brunswick Military Band. 2.21: John Barclay, baritone. 2.24: Max Rosen, violin. 2.27: Florence Easton, soprano. 2.30: Brunswick Military Band. 2.33: Mario Chamlee, tenor. 2.37: Metropolitan Opera House Orchestra. 2.45: Charles Hart and Elliott Shaw. 2.50: Frederick Fradkin, violin. 2.53: Mario Chamlee, tenor. 2.57: Minneapolis Symphony Orchestra. 3.0: Request numbers. 3.20: A chat by a prominent woman. 3.35: Topical chatter—The Flapper and Uncle. 3.55: Musical interlude. 4.0: Cookery and household management—Miss K. Benningfield. 4.15: Musical reproduction. 5.0: G.P.O. chimes. 5.1: Reports from annual thoroughbred racehorse sales at Newmarket. 5.5: Musical reproduction. 5.30: Weather data. 5.45: Close down.

EVENING SESSION

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

NIGHT SESSION

8.0: Great National Happenings as Depicted in Art—The Burke and Wills Expedition—Mr. John Shirrow.
8.15: Community singing transmitted from the Town Hall, Oakleigh.
10.20: Weather and news.
10.30: Close down.

3DB

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

MORNING SESSION.

11.0: Women's radio service "Cooking Hints and Problems," conducted by Miss Iris Turnbull. 12.0: Symphony orchestra—Tales from the Vienna Woods. 12.30: Alma Gluck—"Come Beloved." 1.0: Fritz Kreisler—"Humoreske" (Dvorak). 1.45: Close down.

AFTERNOON SESSION.

2.15: Coldstream Guards Band—Morning, Noon, and Night." 2.30: Herbert Dawson (organ)—"Prayer and Cradle Song." 3.0: Fritz Kreisler—"Praeludium." 3.30: Len Maurice—"Steppin' Along." 4.0: Close down.

EARLY EVENING SESSION.

5.0: Pryors Band—"Officer of the Day." 5.30: Leviathan Session. 6.30: Hubert Eisdell—"The Road to Love." 7.0: Lew White (organ)—"Baby, Oh Where Can You Be?" 7.15: Market reports—John McNamara and Co. Pty., Ltd. 7.20: Chester Gaylord—"Sing a Little Love Song."

EVENING SESSION.

8.0: Bridge. Radio Game No. 13. 8.30: London Regal Cinema Orchestra—"Broadway Selection." 9.0: Norman Allen (bass)—"A West Country Courting." 9.30: Beatrice Harrison (cello)—"Viennese Melody." 10.0: Sophie Tucker—"He's a Goodman." 10.30: Gus Arnheim and his Orchestra—"Now I'm in Love" 10.45: News. 11.0: God Save the King.

"DON"

Radio Products

A.B.C. POWER PACK TRANSFORMERS. HALF WAVE. To operate on 240-volt 50 cycle A.C. secondary windings 250 V. 30 mills, 5 V. 25 amps., and 4 V. 5 amps., centre tapped for A.C. valve filaments, complete with connecting leads and mounting brackets. PRICE EACH £1/2/6
A.B.C. POWER PACK TRANSFORMERS, as above, 50 milliamperes capacity. PRICE EACH, £1/7/6
Shielded metal case fitted to above. EXTRA 7/6

CHOKE COILS. 30 Henry 75 mills, layer wound, double air gap type, suitable for Eliminator, Filter Chokes, etc. PRICE EACH, 5/-
A and B BATTERY ELIMINATORS. HALF-WAVE, complete ready for use, with valve, shielded case, etc. PRICE EACH, £3/10/-
B BATTERY ELIMINATORS, FULL WAVE, complete ready for use, 125 mills capacity. PRICE EACH 2/6
TRANSFORMERS—

For Raytheon Tube, 240 V. AC/300/300 V. 85 Mills, £1/15/-
For UX 280 Tube, 240 V. AC/300/300 V. 85 Mills/5 V. 2 Amp., £2/-
For UX 280 and AC Valves:
240 V. AC/300/300 V. 85 Mills/5 V. 2 Amp./2.5 V. 3A/5V. 1A, £2/5/-
Metal Shields fitted to any of above, 10/- EXTRA
CONDENSERS.—500 V. A.C. test, 5 Mfd., 2/6. 1 Mfd., 3/9. 2 Mfd., 5/4. 4 Mfd., 8/6. Eliminator-Condenser Block 16 Mfd. tapped. PRICE EACH, £1/15/-
VOLTAGE DIVIDERS.—Total resistance 12,700 ohms., tapped. PRICE EACH, 10/6
"Don" Battery Chargers, for charging 6, 12, or 24 batteries.

F. T. S. O'DONNELL, GRIFFIN & CO.
LTD.

51 DRUITT STREET, CITY.

M 259L

5CL

Australian Broadcasting Co., 111 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).

EARLY MORNING SESSION

7.30: Greetings of optimism and cheer. 7.31: News, shipping and mail notices, express train information. 7.45: Musical interlude. 8.0: Time signal. 8.1: Market reports. What's on to-day? Sporting fixtures. Items of interest. 8.10: Morning music. 8.30: Close down.

MORNING SESSION

11.0: The daily broadcast service. 11.10: Morning music. 11.20: News session. 11.30: Housewives' session. 11.45: Sporting notes by "Silvius" on to-morrow's events. 11.55: Musical interlude. 12.0: Time signal. 12.1: Stock Exchange information. British official wireless news, railway information. Items of special interest. 12.20: Midday musical programme. 12.50: Weather report, ocean forecast and rainfall report. 1.0: Clock. 1.59: Weather and ocean forecast. 2.0: Time signal; close down.

AFTERNOON SESSION

3.1: The Radio Matinee. The A.B.C. Musical Ensemble. 4.25: Stock Exchange information. 4.30: Close down.

EVENING SESSION

6.0: Time signal. 6.1: Birthday greetings. 6.30: Dinner music. 7.0: Time signal. 7.1: Sporting service. Stock Exchange information. Items of special interest, market reports. 7.20: News Service. 7.30: Popular sporting talk. 7.35: Mr. P. H. Nicholls will speak to you. 7.45: Friday night musical gems—Latest songs and dance numbers.

NIGHT SESSION

7.58: What's on the air to-night?
8.0: Time signal.
8.1: Popular Friday night programme: Hindmarsh Municipal Band (conducted by Mr. J. Radcliffe)—March, "Concordia" (Newby); overture, "March Militaire" (Schubert).
8.11: Frank Perrin, English entertainer.
8.18: Richard Smith, xylophonist.
8.30: Netta Rodney, soubrette.
8.32: Hindmarsh Municipal Band—"The Belle of New York" (Kerker).
8.43: Kathleen Magarey, soprano.
8.49: Pianoforte recital by Walter Ayliffe.
9.0: Time signal.
9.1: An interlude for the man on the land: Market and weather reports.
9.4: Hindmarsh Municipal Band—Morceau, "In a Monastery Garden" (Kettelbey).
9.14: Netta Rodney, soubrette.
9.21: Richard Smith, xylophonist.
9.28: Frank Perrin, comedian.
9.35: Hindmarsh Municipal Band.
9.41: Kathleen Magarey, soprano.
9.48: Walter Ayliffe, pianist.
9.55: Hindmarsh Municipal Band.
10.0: News session.
10.10: Dance session.
11.0: Close down.

6WF

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

EARLY MORNING SESSION:—7.30: Chimes. 7.31: Meteorological report. 7.32: The day's maxim. 7.35: Musical reproduction. 7.55: Mails and shipping intelligence. 8.0: What's on to-day. 8.5: Cables. 8.10: When the train is due to arrive. 8.27: Features of to-day's programme. 8.30: Close down.

MORNING SESSION:—10.0: Chimes. 10.1: Musical reproduction. 10.10: Talk by Dorothy Graham—Sewing "Simple Articles to Make." 10.30: Organ recital from Ambassadors Theatre—Lea Waldron at the Console of the Wuritzer Organ. 11.0: Close.

MIDDAY SESSION:—12.30: Chimes. 12.31: Musical reproduction. 12.35: Market reports. 12.45: News service. 12.55: Item of interest. 1.0: Weather report. 1.1: Luncheon music by the National Broadcasting Orchestra. 2.30: Close down.

THE RADIO MATINEE:—3.30: Chimes. 3.31: Musical reproduction. 3.45: The story of the day. 4.0: Special recital of reproduced music. 4.55: What's on the air this evening. 5.0: Close down.

EARLY EVENING SESSION:—5.45: Chimes. 5.46: Children's good-night stories. 6.15: A.B.C. Younger Set session. 6.30: Dinner music. 7.0: What's on to-night. 7.5: Features of to-night's presentation. 7.8: Dinner music. 7.30: Weather report. 7.31: News service. 7.35: Market reports. 7.45: Review of to-morrow's sport by A.B.C. sports authority.

EVENING SESSION:—8.0: Chimes. 8.1: Racing anticipations by Russell Sandeman, sporting editor, "Truth." 8.10: Geo. H. Webster and partner, Hawaiian Instrumentalists, "Till We Meet Again" (Whiting), "Shinanicki da" (Carlton). 8.23: Malsie Kerr, popular songs—Selected, "To My First Love" (Lohr). 8.30: Geo. H. Webster and partner, Hawaiian Instrumentalists, "Three o'Clock in the Morning" (Robledo), "Carolina Moon" (Burke). 8.39: Malsie Kerr, popular songs—"Here I Am" (Henderson), "Bungalow and You" (O'Hagan). 8.46: Geo. H. Webster and partner, Hawaiian Instrumentalists, "Goodnight" (Conrad). 8.51: Announcements. 8.56: Description of boxing contest from Olympia Stadium by Basil Kirke. 10.5: British official wireless news. 10.13: What's on the air to-morrow. 10.18: Musical reproduction. 10.59: Weather. 11.0: Close down.

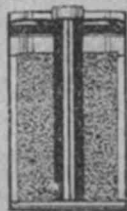
7ZL

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

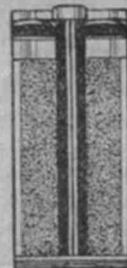
11.30 a.m.: Sonora Recital. 11.34: Midlands weather forecast. 11.35: Recital. 11.55: Tasmanian stations 9 a.m. weather report. 12.0: Chimes. 12.1: Shipping information, mail notices, housewives' guides. 12.8: Recital. 12.30: News service, announcements. 12.40: Recital. 1.5: Railway auction sales. 1.10: Recital. 1.30: Close down. 3.0: Chimes. 3.1: Recital. 3.4: Weather. 3.5: Recital. 4.15: Readings. 4.30: Close down. 6.15: Children's corner. 7.10: Recorded music. 7.30: News session—Stock Exchange quotations. 7.40: A "Celebrity" programme. 8.45: James Counsel, "The History and Development of Music." 9.45: News session. 10.0: Chimes. 10.1: Close down.



25% GREATER OUTPUT AT LESS COST!



Above is the comparative size of the cells found in most Heavy Duty "B" Batteries selling at 25/- or more.



Here is the large SUPER SERVICE cell. Its extra size means extra power, yet a SUPER SERVICE "B" BATTERY costs only 24/6.

While the "Ever-Ready" 45-volt Super Service "B" Battery will give you a 25 per cent. increase in output, it costs you actually less than many small cell Heavy Duty "B" Batteries on the market. The secret of its power is in its 30 large cells and all-round efficient construction. Made in the "Ever-Ready" Sydney factory.

"Ever-Ready" Batteries for every Radio Set are obtainable at all radio dealers.

N.S.W. Wholesale Distributors:

THE EVER-READY CO.,
(Gt. Britain), LTD.

163 PITT STREET, SYDNEY.



Local Programmes, Saturday, March 8

2FC

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

EARLY SESSION—7.0 to 8.15 a.m.

- 7.0: "Big Ben" and Programme Announcements.
- 7.2: Meteorological information for the Man on the Land.
- 7.5: This Morning's News, from the "Daily Pictorial".
- 7.10: Austradio Musical Reproduction.
- 7.45: Mails and Shipping.
- 7.51: What is on to-day.
- 7.53: Music from the Studio.
- 8.10: Condition of the Roads, supplied by the Main Roads Board.
- 8.15: CLOSE.

MORNING AND AFTERNOON SESSIONS.

- 10.30: Announcements.
- 10.32: Racing Talk, by the A.B.C. Racing Observer—M. A. Ferry.
- 10.45: Studio Music.
- 11.0: HOUSEHOLD HELPS—Week-end Suggestions, by Miss Ruth Furst.
- 11.10: CABLES—(Copyright), A.P.A. and "Sun"—"Herald" News Service.
- 11.15: Austradio Musical Reproduction.
- 11.53: British Official Wireless Press.
- 12.0: "Big Ben." Stock Exchange and Metal Quotations.
- 12.5: Studio Music.
- 12.20: Middy Weather Forecast and Weather Synopsis.
- 12.30: Radio Rhythm.
- 12.50: FROM CANTERBURY—Description of the following races in the running:—
1st—The Park Stakes.
2nd—The Flying Handicap.
3rd—The Juvenile Handicap.
4th—The Canterbury Handicap.
5th—The Highweight Handicap.
6th—The Ashbury Handicap.

NOTE.—At 2 o'clock a Glance at the afternoon "Sun" will be given.

- During intervals between races a Musical Programme will be broadcast from the Studio.
- 4.35: FROM THE STUDIO—Late Sporting Results
- 4.45: CLOSE
- EARLY EVENING SESSION—5.45 to 7.55.
- 5.45: Children's "Good-night" Stories, told by the Hello Man.
- 6.0: The 2FC Hospital Birthday League.
- 6.10: Mr. George R. Duff, secretary of the R.S.P.C.A., will talk to the Children on "How to Treat your Household Pets."
- 6.17: A Serial Story.
- 6.45: THE LIGHT ORCHESTRA will play Orchestral Novelties.
- 7.20: A.B.C. Sporting Service.
- 7.30: Special Country Session. Stock Exchange Resume. Markets. Weather Forecast. Late News Service, from "The Sun." Truck Bookings.
- 7.58: To-night's Programme

THE EVENING PRESENTATION—8.0 to 11.30.

To-night is the third of the series of Orchestral Concerts held in the Sydney Town Hall arranged by the Musicians' Union of N.S.W., in which an Orchestra of 60 Players, who are now out of employment, participate. To-night's presentation is conducted by Howard Carr. These concerts have been made possible by the collaboration of the State Government, the Civic Commissioners, the Musicians' Union, and the Australian Broadcasting Co. Through 2BL the contest from the Stadium will provide 2BL Listeners with all the excitement they want. Before crossing to the Stadium there is a popular programme contributed by Bert Barton, Doris Lascelles, Charles Sadler, and Carlton Fay.

8.0: FROM THE SYDNEY TOWN HALL—RELAYED TO 3LO, MELBOURNE.

The third of the series of Orchestral Concerts arranged by the Musicians' Union of N.S.W. An Orchestra of 60 Players, who are now out of employment. Conducted by Howard Carr.

PROFESSIONAL MUSICIANS' ORCHESTRA—"Military March" (Schubert).

8.6: Overture, "The Merry Wives of Windsor" (Nicolai).

8.12: RAYMOND BEATTY, Basso—(a) "Sombre Woods" (Lulli).

(b) "In the Silver Moonbeams" (Cyril Scott)

8.26: PROFESSIONAL MUSICIANS' ORCHESTRA—

"Three Dances from 'Henry VIII.'" (Edward German)—
1. Morris Dance.
2. Shepherds' Dance.
3. Torch Dance.

8.36: BESSIE BLAKE, Soprano—"The Carnival of Venice."

8.46: PROFESSIONAL MUSICIANS' ORCHESTRA—

Overture, "William Tell" (Rossini).

8.58: FROM THE STUDIO—

COUNTRY MAN'S WEATHER SESSION—

(a) New South Wales Forecasts.
(b) Interstate Weather Synopsis.
Yachtsman's and Fisherman's Forecast.
Musical Items.

9.8: FROM THE SYDNEY TOWN HALL—

PROFESSIONAL MUSICIANS' ORCHESTRA—

Overture, "Oberon" (Weber).

9.28: RAYMOND BEATTY, Basso—
(a) "I Triumph" (Carissimi).
(b) "More Sweet is That Name" (Handel).

9.38: Violin Solo—Symphonic Poem, "Dance Macabre," from "The Dance of Death" (Saint-Saens).

9.48: "Barcarolle" from "The Tales of Hoffman" (Offenbach).

9.53: BESSIE BLAKE, Soprano—
Aria, "The Bell Song," from "Lakme" (Delibes).

10.3: PROFESSIONAL MUSICIANS' ORCHESTRA—

Sketches for Orchestra: "Three Heroes" (Howard Carr), by request.

1. "O'Leary, V.C."
2. "Captain Oates."
3. "Warneford, V.C."

10.15: FROM THE STUDIO—

Announcements.
Late Official Weather Forecast.

10.20: ROMANO'S CAFE DANCE ORCHESTRA, conducted by Merv. Lyons.

11.30: CLOSE. NATIONAL ANTHEM.

2BL

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

OPENING SESSION—8.15 to 11 a.m.

- 8.15: G.P.O. Chimes and Announcements.
- 8.16: A Musical Interlude.
- 8.40: Meteorological data for the country.
- 8.45: Mails and Shipping Information.
- 8.50: Memory Melodies.
- 9.40: British Official Wireless Press.
- 9.45: New Music.
- 10.5: News from the "Daily Pictorial."
- 10.10: Austradio Musical Reproduction.
- 10.40: MR. G. COOPER, Park Superintendent of City Parks, will speak on "Gardening."
- 11.0: G.P.O. Chimes; Close Down.

MIDDAY SESSION—12 Noon to 2.30 p.m.

- 12.0: G.P.O. Chimes and Announcements.
- 12.2: A Recital of Pianoforte Reproductions.
- 12.30: Austradio Musical Reproduction.
- 1.0: Afternoon news from the "Sun."
- 1.5: Melodies grave and gay.
- 1.30: Songs of yesterday and to-day.
- 1.45: Gems from the Great Masters.
- 2.15: With the Modern Composers.

AFTERNOON ENTERTAINMENT—2.30 to 5.15 p.m.

A POPULAR PROGRAMME.

- 2.30: THE LIGHT ORCHESTRA—
Selection, "Havana" (Stuart).
- 2.40: LEO LEWIN, Tenor—"Asra" (Newton).
- 2.45: JACK POST, Cellist—"Arlequin" (Popper).
- 2.48: FRANK LEONARD, Entertainer—
(a) "Our New Ford" (Russell).
(b) "My Gal's Face" (Sybil).
- 2.55: THE LIGHT ORCHESTRA—
(a) "The Squirrel Dance" (Smith).
(b) Waltz, "Nina" (Rayner).
(c) "Elegie" (Barmotini).
- 3.5: LEO LEWIN, Tenor—
(a) "Those Wonderful Nights of Love" (Nancarrow).
(b) "Sweet Peggy O'Neill" (Waldrop).
- 3.12: CLIVE AMADIO, Saxophone Solo—"Chanson Indoue" (Rimsky-Korsakoff). (With Orchestral Accompaniment).

3.15: FRANK LEONARD, Entertainer—"Sarah Alice" (Weston).

3.22: THE LIGHT ORCHESTRA—
Selection, "Count of Luxembourg" (Lehar).

3.32: DULCIE BLAIR, Violinist—"A La Tzigane" (Hartman).

3.35: LEO LEWIN, Tenor—"A Banjo Song" (Homer).

3.38: THE LIGHT ORCHESTRA—
(a) "The Swaying Narcissus" (Ring-hager).
(b) "The Song of the Clocks" (Collinge).

3.45: A new song.

3.48: THE LIGHT ORCHESTRA—
Selection, "The Arcadians" (Monckton).

4.0: MELODIES GRAVE AND GAY.

4.15: A RECITAL OF PIANOFORTE REPRODUCTIONS.

4.30: POPULAR BAND SELECTIONS.

4.45: RADIO RHYTHM.

5.0: Complete Racing and Sporting Resume
8.15: G.P.O. Chimes; Close Down.

THE DINNER HOUR—6.15 to 7.55 p.m.

6.15: THE LIGHT ORCHESTRA.

6.45: "THE CAPTAIN" to his Comrades.

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

7.20: THE LIGHT ORCHESTRA.

7.45 Austradio Musical Reproduction.

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

TO-NIGHT'S PRESENTATION—8 to 12 Midnight.

The Contest from the Stadium to-night will provide 2BL listeners with all the excitement they want. This description carrying with it, as it does, a vivid mind picture proves as interesting to the listener who is not conversant with the technicalities of boxing as it does to the man who follows blow for blow with critical ear.

Before we cross over there is a popular programme by Bert Barton and Doris Lascelles, Margaret Grimshaw, popular vocalist, and Carlton Fay in pianoforte novelties.

Through 2FC Service the third of a Series of Orchestral Concerts by 60 members of the Professional Musicians' Union of New South Wales. These concerts have been made possible by the collaboration of the State Government, the Civic Commissioners, the Musicians' Union, and the Australian Broadcasting Company. To-night's Concert will be conducted by the well-known conductor, Mr. Howard Carr.

A POPULAR PROGRAMME.

- 8.0: HARRISON WHITE, Banjo Solos—
(a) "Serenade" (Tosselli).
(b) "Roses of June" (O'Hagan).
- 8.7: BERT BARTON and DORIS LASCELLES, Sketch—"Just like a Woman" (Colling).
- 8.17: CARLTON FAY, Novelty Pianist—
(a) "Your Mother and Mine" (Edwards).
(b) "Orange Blossom Time" (Edwards).
- 8.24: MARGARET GRIMSHAW, Popular Vocalist—
(a) "Painting the Clouds with Sunshine" (Burke).
(b) "Love (Goulding)." SPORT.

8.31: FROM THE SYDNEY STADIUM: A Description of the boxing contest.

9.31: FROM THE STUDIO: Weather Information for the man on the land.

9.33: HARRISON WHITE and HIS BANJO—
(a) Solo, "Crazy Joe" (Harry Reser).
(b) Foxtrot, "The Blue Hills of Pasadena" (Herbert).

9.40: BERT BARTON and DORIS LASCELLES in a Sketch, "Dick's Sister" (Norman McKinnell).

9.50: IN SYNCOPATED RHYTHM FROM THE BALLROOM OF THE ORIENTAL—Sydney Simpson's Syncopaters in Dance Music.

10.0: FROM THE STUDIO: MARGARET GRIMSHAW, Popular Vocalist—
(a) "Dance Away the Night" (Stamper).
(b) "Love is a Dream" (Green and Stept).

10.7: CARLTON FAY, Novelty Pianist—
(a) "Just You—Just Me" (Greer).
(b) "Marianne" (Ahler).

10.14: FROM THE BALLROOM OF THE ORIENTAL: Sydney Simpson's Syncopaters in Dance Music.

10.25: FROM THE STUDIO: Late News from "The Sun." Late Weather Forecast.

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

12.0: NATIONAL ANTHEM. CLOSE.

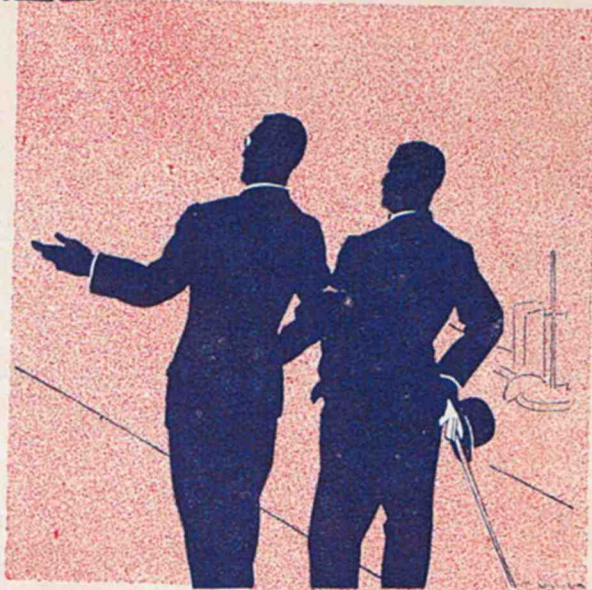


IDEA!

... "It has long been a mystery to me," said the visitor to the director of one of the world's largest radio and electrical organisations . . . "why you have never produced a complete radio receiver . . . world faith in your products demands it!"

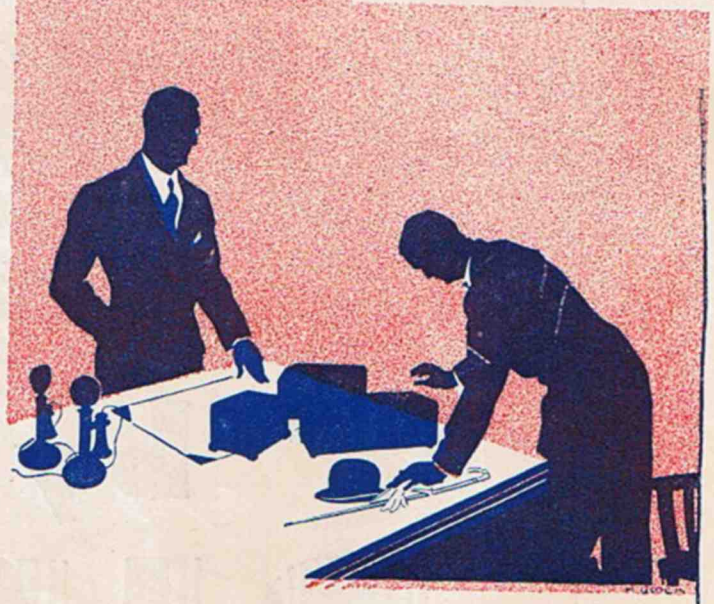
PROGRESS!

There was the radioplayer . . . in the making . . . skilled men . . . clever men . . . were engrossed at their benches . . . each contributing his effort towards a receiver that was entirely new.



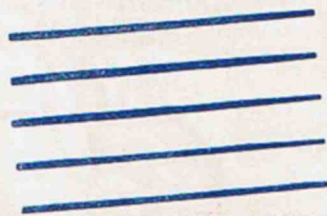
FULFILMENT!

"Magnificent" . . . he exclaimed . . . "Never has radio and the phonograph been so faithfully reproduced . . . and at the mere touch of a switch.



and so

WE NOW TELL YOU OF THE



radio!

WITH the announcement of our radioplayers we give to the public three musical instruments which have only been made possible by years of research in the Philips laboratories.

Here, we give you a short description of each of these entertainers, but, after all, words can convey but little—we ask you to hear them in your own home, a thing that your local dealer will be pleased to arrange.

It is on Philips service that much of our goodwill has been built, and each one of these radioplayers is backed by a service organisation that may best be described as "typically Philips," so generous and efficient are its policies.

Type 2510

This entertainer is distinctly modern and attractive in design and has many unique and outstanding features, among which are:—

- Triple bulkhead metal chassis construction, giving 100% shielding.
- Light socket operation. Condensers built in mono-piece steel housing and fitted with oversize bearings. All coils enclosed in evacuated copper container—they are not affected by climatic conditions. A single lift, high gain audio amplifying system gives remarkable reproduction. Single tuning control. Gramophone pick-up attachment. Price £39/10/-
- With Moving Coil Speaker £53/-/-

Type 2802

A battery-operated all wave, all world radioplayer. Utilises one stage screen-grid amplification on all waves. One spot reaction—no overlapping. 100% anti-capacity shielding. Special short-wave-long-wave detector used exclusively in the 2802. Phonograph pick-up terminals.

- Price £32/-/-
- With "Peter Pan" Speaker £38/10/-

Type 2516

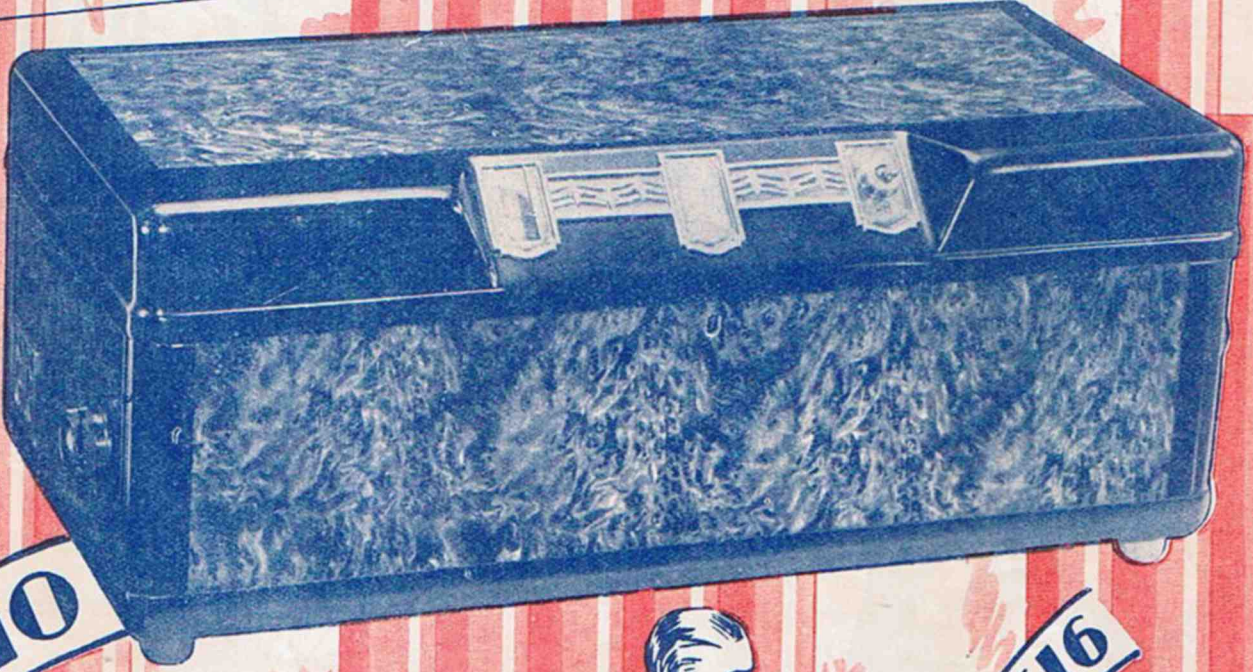
This radioplayer is designed for reception of near-by broadcasting. It is very compact yet light-socket operated. It can be carried from room to room with ease. All metal chassis. Wire wound resistances. Single-lift amplification. Drum tuner internally driven. Quad-selector gives four degrees of selectivity—in last socket electric mains are used as aerial. Price £17/10/-

- With "Baby Grand" Speaker ... £21/-/-

by

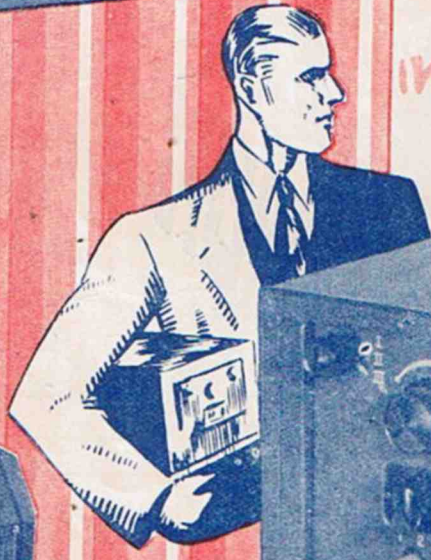
PHILIPS

Layers

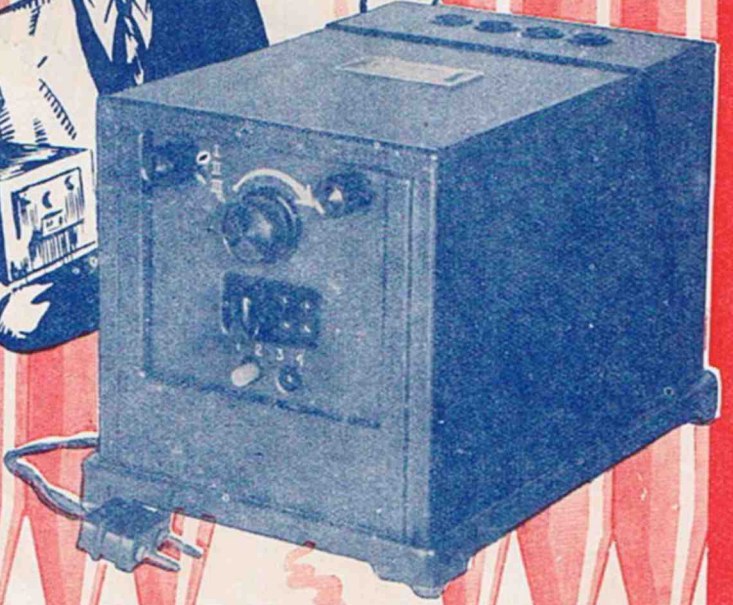


2510

2516



2802



—and as for **Service**



—you've got the assurance of Philips, the biggest name in radio, that you'll have no inconvenience after you buy a radioplayer.

Should the slightest trouble occur we will remedy it—and promptly. You have a DEFINITE guarantee for twelve months and our interest will always be the same—we will see you have REAL music just as you would like it—ALWAYS.

Interstate Programmes, Saturday, March 8

4QG

Australian Broadcasting Co., Brisbane
(Wavelength, 385 Metres).

EARLY MORNING SESSION (7.30 a.m. to 8.30 a.m.) as usual.

MORNING, MIDDAY, AND AFTERNOON SESSIONS (11.30 a.m. to 5.0 p.m.) as usual.

The Brisbane Amateur Turf Club's meeting will be described from Albion Park, relays of the various races being given during the running. Between races musical items will be broadcast from the studio. Transmission of racing news will commence ten minutes before the start of the first race—the actual time being announced during earlier sessions from 4QG.

EARLY EVENING SESSION (6.0 p.m. to 8.0 p.m.) as usual.

NIGHT SESSION
(8.0 p.m. to 11.0 p.m.)

A programme mainly of popular music, interspersed with studio items. There will be relays of the main events from the Davies Park Speedway.

8.0: From the Trocadero—The Brisbane Trocadero Orchestra (conductor, Linn Smith)—Ten minutes dance music.

8.10: From the studio: Hermie and Kathleen Ward—A little melody and mirth.

8.20: David Felsman (bass)—"You Along o' Me" (Sanderson), "Mubeteer of Malago" (Trotter).

8.29: Relays of the main events from the Davies Park Speedway.

9.0: Metropolitan weather forecast.

9.1: From the Trocadero: The Brisbane Trocadero Orchestra (direction, Linn Smith)—Dance music.

9.10: From the studio: Patricia McOnigly (soprano)—"Depuis Le Jour" (Charpentier), "Lovely" (Liszt).

9.19: Phillip O'Brien Hoare (elocutionist)—"The Test" (Hoare), "Mrs. Odsen's Funeral" (Paine).

9.28: D. Felsman (baritone)—"Eyes That Used to Gaze in Mine" (Lohr).

9.32: Kathleen Ward (pianiste)—"To the Spring" (Grieg), "To a Butterfly" (Grieg), "To a Little Bird" (Grieg).

9.40: Patricia McOnigly (soprano)—"String of Pearls" (Phillips).

9.54: Harry Collins and Tom Muller—"Optimists Versus Pessimists."

10.0: News service, weather information.

10.15: From the Trocadero: The Brisbane Trocadero Orchestra (direction, Linn Smith)—Dance music.

11.0: Close down.

3LO

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

As usual. EARLY MORNING SESSION.

As usual. MORNING SESSION.

MIDDAY SESSION.

12.55: Description of Gibson Carmichael Stakes, 7 furlongs, V.R.C. races, at Flemington, by Eric Welch.

Saturday, March 8 2UW

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

5.30 p.m.: Children's Hour, conducted by Uncle Jack.

6.30: Close.

7 p.m.: Musical programme.

10.30: Close.

2KY

Trades and Labor Council, Goulburn St., Sydney
(Wavelength, 286 Metres).

CHILDREN'S SESSION

6.0: Birthday calls.

EVENING SESSION

7.0: Musical interlude.

7.5: Birthday calls.

7.50: Request programme.

9.30: SPORTING FEATURE.—From Wentworth Park Speedway.

10.15: Closing announcements.

2UE

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

EARLY MORNING SESSION

As usual.

AFTERNOON SESSION

Description of the races, by Mr. T. G. Hopkins, turf expert.

5.0: Close down.

EVENING SESSION

6.30: Children's session, by Auntie May, and birthday greetings.

7.17 p.m.: Orchestral dinner music.

7.55: News from "The Sun."

8.0: Clock and chimes.

8.1: Overture, "The Bohemian Girl."

8.10: Vocal and instrumental music.

10.15: National Anthem.

1.5: Stock Exchange information; meteorological data; weather forecast for Victoria, New South Wales, South Australia, and Tasmania; ocean forecast; river reports; rainfall data. 1.20: Comments on the day's news.

AFTERNOON SESSION.

1.30: Description of King's Plate. 1.40: Musical production. 2.0: Description of cricket match. 2.15: Musical reproduction. 2.30: Description of Leonard Stakes. 2.40: Musical reproduction. 2.50: Description of cricket match. 3.0: Time signal; sporting results to hand. 3.10: Description of Autumn Steeplechase. 3.20: Musical reproduction. 3.30: Description of cricket match. 3.40: Musical reproduction. 3.50: Description of Northcote Handicap. 4.0: Time signal; sporting results to hand. 4.5: Musical reproduction. 4.15: Description of cricket match. 4.25: Description of Farewell Handicap. 4.35: Close down.

THE CHILDREN'S CORNER.

5.45: "Little Miss Kookaburra" gives a glad "Ha, Ha," and then tells the tiny ones about "The Rose Bush Fairy and the Thrush." The children's news bulletin. 6.0: Time chimes. Studio Light Orchestra—"Parade of the Paper Dolls." "Little Miss Kookaburra" is sure there are some bigger ones listening who would like to hear about "How Stella and Jack took the wrong 'bus and landed at the Zoo." "Old Doctor Funn"—ten minutes mirth and laughter. 6.25: Birthday greetings from "Little Miss Kookaburra." 6.35: Musical interlude.

EVENING SESSION.

6.40: Sporting results. 6.55: Musical interlude. 7.0: Countryman's session. 7.25: Mr. R. H. Campbell—W. M. Woodfull. 7.40: News service. 7.45: Adventuring round the world. Mr. H. J. G. Esmond—"Shadows of Fate."

NIGHT SESSION.

8.0: Transmission from Station 2FC, Sydney—Light Orchestral Concert, conducted by Howard Carr, from Sydney Town Hall.

8.0: Overture, "Military March" (Schubert), "The Merry Wives of Windsor" (Nicolaï).

8.11: Songs—(a) "Sombre Woods" (Lully), (b) "In the Silver Moonbeams" (Cyril Scott), Raymond Beatty, basso.

8.26: Three dances from "Henry VIII." (German)—(a) "Morris Dance," (b) "Shepherd's Dance," (c) "Torch Dance."

8.36: Song, "The Carnival of Venice," Bessie Blake, soprano.

8.40: Overture, "William Tell" (Rossini).

8.58: Interlude from 3LO Studio—pianoforte recital, Mr. Cecil Fraser.

9.18: Overture, "Oberon" (Weber).

9.28: Songs—(a) "I Triumph" (Carissimi), (b) "More Sweet is that Name" (Handel), Raymond Beatty, basso.

9.38: Symphonic poem, "Danse Macabre" (Saint-Saens) ("The Dance of Death"), viola solo.

9.48: "Barcarolle" from "Tales of Hoffman" (Offenbach).

9.53: Aria, "The Bell Song," from "Lakme" (Delibes), Bessie Blake, soprano. Sketches for orchestra—

"Three Heroes" (Howard Carr), by general request. (a) O'Leary, V.C. (b) Captain Oates, (c) Warneford, V.C.

10.15: British official wireless news; meteorological information; items of interest. 10.25: Paul Jeacle and his band—popular melodies.

11.30: Close down.

3AR

Australian Broadcasting Co., 129A Russell St., Melbourne (Wavelength, 481 Metres).

MORNING SESSION

As usual.

MIDDAY SESSION

As usual. 3.0: G.P.O. chimes.

THE RADIO MATINEE

3.0: Paul Jeacle and his Band—"Lovable and Sweet" (Levant), "My Dream Memory." 3.7: Violet Jackson, soprano—"I Passed by Your Window" (Brahe), "A Japanese Love Song" (Brahe). 3.14: Charles Corum—"Sousaphone Solo." 3.17: Moran Hilford, bass-baritone—"I am . . . Fate" (Hamblen), "Nita Gitana" (Newton). 3.24: Paul Jeacle and his Band—"Laughing Marionette" (Collins), "Josie and Me" (O'Hagan). 3.30: Madoline Knight, contralto—"There's a Song Down Every Roadway" (Wood), "Bird of Love Divine" (Wood). 3.37: Ted Nelson, entertainer—Songs and sketches at the piano.

3.45: Paul Jeacle and his Band—"Let Me Have My Dreams" (Akst), "Love Made a Gypsy Out of Me" (Phillips). 3.52: Moran Hilford and Tom Downie—Duet, "A Kiss, a Caress, and Adieu." 3.56: Claude Jeacle, tenor saxophone—Selected. 3.59: Violet Jackson, soprano—"The Nightingale and the Rose" (Thompson), "To a Miniature" (Brahe). 4.6: Paul Jeacle and his Band—"My Sin is Loving You" (Brown), "I'll Get By" (Turk). 4.13: Madoline Knight, contralto—"When Your Ship Comes In" (Dore), "Cheer Up, Do" (Coverley). 4.20: Ted Nelson, entertainer—Songs and sketches at the piano.

4.27: Paul Jeacle and his Band—"Maybe Who Knows" (Schuster), "My Strongest Weakness is You" (Akst). 4.34: Tom Downie, tenor—"I Love the Moon" (Rubens), "For You Alone" (Geehl). 4.40: Paul Jeacle and his Band—"Only You and Lonely Me" (Greer), "Pretty Cinderella" (Harris). 4.47: Moran Hilford and Tom Downie—"Counting the Stars Alone." 4.51: Paul Jeacle and his Band—"Same Old Moon, Same Old June" (Friend), "The Album of My Dreams" (Arien). 5.0: G.P.O. chimes.

5.1: Musical reproduction. 5.30: Weather data. 5.45: Close down.

EVENING SESSION

6.15: Dinner music, supplied by Paul Jeacle and his Band. 7.30: What's on the air to-night? 7.32: Sporting results. 7.40: Latest musical releases. 8.0: G.P.O. chimes.

NIGHT SESSION

8.1: The Royal Scots—Songs of "Bonnie Prince Charlie," with annotations. 8.30: Description of to-night's events at the Motordrome.

8.45: Harry Shugg's Band—March, "Waldmerr" (Losey); Humoresque, "The Coster's Courtship" (McKenzie); fox-trot, "Jericho" (Myers). 8.55: Ruby Dixon, soprano—"Just a Little Love" (Sbeu), "Mirin" (Berlin).

9.2: Description of events at the Motordrome. 9.20: Harry Shugg's Band—Cornet duet, "Cigarettes" (Cope). 9.23: Bernard Lamble, humorous recital—"Jest Plain Dog," "Smile."

9.30: Ruby Dixon, soprano—"Because" (D'Hardelot), "Adore."

9.37: Description of dirt track racing at the Exhibition. 9.50: Harry Shugg's Band—Sketch, "In a Chinese Temple Garden" (Keteibey); waltz song, "Sleepy Valley" (Hanley).

9.58: Bernard Lamble, recital—"Mixed Relations." 10.5: Description of dirt track racing from the Exhibition.

10.20: Weather and news. 10.30: Harry Shugg's Band—March, "El Abanico" (Javaloyes).

10.35: Rex Dance Band. 12.0: Close down.

3DB

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

AFTERNOON SESSION.

2.0: Coldstream Guards Band—"Jolly Boys." 2.30: Enrico Caruso—"Mattinata." 3.0: Viademir de Pachmann (piano)—"Etude in F Minor" (Chopin). 3.30: Lavton and Johnstone—"Hugable, Kissable You." 4.0: Coldstream Guards Band—"Invicta March." 4.30: Jan Kubicki—"Pierrot Serenade." 5.0: De Groot's Orchestra—"Pale Hands I Love." 5.15: Close down.

EARLY EVENING SESSION.

5.45: Levathan session. 6.45: Kirkby Lunn—"Jock o' Hazeldean." 7.15: Market reports—John McNamara and Co. Pty., Ltd. 7.20: Debroy Somers Band—"Marika."

EVENING SESSION.

8.0: Coldstream Guards Band—"Slavonic Rhapsody." 8.30: Edna Thornton—"I Sometimes Think." 9.0: Arthur Meale (organ)—"Marche Militaire." 9.30: John Motal Cormanck—"She Is Far From the Land." 10.0: Royal Albert Hall Orchestra—"Sylvia Ballet." 10.30: Erno Golden and his Orchestra—"You're My Silver Lining." 10.45: News. 11.0: God Save the King.

5CL

Australian Broadcasting Co., 114 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).

As usual. EARLY MORNING SESSION as usual.

CONTINUOUS DAY SESSION as usual.

EVENING SESSION as usual. 7.40: Mr. Chetwyn Cooper, the well-known tennis coach, will speak.

NIGHT SESSION

7.58: What's on the air to-day?

8.0: Time signal.

8.1: The A.B.C. Chamber Trio.

8.9: Phyllis Everett, contralto.

8.16: Guido Giacchino, cellist.

8.20: Don Parnell, comedian.

8.26: The Chamber Trio.

8.30: Popular Saturday night dance programme by Walter Barratt and his Malson Band, interspersed with vocal numbers by Phyllis Everett (contralto), Charles Bagrott (tenor), and comedy numbers by Don Parnell.

10.20: Sporting session.

10.30: News session. Walter Barratt and his Malson Band.

11.30: Close down.

6WF

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

Day sessions as usual.

EVENING SESSION.—8.0: Chimes. 8.1: Radio talk by Mr. Cozens, member of the Wireless Institute (W.A. Division). 8.15: Results of 1st and 2nd trotting events broadcast from Brennan Park. 8.17: Running commentary of 3rd event from Brennan Park. 8.25: Norman Trenaman, baritone—"The Drums of Life" (Lohr), "Son of Mine" (Wallace), "The Blind Ploughman" (Clarke). 8.32: Austradio reproduced music. 8.39: Running commentary of 4th event from Brennan Park. 8.53: Norman Trenaman, baritone—"Youth" (Allitsen), "The Plane Tree" (Handel), "The Birth of Morn" (Leon). 9.0: Announcements. 9.5: Reproduced music. 9.12: Wuriltzer Organ items (reproduced). 9.18: Running commentary of 5th event from Brennan Park. 9.26: Reproduced music. 9.32: Talk by Basil Kirke, "Great Boxes I Have Met"—No. 2, "Tiger" Payne. 9.47: Reproduced music. 9.55: Running commentary of 6th event from Brennan Park. 10.0: What's on the air to-morrow. 10.5: British official wireless news. 10.13: Reproduced music. 10.20: Running commentary of 7th event from Brennan Park. 10.29: Complete resume of trotting events from Brennan Park. 10.34: Musical reproduction. 10.59: Weather report. 11.0: Close down.

7ZL

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

Day Sessions as usual. During the afternoon running descriptions will be given of the V.R.C. races, also results will be given of the Australian XI v. Tasmania, being played at Launceston. 8.1: A concert arranged by Madame Lucie Benson. 9.30: Record recital. 10.20: Close down.

Local Programmes, Sunday, March 9

2FC

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

THE CHURCH HOUR—10 a.m. to 12.30 p.m.

- 10.0: Announcements.
 10.5: Studio Music.
 10.30: This morning's news, from the "Sunday Times" and "Truth."
 British Official Wireless Press.
 10.45: Musical Items.
 11.0: FROM ST. MARK'S CHURCH OF ENGLAND—MORNING SERVICE.
 12.15: FROM THE STUDIO—Studio Music.
 12.30: CLOSE.

AFTERNOON CONCERT—3.0 to 4.30.

- 3.0: FROM THE STATE THEATRE—
ORGAN RECITAL, by HORACE WEBER:
 (a) "Sonata in Style of Handel," Four Movements (Wolstenholme).
 (b) "Reve d'Amour" (Corbett).
 (c) "Ouant Triumphant" (Gray).
 3.20: FROM THE STUDIO—
WILFRID THOMAS in a Recital of the Songs of Hungary.
 3.27: FROM THE STATE THEATRE—
ORGAN RECITAL by HORACE WEBER—
 (a) "Fantasia on English National Anthem" (Reger).
 (b) "Gavotte" (Rossi).
 (c) "Finale Fugato" on "Tune Hanover" (Lemare).
 (d) "Priore and Cradle Song" (Gullmant).
 3.47: FROM THE STUDIO—
WILFRID THOMAS, in a Recital of the Songs of Hungary.
 3.54: FROM THE STATE THEATRE—
ORGAN RECITAL by HORACE WEBER—
 (a) "March in G" (Smart).
 (b) "Who Do You Miss" (Harris-Rose).
 (c) "Dancing Tambourine" (Polin).
 (d) "Oriental Dance" (Wallace).
 (e) "The Old Brigade" (Barri).
 4.14: FROM THE STUDIO—
AN AFTERNOON STORY
 4.30: CLOSE.

THE EVENING PROGRAMME—6.0 to 10.30.

- 6.0: A PROGRAMME arranged by **LIONEL HART**—
INSTRUMENTAL TRIO—"Londonderry Air" (Fisher).
 Violin—Lionel Hart.
 Cello—Robert Irvine.
 Piano—Florence Paton.
 EVA HART, Soprano—
 (a) "A Birthday" (Woodman).
 (b) "Songs My Mother Taught Me" (Dvorak).
 LIONEL HART, Violinist—
 "Canzone" (Centola).
 ENID HALE, Contralto—
 (a) "The Glory of the Sea" (Sanderson).
 (b) "The Net Mender" (Clarke).
INSTRUMENTAL TRIO—
 "Demande et Reponse" (Taylor).
 EVA HART, Soprano—
 (a) "Down in the Forest" (Landon Ronald).
 (b) "Spring" (Henschel).
 6.40: Dr. L. G. H. HUXLEY will speak on "Recent Investigations on Atmospheres."
 7.0: SECOND HALF OF PROGRAMME ARRANGED BY LIONEL HART—
PIANOFORTE SOLOS: FLORENCE PATON—
 (a) "Rondo Capriccioso" (Mendelssohn).
 (b) "Prelude" Op. 28 (Chopin).
 ENID HALE, Contralto—
 "O Dry Those Tears" (Teresa Dei Riego).
FLUTE SOLO—ROBERT IRVINE—
 "Nightingale" (Don).
INSTRUMENTAL TRIO—
 "Andante from Trio Op. 85" (Reissiger).
 EVA HART, Soprano—
 Violin Obligato by Lionel Hart—
 "Ave Maria" (Gounod).
PIANOFORTE SOLO FLORENCE PATON—
 "Country Gardens" (Grainger).
VIOLIN SOLOS: LIONEL HART—
 (a) "Bagatelle" (Sammons).
 (b) "L'Amour de Moi" (Seidel).
 ENID HALE, Contralto—
 "Vale" (Russell).
INSTRUMENTAL TRIO—
 "Moderato" Op. 164 (Russiger).
 7.30: DR. LOFTUS HILLS will give a talk on "Life's Facts and Fancies."

7.45: FROM HYDE PARK—

A MASED BAND OF 100 PROFESSIONAL MUSICIANS, who are now out of employment, ARRANGED BY THE MUSICIANS' UNION OF N.S.W., BY COURTESY OF THE CIVIC COMMISSIONERS

8.50: FROM THE STUDIO—

THE WHISPERING TRIO—
 (a) "I Love a Little Cottage" (O'Hara).
 (b) "Beautiful Isle of the Sea" (Thomas).

8.57: EWART CHAPPLE, Pianist—
 (a) "Barcarolle" (Tschalkowsky).
 (b) "Valse" (Arensky).

9.2: FROM HYDE PARK—
 A MASED BAND OF 100 PROFESSIONAL MUSICIANS.

9.45: FROM THE STUDIO—
 THE WHISPERING TRIO—
 (a) "My Old Friend John" (Lond).
 (b) "Won't You Buy My Pretty Flowers" (Persly).

9.52: EWART CHAPPLE, Pianist—
 (a) "Romance" (Sibelius).
 (b) "Alt Wien" (Godowsky).
 (c) "Watteau Paysage" (Godowsky).

10.0: MEDITATION MUSIC.

10.30: CLOSE

2BL

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

MIDDAY SESSION—10.53 to 3 p.m.

- 10.55: Announcements.
 11.0: FROM ST. STEPHEN'S PRESBYTERIAN CHURCH—Morning Service, conducted by Rev. HUGH PATON.
 Organist: MR. HARRY CHANDLER, M.A.
 Doxology.
 Invocation.
 Hymn 1.
 Lesson: Job 1.
 Psalm 23.
 Lesson: John 10.
 Young People's Portion.
 Hymn 207.
 Prayer.
 Paraphrase 2.
 Sermon: "THE HEDGE ROUND JOB"
 Text: Job, 1-10.
 Prayer.
 Hymn 191.
 Benediction.
 12.15: FROM THE STUDIO—
 Musical Items.
 12.30: News from "Sunday Guardian," "Sunday Times," and "Truth."
 12.38: A Specially Arranged Programme of Recorded Instrumental Music.
 2.30: "Cheer-up" Session, conducted by Uncle Frank.
 3.0: CLOSE DOWN.

LATE AFTERNOON—4.30 to 6.0.

- 4.30: CELEBRITY RECORD RECITAL, arranged by Madame Evelyn Grieg—
 "The Mother Goose Suite" (Ravel).
 WALTER DAMROSCH conducting the New York Symphony Orchestra—
 (a) "The Parame of the Sleeping Beauty."
 (b) "Hop o' My Thumb."
 (c) "Laidronnette, Empress of the Pagodas."
 (d) "Conversations of Beauty and the Beast."
 (e) "The Fairy Garden."
 (f) "Entrance of the Little Fauns."
 5.0: C. N. BAEYERTZ continues his series, "Philosophic Thought, from Bacon to Bergson."
 5.20: CELEBRITY RECORD RECITAL, arranged by Madame Evelyn Grieg—
ORCHESTRA—
 "Le Rovel d'Omphale" (Saint-Saens).
 "Orchestra de la Societe des Concerts Paris."
VIOLONCELLO—
 "Gavotte" (Mehul).
 "Madrigale" (Simonette-Squire).
 W. H. SQUIRE.
ORCHESTRA—
 "Noche de Arabia" (Arabian Nights) (Arbos).
 MADRID SYMPHONY ORCHESTRA.
PIANOFORTE—
 "Berceuse" (Chopin).

"Minuetto from Suite" (J. Seek), Op. 23.

IGNAZ FRIEDMAN.

SONGS—

"Can't Remember" (Brandon and Goatly).
 "Onaway, Awake, Beloved," from "His watha" (Longfellow and Cowen).

EVENING SESSION—6.0 to 10.0.

- 6.0: For Children in Hospital—Session conducted by Uncle Steve, assisted by Aunt Goodie and Cousins Gwen, Valda, and Renee.
 Announcements by Uncle Steve and Aunt Goodie.
 Master Jackie Butler will play to us.
 Uncle Bill (Rev. C. E. Adams) will tell story.
 A Song by Cousin Gwen
 Bible Drama—
 Uncle Steve,
 Uncle Bill,
 Aunt Goodie,
 Cousin Renee will sing to us.
 Uncle Steve will give the Birthday Calls.
 A Recitation by Cousin Valda.
 John Stevens will give a solo on his Mouth Organ.
 Vocal Duet by Valda and Peggy.
 "Song and Sentiment at the Piano," by Aunt Goodie.
 "2B LULLABY."
 "GOOD-NIGHT, EVERYBODY."
 6.50: FROM PITT STREET CONGREGATIONAL CHURCH—
 Organ Recital by LILIAN FROST.
 7.0: Evening Service, conducted by Rev. I. E. RUTH.
 8.30: FROM THE STUDIO—Relayed by 3AB Melbourne—
CONCERT PROGRAMME, ARRANGED BY LINDLEY EVANS—
TRIO—
 (a) "Allegro Maestoso."
 (b) "Scherzo" (Schutt).
 CYRIL MONK, Violinist.
 GLADSTONE BELL, Cellist.
 LINDLEY EVANS, Pianist.
SONGS—
 (a) "Springnight" (Schumann).
 (b) "Two Grenadiers" (Schumann).
 (c) "The Minstrel" (Schubert).
 RAYMOND BEATTY, Basso.
VIOLIN—
 (a) "Impromptu" (Schubert-Monk).
 (b) "Spanish Dance" (de Fella-Kreisler).
 CYRIL MONK.
CELLO—
 "Slow Movement" from "Sonata" (Grieg).
 GLADSTONE BELL.
SONGS—
 (a) "The Slighted Swain" (Old English).
 (b) "Berceuse" (Lane Wilson).
 (c) "Ye Banks and Braes" (Gretchaninoff).
 MISS CECILE ADKINS, Soprano.
PIANO—
 "Faschingschwank" (Schumann).
 LINDLEY EVANS.
SONGS—
 (a) "Love Me or Not" (Secchi).
 (b) "Love That's True" (Handel).
 RAYMOND BEATTY, Basso.
VIOLIN—
 (a) "Widmung" (Schumann-Monk).
 (b) "Scherzo" (Dittersdorf-Kreisler).
 CYRIL MONK.
SONGS—
 (a) "To One Who Passed Whistling Thro the Night" (Gibbs).
 (b) "As Joseph was A-walking" (Thiman).
 MISS CECILE ADKINS, Soprano.
PIANO—
 (a) "Dancing Doll" (Poldini).
 (b) "Marche Mignonne" (Poldini).
 (c) "Study" (Poldini).
 LINDLEY EVANS.
CELLO—
 (a) "Nocturne" (Besley).
 (b) "Minuet" (Montari).
 (c) "Harlequin" (Popper).
 GLADSTONE BELL.
TRIO—
 "Andante and Finale" (Schutt).
 CYRIL MONK, Violinist.
 GLADSTONE BELL, Cellist.
 LINDLEY EVANS, Pianist.
 9.8: Late Weather Forecast.
 10: NATIONAL ANTHEM. CLOSE.

2GB, 2UW, and 2UE will be found on page —

2GB

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

- 10.0: Music from Studio.
- 10.15: Organ Music from St. Alban's Church, Regent Street, Sydney.
- 10.30: Morning Service from St. Alban's Church.
- 12 noon: Music from Studio.
- 3.0: Musical Session.
- 5.15: Children's Session, by Uncle George.
- 7.0: Lecture from St. Alban's Church.
- 7.35: Address from Adyar House.
- 8.15: Mr. Gregory Valentine (Violinist).
- 8.23: Madame Lillian Gibson (Contralto).
- 8.30: Mr. Alex Whitson (Baritone).
- 8.37: Miss Amy Mallett (Pianiste).
- 8.45: Miss Gladys Verona (Soprano).
- 8.52: Mr. Gregory Valentine (Violinist).
- 9.0: Weather Report.
- 9.1: Madame Lillian Gibson (Contralto).
- 9.8: Mr. Alex Whitson (Baritone).
- 9.15: Miss Amy Mallett (Pianiste).
- 9.23: Miss Gladys Verona (Soprano).
- 9.30: Close down.

2UW

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

- 10.30: Music and request items.
- 1 p.m.: Close down
- 5.30 p.m.: Children's Hour
- 6.30: Close.
- 7 p.m.: Musical programme
- 10.30: Close.

2UE

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

- 11.0 a.m.: Mass from Mary Immaculate Church, Waverley.
- 12.16: Orchestral and vocal selections.
- 1.0: Close down.

EVENING SESSION

- 6.0: Music.
- 6.6: Rev. Father T. Walsh, instruction.
- 6.30: Announcement.
- 6.31: "Question Box," talks by Dr. L. Rumble, M.S.C.
- 7.31: Evening devotions from Mary Immaculate Church, Waverley.
- 8.20: Overture, "Dance of the Hours."
- 8.30: Vocal and instrumental concert.
- 10.15: National Anthem. Close.

Friday, March 7

2UE

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

EARLY MORNING SESSION

- 7.15: Breakfast time hour orchestral selections.
- 8.0: Clock and chimes.
- 8.1: Musical items.
- 8.25: News from the "Sydney Morning Herald."
- 8.30: Weather forecast. Close down.

MIDDAY SESSION

- 10.0: Women's session, conducted by Mrs. Filmer.
- 11.15: Organ and orchestral music.
- 12.0: Close down.

EVENING SESSION

- 6.30: Children's Hour, by Auntie May, with birthday greetings.
- 7.17: Instrumental dinner music.
- 7.55: Announcements and news from the columns of "The Sun."
- 8.0: Clock and chimes.
- 8.1: Overture, "Pique Dame" fantasia
- 8.10: Orchestral and vocal music.
- 8.30: Announcements.
- 8.33: Orchestral concert.
- 10.15: National Anthem. Close.

Saturday, March 8

2GB

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

- 3.0: Musical Session.
- 5.15: Children's Session, by Uncle George.
- 6.50: Metro-Goldwyn-Mayer Radio Movie Club Session.
- 7.0: Request Hour.
- 8.0: Sutton's Musical Session.
- 10.30: Close down.

Interstate Programmes, Sun., Mar. 9

4QG

Australian Broadcasting Co., Brisbane (Wavelength, 385 Metres).

MORNING SESSION.

- 10.30: Musical reproduction. 10.40: Weather. 10.45: News service. 10.52: Cable news. 10.55: Musical reproduction. 11.0: Morning service from the City Congregational Church. 12.15: Close down.

AFTERNOON SESSION.

- 3.0: Musical reproduction. 3.15: Band concert. 4.30: Close down.

EARLY EVENING SESSION.

- 6.0: Special children's session. 7.0: Children's service. 7.30: A relay of the complete evening service. 8.30: Benediction and organ postlude.

NIGHT SESSION.

- 8.40: Eddie Fitch at the Wurlitzer organ—selection of gems from Gilbert and Sullivan's operas.
- 9.0: Nancy Muirhead, soprano—"April Morn" (Batten), "Elf and Fairy" (Densmore).
- 9.0: Eddie Fitch at the Wurlitzer organ—"Souvenir" (Drlal), "Narcissus" (Nevin).
- 9.9: David Felsman, baritone—"Marie, My Girl" (Aiken), "Glorious Devon" (German).
- 9.17: Eddie Fitch at the Wurlitzer organ—selection, "The Desert Song" (Romberg).
- 9.26: Nancy Muirhead, soprano—"A Spring Fancy" (Densmore).
- 9.30: Eddie Fitch at the Wurlitzer organ—half an hour request items.
- 10.0: Close down.

3LO

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

MORNING SESSION.

- 10.0: Time signal. 10.1: Musical reproduction.
- 10.20: Express train information. British official wireless news. Items of interest. 10.30: Bells of St. Paul's Cathedral. 10.45: Musical reproduction.
- 11.0: Morning service from Wesley Church, Lonsdale Street, Melbourne. Preacher, Rev. J. H. Cain. Subject: "A Much Misunderstood Text." 12.30: Close down.

AFTERNOON SESSION.

- 3.0: Pleasant Sunday afternoon service, from Wesley Church Central Mission. Speaker, Rev. W. Goyen. Subject: "A Modern Substitute for Righteousness." Quartette: Stonnington Male Quartette. Conducted by Dr. S. J. Hoban. 4.30: Close down. 6.0: The Children's Corner. 7.0: The Sunday evening feature, Captain Donald Maclean "At Home." 7.45: Mr. H. M. Murphy, J.P., president of the Victorian Benevolent Home, "Helping the Aged and Infirm."

NIGHT SESSION.

- 8.0: Hamilton Webber, Mus. Bac., and his State Musical Ensemble, broadcasting from the State Theatre, assisted by Frank Lanterman at the Wurlitzer, and leading vocal artists.
- 10.15: British official wireless news; meteorological information; items of interest. 10.30: God Save the King.

3AR

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

MORNING SESSION.

- 11.0: Service from Scots Church, Collins Street, Melbourne. The service will be one of dedication of the new pulpit, communion table, etc., in memory of the Rev. Alexander Marshall, D.D., late minister of Scots Church. The Rev. D. Macrae Stewart will conduct the dedication and deliver the address, and will be assisted in the service by the Rev. Dr. Borland. Anthem: "When the Lord Turned Again the Captivity of Zion" (W. G. Alcock). Psalm 150 (C. Franck).

MIDDAY SESSION.

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

AFTERNOON SESSION.

- 4.30: "Hungarian Lustspiel Overture" (Keller)—Brunswick Concert Orchestra. 4.34: "Sapphic Ode" (Brahms)—Sigrid Onegin, contralto. 4.38: "Quartette in G Minor" (Debussy)—New York String Quartette. 4.54: "Chanson Hindoue" (Rimsky-Korsakov)—Florence Easton, soprano. 4.58: "Danse Macabre" (Saint-Saens)—Vasella's Italian Band. 5.2: "Absent" (Metcalfe)—Mario Chamlee, tenor. 5.6: "Sonata in A Flat, Op. 110" (Beethoven)—Edward Goll, piano. 5.21: "Swing Low, Sweet Chariot," "Little David, Play on Your Harp" (Negro Spirituals). 5.23: Melodrama from "Piccolina" (Guiraud)—Minneapolis Symphony Orchestra. 5.32: Some maritime experiences—life on a tramp steamer, Capt. N. Carter. 5.47: "Kreutzer Sonata" (Beethoven)—Huberman, violin; Schultze, piano. 6.11: "When the King Went Forth to War"—Giuseppe Danise, baritone. 6.15: Selection from "Robin Hood" (De Koven)—Brunswick Light Opera Company. 6.23: "Slavonic Dance No. 3" (Dvorak)—Cleveland Symphony Orchestra. 6.27: Special requests. 6.45: What's on the air to-night. 6.47: St. Paul's Cathedral bells.

EVENING SESSION.

- 7.0: Divine service from St. Paul's Cathedral. Sermon, Rev. Roscoe Wilson. Subject: "A Message for the Despondent."
- 8.30: Transmission from Sydney, relayed from 2BL. Concert programme, arranged by Lindley Evans. Trio: "Allegro Maestoso," "Scherzo" (Schutt)—Cyril Monk, violinist; Gladstone Bell, cellist; Lindley Evans, pianist. Songs: "Spring Night" (Schumann), "Two Grenadiers" (Schumann), "The Minstrel" (Schubert)—Raymond Beatty, basso. Violin: "Impromptu" (Schubert)—Monk. "Spanish Dance" (De Falla-Kreisler)—Cyril Monk. Cello: "Slow Movement" from "Sonata" (Grieg)—Gladstone Bell. Songs: "The Slighted Swain" (Old English), "Ber-

- ceuse" (Gretchaninoff). "Ye Banks and Braes"—Cecile Atkins, soprano. Piano: "Fasschingschwank" (Schumann)—Lindley Evans. Songs: "Love Me or Not" (Secchi), "Love That's True" (Handel)—Raymond Beatty, basso. Violin: "Widmung" (Schumann-Monk), "Scherzo" (Dittersdorf-Kreisler)—Cyril Monk. Songs: "To One Who Passes Whistling Thro' the Night" (Gibbs), "As Joseph Was A-walking" (The man)—Cecile Atkins, soprano. Piano: "Dancing Doll" (Poldini), "March Mignonne" (Poldini), "Study" (Poldini)—Lindley Evans. Cello: "Nocturne" (Beley), "Minuet" (Montario), "Harlequin" (Popper)—Gladstone Bell. Trio: "Andante and Finale" (Schutt)—Cyril Monk, violinist; Gladstone Bell, cellist; Lindley Evans, pianist.
- 9.58: Weather.
- 10.0: God Save the King.

3DB

The "Herald" Broadcasting Station, Flinders Street, Melbourne (Wavelength, 355 Metres).

AFTERNOON SESSION.

- 3.0: Berlin State Opera Orchestra—"Così Fan Tutti. Overture." 3.30: Maartli Offers—"Adriano Ariù" (Reina). 4.0: Elman String Quartet—Emperor Quartet. 4.30: Close down.

EVENING SESSION.

- 6.30: Royal Opera Orchestra—"Morning." Peer Gynt Suite. 7.0: John McCormack—"Morning Was Gleaming." 7.30: Hours with great composers—No. 9, Saint-Saens. 8.30: Requests. 10.0: God Save the King.

5CL

Australian Broadcasting Co., 114 Hindmarsh Square, Adelaide (Wavelength, 469 Metres).

MORNING SESSION.

- 10.30: Message of cheer. 10.31: Sabbath Morning service. 10.45: Morning chimes from the bells of the Adelaide Town Hall. 11.0: Time signal. 11.1: Service from St. Bartholomew's Church, Norwood. 12.15: Close down.

AFTERNOON SESSION.

- 3.0: Time signal. 3.1: A pleasant Sunday afternoon service from Maughan Methodist Church. 4.30: Close down.

EVENING SESSION.

- 6.0: Time signal. 6.1: Birthday greetings. 6.15: "The Bird Lady" will entertain the children. 6.45: Children's service. 7.0: Time signal. 7.1: Evening service from Maughan Methodist Church.

NIGHT SESSION.

- 8.30: A special programme will be relayed from 3LO, Melbourne.
- 9.45: British official wireless news, meteorological information.
- 10.0: Close down.

6WF

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

- MORNING SESSION.—10.40: Sporting resume. 10.50: Sunday news service. 11.0: Church service, St. Mary's Cathedral. 12.30: Reproduced music. 1.0: Close.

- AFTERNOON SESSION.—3.0: Chimes. 3.1: Reproduced music. 4.55: Features of to-night's programme. 5.0: Close down.

- EVENING SESSION.—6.30: Chimes. 6.31: Children's session. 7.15: Reading. "The Impatience of a Parson." 7.30: Church service, Wesley Church. 8.45: Special musicale arranged by Bert. Howell, broadcast from Ambassador's Theatre, Perth, including assisting artists: Irene Stancliffe (soprano), Roy Glenister (baritone). 10.30: Close down.

7ZL

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

- 11.30 a.m.: Morning service from Chalmers Presbyterian Church, Hobart. 12.15: Close down. 3.30: From the Studio, a programme of classical music by the Discus Ensemble. 4.30: Close down. 6.15: Children's Chorus singing (leader, C. Thomson). 6.45: Bertha Southey Brammall will tell a parable to the kiddies. 7.0: Evening service from St. David's Cathedral. 8.30: From the studio—a programme arranged by James Counsel. 9.45: News. 9.50: Close down.

"EXCELTRON"

- B ELIMINATORS £3 15 0
- A CHARGERS £3 0 0
- A.B.C. POWER PACKS £5 10 0

Usually sold £6 to £12—Sold direct from factory to you, hence these low prices. Fully guaranteed, 12 months. Installed free. Easy Terms. Mail order, add carriage. EXCELTRON ELECTRICS, 54 Oxford Street, Sydney.

SUB-PANELS AND SHIELDING MADE TO ANY SIZE, IN ANY METAL.

HARRY CRABB, LTD.,
261 RILEY STREET, SURRY HILLS.
Phone, FL1887.

Local Programmes, Monday, March 10

2FC

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

EARLY SESSION—7 to 8.15 a.m.

- 7.0: "Big Ben" and Programme Announcements.
 7.2: Meteorological Information for the man on the land.
 7.5: This morning's news from the "Daily Guardian."
 7.10: Austradio Musical Reproduction.
 7.45: Mails and Shipping.
 7.51: What is on to-day.
 7.53: Music from the Studio.
 8.15: CLOSE.

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

- 10.30: Announcements.
 10.32: Racing Talk by the A.B.C. Racing Observer, M. A. Ferry.
 10.45: HORACE WEBER AT THE GRAND ORGAN—
 (a) "Serenade" (Widor).
 (b) "Old Virginny" (Zamecnick).
 (c) "Some Sunday Morning" (Whiting).
 11.0: HOUSEHOLD HELPS. Cooking, by Miss Ruth Furst.
 11.10: CABLES (Copyright), "Sun"—"Herald" and A.P.A. News Service.
 11.15: MORNING DEVOTION, conducted by Rev. W. H. Wingfield.
 11.30: Austradio Musical Reproduction.
 11.35: A MORNING STORY.
 11.53: British Official Wireless Press.
 12.0: "Big Ben," Stock Exchange, and Metal Quotations.
 12.5: V. C. Bell will speak from "The Public Forum."
 12.20: Midday weather forecast and weather synopsis. Special produce market session for the man on the land, supplied by the State Marketing Board.
 12.30: CLOSE.

THE LUNCH HOUR—1 to 2.30 p.m.

- 1.0: BAND OF H.M. COLDSTREAM GUARDS—
 "Marche Militaire" (Schubert), (H.M.V.).
 1.10: FROM THE AEOLIAN HALL. Lunch-hour Recital by Mischa Dobrinski—
 "Trio, Op. 50" (Tschaiakowsky).
 Moderato Assai—Theme with Variations—Finale
 Alexander Hmelintzky Piano
 Mischa Dobrinski Violin
 Neil Marsh Cello
 1.50: FROM THE STUDIO. Popular Music
 2.0: Stock Exchange, second call.
 2.2: A Glance at the Afternoon "News."
 2.7: Austradio Musical Reproduction.
 2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.

- 2.30: MELODIES, GRAVE AND GAY.
 3.0: MRS. MEREDITH ATKINSON will tell Listeners of "Louis Pasteur."
 3.15: E. CARLYLE KENNY, Pianoforte Recital—
 (a) "Rondo in A Major" (Mozart).
 (b) "Gigue in A Major" (Handel).
 (c) "Nigger Dance" (Scott).
 3.22: INA VARINI, Popular Vocalist.
 "Nobody Knows You Like I Do" (Lanfield).
 3.25: THE NEW SYMPHONY ORCHESTRA.
 "Children's Overture" (Quilter), (H.M.V.).
 3.37: INA VARINI, Popular Vocalist.
 "Dance Away the Night" (Strauss).
 "Why Can't You?" (Al Jolson).
 3.44: E. CARLYLE KENNY, Pianist—
 (a) "Shadow Dance" (MacDowell).
 (b) "Three Ecossaises" (Chopin).
 (c) "Etude G Flat" (Blacknote), (Chopin).
 (d) "Etude G Flat" (Butterfly), (Chopin).
 3.54: RADIO RHYTHM.
 4.0: GEORGE BLACK speaks on "Smoking: Is It Hurtful?"
 4.15: INA VARINI, Popular Vocalist.
 "Love" (Goulding).
 4.18: MEMORY MELODIES.
 4.28: Stock Exchange, third call.
 4.30: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Children's "Good-night" Stories, told by the "Hello Man."
 6.0: The 2FC Hospital Birthday League
 6.10: Aunt Eily will entertain.
 6.30: The Serial Story.
 6.45: THE RADIO ENTERTAINERS—
 7.20: A.B.C. Sporting Service.
 7.25: Special Country Session. Stock Exchange Resume. Markets. Weather Forecast. Late news service from the "News."

Truck Bookings. 7.58: To-night's Programme. THE EVENING PRESENTATION—8 to 11.30 p.m.

- 8.0: "WITH THE BRITISH NAVY." The Navy!—Britain's first line of defence—every Britisher's heart quickens at the mention of it, and every lass loves a sailor. Jack afloat is a different man from Jack ashore. Aboard, his is a life of discipline; ashore, his is a time of merriment—and he excels in both. From fore-castle to quarter-deck, the glorious traditions of the British Navy have been upheld in word and deed. The Navy is full of traditions, and in music, song, and story we present to-night an original entertainment, "FROM NELSON TO JELICOE." Arranged by Gordon Ireland, and enacting in dramatic form the Battle of Trafalgar, the Death of Nelson, and many famous songs of the sea, interspersed with humor and Novelty.
 8.30: A MUSICAL FARCE, "STOP FLIRTING" (Gordon Ireland).
 Characters:

- Mr. Ignace Pepper (a very meek man), Harry Linden
 Mrs. Pepper (his Wife) Ida Berridge
 Reggie Harcourt (Juvenile) Maurice Chenoweth
 Nina (Ingenué) Nellie Kemp
 Cynthia Florence Page
 Gerald (Juvenile) A. G. Ellis
 Ruggies (A Walter) Ken Hill
 John Mills (A Guest) Ray Benton
 Time, The Present; Place, London. The Play takes place in three Scenes. Scene One, Reg Harcourt's Drawing-room. Scene Two, Ciro's Cabaret. Scene Three, Reg Harcourt's Drawing-room.

9.0: OF INTEREST TO TOWN AND COUNTRY. THE COUNTRY MAN'S WEATHER SESSION.

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

9.2: "HITS AND BITS OF MERRIE ENGLAND"

To-night we are trying to recapture the spirit of "Merrie England"—in the folk songs and country dances dear to all of us, whether English or Australian born, as representing the spirit of "Home." It is in the blood we inherit that we Australians—as yet too young a nation to have evolved our own folk music—should feel a tender affection for these old songs, associated, as they are, with all the best traditions of our grand old parent stock, and carrying with them, to many of our older folk, recollections of childhood and memories of home.

The melodies introduced:—
 "Merrie England."
 "The Lass with the Delicate Air"
 "Drink to Me Only."
 "There's a Land."
 "Home, Sweet Home."
 "Pomp and Circumstance."

9.30: A COMEDY INTERLUDE, "HAIL TO SPRING," depicted by Maurice Chenoweth, Ray Benton, Nellie Kemp, and Walter Martin.

9.45: CEC. MORRISON AND HIS BAND presents "A DIP IN THE BLUE." The term "Blue" has been played upon so often it signifies a number of meanings. We hope our Listeners are not unhappy to-night—but just in case they are Cec. Morrison is here with his "Blues" to dispel your "Blues."

- A Military Bugle Call, "Lights Out"
 "Blue Skies"
 "So Blue."
 "Blue Danube."
 "Am I Blue?"
 "Blue Baby."
 "My Blue Heaven."
 "Blue River"
 "Blue."
 "Blue Over You."
 "Bluebird, Sing Me a Song"

- 10.15: Announcements.
 Late Official Weather Forecast.
 10.20: DANCE MUSIC
 CEC. MORRISON AND HIS BAND.
 11.30: CLOSE. NATIONAL ANTHEM.

2BL

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

OPENING SESSION—8.15 to 11 a.m.

- 8.15: G.P.O. Chimes and Announcements.
 8.16: A Musical Interlude.

- 8.40: Meteorological data for the country.
 8.45: Mails and Shipping Information.
 8.50: Memory Melodies.
 9.0: This Morning's Story.
 9.30: Songs, Grave and Gay.
 9.40: British Official Wireless Press.
 9.45: New Music.
 10.5: News from "The Daily Guardian."
 10.10: Austradio Musical Reproduction.
 10.30: THE AUSTRALIAN BROADCASTING COMPANY'S WOMEN'S ASSOCIATION, conducted by Miss Gwen Varley.
 "Golf Etiquette."
 Thrift Talk. "Planned Savings—the Key to Success," by Miss Janet Mitchell.
 11.0: G.P.O. Chimes. Close Down.

MIDDAY SESSION—12 Noon to 2.30 p.m.

- 12.0: G.P.O. Chimes and Announcements.
 12.2: A Recital of Pianoforte Reproductions.
 12.30: Lunch-hour Music.
 1.0: Afternoon News from "The Evening News."
 1.5: Melodies, past and present.
 1.20: Austradio Musical Reproduction.
 2.0: Half an hour with Silent Friends.

AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.

- 2.30: THE WORLD OF WOMEN.
 THE WOMEN'S HOUR, conducted by the A.B.C. Women's Association.
 "Man and Marriage."
 Music by request.
 "Expressing Your Personality in the Home," by Miss Margot Heals.
 "The Home Production of Tomatoes," by Mr. John Douglas.
 3.30: IN SYNCOPATED RHYTHM.
 FROM THE BALLROOM OF THE ORIENTAL. Sydney Simpson's Syncopaters in Dance Music.
 3.42: FROM THE STUDIO. A Popular Band Selection.
 3.46: SOME NEW SONGS.
 3.56: "Rigoletto Paraphrase de Concert," played by ALFRED CORTOT, Pianist, on an H.M.V. Record.
 4.0: FROM THE BALLROOM OF THE ORIENTAL. Sydney Simpson's Syncopaters in Dance Music.
 4.12: FROM THE STUDIO. An Old Ballad.
 4.15: FOR THE MUSIC LOVER.
 An Illustrated Lecture Recital by ERNEST FRANK, Pianist—
 (a) "Elegie" (Rameau-Godowsky).
 (b) "Mazurka" (Paderewski).
 (c) "Nocturne" (Chopin).
 4.30: FROM THE BALLROOM OF THE ORIENTAL. Sydney Simpson's Syncopaters in Dance Music.
 4.45: FROM THE STUDIO. The Trade Hour. Demonstration Music.
 5.45: Weather Information. Close Down.

THE DINNER HOUR—6.15 to 7.55 p.m.

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

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

- 8.0: "OUR COMMUNITY NIGHT."
 FROM ASHFIELD PARK—
 SCOTTISH NIGHT COMMUNITY CONCERT, directed by S. Lutton, Secretary of the Band.
 GEORGE JACKSON, Chimes.
 MARCH, "Collingwood" (Pettee).
 Selection, "Edinburgh Town" (Smith).
 THE ASHFIELD DISTRICT BAND
 8.15: MISS ELSIE PEELESS.
 "The Dream of Home" (Arditi).
 8.20: Waltz, "IN LOVELAND LANES" (Clark).
 ASHFIELD DISTRICT BAND.
 8.27: COMMUNITY SINGING.
 8.37: MESSRS. E. MILLER and A. HERON, Cornet Duet.
 "Sandy and Jock" (Sutton).
 8.42: ELSIE PEELESS and CECIL HOUGHTON, Vocal Duet.
 "Miserere" (Verdi).
 8.47: ASHFIELD DISTRICT BAND.
 (a) "Song of the Vagabonds" (Friml).
 (b) "If You See Sally" (Donaldson).
 8.52: COMMUNITY SINGING.
 9.0: CECIL HOUGHTON.
 "Serenata" (Toselli).

- 9.5: ASHFIELD DISTRICT BAND
"Faust" (Gounod).
9.12: March. "With Sword and Lance"
(Starke).
9.15: MOMENTS OF MIRTH AND
MELODY.
FROM THE STUDIO. D. B. O'CONNOR
and GWENDA GEORGE in a Sketch, en-
titled, "How I Became a Freemason" (D.
B. O'Connor).
9.25: ENID HALE (Contralto)
(a) "A Summer Night" (Goring Thomas).
(b) "The Love Song of Har Dyal" (Bat-
ten).
9.31: OF INTEREST TO CITY AND COUN-
TRY.
Weather Information for the man on the
Land.
9.33: GEORGE PORTUS tells of "Then and
Now."
9.48: THE RHYTHMIC THREE, Instrumen-
talists.
(a) "Honolulu Stomp" (Pilipo).
(b) "Russian Waltz" (Barnes and Foster).
(c) "Kohala March" (Ferera).
(d) "Low down Blues" (Roy Smeck).
Spanish Guitar Solo, by T. Foster.
9.58: D. B. O'CONNOR and GWENDA
GEORGE. Sketch, entitled "A Country
Boy in Town" (D. B. O'Connor).
10.8: ENID HALE (Contralto).
(a) "Nocturne" (Curran).
(b) "My Wishes for You" (Little).
10.14: THE RHYTHMIC THREE, Instrumen-
talists.
(a) "Vagabond Lover" (Vallee and Zim-
merman).
(b) "Song of the Islands" (Chas. E. King).
(c) "If I Had You," Vocal Duet (Foster
and Barnes) (Shapiro).
(d) "Ellis March" (Ellis).
10.25: Late News from "The Evening News"
Late Weather Forecast.
10.30: NATIONAL ANTHEM
CLOSE.

2GB

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

- Day Sessions as usual.
8.0: Miss Florence Grant.
8.7: Symphony Orchestra.
8.15: Mr. Laurence Macaulay.
8.22: Violin Solos.
8.30: Mr. Jack Win and Mr. Heath Burdock
(Humor).
8.35: Miss Molly Long.
8.45: Address.
9.0: Weather Report.
9.1: Symphony Orchestra.
9.10: Miss Florence Grant.
9.20: Symphony Orchestra.
9.30: Mr. Laurence Macaulay.
9.40: Mr. Jack Win and Mr. Heath Burdock
(Humor).
9.45: Violin Solo.
9.50: Miss Molly Long.
10.0: Instrumental Music.
10.30: Close down.

2UW

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

MIDDAY SESSION

As usual

EVENING SESSION

- 5.30: Children's Hour, conducted by Uncle
Jack.
6.30: Meccano Club.
6.45: Close down.
7.0: Chimes. Request numbers.
7.45: Radio talk by Mr. E. Homfray
8.0: Musical programme.
9.0: Music and request items
10.30: Close down.

2KY

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

MORNING SESSION

As usual.

CHILDREN'S SESSION

As usual.

EVENING SESSION

- 7.0: Musical interlude.
7.15: A Talk on the Garden.
7.30: WOMEN'S SESSION.
8.0: Overture.
8.8: Tenor solos.
8.15: Dance music.
8.30: Request numbers.
8.45: Soprano solos.
9.0: From the ringside of McHugh's Leich-
hardt Stadium, full description of wrest-
ling match by Mr. W. E. Withrow.
10.0: Closing announcements.

Something New

THE
"FIDELITY"
Console or Baffle Board
CONE
SPEAKER

For installation in Cabinet or
Floor model Speakers



47'6

Diameter of Cone 7in.

The unit is of the balanced
armature type and is magneti-
cally and mechanically centred
in such a way that it is im-
possible to rattle even at tre-
mendous volume.

Reproduces the extreme high
and low notes with unusual
fidelity. Call and hear this
phenomenal Speaker. You
will be amazed at its perfect
reproduction. The Fidelity is
the Dynamic Speaker's most
serious competitor.

Sold with our guarantee
of satisfaction or money re-
funded.

Sole Australian Agents

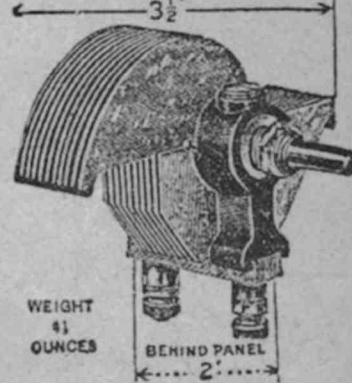
W. Harry Wiles
Electrical, Radio, and Gramophone
Supplies
Pitt & Goulburn Sts.
SYDNEY



BRITISH MADE
VARIABLE
CONDENSER

Is the SMALLEST, LIGHTEST, MOST
EFFICIENT Obtainable

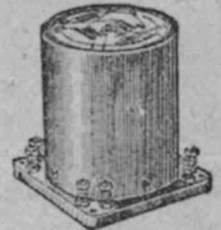
SPAN FULLY OPEN



WEIGHT
4 1/2
OUNCES

Construction and Performance
SECOND TO NONE.

THE PRICE IS RIGHT.
.0005—10/6, .00035—10/-
.00025—10/-



COMBINATION L.F. UNITS

- "TRUE SCALE" 45/-
(Dual Impedance).
- "TWO STAGE" 52/6
(Resistance-Transformer).
- "TRANSFORMER
Output Filter CHOKE" .. 45/-

ASK YOUR DEALER FOR
CATALOGUE

DISTRIBUTORS
for New South Wales,

O. H. O'BRIEN,
37-39 Pitt Street;

MURDOCH'S, LTD.,
Park Street;

ELECTRIC UTILITY
SUPPLY CO.,
617 George Street

Factory Representative
WHITELAW AND WOOL
PTY., LTD.,
CATHCART HOUSE,
11c Castlereagh St., Sydney
312 Flinders St., MELBOURNE.

Interstate Programmes, Monday, March 10

4QG

Australian Broadcasting Co., Brisbane
(Wavelength, 385 Metres).

EARLY MORNING SESSION.

7.30 a.m. to 8.30 a.m., as usual.

MORNING AND MIDDAY SESSION.

11 a.m. to 2 p.m., as usual.

AFTERNOON SESSION.

3 p.m. to 4.30 p.m., as usual.

EARLY EVENING SESSION.

6 p.m. to 8 p.m., as usual.

NIGHT SESSION.

8.0: From the studio—Australian Music Examinations Board lessons and demonstration, Mr. Eric Hayne, violin, grades 3 and 6.

8.30: The National Broadcasting Orchestra, conductress, Hilda Woolmer—overture, "Norma" (Bellini).

8.37: Lynn Miller and Co., in a musical specialty.

8.47: Billie Stokes, child impersonator—"Elizabeth Ann" (Milne), "Vespers" (Milne).

8.55: The National Broadcasting Orchestra, conductress, Hilda Woolmer—Valse Caprice, "Fairies' Whispers" (Kretschmer).

9.0: Metropolitan weather forecast.

9.1: H. J. Chant, tenor—"The Song that Reached My Heart" (Jordan), "God Gave Each Rose a Garden" (Lockton).

9.9: Lynn Miller and Co., another musical specialty.

9.19: Billie Stokes, child impersonator—"Lines and Squares" (Milne), "Alexander Beetle" (Milne).

9.27: "Whistling Rufus"—a novel musical entertainment.

9.33: H. J. Chant, tenor—"In An Old-fashioned Town" (Squire).

9.37: The National Broadcasting Orchestra, conductress, Hilda Woolmer—two Grieg numbers, "Temple Dance," "To Spring."

9.45: Ivy Plane, soprano—"What's in the Air To-day" (Eden), "Free" (Aylward).

9.53: "Whistling Rufus"—another novelty.

9.56: The National Broadcasting Orchestra, conductress, Hilda Woolmer—march, "Step Lively" (Allen).

10.0: News service.

10.15: The A.B.C. Dance Band (conductor, Roy Baird).

11.0: Close down.

3LO

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

EARLY MORNING SESSION.

As usual.

MORNING SESSION.

As usual.

MIDDAY SESSION.

As usual. 1.30: Transmission from the Constitutional Club luncheon. Speaker, Mr. Frank Russell, "Does Australia Mean Anything?" 2.0: Dr. K. S. Cunningham, M.A., Ph. D., treasurer of the Vocational Guidance Association, will speak on "Fact and Fallacy in Vocational Guidance." 2.15: Musical interlude. 2.20: Mr. P. Serle, "Some Men of the Sixties." 2.35: Musical interlude. 2.40: Mr. J. Howlett Ross will speak on the late "Sir John Madgen." 2.55: Musical interlude.

THE RADIO MATINEE.

3.0: The Studio Dance Band—popular numbers. 3.6: Violet Jackson, soprano—"That Little White Cottage of Mine" (Pether), "A Brown Bird Singing" (Wood). 3.13: The Studio Dance Band—banjos. 3.18: J. Howard King, bass-baritone, and Tom Downie, tenor—"Larboard Watch." 3.20: The Studio Dance Band—popular numbers. 3.26: Norah O'Malley and a piano. 3.32: Tom Downie, tenor—"Reuben Ranzo" (Coates). 3.36: The Studio Dance Band—popular numbers. 3.42: J. Howard King, bass-baritone—two Scotch songs, "A Hundred Pipers," "Bonnie Dundee." 3.50: Norah O'Malley and a piano. 3.57: Studio Dance Band—popular numbers. 4.0: Tom Downie, tenor—request items. 4.1: Studio Dance Band—popular numbers. 4.15: Violet Jackson, soprano—two songs of Old London, by Herbert Oliver, "Down Vauxhall Way," "Strawberries." 4.20: Studio Dance Band—popular numbers. 4.25: Acceptances and barrier positions for the Sandown Park races on Wednesday. 4.30: Close down. 5.45: The Children's Corner. 6.0: Time chimes. The Studio Dance Band—latest hits. Mr. E. C. H. Taylor continues his series of adventure stories. 6.25: Birthday greetings, by "Billy Bunny." 6.35: Musical interlude.

THE EVENING SESSION.

6.40: A war widow's pilgrimage to the battlefields—Mrs. K. Welch, "Beach Cemetery and Hill 60." 6.55: Musical interlude. 7.0: Melbourne Observatory time signal. 7.1: Countryman's session. 7.45: Mr. E. C. H. Taylor will speak on "Public School Life and Sport." 7.40: News service. 7.45: Mr. C. J. P. Hodges, secretary of the R.A.C.V., "Underneath the Bonnet." 8.0: Time signal.

NIGHT SESSION.

8.0: A choral and orchestral programme. The National Broadcasting Orchestra—Overture, "Figaro" (Mozart). The Victorian Singers (directed by Harold Browning)—Part song, "Early One Morning" (Old

English). Lola Edwards, soprano—"I Love Thee" (Grieg). The Victorian Singers—Madrigal, "Camella Fair Tript O'er the Plain." F. Jolly, tenor—"Go, Lovely Rose" (Roger Quilter). The Victorian Singers—Madrigal, "Sweet Flowers, Ye Were Too Faire" (Walmesley). Edouard Lambert, violin—selections from his repertoire. Harold Browning, baritone—(a) "Thy Beaming Eyes" (McDowell), (b) "Molly O!" (Howells), (c) "Oh, My Sweetlyng" (Samuel). Victorian Singers—"O Grief Even on the Bud" (Morley). Violet Semple, contralto—"Secrecy" (Wolf). Victorian Singers—"London Town" (German).

8.30: How Marie Antoinette came to Paris, told by Captain Donald Maclean.

9.0: "A Gypsy Romance," produced by Hugh Huxham, a musical story of gypsy life.

9.30: "The Murders in the Rue Morgue," a grand Guignol play, based on the celebrated mystery classic of Edgar Allan Poe, produced for radio by Gordon Ireland.

10.0: "In Memory Lane." "Courtin' on the Old Mill Pond" will be a feature of the "Memory Lane" programme. The scene on the Old Mill Pond will be presented in songs and descriptive music reminiscent of the old days. The melodies threaded together are: "When You and I Were Young, Maggie," "Love's Young Dream," "Courtin' on the Old Mill Pond," "Memories," "Mona," "The Mill," "The Old Rustic Bridge," "Melodious Memories."

10.30: News session.

10.40: Latest dance numbers.

11.30: God Save the King.

3AR

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

MORNING SESSION.

As usual.

MIDDAY SESSION.

As usual.

AFTERNOON SESSION.

2.1: Vesella's Italian Band. 2.3: Chester Gaylord, baritone. 2.6: Rudy Wiedoeff, saxophone. 2.9: Abe Lyman and his orchestra. 2.12: Sandy Macfarlane, Scotch comedian. 2.15: Vesella's Italian Band. 2.18: Zelma O'Neill, soubrette. 2.21: Frederick Fradkin, violin. 2.24: Chester Gaylord, baritone. 2.27: Brunswick Concert Orchestra. 2.30: Elizabeth Lennox, contralto. 2.33: Rudy Wiedoeff, saxophone. 2.36: Abe Lyman and his orchestra. 2.39: Sandy Macfarlane, Scotch comedian. 2.42: Walter B. Rogers, band. 2.45: Freddie Rose, tenor. 2.48: Brunswick Concert Orchestra. 2.51: Elizabeth Lennox, contralto. 2.54: Frederick Fradkin, violin. 2.57: Luther and Robinson, duet. 3.0: Request numbers. 3.20: Our daily bread—Birds of a Feather, "Quiz." 3.35: Musical interlude. 3.40: Gardening hints—Liquid Manuring for Quality, Mr. H. W. Jessep. 3.55: Musical interlude. 4.0: A woman's wanderings—The Land of Eternal Springtime, Miss Doreen Berry. 4.15: Musical reproduction. 5.0: G.P.O. chimes. 5.1: Musical reproduction. 5.30: Weather data. 5.45: Close down.

EVENING SESSION.

6.15: Dinner music, supplied by Mark Makeham's Melodians. 7.30: What's on the air to-night. 7.32: Sporting results; acceptances and barrier positions for the Sandown Park races on Wednesday, March 12. 7.35: Latest musical releases. 8.0: G.P.O. chimes.

NIGHT SESSION.

8.0: Romance and adventure—In the Days of Clipper Ships, Mr. G. R. Leggett.

8.15: Coburg City Band—selection, "Ballet Music from Coppelia" (Delibes).

8.25: Harold Kyng, baritone—"An Evening Song" (Coates), "Nirvanah" (Adam).

8.32: Walter Meide, mandolin, Charles Backstrom, Spanish guitar—"La Casrine Masarka" (Ganne), "Vienna March" (Schrammel).

8.38: Tom Preston, comedian, will entertain. 8.46: Coburg City Band—trombone solo. "The Switchback" (Sutton); march, "Winning Fight" (Holtman).

8.56: La Viva Ensemble, in vocal and instrumental classical and popular numbers—ensemble, "Chanson de Florian" (Godard); contralto, "Easter Snow" (Standford); violin and voice, "Londonderry Air" (Kreidler); soprano, "The Last Rose of Summer" (Moore); piano, "Dancing Tambourine" (Pollat); contralto, "The Minstrel Boy" (Moore); soprano, "The Last Chime of Erin"; piano, Irish medley; ensemble, "Eileen Allannah."

9.26: Coburg City Band—selection, "Daughter of the Regiment" (Donizetti).

9.36: Harold Kyng, baritone—"Dingo" (Traditional), "Dashing Away with the Smoothing Iron" (Traditional).

9.43: Walter Meide and Charles Backstrom—"Santa Lucia" (Italian folk song), "Glow Worm Gavotte" (Lincke).

9.50: Tom Preston, comedian, will entertain. 9.58: Coburg City Band—fox-trot, "The ToyMaker's Dream" (Brown); march, "La Belle Ference" (Hane).

10.8: Weather and news. 10.18: Coburg City Band—dance, "Hungarian No. 5" (Brahms); waltz, "Rosen" (Ellenberg).

10.30: God Save the King.

3DB

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

MORNING SESSION.

11.0: Thelma Ready's Melody Maids transmitted from the Auditorium. 12.0: Community Singing.

conducted by Mr. G. J. Mackay; accompanist, Mr. Reg. Brown. 1.45: Close down.

AFTERNOON SESSION.

2.15: Royal Air Force Band—"Vanity Fair." 2.30: Women's radio service—Book and Garden Session, conducted by Miss Iris Turnbull. 3.30: New Concert Orchestra—"Vienna Maidens." 4.0: Close down.

EARLY EVENING SESSION.

5.0: The Symphony Orchestra—"Homage March." 5.30: Leviathan session. 6.30: Victor Symphony Orchestra—"Spring Morning." 7.0: Ray Starita and his Ambassadors Band—"It's a Habit of Mine." 7.15: Market reports—John McNamara and Co. Pty., Ltd. 7.20: Pearce Bros.—"If I Give up the Saxophone."

EVENING SESSION.

8.0: Royal Albert Hall Orchestra—"Shepherds Hey." 8.30: Kirkby Lunn—"Rose in the Bud." 9.0: Virtuoso String Quartet—"Nolettes." 9.30: Lions Quartet—"Vere is Mein Lettie Dog Gone." 10.0: Herbert Dawson (organ)—"Idylle." 10.30: Colonial Club Orchestra—"Why Don't You Love Me?" 10.45: News. 11.0: God Save the King.

5CL

Australian Broadcasting Co., 114 Hindmarsh Square,
Adelaide (Wavelength, 409 Metres).

Day sessions as usual.

NIGHT SESSION.

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

8.0: The Programme will open with a delightful musical scene, "In Liliac Time With Schubert." Specially adapted by Mrs. James Anderson, from the Radio Play by Gordon Ireland, and produced under the direction of James Anderson. SYNOPSIS:

The time is in the year 1820. When the play opens we find ourselves in the quaint courtyard of the Inn of the Three Crowns at Vienna. The friends of Franz Schubert are gathered under the Linden Tree, singing the songs composed by him. They are an impetuous crowd, but the jollity with which they enter into their pleasures leaves no doubt as to the unflinching good nature of their fellowship.

CHARACTERS: Franz Schubert, F. Schober, Caroline Countess Esterhazy, Adolf, Friends of Schubert, Taverners, Musicians, etc. MUSIC: Included in the musical numbers to be introduced are the following:

"Impromptu in A Flat," Op. 142, No. 2; "Ave Maria"; "Serenade"; "Who is Sylvia?" and other popular compositions by Schubert.

9.0: Time signal.

9.1: An interlude for the man on the land: Wheat market, and weather reports.

9.2: A bracket of modern ballads by Phyllis Everett (contralto).

9.9: Bill Runge will be heard in a humorous interlude.

9.19: An interlude of old-time melodies of the popularity of which there is a world-wide revival, by Blanche Bell (soprano), Gordon Hele (baritone), Phyllis Everett (contralto), Norman Morphet (tenor) and the 5CL Melody Makers.

9.45: Will Runge (comedian).

9.52: Turn down your lights and listen—A dramatic sketch will be produced under the direction of James Anderson.

10.0: News session.

10.10: Dance session.

11.0: Close.

6WF

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

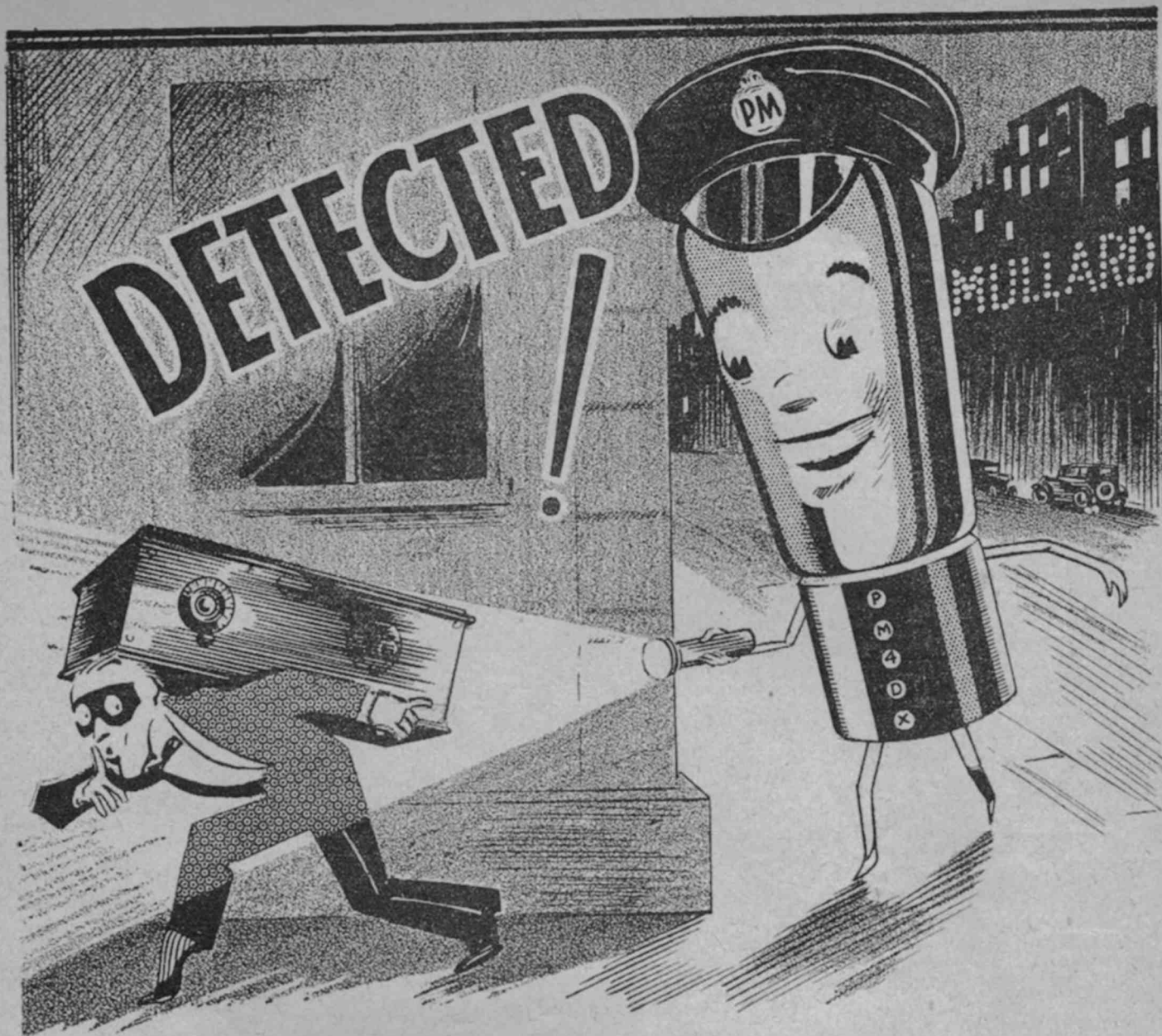
Day Sessions as usual.

EVENING SESSION.—8.0: Chimes. 8.1: By special request, an hour's programme of beautiful melodies, known as "The Shades of Don Juan," the immortal legend of romance. Artists: Harry Graham, reciter, "Shades of Don Juan," Lulu Potter, soprano, and A.B.C. Instrumental ensemble, featuring "Monsieur Beaucaire" (Rosse), "O, Sole Mio" (Di Capua), "Salut D'Amour" (Elgar), "Flower of My Heart" (Finden), "La Paloma" (Yradier), "Serenata" (Toselli), "Valse Song" from "Romeo and Juliet" (Gounod), "Serenade" (Tosti), and "To a Miniature" (Brahme). "I Hear You Calling Me" (Marshall), "Minuet" (Beethoven), "Songs of Songs" (Moya), "Caro Mio Ben" (Giordani), "Serenade" (Finden), "A Dream" (Bartlett). 9.10: Announcements. 9.15: Sydney Alley, novelty instrumental act (mouth organ and autoharp), selected. 9.22: Talk by Charles Schwab, "The Romance of Words." 9.42: Sydney Alley, novelty instrumental act, selected. 9.49: British Official Wireless news. 9.57: What's on the air to-morrow. 10.0: Austradio musical reproduction. 10.59: Weather report. 11.0: Close down. God Save the King.

7ZL

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

Day sessions as usual. 8.0: Chimes. 8.1: Record recital. 8.15: Transmission from the Memoria Church—a concert by James Marsh. 9.30: News session. 9.45: Record recital. 10.1: Close down.



THE MULLARD SPECIAL DETECTOR VALVES

Get Yours NOW and INCREASE the efficiency of your Receiver

PM 2 DX
Two Volts.
Impedance 9,000 ohms.
Mutual Conductance 1.5
mA/- volts. Fil. Current
0.25 amp.

PM 4 DX
Four Volts.
Impedance 6,000 ohms.
Mutual Conductance 2.1
mA/- volts. Fil. Current
0.1 amp.

PM 6 D
Six Volts.
Impedance 9,000 ohms.
Mutual Conductance 2.0
mA/- volts. Fil. Current
0.1 amp.

ALL
13/6
EACH

Mullard

THE · MASTER · VALVE

ALL
13/6
EACH

Ask your dealer for Booklet describing Mullard Valves or Speakers, or write A. BEAL PRITCHETT (AUST.) LTD., 17 Parker Street, Sydney, or 150 Queen Street, Melbourne.

Local Programmes, Tuesday, March 11

2FC

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

EARLY SESSION—7.0 to 8.15 a.m.
7.0: "Big Ben" and Programme Announcements.

7.2: Meteorological Information for the Man on the Land.

7.5: This Morning's News, from the "Daily Guardian."

7.10: Austradio Musical Reproduction.

7.45: Mails and Shipping.

7.51: What is on to-day.

7.55: Music from the Studio.

8.15: CLOSE.

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

10.32: A Racing Talk by the A.B.C. Racing Observer—M. A. Ferry.

10.45: HORACE WEBER at the GRAND ORGAN—

(a) Selection, "Little Nellie Kelly" (Cohan)
(b) "Red, Red Rose" (Shaner).

11.0: HOUSEHOLD HELPS—Hints to Housewives, by Miss Ruth Furst.

11.10: CABLES—(Copyright) "Sun"—"Herald" and A.P.A. News Service.

11.15: MORNING DEVOTION conducted by Rev. F. W. Tugwell.

11.30: Austradio Musical Reproduction.

11.53: British Official Wireless Press.

12.0: "Big Ben." Stock Exchange and Metal Quotations.

12.5: FRANCIS JACKSON will tell Listeners "What to Read"—Book Reviews.

12.20: Midday Weather Forecast and Weather Synopsis. Special Produce Market Session for the Man on the Land, supplied by the State Marketing Board.

12.30: CLOSE.

THE LUNCH HOUR—1.0 to 2.30 p.m.

1.0: LUNCH HOUR MUSIC.

2.0: Stock Exchange, second call.

2.2: A Glance at the afternoon "News."

2.7: Austradio Musical Reproduction

2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.

2.30: THE LIGHT ORCHESTRA—

(a) "Egmont Overture" (Beethoven).

(b) "Valse Triste" (Sibelius).

2.42: VERA PASSMORE, Contralto—

"Dear Downcast Eyes" (Woolmer).

2.45: VINCENT ASPEY, Violinist—

"The Hunt" (Chilbrano).

2.48: ALEXANDER HMELNITZKI, Pianist—

"Pastels Morzeau Miniature," Op. 3 (Gretchaninow).

1. Plainte.

2. Chante d'Automne

3. Orage.

4. Nocturne.

2.58: LUCILLE BRUNTNELL will give a talk on "The Glories of Paris."

3.13: THE LIGHT ORCHESTRA—

"Elfin Dance" (Fellre).

3.20: VERA PASSMORE, Contralto—

(a) "The Carpet" (Sanderson).

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

3.27: ALEXANDER HMELNITZKI, Pianist—

"Rhapsody No. 13" (Liszt).

3.37: JACK POST, Cellist—

"Lament" (Faure).

3.53: THE LIGHT ORCHESTRA—

"Four Indian Love Lyrics Suite" (Woodforde Flinden).

3.50: VERA PASSMORE, Contralto—

"Far Off I Hear a Lover's Flute" (Cadman).

3.53: THE LIGHT ORCHESTRA—

"Natoma" Grand Opera Selection (Herbert).

4.0: H. M. BOWDEN will tell Listeners of

"Australian Opal Fields."

4.15: POPULAR DANCE MUSIC.

4.28: Stock Exchange, third call.

4.30: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55.

5.45: Children's "Good-night" Stories, told by Aunt Louise.

6.0: The 2FC Hospital Birthday League.

6.10: More "Good-night" Stories

6.45: THE LIGHT ORCHESTRA.

7.20: A.B.C. Sporting Service.

7.25: Special Country Session. Stock Exchange Resume. Markets. Weather Forecast. Late News from the "News." Truck Bookings.

7.58: To-night's Programme.

THE EVENING PRESENTATION—8.0 to 11.30.

Our State-wide Radio Dance Night will

keep the attention of 2FC Listeners to-

night, and the unusual presentation which

Cec. Morrison has arranged provides an

attractive opportunity for dances.

Through 2BL Service Livingstone Mote

is conducting a Classical Programme be-

tween 8.0 and 9.30, concluding with a talk

by Dr. Loftus Hills on "Ancient Hunters."

8.0: CEC MORRISON AND HIS DANCE

BAND.

8.20: THE RADIO ROGUES interrupt the

proceedings.

8.24: CEC MORRISON AND HIS DANCE

BAND.

8.44: NORMAN JANSON, baritone, sings—

"Son of Mine" (Wallace).

8.48: CEC MORRISON AND HIS DANCE

BAND.

9.8: THE COUNTRY MAN'S WEATHER

SESSION—

(a) New South Wales Forecasts.

(b) Interstate Weather Synopsis

9.10: THE RADIO ROGUES again in a

Mirthful Moment!

9.14: CEC MORRISON AND HIS DANCE

BAND.

9.34: A SONG by NORMAN JANSON—

"Over the Mountains" (Quilter).

9.38: CEC MORRISON AND HIS DANCE

BAND.

9.58: THE RADIO ROGUES say Good-night.

10.2: CEC MORRISON AND HIS DANCE

BAND.

10.15: Announcements.

Late Official Weather Forecast.

10.20: CEC MORRISON AND HIS DANCE

BAND.

11.30: CLOSE. NATIONAL ANTHEM.

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 358 Metres).

OPENING SESSION—8.15 to 11 a.m.

8.15: G.P.O. Chimes and Announcements

8.16: A Musical Interlude.

8.40: Meteorological data for the country.

8.45: Mails and Shipping Information.

8.50: Memory Melodies.

9.0: This Morning's Story.

9.30: Songs, grave and gay.

9.40: British Official Wireless Press.

9.45: New Music.

10.2: News from the "Labor Daily"

10.5: News from the "Daily Guardian."

10.10: Austradio Musical Reproduction.

10.30: THE AUSTRALIAN BROADCASTING COMPANY'S WOMEN'S ASSOCIA-

TION, conducted by Miss Gwen Varley—

"A Talk from Our Health Bureau.

"The Care of Your Child."

11.0: G.P.O. Chimes. Close Down.

MIDDAY SESSION—12 Noon to 2.30 p.m.

12.0: G.P.O. Chimes and Announcements.

12.2: A Recital of Pianoforte Reproductions.

12.30: Lunch Hour Music.

1.0: Afternoon news from the "Evening News."

1.5: Radio Rhythm.

1.20: With the Modern Composers.

1.45: New Dance Numbers.

2.0: Half an hour with Silent Friends.

AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.

2.30: RECORDED GEMS, BY ABSENT CELEBRITIES.

2.45: A RECITAL OF PIANOFORTE REPRODUCTIONS.

3.0: FROM FARMER'S OAK HALL—Dance Music.

3.15: FROM THE STUDIO—A FAIRYLAND OF CORAL.

MEL WARD will tell of the "Great Barrier Reef."

3.30: FROM FARMER'S OAK HALL—Dance Music.

3.42: FROM THE STUDIO—Some Popular Songs.

3.52: FROM FARMER'S OAK HALL—Dance Music.

4.3: FROM THE STUDIO—Orchestral—"Tales of Hoffmann" (Offenbach), played by THE GRAND SYMPHONY ORCHESTRA, on a Parlophone record.

Violin—"Rondino" (On a Theme by Beethoven) (Arr. Kreisler), played by MISCHA ELMAN, on a H.M.V. record

4.15: FROM OUT OF THE PAST PEEPS INTO OLD POST-BAGS

"THE STORY-TELLER" reads "Some Letters of the Great."

4.30: FROM FARMER'S OAK HALL—Dance Music.

4.45: FROM THE STUDIO—The Trade Hour—Demonstration Music.

5.45: Weather Information. Close Down.

THE DINNER HOUR—6.15 to 7.55 p.m.

6.15: THE LIGHT ORCHESTRA

6.45: THE GIRL GUIDES.

"The Guide Law," by Lady David.

7.5: The Country Man's Market Session—Wool, Wheat, Stock, Farm Produce, Fruit, Vegetable, and Pig Markets

7.20: THE LIGHT ORCHESTRA.

7.45: Austradio Musical Reproduction.

7.55: What's on the Air To-night?

TO-NIGHT'S PRESENTATION—8 to 10.30

The first part of our presentation is a programme of musical contrasts arranged by Livingstone Mote. The first half is devoted to the older school of music, and the second half to modern Composers. Concluding this programme, Dr. Loftus Hills will speak on "Ancient Hunters," at 9.30, and at 9.45 we present to you a Celebrity Recital of Reproduced Music.

8.0: A PROGRAMME OF MUSICAL CONTRASTS WITH THE OLD MASTERS.

RICHARD McCLELLAND, Bass—

"YE HAPPY FLOCK" (Bach).

Bach's music was never more popular than to-day, for the reason that much more of his vocal music has been re-edited and sung in English. Here the spirit of the words is so simply and beautifully caught up that the music makes an immediate appeal.

LLOYD DAVIES, Violinist—

"MINUET AND ALLEGRO" (Handel).

ILA TURNBULL, Soprano—

"O Sleep Why Dost Thou Leave Me."

"So Shall the Lute and Harp" (Handel).

The Minuet is an outstanding instance of Handel's charm. Miss Turnbull's first song is taken from his opera, "Semele."

MADAME BOLYNOS BENO, Pianist will give a Short Pianoforte Recital

VOCAL OCTETTE, "MADRIGAL" (Palestrina)—

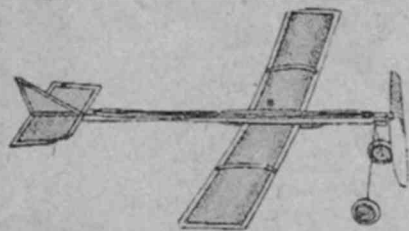
Palestrina's unaccompanied music reaches the highest point of excellence on account of its smoothness and purity. It is so well adapted to the different voices that the blend is perfect

WITH THE MODERN COMPOSERS—

RICHARD McCLELLAND, Bass—

"AS I RIDE" (Bantock).

(Continued on page 45.)



Model Flying Aeroplanes

THE WARNEFORD "DEMON," with 23in. Wing Span, 11/6. Post., N.S.W. 1/3. Q'land and Victoria 1/9.

KITS FOR BUILDING THE KILLARA KLIPPER MODEL, described in "Wireless Weekly," 9/- Set. Postage as above.

All Materials for Building Your Own Models.

Balsa, Spruce, Silk, Paper, Wire, Glue, Dope, Bamboo, etc. Write for Price List.

The Boys' Model Shop,

Walther & Stevenson Ltd.,
395 GEORGE STREET, SYDNEY.
Box 785G.

Now Ready
THE LATEST AND MOST WANTED
WIRELESS UNIT YET OFFERED.

Levenson's Like-a-Flash
Combination.

"B" Battery Eliminator,
AND

"A" Battery Charger
(ACCUMULATOR).

for all sets up to and including 5 valves.
Anyone can build it in a very short time.
We supply simple charts for 6d. or free
with parts. All parts, everything needed.

COSTS £5/4/0

Or we have the unit ready made for £7.
Makes your present battery set all-electric
without alteration.



Build your own Cone Speaker. Nothing
any better than this. Chassis on 5-ply
wood, baffle board, fitted with floating
cone, 13/6. Unit to fit, 21/. English make.
Sturdily built.

Levenson's English 1-hole Mount Variable
Condensers, ball bearing, 7/9. Aluminium
end plates. Bakelite end plates, 7/3.

Tefag Adjustable 4000 ohm. Headphones,
new type, 12/6.

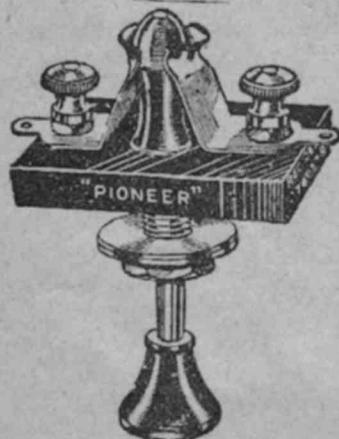
Indoor Spring Copper Aerials, with In-
sulators, 2/6. Now 1/-.

4-volt High Grade Accumulators, 1 unit,
hard rubber case, 50/- . Now 30/-.

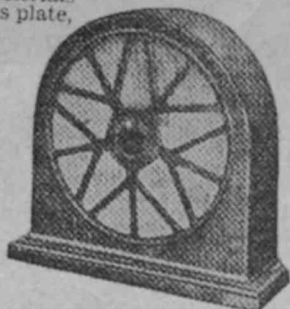
B.T.H. British Valves, 2, 4, 6 volts, UX
Bases, 13/6, 22/6. Now 6/6.

Lissen Gramophone Pick-up, with at-
tached Tone Control, 15/-.

German Indoor Collapsible Frame Aerials
on folding base, with nickel compass plate,
£10. Now £2.



Pioneer Push-Pull Switches,
1-hole Panel Mount, non-
solder. No weak contacts.
Double Thick Rounded Nickel
Silver Spring, 2/3.



Announcing the new English
W.B. Cone-Speaker at 45/-.
Attractive and handsome in
build. Bakelite cabinet. Per-
fect reproduction on all notes
of the musical scale.



Like-a-Flash Vernier Bake-
lite Dials, no backlash,
perfect action, 5/6.



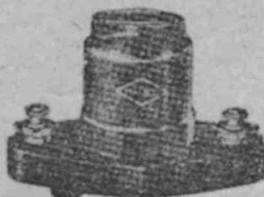
Amisco Battery Strip de Luxe, 7/6. NOW 3/6.

**IMPROVE YOUR
RECEPTION**
with a

CLIMAX
RADIO EARTH

The Climax Radio
Earth makes a world
of difference to your
Wireless reception.
Greater selectivity—
essential with new re-
gional stations—greater
stability, minimum resis-
tance, maximum efficiency.
Many unique features. Ar-
moured point. Projections
ensure efficient contact. Abs-
olutely the best earth on earth.
Cut out the old inefficient water
pipe or gas pipe earth and fit Climax.
In two models.

PRICE, 4/6



Magnus Ideal Lightning
Arresters, 5/6. Now 2/6.

Phone-o-
Link
Gramo-
phone
Pick-up,
with
Tone
Arm and
Attached
Tone
Control,
63/. Now
30/-.

Lissen
60-volt
New
Process
"B" Bat-
teries,
14/6; 100
volts,
22/6. 9-
volt "C"
Battery,
3/-.

Here It Is At Last!

Everyone will be interested.

Levenson's Like-a-Flash

A.B.C. Pack FOR ALL-ELECTRIC
SETS.

Complete kit of all parts and valve, to
build yourself, and simple chart supplied.

£5/13/6 OR READY BUILT,
£7/17/6.

All that's needed is a little alteration to
your present battery set to convert to A.C.
operation. We supply charts for same.



The best Cone Speaker Unit of them all.
English built, 21/-. Worth double. The
famous W.B. Cone Unit, 4-pole balanced
armature, with cobalt steel magnet.

Speed Tubes, 25 per cent. better. Send
for full list, 227 13/6, 226 10/6, 280 19/6,
117 15/-.

Now ready, 2/6. Levenson's 1930 Portfolio
of 19 Modern Photo. Charts. Anyone can
build a modern set from them. Selling like
hot cakes.

Muter 3-stage Resistance Coupled Ampli-
fiers, 35/6. Now 10/6. 2 stage, 8/6.

"Quam" Variable Condensers, gear driven,
Pyrex Glass End Plates, with 4in. dial,
25/- value. Now 6/6.

Western Electric 4000 ohm. Ship's Opera-
tor Lightweight Headphones, 35/- . Now
16/6.

Like-a-Flash Heavy Duty 45-volt "B" Bat-
teries, upright type, 28/6 value. Now 18/9.
Despite new heavy duty.

Amplion A.R. 19 Horn Type Loud Speak-
ers, £6/10/- . Now 50/-.



Send for this 190-page Illustrated
Handbook and Catalog, 4/- Coupon
enclosed, 1/- . Post free to any ad-
dress, or call for it whilst in town.

LEVENSONS RADIO
THE PALACE OF WIRELESS
226 PITT ST SYDNEY BRANCH 86A PITT ST BETWEEN HUNTER ST
& MARTIN PLACE

Interstate Programmes, Tuesday, March 11

4QC

Australian Broadcasting Co., Brisbane
(Wavelength, 385 Metres).

EARLY MORNING SESSION

7.30 to 8.30 a.m., as usual.

MORNING AND MIDDAY SESSION.

11 a.m. to 2 p.m., as usual.

AFTERNOON SESSION.

3 p.m. to 4.30 p.m., as usual.

EARLY EVENING SESSION.

6 p.m. to 8 p.m., as usual.

NIGHT SESSION.

8.0: From St. Andrew's, Lutwyche—the Carillon (G. Smoother, carillonist); "Clock Chimes"; hymn, "Eternal Father"; hymn, "Holy, Holy, Holy"; hymn, "Hark, Hark, My Soul"; hymn, "Abide With Me."

8.15: From the Tivoli Theatre, the Tivoli Orchestra (conductor, Charles Groves)—overture, "A May Day" (Woods).

8.23: Arthur Thomson, baritone—"It's All That I Can Say" (Temple); "At Dawning" (Cadman).

8.30: From the Tivoli Theatre, the Tivoli Orchestra (conductor, C. Groves)—"Musical Scenes from Switzerland" (Langye).

8.36: From the studio, Ann Samman, soprano—"Wake Up" (Phillips); "Happy Song" (Teresa del Riego).

8.44: From the Tivoli Theatre, the Tivoli Orchestra (conductor, C. Groves)—"The Baby Parade" (Pryor); "Tarentella" (Helmund).

8.52: From the studio, Pipe Major Jas. Lawrie and his bagpipes.

9.0: Metropolitan weather forecast.

9.1: From the Tivoli Theatre, the Tivoli Orchestra (conductor, C. Groves)—selection, "Sullivan's Songs" (arr. Henley).

9.15: From the studio, Richard Thomson (boy soprano)—"The Swallows" (Power); "My Bird of April Days" (Besley).

9.23: From the Tivoli Theatre, the Tivoli Orchestra (conductor, C. Groves)—fox-trot, "Happy Humming Bird" (Dixon and Woods).

9.27: From the studio, Ann Samman, soprano—"My Prayer" (Squire).

9.31: From the Tivoli Theatre, the Tivoli Orchestra (conductor, C. Groves)—Waltz 9, "Blue Hawaii" (Baer).

9.34: From the studio, Arthur Thomson, baritone—"The Wanderer" (Schubert).

9.38: From the Tivoli Theatre, the Tivoli Orchestra (conductor C. Groves)—"Charm of Life" (Olsen).

9.41: From the studio, Richard Thomson, boy soprano—"I Mourn as a Dove" (Benedict).

9.45: From the Tivoli Theatre, the Tivoli Orchestra (conductor, C. Groves)—fox-trot, "Misery Farm" (Wallis).

9.48: From the studio, Pipe Major Lawrie and his bagpipes.

9.52: From the Tivoli Theatre, the Tivoli Orchestra (conductor, C. Groves)—Spanish suite, "La Feria" (Lacombe).

10.0: News; weather.

10.20: The Brisbane Trocadero Dance Band (director, Linn Smith)—dance music.

11.0: Close down.

3LO

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

EARLY MORNING SESSION.

As usual.

MORNING SESSION.

As usual.

MIDDAY SESSION.

As usual.

THE EDUCATIONAL SESSION.

2.0: Mr. W. A. Jones, B.V.S.C., Indian Army Commissioner—Selecting the Australian Horse for the Indian Army. 2.15: Musical interlude. 2.20: Dr. J. Dale, Melbourne Medical Officer of Health—"The Influence of Diet on Health." 2.35: Musical interlude. 2.40: Madame Joy McArden—"A Travelling Artist in Europe." 2.55: Musical interlude.

AFTERNOON SESSION.

3.0: Time signal. 3.1: Afternoon musicale, provided by the Lido Instrumental Ensemble and leading vocalists. 4.25: Acceptances and barrier positions for the Sandown Park races on Wednesday. 4.30: Close down. During the afternoon details of the more important sales at the annual horse sales at Newmarket will be broadcast as they come to hand. 5.45: The Children's Corner. 6.0: Time chimes. The Studio Light Orchestra—"Tea Cup Tinkles." "Clever Clarice" and "Bobbie Bluegum" in "Some Songs from the Silver-sheet." "Bobbie Bluegum" and "Ector and Orace chat about this and that." 6.5: Birthday greetings by "Bobbie Bluegum."

THE EVENING SESSION.

6.40: Boy Scout doings, by a representative of the association. 6.55: Musical interlude. 7.0: Time signal. 7.1: Countryman's session. 7.25: For the man on the land, under the auspices of the Department of Agriculture, Mr. W. B. Miller will speak on "Wheat Growing—Preparations for Seeding." 7.40: News service. Cable news service (copyright, Australian Press Association and "Sun"—Herald News Service, Ltd.). 7.45: For the medical student, Mr. Lindsay Biggins, Mus. Bac. Illustrations for the forthcoming music examinations.

NIGHT SESSION.

8.0: Operatic gems. Masterpieces from Italy, Austria, France, and Germany scintillate among our cluster of operatic gems to-night. No overtures are more universally popular than those to "The Barber of Seville" (Rossini) and "Tannhauser" (Wagner), and the National Broadcasting Orchestra do full justice to them. The pathetic aria, "Che Faro" ("Have I Lost Thee"), from Gluck's "Orfeo," is familiar to most opera-lovers, and a duet from "The Daughter of the Regiment" and the beautiful violin solo from Massenet's "Thais" are also included. Orchestral, "Barber of Seville" Overture (Rossini); aria, "Che Faro," from "Orfeo" (Gluck); Violin, "Meditation" from "Thais" (Massenet). Duet, "from "Daughter of the Regiment" (Donizetti); orchestral overture, "Tannhauser" (Wagner).

8.30: A three-act comedy, "The Marriage of Kitty" by Cosmo Gordon Lennox. The persons of the play: Sir Richard Belzize, Maurice Dudley; John Travers (a solicitor), Arthur J. Fay; Norbury (a man servant), H. M. Hill; Hampton (a clerk), Chas. Lacey; Miss Katherine Silverton (Kitty), Mrs. Maurice Dudley; Madame de Semiano, Edith Huxham; Rosalie (a French maid), Alba Zacuti. Act I: John Travers' office, Lincoln's Inn. Acts II and III: Lady Belzize's villa on the Lake of Geneva. A year is supposed to have elapsed between acts 1 and 2. Produced by Maurice Dudley.

10.0: An orchestral ensemble of combined orchestras, featuring the "Rhapsody in Blue," with Cecil Fraser at the piano.

10.30: News-session.

10.40: Mark Makeham's Melodians—latest numbers.

11.30: God Save the King.

3AR

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

MORNING SESSION

As usual.

MIDDAY SESSION

As usual.

AFTERNOON SESSION

As usual. 2.49: Wilhelm Backhaus, piano. 2.53: London Symphony Orchestra. 3.0: Request numbers. Mainly for women;—3.20: The Baby—"The Week's Hints About Baby"—Sister Anne Purcell. 3.35: Musical interlude. 3.40: A woman peacemaker from England—Miss Nora Collinson, Secretary of the Bureau of Social and International Affairs. 3.55: Musical interlude. 4.0: The latest fashions—Madame La Mode. 4.15: Musical reproduction. 5.0: G.P.O. chimes. 5.1: Musical reproduction. 5.30: Weather data. 5.45: Close down.

EVENING SESSION

6.15: Dinner music, supplied by the Studio Orchestra. 7.30: What's on the air to-night. 7.32: Sporting results. 7.35: Latest musical releases. 8.0: G.P.O. chimes.

NIGHT SESSION

8.1: The Romance of Australia's Discovery—Capt. Donald MacLean.

DANCING AND VARIETY

8.15: Ted Nelson, entertainer—Songs and sketches at the piano.

8.23: Ruby Dixon, soprano—"Love, Your Spell is Everywhere" (Goulding); "Where is the Song of Songs for Me?" (Berlin).

8.30: Mark Makeham's Melodians—Dance music.

8.36: Percy Blundell, tenor—"The Old Road Home" (Thompson); "The Pixie Loper Man" (Elliott).

8.43: Max McCalman, clarinet—Selected.

8.47: Norman Bland and partner—almost gentlemen—will entertain.

8.57: Mark Makeham's Melodians—Popular melodies.

9.3: "Anatol," a sequence of dialogues, by Arthur Schnitzler—Episode V—"A Christmas Present." Anatol, Leslie Williams; Max, Jack Bindon; Gabrielle, Catherine Neill.

9.18: Mark Makeham's Melodians—Dance music.

9.24: Ruby Dixon, soprano—"Amoureuse" (Berger); "Sincerity" (Emilie Clarke).

9.31: Mark Makeham and Harry Lazarus—Two piano work.

9.38: Percy Blundell, tenor—"The Song of the Clock" (Burchell); "You'll Get Heaps o' Lickins."

9.43: Mark Makeham's Melodians—Dance music.

9.50: Ted Nelson, entertainer—Songs and sketches at the piano.

9.57: Syncopated pianisms by an absent artist.

10.5: Weather and news.

10.15: Norman Bland and partner—almost gentlemen—will entertain.

10.25: Syncopated pianisms by an absent artist.

10.30: God Save the King.

3DB

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

MORNING SESSION.

11.0: Women's radio service. "Fashions and Toilet Hints," conducted by Miss Iris Turnbull. 12.0: Black Diamonds Band, "Punjab March." 12.30: Robert Radford, "Shepherd, See Thy Horse's Foaming Mane." 1.0: De Groot and Piccadilly Orchestra, "The Great Waltz Song." 1.30: John McCormack, "Golden Love." 1.45: Close down.

AFTERNOON SESSION.

2.15: Le Garde Republicaine Band, "Marche Italiana." 2.30: Fritz Kreisler, "Chanson Meditation."

3.0: Savoy Orpheans, "Round the World Medley." 3.30: Guy Lombardo and his Royal Canadians, "Why Did You?" 4.0: Close down.

EARLY EVENING SESSION.

5.0: De Groot and Piccadilly Orchestra, "Shepherd's Love." 5.30: Leviathan Session. 6.30: Emille de Gogorza, "Sally in Our Alley." 7.0: The Cavaliers, "Sleepy Valley." 7.15: Market reports. 7.30: Sponsored session.

EVENING SESSION.

8.0: Symphony Orchestra, "Tales from the Vienna Woods." 8.30: Sponsored session. 9.30: Black Diamonds Band, "Merrymakers' Dance." 10.0: John McCormack, "Serenade" (R&H). 10.30: Colonial Club Orchestra, "Song of the Moonbeams." 10.45: News. 11.0: God Save the King.

5CL

Australian Broadcasting Co., 114 Hindmarsh Square,
Adelaide (Wavelength, 109 Metres).

Day sessions as usual.

NIGHT SESSION.

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

8.0: Time signal.

8.1: Popular Band Concert by the Magill Vice-Regal Band (under the conductorship of Mr. Orto Lovell), assisted by Elsie Woolley (contralto), Reginald Harris (tenor), Richard Smith (xylophonist), and George Horton (comedian). During the interval at nine o'clock wheat, market, and weather reports will be given for the man on the land.

10.0: News session.

10.10: Dance session.

11.0: Close down.

6WF

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

Day sessions as usual.

EVENING SESSION.—8.0: Chimes. 8.1: Ambassadors' Theatre Orchestra. 8.15: The Radio Troubadours in "Melody and Mirth," featuring "Good Little Bad Little You" (Stept) and "Coquette" (Berlin). 8.21: Sporting review. 8.28: The Radio Troubadours in "Melody and Mirth." "I'd Love To, but I'm Afraid" (Hargreaves). 8.44: Doris Horrigan, soprano, selected. "The Thrushes in Our Glen" (Aylward). 8.51: The Radio Troubadours, in Melody and Mirth, "I'm Crazy Over You" (Lewis) 8.57: Doris Horrigan, soprano, "Solvieg's Song" (Grieg). "The Piper of Love" (Carew). 9.4: Stage presentation from Ambassadors' Theatre, Perth. 9.30: Review of foreign affairs by P. Alexander, M.A., of the University of West Australia. 9.45: Bert Howell and his Stage Band. 10.15: British Official Wireless news. 10.23: What's on the air to-morrow. 10.28: Reproduced music. 10.59: Weather report. 11.0: Close down.

7ZL

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

Day sessions as usual. During the afternoon progress scores will be given of the cricket—Australian XI v. Tasmania, at Launceston. 8.0: Sonora recital. 8.15: A programme of dance music by the Discus Dance Ensemble (interspersed with vocal numbers). 9.30: News. 9.40: Dance numbers. 10.1: Close down.



Stromberg-Carlson Gear Drive

THE Stromberg-Carlson Gear Drive is primarily for use with ganged condensers. It is positive in action with truly meshed gears.

The Scale is of heavy celluloid, which is efficiently illuminated from the back by means of a standard 6-volt Lamp, which operates satisfactorily on either 4 or 6 volt circuits. The Escutcheon Plate is of handsome design, finished in old gold, with a Knob of pure brown bakelite. One of the main features of the Stromberg-Carlson gear drive is its sturdy construction, which, together with the fact that it has a precision made gear drive, makes it far more satisfactory for driving ganged condensers than any other type of dial.

Type A. 623, Gear Drive. Complete with Escutcheon, Knob, and Lamp — Dimensions, 4 7/8 x 3 3/8 x 2 in. Weight, 8oz. Price, 15/6

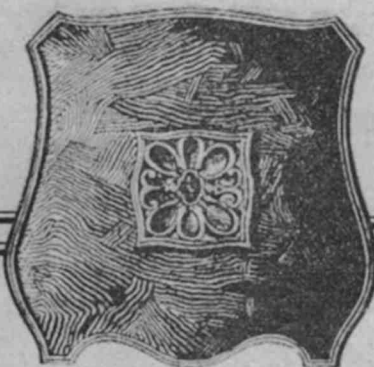
Made in Australia by

Stromberg-Carlson (A/sia.), Ltd.,
72-76 WILLIAM ST., SYDNEY.

Emmco's POWER AMPLIFIER

Australian Made
and
Guaranteed

Quality
Unsurpassed



The Voice of the Singer
PURE AND SWEET

*Through Emmco's Latest
Power Amplifier*

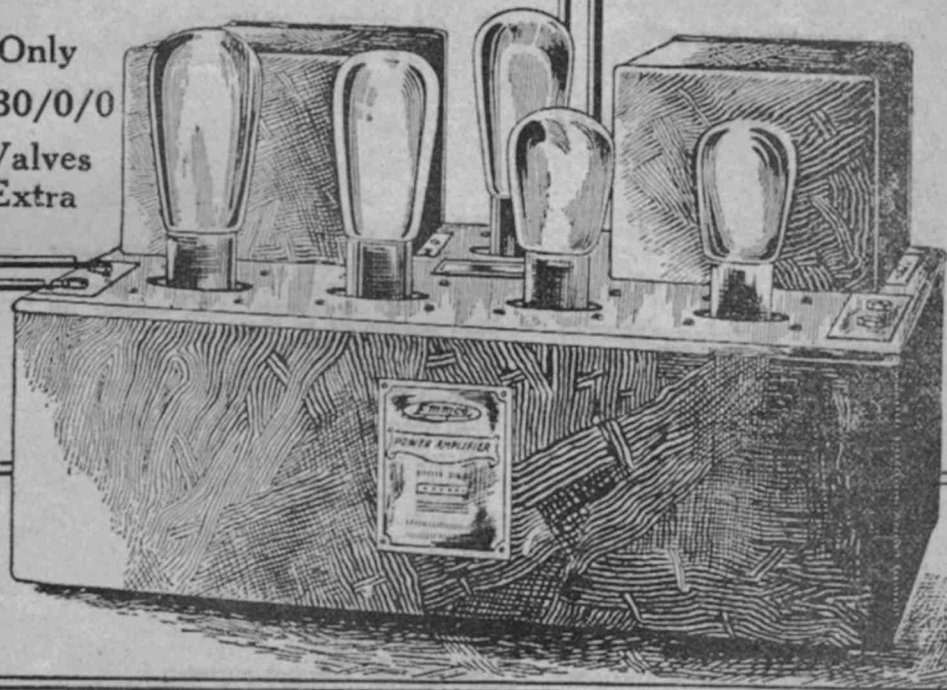
UTILISES
2—E424 Valves
2—UX245 Valves
1—UX280 Valves

OBTAINABLE
AT ALL
RADIO
DEALERS

Only
£30/0/0
Valves
Extra



SAN
DER
SON



Manufactured and Guaranteed by
ELECTRICITY METER MANFG. CO. LTD., SYDNEY

Sole Factory Representatives:

MANUFACTURERS PRODUCTS PTY., LTD.

137 CLARENCE ST., SYDNEY

SUGDEN PLACE, MELBOURNE

Local Programmes, Wednesday, March 12

2FC

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

EARLY SESSION—7.0 to 8.15 a.m.

- 7.0: "Big Ben" and Programme Announcements.
- 7.2: Meteorological Information for the Man on the Land.
- 7.5: This Morning's News, from the "Daily Guardian."
- 7.10: Austradio Musical Reproduction.
- 7.45: Mails and Shipping.
- 7.51: What is on to-day.
- 7.53: Music from the Studio.
- 8.15: CLOSE.

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

- 10.30: Announcements.
- 10.32: General Sporting Talk, by the A.B.C. Sporting Editor.
- 10.45: HORACE WEBER at the GRAND ORGAN.
- 11.0: HOUSEHOLD HELPS—Cooking, by Miss Ruth Furst.
- 11.10: CABLES—(Copyright) "Sun"—"Herald" and A.P.A. News Service.
- 11.15: MORNING DEVOTION, conducted by Rev. W. A. Siddon.
- 11.30: Austradio Musical Reproduction.
- 11.53: British Official Wireless Press.
- 12.0: "Big Ben." Stock Exchange and Metal Quotations.
- 12.5: SISTER MARY A. JACOB, of THE AUSTRALIAN MOTHERCRAFT SOCIETY, will talk on "Overfeeding Infants."
- 12.20: Midday Weather Forecast and Weather Synopsis. Special Produce Market Session for the Man on the Land, supplied by the State Marketing Board.
- 12.30: CLOSE.

THE LUNCH HOUR—1.0 to 2.30 p.m.

- 1.0: THE RADIO ENTERTAINERS.
- 2.0: Stock Exchange, second call.
- 2.2: A Glance at the afternoon "News."
- 2.7: Austradio Musical Reproduction.
- 2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.45 p.m.

- 2.30: RADIO RHYTHM
- 2.42: JOHN BENJAMIN, Baritone—
"A Song Remembered" (Coates).
- 2.45: ROYAL ALBERT HALL ORCHESTRA
"Henry VIII Dances" (German) (H.M.V.).
- 3.0: ROMANO'S CAFE DANCE ORCHESTRA, conducted by Merv. Lyons.
- 3.12: FROM THE STUDIO—
DORA LINDSAY, Scottish Comedienne—
"You'll Always Find a Scotsman There."
- 3.15: BERLIN STATE OPERA ORCHESTRA—
"Lohengrin Prelude to Act I." (Wagner). (H.M.V.).
- 3.22: ROMANO'S CAFE DANCE ORCHESTRA, conducted by Merv. Lyons.
- 3.32: FROM THE STUDIO—
JOHN BENJAMIN, Baritone—
(a) "Night was made of Loveliness and Prayer" (Stickles).
(b) "Linden Lea" (Williams).
(c) "The Conquest" (Spross).
- 3.39: ROMANO'S CAFE DANCE ORCHESTRA, conducted by Merv. Lyons.
- 3.52: FROM THE STUDIO—
DORA LINDSAY, Scottish Comedienne—
"Mrs. Tut-Tut" (Lindsay).
- 4.0: ROMANO'S CAFE DANCE ORCHESTRA, conducted by Merv. Lyons.
- 4.12: FROM THE STUDIO—
JOHN BENJAMIN, Baritone—
"Nightfall at Sea" (Phillips).
- 4.15: ROMANO'S CAFE DANCE ORCHESTRA, conducted by Merv. Lyons.
- 4.28: FROM THE STUDIO—
Stock Exchange, third call
- 4.30: Studio Music.
- 4.45: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55.

- 5.45: Children's "Good-night" Stories, told by the "Hello Man."
- 6.0: The 2FC Hospital Birthday League.
- 6.10: Uncle Ted and "Sandy" will entertain.
- 6.30: The Serial Story.
- 6.45: THE LIGHT ORCHESTRA.
- 7.20: A.B.C. Sporting Service
- 7.25: Special Country Session. Stock Exchange Resume. Markets. Weather Forecast. Late News Service from the "News" Truck Bookings.
- 7.58: To-night's Programme.

THE EVENING PRESENTATION—8.0 to 11.30.

The first part of our programme to-night is arranged by E. J. Roberts, conducting the Studio Orchestra, with Song Groups by David Craven, baritone. C. N. Baeyertz will tell of "Whistler—The Amazing Jimmy," and in lighter vein we turn to the Scena "When the Billy Boils," a delightful little vignette redolent with the atmosphere of the Australian Bush.

Then and Now—Sidelights of Old Sydney—offers facts and features both laughable and interesting.

Instead of Dance Music we are substituting a Rest Hour in Radio Music, between 10.30 and 11.30, which is proving an immensely popular item with our Listeners.

8.0: ORCHESTRAL PROGRAMME, presented by E. J. ROBERTS, Conductor of the Studio Orchestra. Assisting Artist: David Craven

THE STUDIO ORCHESTRA, conducted by E. J. Roberts—

- "William Tell" (Rossini).
- Solo Cello—Jack Post.
- Solo Flute—Neville Amadio.
- Solo Clarinet—Clive Amadio.

8.15: DAVID CRAVEN, Baritone—
(a) "They All Love Jack" (Adams)
(b) "Beauty's Eyes" (Tosti) (with violin obligato by Dulcie Blair).

8.19: JACK POST, Cellist—
(a) "Autumn Flower" (Popper).
(b) "Rondo" (Boccherini-Squire).

8.25: THE STUDIO ORCHESTRA—
"Three Bavarian Dances" (from "The Bavarian Highlands") (Elgar).

- 1. The Dance.
- 2. Lullaby.
- 3. The Marksman.

8.40: DAVID CRAVEN, Baritone—
(a) "I Am Fate" (Hamblen), with Orchestral Accompaniment.

(b) "My Message" (D'Hardelot).

8.48: THE STUDIO ORCHESTRA—
"Pot Pourri of Sullivan Works" (Arr. Godfrey).

9.0: THE COUNTRY MAN'S WEATHER SESSION—
(a) New South Wales Forecasts.
(b) Interstate Weather Synopsis.

9.2: C. N. BAEYERTZ will tell of "Whistler—The Amazing Jimmy."

9.22: "WHEN THE BILLY BOILS."

We now come to a scene that appeals to the hearts of all Australians and those who visit our Glorious Country—a typical setting of way-out-back, where every man tends for himself and extends his bush hospitality to those he meets. The boiling billy is always the connecting link of bush friendships. Artists—The A.B.C. Male Quartette and Frank Mortimer, our brilliant Mimic.

The following Musical Numbers will be presented:—

- "Kookaburra" (English).
- "While the Billy Boils" (English).
- "Mulligan's Musketeers."
- "Woodonga"
- "The Sundowner" (English)
- "Gundagai."
- "Billy Tea" (English).

10.0: THEN AND NOW—Sidelights on Old Sydney.

10.10: Announcements.

10.15: A REST-HOUR IN RADIO MUSIC.
Late Official Weather Forecast.

11.30: CLOSE. NATIONAL ANTHEM.

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 358 Metres).

THE OPENING SESSION—8.15 to 11.

- 8.15: G.P.O. Chimes and Announcements.
- 8.16: A Musical Interlude.
- 8.40: Meteorological Data for the Country.
- 8.45: Mails and Shipping Information.
- 8.50: Memory Melodies.
- 9.0: This Morning's Story.
- 9.30: Songs Grave and Gay.
- 9.40: British Official Wireless Press.
- 9.45: New Music.
- 10.5: News from the "Daily Guardian."
- 10.10: Austradio Musical Reproduction.

10.30: THE AUSTRALIAN BROADCASTING COMPANY'S WOMEN'S ASSOCIATION, conducted by Miss Gwen Varley.

"Tennis Coaching."
"Simple Auction Bridge for Beginners," by Mrs. E. Johns.

11.0: G.P.O. Chimes. Close Down.

MIDDAY SESSION—12 Noon to 2.30 p.m.

12.0: G.P.O. Chimes and Announcements.

12.2: A Recital of Pianoforte Reproductions.

12.30: THE RADIO ENTERTAINERS.

1.0: Afternoon News, from the "Evening News."

1.5: Austradio Musical Reproduction.

1.40: Songs of Yesterday and To-day.

2.0: Half an Hour With Silent Friends.

AFTERNOON ENTERTAINMENT—2.30 to 5.45.

2.30: THE WORLD OF WOMEN—
THE WOMEN'S HOUR, conducted by the A.B.C. Women's Association—
"Homeless Woman."
Music by Request.
"Homecraft."

"The Fight of the Opium Traffic by the League of Nations," by Mrs. Edith Glanville.

3.30: MUSICAL LIGHT AND SHADE.
THE LIGHT ORCHESTRA—
"Sunshine and Shadow" Sketches (Frent Tours).

3.43: (a) "Speak" (Tosti), sung by SYDNEY COLTHAM, Tenor, on an H.M.V. Record.
(b) "Wohin" (Schubert) sung by ELENA GERHARDT, Mezzo-Soprano, on an H.M.V. Record

3.50: DULCIE BLAIR, Violinist—
"Lullaby" (Cyril Scott).

3.53: A MOMENT WITH SCHUBERT.
THE LIGHT ORCHESTRA—
"Entracte Music from 'Rosamunde'" (Schubert).

4.3: A NOVELTY PIANO SOLO, with Orchestral Accompaniment, by FRED WHAITE—
"Happy Days and Lonely Nights" (Fisher).

4.8: Vocal—"Voyous Que J'ersale," from "Carmen" (Bizet)—
Sung by GERALDINE FARRAR, Soprano, on an H.M.V. Record.

Vocal Duet—"The Moon has Raised Her Lamp Above" (J. Benedict)—
SYDNEY COLTHAM and PETER DAWSON, on an H.M.V. Record.

4.15: FROM THE PRACTICAL POINT OF VIEW—
DR. LOFTUS HILLS will tell of "Science in Everyday Life."

4.30: THE LIGHT ORCHESTRA—
"Hansel and Gretel" Selection, from "Humperdinck Opera" (Chas. J. Roberis).

4.45: The Trade Hour—Demonstration Music.

5.45: Weather Information. Close Down.

THE DINNER HOUR—6.15 to 7.55 p.m.

6.45: THE BOYS' RADIO CLUB, conducted by Mr. Norman Lyons.

7.5: The Country Man's Market Session—
Wool, Wheat, Stock, Farm Produce, Fruit and Vegetable Markets.

7.20: THE LIGHT ORCHESTRA.

7.45: Austradio Musical Reproduction.

7.55: "THAT ODD JOB OF YOURS."
REV. GEORGE COWIE will tell you "What to do with it."

TO-NIGHT'S PRESENTATION—8.0 to 10.30.
Our two big features to-night are in the nature of startling contrast. Cec Morrison will demonstrate to you phase by phase how a dance number is built up.
From present-day rhythm we whisk you away to a poignant episode in the good old Bushranging days of Australia's early history.
Lieutenant-Colonel C. E. Hughes, C.B.E., Deputy-Controller of the Eastern District Memorial War Graves Commission, who is on a short visit to Sydney from Tasmania, will speak at 8.10. Lieut.-Colonel Hughes has some very interesting facts to give listeners regarding the work of the Commission.
The Band, in symphonic numbers, unusual vocal trio items, and popular songs by Rae Foster, will complete the presentation.

8.0: "WE THREE" in merry mood.

8.7: TERRY WYNDHAM and friend Saxophone—
"Another Kiss."

8.10: TO-NIGHT'S PERSONALITY.
 LIEUTENANT-COLONEL C. E. HUGHES, C.B.E., Deputy Controller of the Eastern District Memorial War Graves Commission, will speak on "The Memorial War Graves Commission."

8.20: THE ROYAL DUO play "Piccolo Pete."

8.23: RAE FOSTER, Popular Vocalist—
 (a) "Old-fashioned Lady" (Silva).
 (b) "If I Had My Way" (Green).

8.30: "TOWARDS BETTER DANCE MUSIC."
 In conjunction with the personnel of his band, Cec. Morrison talks on a very interesting subject to-night, and will give explanations and musical examples of what goes into the making of modern dance music, taking you through stages from the ordinary piano part to the symphonic arrangement.

"To play really good dance music," he says, "one must have a wonderful sense of rhythm, creative power, and a good memory."

"Go and learn to dance first; get the rhythm, and you will find how much easier it is to put into your fingers what the dancing teacher puts into your feet."

The first illustration is the well-known fox-trot, "MY SIN."

The chorus, played as a piano solo, exactly as it is written; then the same chorus, embellished with musical showmanship.

The next illustration is the ordinary orchestration. First we open with a few bars of the piano part, played exactly as it is written; curious how much it sounds like the old-fashioned vamp, isn't it? Then along comes friend saxophone, with liquid note, the trumpet has a word to say, the trombone plays counter harmony, the saphone adds his quota, and the drums accent the rhythm with the piano. Thus the number is played right through.

Now comes the symphonic arrangement of the same number. What is the meaning of symphonic? In short, an elaborate instrumental composition for full orchestra—the term was formerly applied to any composition for an orchestra, such as an overture, etc., and still earlier to certain compositions, partly vocal, partly instrumental.

In presenting the symphonic arrange-

ment of "My Sin" you will see how clearly the band exemplifies the dictionary's definition of the word.

9.0: "WE THREE" tell it with music.
 9.7: FRANK LAMBERT and his Xylophone—"Fashionette" (Glogau).

9.10: "DISHONOR AMONG THIEVES."
 The Second Episode in the series of Bush-ranging Scenes which James Donnelly is presenting.

Mick Howell—untamed, ruthless, the law only unto himself. Living up to the last letter of his picturesque title—"THE GOVERNOR OF THE RANGES."

The portrayal of his career is rich with thrilling incident as the long arm of justice reaches out for the notorious highwayman—central figure of a hundred crimes.

9.40: Weather Information for the Man on the Land.

9.42: THE A.B.C. DANCE BAND

9.52: RAE FOSTER, Popular Vocalist—"Love" (Edmund Goulding).

9.55: ROBERT LEE, Cellist—"The Love Parade" (Schertzinger)

9.58: THE A.B.C. DANCE BAND.

10.8: RAE FOSTER, Popular Vocalist—"Why Can't You?" (De Sylva).

10.11: THE A.B.C. DANCE BAND.

10.25: Late News from the "Evening News." Late Weather Forecast.

10.30: NATIONAL ANTHEM.

2GB

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

Day sessions as usual.

- 8.0: Miss Mary Neal.
- 8.7: Symphony Orchestra.
- 8.15: Mr. Cecil Houghton.
- 8.22: Instrumental Trio.
- 8.30: Mr. Jack Win and Mr. Heath Burdock, humor.
- 8.35: Miss Elsie Brown.
- 8.42: Symphony Orchestra.
- 8.52: Miss Mary Neal.
- 9.0: Weather report.
- 9.3: Address.
- 9.15: Instrumental Trio.

- 9.25: Mr. Cecil Houghton.
- 9.35: Mr. Jack Win and Mr. Heath Burdock, humor.
- 9.40: Symphony Orchestra.
- 9.50: Miss Elsie Brown.
- 10.0: Instrumental music.
- 10.30: Close down.

2UW

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

MIDDAY SESSION

As usual.

EVENING SESSION

- 5.30: Children's Hour, conducted by Uncle Jack.
- 6.30: Close.
- 7.0: Chimes. Request numbers.
- 8.0: Musical programme.
- 9.0: Comments on Foreign Affairs by Mr. J. M. Prentice.
- 9.10: Music and request items.
- 10.30: Close down.

2KY

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

Morning Session as usual.
 Children's Session as usual.

EVENING SESSION

- 7.0: Musical interlude.
- 7.15: Hawaiian steel guitar selections.
- 7.40: Health feature.
- 8.0: From Bebarfald's New Studio. AL ROSENBERG, Novelty Pianist.
- 8.30: Banjo solos, Master Harry Weir.
- 8.45: Contralto solos, Miss Roter.
- 9.10: From Sydney Stadium, full description of main 15-round event. Mr. E. R. Voigt.
- 9.55: Result of main 15-round event.
- 10.0: Closing announcements.

2UE

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

Programme as usual—see Friday's schedule.

NOW £8/15/0
THE COSSOR MELODY MAKER .



The Price, £8/15/0, includes every accessory except batteries and loud-speaker. Come in and see us, or mail the coupon below for full details.

This is the set that has swept Australia from end to end. It is inexpensive to buy, easy to build, and remarkable in performance. Already hundreds of people have assembled this marvellous radio, and you, too, can experience the thrill of assembling this unique set and see and hear for yourself just what it can do.

SPECIAL FREE OFFER

One lucky purchaser will receive a Cossor Melody Maker Kit entirely FREE. It may be you. Full particulars from

Harringtons LTD

Established 41 years.

Radio, Photo and Cine Merchants,
 386 GEORGE ST., SYDNEY.

Branches all States and N.Z.

MAIL THIS COUPON NOW.

Please send me free of charge one of your Constructor Envelopes, which tells me how the Cossor Melody Maker is built in 90 minutes.

HARRINGTONS, LTD.,
 Box 4146X, G.P.O., Sydney.

NAME

ADDRESS

Home Set Builders!

ELECTRIFY YOUR PRESENT SET FOR £9/10/-

Or build your own Electric Set by the SIMPLICITY "3" METHOD for £14/3/0. Wiring diagram, subpanel layout diagram, and full particulars simply expressed may be obtained from any Radio store for the asking.

EXPERIMENTERS!

We have type "F" power transformers suitable for building or rebuilding 5 and 6 valve sets—supplying current for 2-224, S. Grid, 2-227 and 2-245 Power Valves, or 4-227 and 2-245 Power Valves, as well as 250 volt "B" Current on full load.

VOX VALVES

Every Valve Guaranteed by the Agents.

U.X.226	12/6
U.Y.227	21/-
U.X.171A	15/-
U.X.280	25/-
U.X.245	25/-
U.Y.224	27/6

Wholesale Only.

GUARANTEED BY THE AGENTS



32 Clarence St., Sydney 'Phone B2002

Interstate Programmes, Wed., Mar. 12

4QG

Australian Broadcasting Co., Brisbane (Wavelength, 385 Metres).

EARLY MORNING SESSION.
7.30 a.m. to 8.30 a.m., as usual.
MORNING AND MIDDAY SESSION.
11 a.m. to 2 p.m., as usual.
AFTERNOON SESSION.
3 p.m. to 4.30 p.m., as usual.
EARLY EVENING SESSION.
6 p.m. to 8 p.m., as usual.

NIGHT SESSION.
8.0: The National Broadcasting Orchestra, conductress, Hilda Woolmer—selection, "Prince Charming" (King).

8.10: Ernest Barry and Dulcie Scott in a radio comedy, "Admiral Peters" (by W. W. Jacobs). George Burton is courting the widow Dutton most successfully when an old shipmate, Joe Stiles, lures him to drink. The widow is disgusted at seeing him in his cups. He tries to reinstate himself in the good woman's graces by urging Joe to tell her of his good points, a thing which Joe, posing as "Admiral Peters," does, very much at poor George's expense. Cast: George Burton, Joe Stiles, Ernest Barry; Mrs. Dutton, Dulcie Scott.

8.35: The National Broadcasting Orchestra, conductress, Hilda Woolmer—Valse de ballet, "Pierottettes" (Smith).

8.41: Mark Leslie—ten minutes of light comedy.
8.51: Lynn Miller and Co. in a musical specialty.
9.0: Metropolitan weather forecast; movements of lighthouse steamers.

9.3: Ernest Barry—a short recital.
9.10: The National Broadcasting Orchestra, conductress, Hilda Woolmer—romance, "In a Woodland Glade" (Ray).

9.15: Mark Leslie—more light humor.
9.20: Lynn Miller and Co. in another musical novelty.

9.30: The A.B.C. Dance Band, conductor, Roy Baird—dance music.
10.0: News service.

10.15: The A.B.C. Dance Band, conductor, Roy Baird—dance music.
11.0: Close down.

3LO

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

EARLY MORNING SESSION.

As usual. **MORNING SESSION.**

As usual. **MIDDAY SESSION.**

As usual. 1.30: Transmission from the Rotary Club. Sir Arthur Robinson on "The English-speaking Union." 2.5: Mr. W. C. Groves—Idling Round the Islands, "With a Government Patrol." 2.13: Description of Two-year-old Handicap, 5 furlongs, Sandown Park races, by Eric Welch. 2.20: Musical interlude. 2.25: Rev. George Cox, "Australian Birds." 2.40: Musical interlude. 2.43: Description of Sandown Plate, 6 furlongs, Sandown Park races, by Eric Welch. 2.50: Musical interlude. 3.0: Time signal.

THE RADIO MATINEE.

3.1: Afternoon musicale, provided by the Lido Instrumental Ensemble and leading vocal artists. 4.50: Close down. (Note: At approximately 3.10, 3.40, 4.10, and 4.40 further descriptions of the Sandown Park races will be broadcast by Eric Welch.) 5.45: The Children's Corner. 6.0: Time chimes. 6.25: Birthday greetings. 6.35: Musical interlude.

THE EVENING SESSION.

6.40: Madame Soward—"French." 6.55: Musical interlude. 7.0: Time signal. 7.1: Countryman's session. 7.25: Under the auspices of the Workers' Educational Association of Victoria, Dr. K. S. Cunningham, M.A., Ph.D., "Education with Its Eyes Open." 7.40: News service. 7.45: Mr. H. K. Love will supply "Our Radio Service to Listeners." 8.0: Time signal.

NIGHT SESSION.

8.0: "The Safety Curtain," the first radio "talkie," introducing an entirely new form of radio entertainment. Play by Gordon Ireland. Music and lyrics by Con. Conrad. Directed by Hugh Huxham. Characters: Nancy Greeley, a show girl; Derrick Mayne, her partner; Sam. Blaney, a theatrical magnate; Joe Hopworth, his producer; Dorothy North, a revue star.

8.30: A debate of a highly diverting and entertaining character, "Is Pursuit of Riches Worth While?"

9.0: Famous composers, illustrating their most famous compositions—Grieg, Orchestra, "Shepherd Boy"; "Norwegian Rustic March," from "Lyric Suite"; soprano, "Solweig's Song"; piano, with orchestra, "First Movement Piano Concerto in A Minor"; orchestra, "March of the Dwarfs."

9.30: "The Little Corporal," a Napoleonic song scene in two acts, suggested by Seton Merriman's story, "Barlasch of the Guards," prepared for radio by Norman Montagu.

10.0: A radio ramble round the world by means of Professor Popofski's wonderful invention, the Cosmopolitan Radiola.

10.30: News session.
10.40: Light music.
11.30: God Save the King.

3AR

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

MORNING SESSION

As usual. **MIDDAY SESSION**

As usual.

AFTERNOON SESSION

2.1: Cafe de Paris Orchestra. 2.3: Charles Hamp, tenor. 2.5: Leslie Harvey, organ. 2.9: The Three Australian Boys. 2.12: Cafe de Paris Orchestra. 2.15: North and South, comedy. 2.18: David and Queenie Kalla—Hawaiian music. 2.21: Charles Hamp, tenor. 2.24: Massed Military Bands. 2.27: Syd Beck, comedian. 2.30: Victor Lane, piano. 2.35: The Three Australian Boys. 2.38: Russian Bala-laika Orchestra. 2.41: Syd Beck, comedian. 2.44: David and Queenie Kalla. 2.47: William Ross, bagpipes. 2.50: Massed Military Bands. 2.53: Sydney Burchall, baritone. 2.56: Parlophone Dance Orchestra. 3.0: Request numbers. 3.20: The Y.W.C.A. in Korea—Miss Jean Stevenson, Secretary of the Melbourne Y.W.C.A. 3.35: Musical interlude. 3.40: Royal Craft Workers—Mrs. Eleanor Moody, Secretary of the Arts and Crafts Society of Victoria. 3.55: Musical interlude. 4.0: Hints to Potential Nurses—Avenue of work for graduate nurses at home—Miss Grace Wilson, C.B.E., R.R.C., Matron-in-Chief of the A.A.N.S. 4.15: Musical reproduction. 5.0: Chimes. 5.1: Musical reproduction. 5.30: Weather data. 5.45: Close down.

EVENING SESSION

6.15: Dinner music, supplied by the Regent Brass Band. 7.30: What's on the air to-night? 7.32: Sporting results. 7.35: What's on the air to-night? 8.0: G.P.O. chimes.

NIGHT SESSION

8.1: Leaves from an Actor's Diary: Concerning Wilson Barrett—Mr. Roche Phillips.

8.15: Prahran City Band—Overture, "The Caliph of Bagdad" (Bolidieu).

8.25: Ivy Davis, soubrette, in novelty numbers.

8.32: Morfyn Jones, piano—Etude in C Sharp Minor (Chopin). Etude en forme de Valse (Saint-Saens).

8.42: Oliver Peacock, baritone—"The Pirate" (Maley). "Old Fashioned Locket" (Winbrow).

8.49: Prahran City Band—Selection, "Oberon" (Weber).

9.0: Comedy sketch—"The Motor Ride" (produced by Mrs. Charles King).

9.10: Zoe Harrison, violin—"Le Cygne" (Saint-Saens). "Andante," from "Concerto in E Minor, Opus 84" (Mendelssohn).

9.20: Ivy Davis, soubrette, in novelty numbers.

9.27: Prahran City Band—Cornet polka, "Titania" (Rimmer); intermezzo, "Damoiselle Chic" (Fletcher).

9.37: Oliver Peacock, baritone—"If You Should Need Me" (Delmore). "Sing a Little Love Song" (Conrad).

9.44: Morfyn Jones, piano—"Eroica Etude" (Liszt). "Humoreske" (York Bowen).

9.50: A comedy sketch—"The Crossing of the Wires" (produced by Mrs. Charles King).

9.57: Prahran City Band—March, "Invicta" (Greenwood); intermezzo, "In a Monastery Garden" (Keeble).

10.5: Weather and news.

10.15: Zoe Harrison, violin—"Andantino" (Martini-Kreiser). "Sovenir" (Drda).

10.20: Prahran City Band—Selection, "Bohemian Girl" (Balfe).

10.30: God Save the King.

3DB

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

MORNING SESSION.

11.0: Women's Radio Service: "Homecrafts and Interior Decoration," conducted by Mrs. Dorothy Silk. 12.0: Coldstream Guards Band, "Serene Overture." 12.30: Kirkby Lunn, "In Sweet September."

1.0: Harold Samuels (piano), "Courante" (Bach). 1.30: Gus Arnheim and his Orchestra, "Now I'm in Love." 1.45: Close down.

AFTERNOON SESSION.

2.15: Philadelphia Symphony Orchestra, "Marche Slave." 2.30: Guillermina Suggia (cello), "Serenade Espagnole." 3.0: Hubert Eisdell, "Where My Caravan." 3.30: Ernie Golden and His Orchestra, "Song of Siberia." 4.0: Close down.

EARLY EVENING SESSION.

4.45: Choral Evensong, from St. Paul's Cathedral.

5.30: Leviathan Session. 6.30: Sir Harry Lauder, "Safest of the Family." 7.0: Ethel Waters, "Am I Blue?" 7.15: Market Reports. 7.20: Leo Reisman and his Orchestra, "Evangeline." 7.45: Zenker and Schultes session.

EVENING SESSION.

8.0: Pioneer Tourist Coaches session. 8.30: Triumph Super Seven session. 9.0: J. H. Sherwood Shoe session. 10.0: Chester Gaylord, "Sing a Little Love Song." 10.30: Swanee Synopaters, "Song of the Sands." 10.45: News. 11.0: God Save the King.

5CL

Australian Broadcasting Co., 111 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).

Day sessions as usual. **NIGHT SESSION.**

7.58: What's on the air to-night?
8.0: Time signal.

8.1: "The Showboat Revue," being the third programme of the new Showboat series. Comprising an atmospheric presentation of variety and romance, produced on the Mystery Showboat, under the direction of the Skipper.

9.0: Wheat, market, and weather reports.

9.4: A special programme relayed from 3LO, Melbourne—"The Little Corporal," a Napoleonic song scene in two acts. Suggested by Seton Merriman's story, "Barlasch of the Guards." Prepared for radio by Norman Montagu.

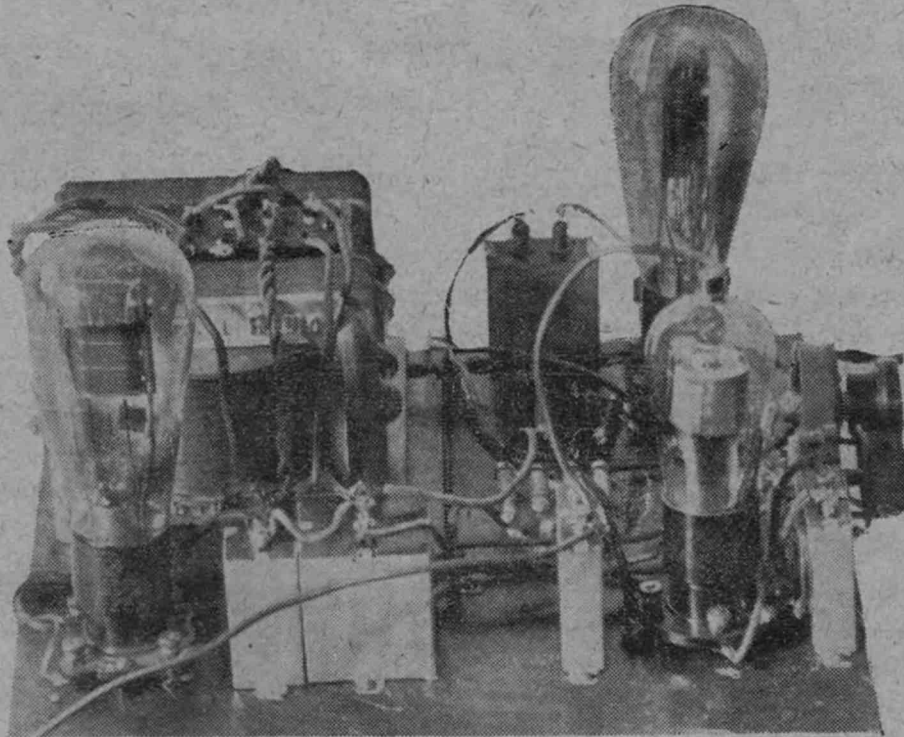
9.30: A radio ramble round the world, by means of Professor Popofski's wonderful invention.

10.0: News session.
10.10: Dance music
11.0: Close down.

Ross Hull's Specification of:

THE DIRECT COUPLED AMPLIFIER

Power Packs manufactured by Southern Radio Co. are guaranteed for one year.



We specially recommend the use of Raytheon A.C. Valves in this specification. They stand for long life and perfect results, and their performance never varies.

	Retail Price EACH.
1 Southern Radio Power Transformer and Choke Unit, having windings for 700 Volts, 7.5 Volts, 7.5 Volts, and 2.5 Volts	£4 3 0
1 Raytheon UX-250 Valve	£3 15 0
1 Raytheon UX-281 Valve	£2 5 0
1 Raytheon UY-224 Valve	£1 9 6
2 UX Sockets Pilot No. 213	2 6
1 UY Socket, Pilot No. 212	3 0
2 Chanex 1,500 volt and 2 mfd. Condensers	4 0
1 Chanex 1,000 volt, 1 mfd. Condenser	3 0
1 Chanex 500 volt, 1mfd Condenser	2 6

	Retail Price EACH.
1 Chanex 500 volt, .1 mfd. Condenser	1 6
1 25,000 ohm. Fixed Resistor or "Standard" Variable Resistor	9 6
1 900 ohm. Centre-tapped Pilot Resistor, No. 959	5 0
1 Pilot 400 ohm. Potentiometer, No. 400	5 0
1 Southern Radio 3500 ohm. Fixed Resistor	4 0
1 Carborundum 100,000 ohm. Resistor	12 0
1 .5 megohm Gridleak, Pilot No. 752	2 3
1 50 ohm. Centre-tapped Resistor, Pilot No. 356	3 0
1 Unfited Pick-up	3 0
1 Magnavox or Jensen Dynamic Unit, from	£3 17 6
	£5 5 0

Southern Radio Specialities—

STANDARD THREE-VALVE POWER PACKS.

Consisting of Transformer and Choke, cast aluminium frame fitted into Sprayed Steel Cover and Steel Base, "C" Bias Resistances included in price, but supplied separately. This Pack can be supplied for use with any type of Rectifying Valve and Standard Receiving Valves such as two Philips E415 or two Raytheon Type 227. The Power Valves to be used for this Pack are the Philips C603 or the Raytheon 171A.

RETAIL PRICE, £4/3/- (without Rectifying Valve).

STANDARD THREE-VALVE CHASSIS.

Complete Sprayed Steel Chassis, including four Sockets, "C" Bias Resistances, insulated washers for terminals, tuning coil, and Standard Power Pack.

RETAIL PRICE, £6/3/-.

POWER PACK MODEL 245 (Three or Four Valves, Single or Push-Pull Type).

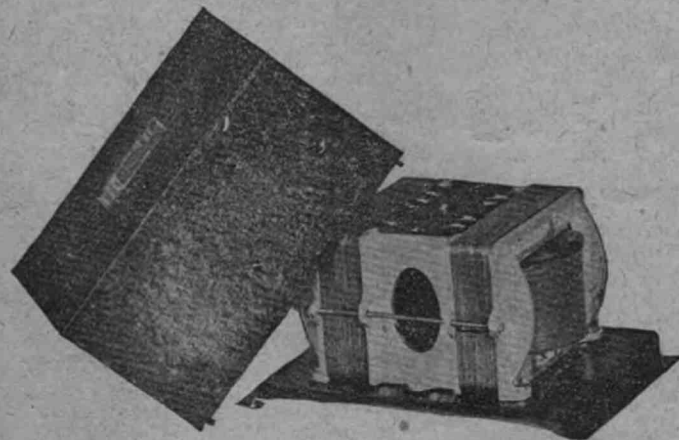
The construction and finish of this Pack will be the same as the Standard Model, only the Transformer and Choke will be specially manufactured to be used in the Set operating one Raytheon Type 245 Valve and two ordinary A.C. Valves such as the 227 or E415. The winding would again be slightly different for using two 245 Valves, but the price will be the same.

RETAIL PRICE, £6/10/-.

STANDARD SIX-VALVE POWER PACK.

This Pack is designed for use with any type of Rectifying Valve, and the other Valves to be used are Philips Type E415 or Raytheon Type 227, with Philips C603 or Raytheon 171A as a Power Valve.

RETAIL PRICE, £4/15/-.



MODEL 245 PACK (Six or Seven Valves, Single or Push-Pull Type). The same construction as the Standard Six-valve Power Pack, only with the special winding suitable for Raytheon type 245 Valves. The winding would again be slightly different for using two 245 Valves, but the price would be the same.

RETAIL PRICE, £7.

Sole Distributors for Australasia:

BLOCH and GERBER, LTD., 48 YORK STREET, SYDNEY

PHONE, M4657, M4658, M2675, M2676.

Dealers please note that we carry a very comprehensive range of all Radio Component Parts, Batteries, Valves, etc., etc. Write to us for our Special Discount Schedule.

Local Programmes, Thursday, March 13

2FC

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

EARLY SESSION—7.0 to 8.15 a.m.

- 7.0: "Big Ben" and Programme Announcements.
 7.2: Meteorological Information for the Man on the Land.
 7.5: This Morning's News, from the "Daily Guardian."
 7.10: Austradio Musical Reproduction.
 7.45: Mails and Shipping.
 7.51: What is on to-day.
 7.53: Music from the Studio.
 8.15: CLOSE.

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

- 10.30: Announcements.
 10.32: Racing Talk by the A.B.C. Racing Observer—M. A. Ferry.
 10.45: HORACE WEBER at the GRAND ORGAN.
 11.0: HOUSEHOLD HELPS—Domestic Notes, by Miss Ruth Furst.
 11.10: CABLES—(Copyright), "Sun"—"Herald" and A.P.A. News Service.
 11.15: MORNING DEVOTION, conducted by Rev. T. Jamieson Williams.
 11.30: An Orchestral Selection.
 11.35: A MORNING STORY.
 11.53: British Official Wireless Press.
 12.0: "Big Ben." Stock Exchange and Metal Quotations.
 12.5: TOM GURR will tell Listeners about "The Holy Cities of India."
 12.20: Midday Weather Forecast and Weather Synopsis. Special Produce Market Session for the Man on the Land, supplied by the State Marketing Board
 12.30: CLOSE.

THE LUNCH HOUR—1.0 to 2.30.

- 1.0: THE RADIO ENTERTAINERS.
 2.0: Stock Exchange, second call.
 2.2: A Glance at the Afternoon "News."
 2.7: To-day's Acceptances, by the A.B.C. Racing Observer—M. A. Ferry.
 2.17: Studio Music.
 2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30.

- 2.30: MELODIES, GRAVE AND GAY.
 2.45: MARY HOSKING, Mezzo—
 (a) "A Pinetree Standeth Lonely" (Allitsen).
 (b) "Fathoms Deep May Drift the Snow" (Adams).
 (c) "O Death, It is the Cold, Cold Night" (Allitsen).
 2.50: FRIEDA PAULL, 'Cellist—
 (a) "Le Baiser" (Thomas).
 (b) "Gavotte e Minuetto" (Galcotti).
 2.57: DICK ROBERTSON will sing "She's Wonderful" (Donaldson), (H.M.V.).
 3.0: FAIRY TALES RETOLD—
 DR. HAROLD NORRIE—"Jack and the Beanstalk."
 3.15: SYMPHONY ORCHESTRA—
 "La Valse" (Ravel), (H.M.V.)
 3.30: MARY HOSKING, Mezzo—
 "La Serenata" (Tosti).
 3.33: FRIEDA PAULL, 'Cellist—
 "Andacht" (Popper).
 3.36: RADIO RHYTHM.
 3.48: MARY HOSKING, Mezzo—
 "Lullaby" (Scott).
 3.51: FRIEDA PAULL, 'Cellist—
 "Tarantelle" (Cossmann).
 3.54: PIANOFORTE SOLOS, played by PAUL ALFERT—
 (a) "Dancing Tambourine" (Polla).
 (b) "Doll Dance" (Brown).
 4.0: THE BRIGHTNESS OF BLIND LIFE. DIGGER FRANK DOWNES—the Blind Digger tells the Story.
 4.15: MELODIES GRAVE AND GAY.
 4.28: Stock Exchange, third call.
 4.30: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55.

- 5.45: Children's "Good-night" Stories, told by Aunt Goodie.
 6.0: The 2FC Hospital Birthday League.
 6.10: More "Good-night" Stories.
 6.45: The Light Orchestra.
 7.20: A.B.C. Sporting Service.

7.25: Special Country Session. Stock Exchange Resume. Markets. Weather Forecast. Late news service from the "News." Truck Bookings.

7.58: To-night's Programme.

THE EVENING PRESENTATION—8.0 to 11.30.

To-night we present to you a Programme of Russian Music, featuring various phases of Russian Art. The production is under the direction of Mr. Ewart Chapple. The latter half of the Programme is contributed by the A.B.C. Male Quartette, Bessie Blake, Soprano; there are Violin Solos by Vincent Aspey, and sketches by D. B. O'Connor and Miss Gwenda George.

8.0: A PROGRAMME OF RUSSIAN ART, arranged by GORDON IRELAND, and presented by EWART CHAPPLE.

The first number will be one by Tchaikowski, perhaps the most internationally famous of all the Russian composers, whose music, while patriotic in character, usually reached out beyond the limits of nationalism. In the following number, however, you will hear him in a most patriotic mood. The Studio Orchestra, conducted by E. J. Roberts, will play his celebrated "Marche Slav."

And now, perhaps the most famous folk song of Russia known to us—the traditional "Song of the Volga Boatmen"—which will be sung by the A.B.C. Male Quartette.

We come to a very interesting work of Henry Wieniawski, the violinist, who, at an early age, gained in 1846 the first prize in interpretation at the Paris Conservatoire. Wieniawski, after residing in Russia, became well-known as a concert player, and he was appointed Imperial Chamber Virtuoso at St. Petersburg in 1860, and remained there till 1872, when he joined Anton Rubenstein, the pianist, in a tour of America. He finally died destitute in a hospital in Moscow. From Wieniawski's famous Violin Concerto in D Minor Vincent Aspey will play the very beautiful Slow Movement, often described as a Romance.

EWART CHAPPLE will now talk to you on "The Evolution of the Russian Ballet."

We come to a composer of the Modern School, which will be represented by a song of Rachmaninoff's sung by Bessie Blake, Soprano—"Night."

Again we come to Tchaikowski. This time we meet him in the form of Chamber Music. The A.B.C. String Quartette will render the "Andante Cantabile" from Opus 11.

A one-act Play, "Resurrection," a Scene from the famous novel of Leo Tolstoy, adapted from the original and dramatised by Gordon Ireland. There are four characters represented—Prince Dmitri Nekhlyudov; Katuscha Maslova, a woman prisoner; a Prison Superintendent, and a Gaoler.

In order to give listeners unacquainted with the theme of Tolstoy's novel an idea of the story, it is well to remember that the action takes place in one of the awful prisons of Czarist Russia. Prince Dmitri Nekhlyudov, in his youth, had visited the home of relatives, where he appears to have fallen in love with a servant girl, Katuscha Maslova. In the years that follow he learns that the woman he has betrayed has sunk into the depths, and has been finally cast into prison, following an alleged conspiracy of which she claims she is entirely innocent. Dmitri, who has had to serve as a jurymen at her trial, is overcome with remorse, and vows to make amends by marrying her. The scene that follows is the one in which, having secured her release, he follows her to Siberia to seek redemption.

Bessie Blake will be heard in song again, this time in a Rachmaninoff composition, "Lilacs," and "The Beetle," by Arensky.

And, to conclude, the Studio Orchestra will render a portion of the music from that most colorful Russian Ballet, of which you've already heard mention—"Scheherazade," by Rimski-Korsakoff.

9.0: THE COUNTRY MAN'S WEATHER SESSION—

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

9.2: TO-NIGHT'S PERSONALITY.

9.10: POPULAR MUSIC AND LIGHT COMEDY—

THE STUDIO ORCHESTRA—
 "Waltz from the Ballet Suite, 'Sleeping Beauty'" (Tchaikowski).

9.15: D. B. O'CONNOR and GWENDA GEORGE in a short Radio Sketch—
 "The Newlyweds" (O'Connor).

9.25: THE A.B.C. MALE QUARTETTE—
 (a) "The Song of the Jolly Roger" (Canadian).

(b) "The Turtle Dove" (Williams).

9.32: VINCENT ASPEY, Violinist—

(a) "Gipsy Rondo" (Haydn).

(b) "Berceuse" (Joun).

9.39: BESSIE BLAKE, Soprano—

"Batti Batti" (Mozart).

"Deh Vieni."

9.46: D. B. O'CONNOR and GWENDA GEORGE present—

"An Irish Village" (O'Connor).

9.56: THE A.B.C. MALE QUARTETTE—

(a) "Pickaninny Lullaby" (Macy).

(b) "In Absence" (Dudley Buck).

10.3: FROM THE HOTEL AUSTRALIA—

Dance Music.

10.15: FROM THE STUDIO—

Announcements.

Late Official Weather Forecast.

10.20: FROM THE HOTEL AUSTRALIA—

Dance Music.

11.30: CLOSE. NATIONAL ANTHEM.

2BL

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

THE OPENING SESSION—8.15 to 11 a.m.

- 8.15: G.P.O. Chimes and Announcements.
 8.16: A Musical Interlude.
 8.40: Meteorological data for the country.
 8.45: Mails and Shipping Information.
 8.50: Memory Melodies.
 9.0: This Morning's Story.
 9.30: Songs, grave and gay.
 9.40: British Official Wireless Press.
 9.45: New Music.
 10.2: News from "The Labour Daily."
 10.5: News from "The Daily Guardian."
 10.10: Austradio Musical Reproduction.
 10.30: THE AUSTRALIAN BROADCASTING COMPANY'S WOMEN ASSOCIATION, conducted by Miss Gwen Varley.
 "You and Your Dog."
 "A Talk on Leathercraft."
 11.0: G.P.O. Chimes. Close Down.

MIDDAY SESSION—12 Noon to 2.30 p.m.

- 12.0: G.P.O. Chimes and Announcements.
 12.2: A Recital of Pianoforte Reproductions.
 12.30: THE RADIO ENTERTAINERS.
 1.0: Afternoon News from "The Evening News."
 1.5: New Dance Numbers.
 1.20: Songs of Yesterday and To-day.
 1.30: Austradio Musical Reproduction.
 2.0: Half an hour with silent friends.

AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.

- 2.30: A RECITAL OF PIANOFORTE REPRODUCTIONS.
 2.42: AN ORCHESTRAL SELECTION.
 "The Master Singer of Murenburg Overture" (Wagner), played by the SYMPHONY ORCHESTRA, conducted by ALFRED COATES, on an H.M.V. Record.
 2.49: SONGS (a) "Rosina" (A. de Lorezi Eabis), sung by TOTI DAL MONTE (Soprano), on an H.M.V. Record.
 (b) "Belle of the Sea" (Solman), sung by REGINALD WHITEHEAD (Bass), with Orchestral Accompaniment, on a Parlophone Record.
 2.56: VIOLIN. "La Fille aux Cheveux de lin" (Debussy), played by JACQUES THIBAUD, on an H.M.V. Record.
 3.0: ROMANO'S CAFE DANCE ORCHESTRA, conducted by Merv. Lyons.
 3.12: FROM THE STUDIO. A Popular Ballad.
 3.15: GENTLEMEN, THE KING!
 REV. F. H. RAWARD will tell of "Wind-sor, the Country Home of His Majesty."
 3.30: ROMANO'S DANCE ORCHESTRA, conducted by Merv. Lyons.

- 3.42: FROM THE STUDIO. Vocal Gems by Absent Celebrities.
- 3.52: POPULAR BAND MUSIC.
- 4.0: ROMANO'S DANCE ORCHESTRA, conducted by Merv. Lyons.
- 4.15: FROM THE STUDIO. CLAIRE E. BYRNE, "Studying a Part."
- 4.30: ROMANO'S DANCE ORCHESTRA, conducted by Merv. Lyons.
- 4.45: FROM THE STUDIO. The Trade Hour. Demonstration Music.
- 5.45: Weather Information. Close Down.

THE DINNER HOUR—6.15 to 7.55 p.m.

- 6.15: THE LIGHT ORCHESTRA.
- 6.45: THE GIRLS' RADIO SESSION, conducted by Miss Gwen Varley.
- 7.5: The Country Man's Market Session. Wool, Wheat, Stock, Farm Produce, Fruit, and Vegetable Markets.
- 7.20: THE LIGHT ORCHESTRA.
- 7.45: Austradio Musical Reproduction.
- 7.55: What's on the air to-night?

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

To-night is the second presentation in "The League of Nations" series, and we have with us Dr. Busing, Consul for Germany. Goodie Reeve is busy preparing an original sketch, and Peggy Pryde is making one of her rare broadcast appearances. Listeners of the older generation welcome her name on the programme, remembering her triumphs of a quarter of a century ago, and appreciating the ease with which she recaptures the charm of bygone days. "Prudence and Primrose" are discussing "The Question of Careers," an interesting topic when viewed through the eyes of a maiden aunt and her frivolous niece.

W. Nichols, winner of the Champion Cornet Solo in the recent contest held by the New South Wales Band Association, makes his first broadcast appearance. There are violin solos by Dulcie Blair, and C. Price Conigrave brings with him a breath of outback in his rollicking story, "Loading Cattle at Wyndham."

8.0: "THE LEAGUE OF NATIONS." The second of a series of National Programmes, affording listeners an opportunity of knowing the leading Nations of the world by more than repute. An intimate insight into the customs and folk-lore and national music of the country, arranged by Madame Emily Marks, in association with Madame Evelyn Grieg. To-night we present "GERMANY." INTRODUCTION by DR. Busing, CONSUL FOR GERMANY. NATIONAL ANTHEM. "Der Wacht am Rhein." Address by the German Consul (Dr. Busing). A group of German Lieder, sung by MADAME EMILY MARKS.

"Verdorgenheit" (Hugo Wolf). "Mondnacht" (Schumann). "Ich hab ein Kleiner lied erdacht" (Bun-ger). Traditional folk songs. MADAME EVELYN GRIEG will play "First Movement of the Kreisler Reine" (Schumann).

Overture, "Der Rosenkavalier" (Strauss)

8.25: "PRUDENCE AND PRIMROSE" talk about "Careers."

8.35: FIRST BROADCAST APPEARANCE OF W. NICHOLS, winner of the Champion Cornet Solo in the recent contest held by the N.S.W. Band Association. "Shy-Lock" (Hoch).

8.42: GOODIE REEVE in an original radio sketch.

9.7: DULCIE BLAIR, Violinist. "Slow Movement from Concerto" (Tschai-kowsky).

9.12: PEGGY PRYDE, Entertainer.

9.19: C. PRICE CONIGRAVE will tell of "Loading Cattle at Wyndham."

9.34: Weather Information for the man on the land.

9.36: W. NICHOLS, Cornet Solo. "Zelda" (Percy Code).

9.43: PEGGY PRYDE, Entertainer.

9.50: SYBIL at the Piano. (a) "Second Nocturne" (Chopin). (b) "Sylvia Ballet" (Heugel). (c) "Marilyn" (Lou Alter).

9.57: LOUISE HOMPFEY, Lady Baritone. (a) "Nobody's Fault but Your Own" (Murray and Noble). (b) "Stay Out of the South" (Dixon).

10.4: RECORDED GEMS BY ABSENT CELEBRITIES.

10.25: Late News from "The Evening News." Late Weather Forecast.

10.30: NATIONAL ANTHEM. CLOSE.

LOCAL PROGRAMMES, TUESDAY

(Continued from page 36.)

Is a vigorous setting of Browning's galloping poem.

"SONS OF THE SEA" (Coleridge-Taylor). Coleridge-Taylor had African blood in him. Certain words made an immediate appeal to him, and he quickly made music with a distinct flavor. In this song we seem to feel the salt spray.

LLOYD DAVIES, Violinist—"First Movement Sonata" (Franck).

The great Belgian composer lived most of his life in retirement as an organist of a great Church in Paris. He, too, found a new style with new harmonies, and this Sonata is regarded as one of the greatest violin works. The 1st Movement is one of great charm and is in reflective mood.

ILA TURNBULL, Soprano—"SWEET AND LOW" (Shaw).

A pretty new setting of Tennyson's words by a living Britisher—Shaw.

"SO WHITE, SO SOFT" (Delius).

Delius is regarded as the most original living composer; his idiom is unlike any other; its harmonies are at times quaint and strange, yet not harsh, moving in a very smooth manner.

MADAME BOLYNOS BENO, Pianoforte Solos.

VOCAL OCTETTE—"CAROL" (Parry).

"I KNOW MY SOUL" (Parry).

Parry was the father of the English musical renaissance, and made music an integral part of the life and culture of Oxford University. His choral writing is very effective, for he set a new standard in wedding music to English words. The natural accentuation is most carefully and expressively attended to.

9.30: DR. LOFTUS HILLS will tell of "Ancient Hunters."

9.45: "The Children's Overture" (Roger Quilter).

10.25: Late News from the "Evening News." Late Weather Forecast.

10.30: NATIONAL ANTHEM. CLOSE.

2GB

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

Day sessions as usual.

8.0: Miss Florence Gordon.

8.7: Symphony Orchestra.

8.23: Mr. William Green.

8.33: Mr. Jack Win and Mr. Heath Burdock, humor.

8.38: Symphony Orchestra.

8.50: Miss Gwen Selva.

9.0: Weather report.

9.3: Address.

9.15: Miss Florence Gordon.

9.25: Symphony Orchestra.

9.30: Mr. William Green.

9.40: Mr. Jack Win and Mr. Heath Burdock, humor.

9.45: Pianoforte solo.

9.50: Miss Gwen Selva.

10.0: Instrumental music.

10.30: Close down.

2UW

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

As usual.

MIDDAY SESSION

EVENING SESSION

5.30: Children's Hour

6.30: Close.

7.0: Chimes. Request numbers

8.0: Musical programme.

9.0: Comments on Foreign Affairs by Mr. J. M. Prentice.

9.10: Music and request items

10.30: Close.

2KY

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

Morning Session as usual.

Children's Session as usual.

EVENING SESSION

7.0: Musical Interlude.

7.15: SPORTING FEATURE. Turf Topics. How they should run to-morrow. Mr. GEO. A. DAVIS.

7.45: Request numbers.

8.0: From Bebarfald's New Studio.

8.15: Baritone selections.

8.48: From the ringside of McHugh's Leichhardt Stadium, results of early events and full description of main 15-round event, by HERBERT BEAVER.

9.40: Dance music from the Studio.

10.0: Closing announcements.

RADIOKES

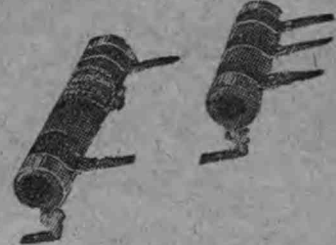
1930 Power Resistors

At Pre-tariff Prices

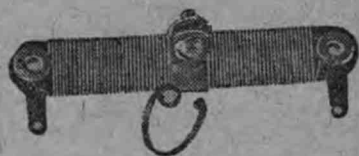
These Resistors are produced in three types—Light, medium, heavy duty resistors. Ask for information contained in Radiokes New Pamphlets, at your dealers, or direct from factory. We can solve your resistor problems and supply the proper resistor for your job.



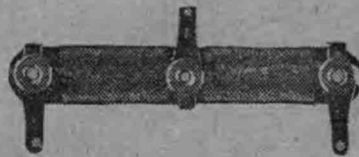
Radiokes new 12,000 ohm Resistor for your voltage dividing jobs, as used by leading manufacturers and home constructors. Quite small, being only 4 1-16in. total length, and approximately 1 1/2 in. high. Tapped for 180v., 135v., 90v., and 45v. Runs cool in use, and will not burn out with normal work. Price, 8/6 each.



Radiokes Vitreous Type Resistors in three duties, and all resistance values from 100 ohms. to 10,000. For all uses with Electric Radios, Gramophones, Power Packs, Public Address Systems, and Talkies. High current carrying capacity, and small and compact in size, and reliable in use. Supported on insulated mounting brackets, beautifully finished, and moderately priced from 3/3 to 6/6 each.



Filament Tubes operating on A.C. require a centre tap for the grid return. Radiokes adjustable centre tapped resistor, simple to install, fool proof, highly efficient, and inexpensive. Priced at 3/3 each. Sizes from 10 to 50 ohms.



Radiokes Centre Tapped Strip Resistors are made in sizes from 10 to 75 ohms., with adjustable solder lugs for mounting direct to your socket terminals, ruggedly and accurately constructed, and reasonably priced at 2/6 each.

From your dealer or direct from
METROPOLITAN ELECTRIC CO., LTD.,
126 Sussex Street, Sydney.

(Schedules for 2GB, 2UW, 2KY, and 2UE same as usual—refer to Friday).

Interstate Programmes, Thursday, March 13

4QG

Australian Broadcasting Co., Brisbane
(Wavelength, 385 Metres).

EARLY MORNING SESSION.

7.30 to 8.30 a.m., as usual.

MORNING AND MIDDAY SESSION.

11 a.m. to 2 p.m., as usual.

AFTERNOON SESSION.

3 p.m. to 4.30 p.m., as usual.

EARLY EVENING SESSION.

6 p.m. to 8 p.m., as usual.

NIGHT SESSION.

8.0: From the studio, the Brisbane Citizens' Band, conductor, A. Caesar—overture, "Ivanhoe."

8.7: Harry Borradaile, entertainer.

8.11: Citizens' Band—selection, "The Belle of New York" (Kerkel).

8.23: Beatrice Pugh, soprano—"Autumn" (Mallinson), "Buy My Strawberries" (Oliver).

8.31: Citizens' Band—specialty, cornet solo, "The Holy City" (Adams), with band accompaniment.

8.36: Ernest Harper, baritone—"Yonder" (Oliver).

8.40: Citizens' Band—selection, "Auld Scotch" (Lauder).

8.50: Hugh Olive, tenor—"To Mary" (White).

8.55: Citizens' Band—romance, "Simple Avenu" (Thome).

9.0: Weather forecast; movements of the travelling dental clinic.

9.1: Ernest Harper, baritone—"The Ne'er Do Well" (Tate).

9.11: Citizens' Band—intermezzo, "In a Monastery Garden" (Kettelby).

9.17: Harry Borradaile, entertainer.

9.25: Citizens' Band—a pot pourri of old-time favorites.

9.32: Beatrice Pugh, soprano—"The Cuckoo" (Lehmann).

9.37: Citizens' Band—specialty, cornet solo, "Parted" (Tosti), with full band accompaniment.

9.42: Ernest Harper, baritone—"Why Shouldn't I?" (Russell).

9.40: Citizens' Band—waltz, "The Skaters" (Waldteufel).

9.51: Hugh Olive, tenor—"Linden Lea" (Williams).

9.55: Citizens' Band—hymn tune, "Abide With Me."

10.0: News service.

10.15: The Brisbane Trocadero Dance Band (direction, Linn Smith)—dance music.

11.0: Close down.

3LO

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

EARLY MORNING SESSION.

As usual.

MORNING SESSION.

As usual.

MIDDAY SESSION.

As usual.

EDUCATIONAL SESSION.

2.0: Dr. H. Flecker—"Marine Life—Spade-footed or Bivalve Shellfish." 2.15: Musical interlude—Historical Romances of the Sea. 2.20: Captain Donald Maclean—"The Great Manila Galleons." 2.35: Musical interlude. 2.40: Mr. C. R. Paynter—"The Story of Australian Molybdenite." 2.55: Musical interlude. 3.0: Time signal.

THE RADIO MATINEE.

3.0: Afternoon musicale, provided by the Lido Instrumental Ensemble and leading vocalists. 4.25: Acceptances and barrier positions for the V.A.T.C. races at Caulfield. 4.30: Close down.

THE CHILDREN'S CORNER.

5.45: "Bobbie Bluegum's" Kiddies' Concert. (a) Answers to letters. (b) Name Club news (listen for your name). (c) A new story for the little ones. (d) The news. 6.0: Time chimes. 6.1: A really, truly kiddies' night. All the big boys and girls will be little boys and girls again. Let's all play with our dollies, eh? What memories. (a) The orchestra will play a real "Dolly" number. (b) Then Clever Clarice and Bobbie Bluegum join the orchestra in a dance of the "Paper Dolls." (c) "Bobbie Bluegum" now tells the story of his youthful days, when he was father to his sisters' dolls. (d) "Clever Clarice" and "Bobbie Bluegum" sing about a "Lonesome Little Doll." (e) Then another little Dolly says: "I've Got a Pain in My Sawdust." (f) "The Mechanical Doll" tells of her terrible life. (g) Now the dollies will all have to be put to bed, but we must remind them of "The Noody Doody Men"—mustn't we? (h) "Bobbie Bluegum" wonders whose birthday it is. (i) And, of course, the "Stray Sunbeam."

EVENING SESSION.

8.40: Mr. F. J. Bennell, skipper of the winning Bass Strait yacht, "Oinara." "The Little-known Islands in the Bass Straits." 6.55: Musical interlude. 7.0: Time signal. 7.1: Countryman's session. 7.25: For the man on the land, under the auspices of the Victorian Department of Agriculture, Mr. H. W. Davey, "Control of Orchard Insect Pests." 7.40: News service. 7.45: Mr. W. M. Stilling, manager of the Jenolan Caves House, and special representative of the New South Wales Government Tourist Bureau, "Mt. Kosciusko—the Roof of Australia." 8.0: Time signal.

NIGHT SESSION.

8.0: "The Harmony Hoboes," stroll down "Memory Lane."

8.15: The outstanding personality or question of the week.

8.30: Studio Dance Band—popular numbers.

8.37: Rita Hilton, entertainer, at the piano—"Mechanical Man."

8.40: Studio Dance Band—popular numbers.

8.47: Mollie Warden, soprano—"The Leaves and the Wind" (Franco Leoni).

8.50: Studio Dance Band—popular numbers.

8.57: Wilfred Collier, tenor—"Fairings" (Easthope Martin).

9.0: Studio Dance Band—popular numbers.

9.7: Rita Hilton, entertainer, at the piano—"Keeping the Wolf from the Door" (Burke).

9.10: Studio Dance Band—popular numbers.

9.17: Mollie Warden, soprano—"An Old Romance" (D'Hardelot).

9.20: Studio Dance Band—popular numbers.

9.27: Wilfred Collier, tenor—"I Hid My Love" (D'Hardelot).

9.30: Studio Dance Band—popular numbers.

9.37: Rita Hilton, entertainer, at the piano—request item.

9.40: Studio Dance Band—popular numbers.

9.47: Mollie Warden, soprano—"Song of the Little Folk" (Eric Coates).

9.50: Studio Dance Band—popular numbers.

9.57: Wilfred Collier, tenor—"O Western Wind" (Brahe).

10.0: Studio Dance Band—popular numbers.

10.7: Rita Hilton, entertainer, at the piano—selected.

10.10: Studio Dance Band—popular numbers.

10.17: Mollie Warden, soprano—"Yo San" (Amy Woodforde-Flinden).

10.30: News session.

10.40: Studio Dance Band—popular numbers.

10.47: Wilfred Collier, tenor—"For You" (Montague).

10.50: Studio Dance Band—popular numbers.

11.30: God Save the King.

3AR

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

MORNING SESSION

As usual.

MIDDAY SESSION

As usual.

AFTERNOON SESSION

As usual. 2.0: Regimental Band of H.M. Grenadier Guards. 2.8: Charles Hackett, tenor. 2.13: Herman Finck and his Orchestra. 2.20: Edna Thomas, soprano. 2.23: Yovanovitch Bratz, violin. 2.26: Cherniavsky Trio—Instrumental. 2.32: Charles Hackett, tenor. 2.36: New Queen's Hall Light Orchestra. 2.52: Edna Thomas, soprano. 2.55: Regimental Band of H.M. Grenadier Guards. 3.1: Request numbers. Mainly for women.—3.20: The Baby's Potentialities of Mind and Spirit: Love—Miss Stella Parker. 3.35: Musical interlude. 3.40: The Importance of Exercise—Miss N. P. Jervis, Physical Education Expert. 3.55: Musical interlude. 4.0: Cookery and Household Management—Miss K. Benningfield. 4.15: Musical reproduction. 4.45: Even-song, transmitted from St. Paul's Cathedral. From the Studio.—5.30: Weather data. 5.45: Close down.

EVENING SESSION

6.15: Dinner music. 7.30: What's on the air tonight. 7.32: Sporting results. Acceptances and barrier positions for the V.A.T.C. races at Caulfield on Saturday, March 15. 7.35: Latest musical releases. 8.0: G.P.O. chimes.

NIGHT SESSION

8.1: The odd men out—"You're no gentlemen!"
8.15: Transmission from the Coburg Town Hall—Concert by the Coburg Musical Society: March, "The Gladiator's Farewell" (Clakenburg), Coburg City Band; songs, popular numbers, Coburg Musical Society; songs, "When the Sergeant-Major's on Parade" (Longstaff), "The Handyman" (Howard), Mr. John Cook, baritone; songs, popular numbers from A.B.C. Songster, Coburg Musical Society; fox-trot, "Broken Hearted" (Whiting), Coburg City Band; recitations, "The Pupil Makes a Difference," "The Three Questions," Miss Cheers; songs, popular numbers, Coburg Musical Society; selection, "Ti Trovatore" (Verdi), Coburg City Band; songs, popular numbers, Coburg Musical Society; songs, "Ring, Bells, Ring" (Bay), "Mighty Lak a Rose" (Nevin), Miss Elta Bernard; songs, popular numbers, Coburg Musical Society; selection, "Land of Hope and Glory" (Elgar), Coburg City Band.
10.20: Weather and news.
10.30: God Save the King.

3DB

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

MORNING SESSION.

11.0: Women's Radio Service, "Your Baby and Mine," conducted by Mrs. Dorothy Silk. Matron Moreland, of the Tweedie Homes, "Special Care of the Toddler." 12.0: Royal Air Force Band, "Reminiscences of Scotland." 12.30: Julia Culp, "Long, Long Ago." 1.0: Mischa Elman, "Hungarian Dance No. 7." 1.45: Close Down.

AFTERNOON SESSION.

2.15: New Queen's Hall Light Orchestra, "Ballet Egyptian." 2.30: Mark Hamburg, "Harmonious Blacksmith." 3.0: Theodore Challepin, "The Prophet." 3.30: The Dizie Stars, "Sweet Mandy." 4.0: Close Down.

EARLY EVENING SESSION.

5.0: Coldstream Guards Band, "Private Ortheris." 5.30: Sponsored Session. 6.30: Enrico Caruso, "Tiempo Antico." 7.0: Bay Sarita and his Ambassadors' Band, "Broadway." 7.15: Market Reports.

7.20: Gil Dech (piano), "The Dying Poet." 7.40: Sponsored Session. 7.55: R. Reid, B.A., "Vocations."

EVENING SESSION.

8.0: B.B.C. Wireless Military Band, "Dance of the Dwarfs." 8.30: Harold Williams, "The Heart Bowed Down." 9.0: Leslie Sarony (comedian), "Get Up Nice and Early." 9.30: Albert Sandler (violin), "Algerian Scene." 10.0: Amelita Galli Curci, Sol-veig's Song." 10.30: Ted Weems and his Orchestra, "Here We are." 10.45: News. 11.0: God Save the King."

5CL

Australian Broadcasting Co., 114 Hindmarsh Square,
Adelaide (Wavelength, 409 Metres).

Day sessions as usual.

NIGHT SESSION.

7.58: What's on the air to-night?
8.0: Time signal.
8.1: Gramophone chat by Professor Harold Davies, of the Adelaide University (director of the Elder Conservatorium).
8.25: Linda Wald, soprano—Selections.
8.32: Violin Recital by James Wilton.
8.42: A dramatic monologue by Beryl Alford.
8.48: Linda Wald, soprano, and James Riley, tenor, vocal duettists—Selections.
8.55: Walter Hurst will entertain you with a pianoforte selection.
9.0: Time signal.
9.1: For the man on the land: Wheat, market, and weather reports.
9.3: "The Peep Show": "Roofs Off in Suburbia." Each week we lift the roof of a house in Suburbia, and peep within the four walls to see what little real life comedy or drama is being enacted. To-night we lift the roof of No. 666.
9.23: James Riley, tenor—Selections.
9.30: Frank Johnstone, entertainer, will entertain you.
9.37: William Robertson, clarinetist—Selected.
9.44: Linda Wald, soprano—Selections.
9.51: A recital for violin and piano by Walter Hurst, pianist, and James Wilton, violinist.
10.0: News session.
10.10: Dance session.
11.0: Close down.

7ZL

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

Day sessions as usual. During the afternoon running descriptions will be given of the Mornington races. During the afternoon descriptions will be given of the cricket match, Australian XI v. Tasmania, at Hobart. 8.0: Chimes. 8.1: Record recital. 8.15: 7ZL's Community Singing. 9.30: News session. 9.45: Record recital. 10.1: Close down. A. C. Costello will be heard in vocal items during Community Singing.

New Radio Club

A NEW radio club has been formed in Williamstown, Victoria, to be known as the "WILLIAMSTOWN DISTRICT RADIO CLUB," with headquarters at the Mechanics' Institute, Williamstown, where it meets every Thursday night. The president is Capt. J. H. Fearon. The objects of the club are to foster a knowledge of radio amongst members, to provide opportunities for social intercourse, and to erect and operate a transmitting station. Persons wishing to enrol should communicate with the secretary, Mr. T. A. Rewell, 16 Illawarra St., Williamstown, or at the Mechanics' Institute on meeting nights.

ON March 12, through 2FC, Mr. C. N. Baerertz will give his second talk on "Whistler, a Great Artist, and Perhaps even Greater Wit."

GENERAL FERRIE, the chief of the French military wireless service has just communicated to the Academy of Sciences the results of radio observations which he conducted in Indo-China in May last, during the total eclipse of the sun.

During the period of totality there was a considerable diminution of signal strength on the short waves and 30 seconds elapsed between the direct signal and the receipt of the characteristic "echo." The general made no attempt to explain the delay, writes our Paris correspondent.

SEE AND HEAR THIS WONDER SET IN YOUR OWN HOME!

Let us place this Wonder Set in your own home. See how beautifully it will fit in with your furnishing scheme. Hear its delightful tone! A home demonstration will not obligate you in any way.

RING 2261, B4594.

A. C. THREE

Table Model, complete with Speaker,
CASH PRICE, £29
Deposit £6.
Monthly £2/2/9.

A.C. THREE

Console Model, Complete with Speaker,
CASH PRICE, £34.
Deposit £7.
Monthly £2/10/-.

A.C. SIX.

Console Model, complete with Speaker,
CASH PRICE, £56.
Deposit £12.
Monthly £4/1/5.



THE COLVILLE-MOORE
Table Model A.C. Three
(As illustrated)

£34

GRACEFUL DESIGN

that never tires the
eye.

DELIGHTFUL TONE

that never grates on
the ear. - - - -
Perfect balance in
every detail of the
Colville-Moore set
gives super perform-
ance. Stands every
test for clarity, tone,
distance, selectivity
and operation
simplicity.

The Colville-Moore A.C. Three Receiver

—A Triumph in Tone and Mechanical Perfection!

100 Per Cent. All Electric. Plug in to your Power or Light Socket

No Aerial or other loose wires. Solves your entertainment problem.

SOME POINTS OF COLVILLE-MOORE SUPERIORITY.

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

Demonstrations in your home without obligation

COLVILLE-MOORE WIRELESS SUPPLIES LTD.

*Phones: B2261, B4594.

4 AND 10 ROWE STREET, SYDNEY

ELECTRIFY THAT SET—We can show you how

And you want good music, or none at all

One or two Battery replacements will pay for the alteration, apart from the Convenience, Simplicity, and Improvement in tone and volume.

ANY THREE-VALVE SET.

Wallace A.B.C. Power Pack	£3 17 6
Philips A.C. Valve	1 7 6
Socket	0 2 6
Total	£5 7 6

ANY FOUR-VALVE SET.

Wallace A.B.C. Power Pack	£3 17 6
Two Philips A.C. Valves	2 15 0
Two Sockets	0 5 0
Total	£6 17 6

ANY FIVE-VALVE SET.

Wallace A.B.C. Power Pack	£3 17 6
Three Philips A.C. Valves	4 2 6
Three Sockets	0 7 6
Total	£8 7 6

ANY SIZE SET.

Wallace Super A.B.C. Power Pack	£6 17 6
(UX 280 type.)	
A.C. Valves and Sockets to suit.	
Total, about £12.	

NOTE.—If you already have a B, or B and C Eliminator, deduct about £3 from these totals.

B, and B and C ELIMINATORS.—For 3 valves, 59/6; for 4 and 5 valves, 67/6. Wallace Super B and C Eliminator Kit, for sets of any size, £6/17/6.

Any of these Kits assembled in full working order for nominal amount.

AND WE CAN MAKE A.B.C. TRANSFORMERS.

300 volt, 25/-; with A.C. Filament Winding, 27/6. UX 280 Type, 600 volt, centre-tapped, 30/-; with 4-volt A.C. Filament Winding, 35/-.

Special Heavy Amplifier Type, 700-volt, centre-tapped, two 5-volt, two 2½-volt, heavy current windings, 40/-.

WE KNOW OUR JOB.

SAME DAY SERVICE
for
Country Clients.

“THE WIRELESS SHOP”

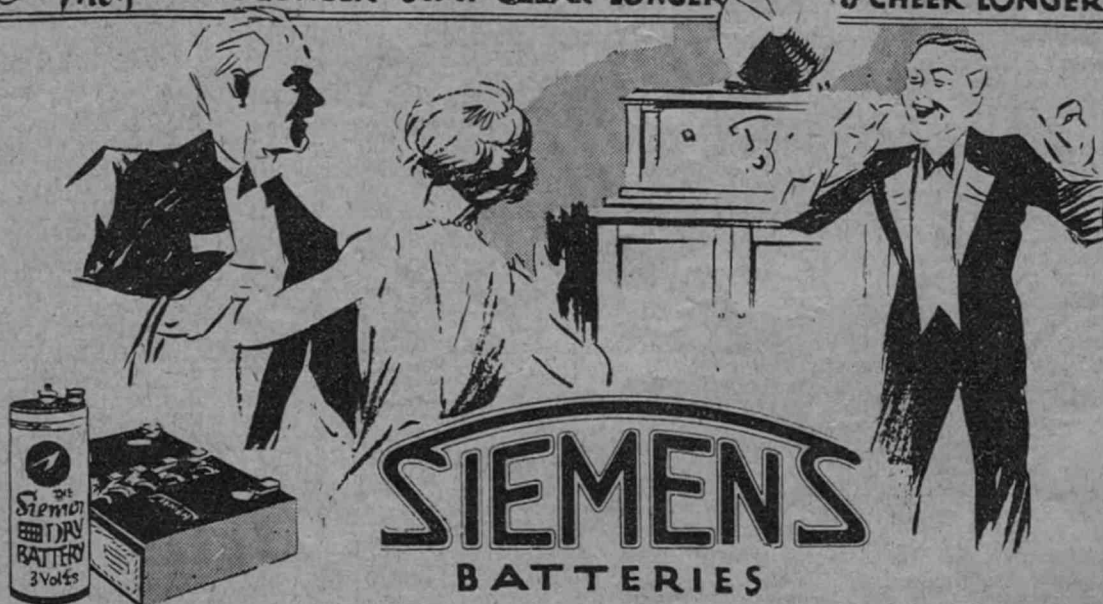
Miss F. V. Wallace, 6 Royal Arcade, Sydney.
THE OLDEST RADIO FIRM IN TOWN.

Money Back
Guarantee.

Two Doors from George Street, opp. Q.V. Markets.

ESTABLISHED 8 YEARS. 'PHONE, MA5543.

They WEAR LONGER • STAY CLEAR LONGER & CHEER LONGER



SIEMENS

BATTERIES

WHEN other batteries have been consigned to the "Scrap Heap"—and long after—Siemens Radio Batteries continue to give clear, satisfactory service. Here is the secret of Siemens' success. Siemens are built to endure.

The radio enthusiast who demands the very ultimate in battery value will appreciate this inbuilt stamina.

ASK YOUR RADIO DEALER ABOUT SIEMENS BATTERIES.

SIEMENS (Aust.) Pty. Ltd.

SYDNEY, MELBOURNE, ADELAIDE,
BRISBANE, NEWCASTLE.

H. C. LITTLE and CO., LTD., 858 Hay Street, Perth,
Sole Representative in Australia for THE ENGLISH ELECTRIC COMPANY, LIMITED, LONDON.

THE RADIO INFORMATION SERVICE

SOME HOME TRUTHS ABOUT COIL WINDINGS

A.S.McD., Bairnsdale, Vic., wants to add a stage of radio frequency amplification to his present set, but does not know the number of turns required for the coils.

Answer: And there have been hundreds of others who did not know the number of turns for some coils or other during the last few months, and wrote in about it. For the sort of work indulged in by home-builders of sets and by amateur experimenters, the determination of the windings for coils (irrespective of what they may be used for) is a perfectly simple matter. All that is required is a little common sense and some patience. No elaborate mathematical formulae are necessary, and the enthusiast need have no training in the lofty and involved branches of science. It is necessary only to make an estimate of the number of turns, to wind the coils, and then to make any slight amendments that may be necessary. If the estimate is made with the aid of specifications given by some reputable authority for coils suited for similar work, then it is highly probable that no final amendments will be necessary. For the r.f. stage mentioned in the question, two additional windings will be necessary. The present aerial and secondary coils may be used to feed the grid circuit of the r.f. amplifier, and two new coils may be built to operate as plate and grid coils in the coupling device between the r.f. valve and the detector. If reaction is used it may be simpler to wind a new aerial and grid coil to feed the r.f. valve, and amend the present aerial coil to function as a plate coil. Let us assume that this will be done. Then the new grid coil will be a tuned circuit just like the present grid coil. It will have the same work of tuning across the band. And it will be helpful if it "tracks" fairly closely with the detector tuning. The coil, then, should be exactly the same as the present grid coil, and the new condenser the same as the present tuning condenser. The new aerial coil (as can be discovered from scores of descriptions of receivers) may be anything between about 10 and 30 turns, depending on how much selectivity is desired. Since the receiver is for the country, 25 or 30 turns might well be used. Now, the old aerial coil must be turned into a plate coil. If a screen-grid r.f. valve is used it will be desirable to increase the turns (as is mentioned in scores of descriptions) and the number of turns will influence selectivity and amplification. If you use about 75 turns in the grid coil, you could try 40 on the primary. If the tuning is still unnecessarily sharp, you could increase that number, while if the selectivity is insufficient you could reduce it. A half-hour's experiment will give you the whole story.

W. Fellow, Wangaratta.—Suggest two Pilot voltage dividers in series. This will give you lots of tapings, and you will be able to adjust voltages to suit yourself. Your bias arrangement incorrect. Negative lead from filter would have to go to bottom end of complete resistor unit, the B negative from set being taken off at some point higher up the resistor, which would give a drop equal to required bias below it. See recent article on power packs. If you use this sort of bias arrangement the centre-tap of power filament could be earthed. Not with other scheme mentioned in the article referred to. In either case the bias voltage will have to be subtracted from output of filter to give plate voltage. Suggest filter condensers rated at 1000 volts d.c.

"Broken Drought."—Cannot specify correct arrangement without full details of your set. Not a very good idea to have the 201 a's mixed up with the 6-volt valves in any case. In the meantime you might well use the arrangement which gives best results.

"O.D." Five Dock.—Probably the equivalent of a 4-foot square baffle—which is quite big enough. Yes, the back of the cabinet should preferably be wide open, or covered with open cloth of some sort. Do not advise just a small hole as you suggest.

"M.A." Concord West.—The eliminator is of a very poor type, and cannot be expected to give anything but the poorest results. Be unselfish and give it to someone. Possibly the valve is in need of renewal. Possibly the bias in your set (if you use any) is of wrong value.

"J.B." Wentworthville.—Unfortunately we cannot supply special circuits. Addition of r.f. stages and construction of short-wave receivers has been fully treated during last few months. Pentode is supposed to be used only in second stage. Sorry we cannot suggest the make of set. Have never seen anything like it.

"L.L." Takoko.—We cannot say. Suggest you write the people who sold you coils. They are the obvious holders of the information.

"Q.R.G." Nerang.—We could give you the necessary formulae, but they would occupy most of this column. It would be sheer waste of time for you to make the necessary calculations. Rig up the coils and condenser and try the thing. That would take you half an hour at the most. The computation would take you many hours, and even then you would have to make assumptions that probably would not be justified. Suggest the arrangement in which condenser is across all circuit, though the other is useful for amateur work when trying to get equal coverage on various bands. They both work, and difference cannot be detected in our experience.

E. Pierce, Broke.—Suggest you write some of the booksellers for list. There is a splendid new one by Moorecroft. Its title, "Elements of Radio Communication," or something near to it. They are all good, but some more advanced than others.

H. Dixon, Albury.—We cannot print special circuits or design special receivers. Suggest you investigate Pilot "Wasp."

S.C.G.M., Marrickville.—Yes, detector, first audio, and power valve O.K., though why not use a 245 instead of the 171. When two valves in parallel for power stage use half ordinary bias resistor. The parallel valves halve plate resistance and complicate output-transformer considerations. Yes, the 224 is the s.g. r.f. valve; 2.5 volts on filament; 20 or 50 ohm. centre-tap resistor. About 180 for plate. Work out bias resistor in same manner as first audio. You don't describe r.f. stage, so we cannot say what alterations necessary.

M.S.K.—No address. Similar receivers have been described in "Wireless Weekly." The people who sell the parts probably could give you blue print. No, we don't know Mr. Carl Brittain.

E. Bruce, Leichhardt.—We cannot undertake the design of special equipment. You could not increase the voltage output of the eliminator without rebuilding the whole thing. Yes, 245 operated at full voltage would be better. Would suggest building an entirely new eliminator, using a commercially-made transformer. They can be purchased quite cheaply.

E.J.S., Bourke.—We cannot supply special circuits. You should be able to get some idea how it is done from recent circuits of similar type.

D.L.Y., Bondi.—The bias resistor should operate if it is connected properly. It should be between the centre-tap of the power valve filament and ground, the F side of the audio transformer secondary also being grounded. Make sure that this is so.

A. F. Jones, Emungeri.—Use plate voltages as marked on leads. Then put 7½ volts bias on first audio (405) and about 16 volts on bias lead of last audio. If the jack was in grid circuit of detector valve would be left in. Connection of condenser across B can be to either filament terminal, though preferably side to which B negative connects. Put more voltage on detector or use lower aerial coupling on short-waves. Evidently you have not found wavelength of short-wave broadcasters.

"Subscriber," P.P. S.A.—The pre-selector would be unsatisfactory unless first two tuned circuits were ganged. Cannot print circuits. You could work it out from the a.c. circuit and somewhat similar d.c. circuits. Use 180 volts of plate supply on r.f. valve and last audio. 135 would be O.K., but inferior.

M.I.T.Z., Pt. Pass.—You could build set as suggested, but leave reaction control as shown with .00025 reaction control condenser. Use .0005 for tuning condensers. Seventy-five turns of 28-gauge on 2in. former for secondaries; 25 turns for aerial, and same for reaction. Same windings for "Special" kit, but 40 turns wound in hank for the primary of r.f. transformer.

"A.C." Manly.—The set requires considerable care in construction. Wooden cabinet O.K. with bakelite, wood, or metal panel. You could get better idea of

cost than we could give. You will know what parts you will use and where you will buy them. Coupling resistor can be below base. Afraid you will have to depend on published diagram.

F. Hoskins, Dulwich Hill.—Coils are described in article. They must be very carefully matched.

G.F.D., Ipswich.—Sorry your previous questions went astray. Coils for the reflex set will depend on particular wiring of set. There were many types of that particular set evolved. In any case, they are all antiquated. Suggest you look up "Magister" crystal set in recent issue.

O.O., Newcastle.—Look for broken or loose wire. If none to be found, try new valves or replace one valve at a time. Assume you have checked filament and plate supply to see that all is well.

J.J.A., Greenmount, Q.—Wiring as given is quite correct. If possible, try another s.g. valve. Try varying s.g. voltage in small steps.

J.L.P., Mt. Nicholas, Tas.—Yes, you could add a B443 Necessary put 30 ohm. rheostat in series with its filament turned on about halfway to reduce voltage to 4. Bias would be 13½ at 130-plate volts. Connect auxiliary grid to 130 volts positive. Yes, your present valves might well be getting a little feeble. Try one or two new ones and see if they make much difference.

F.W.H., Augathella, Q.—Mr. Warner thanks you for comment. He doubts that the results could be equal to five or six valves, however.

H.R.S., Armidale.—The subject is too extensive. Full details are given in "The Radio Amateur's Handbook."

Clive Bernard, Newcastle.—Think that was misprint, meant to be "simple control." Single control would necessitate specially designed oscillator condenser. Suggest making your own coil kit. Yes, the new pack could be used, but valves of resistors would have to be increased to drop voltage for r.f. det. and oscillator valves. See article in recent issue on power-packs for simple method of calculating resistance values. The resistors were provided with clips in most cases. Others just supported by wiring.

TO INFORMATION SEEKERS

BEFORE you write that letter you have been contemplating, read this:—Letters to the Radio Information Service of "Wireless Weekly" have approximately doubled in number during the last few months. Hence it is now impossible to give any real service to anyone under existing conditions. In view of the fact that more than half the letters are entirely unnecessary at the present time, and that their elimination would permit us to give a proper service, we have decided upon the following rules. Letters not written in accordance with them will be disregarded:—

1. Only one question dealing with a single specific point can be answered.
 2. Questions resulting from the construction or adjustment of receivers must be confined to sets which have been described in "Wireless Weekly."
 3. No special circuits can be supplied and no special designs for transformers, coils, or other apparatus can be given.
 4. Letters must be concisely worded and written on one side of paper. They must be headed "Information Service."
 5. No information can be supplied by mail. Nor can it be given in person or over the telephone.
- "Wireless Weekly" readers desiring information on subjects beyond the scope of Information Service are invited to make suggestions for articles covering the particular phase of technique or practice on which information is lacking.

The Radio Information Service
"WIRELESS WEEKLY"
Please answer the accompanying query in the Information Service Department, at your earliest convenience. I enclose this coupon in order to indicate that I am a bona-fide reader.

Box 3368/P.P.
G.P.O., Sydney.

"Core" (Richmond, Vic.).—See article on transformers in this issue. R3 could be 2 megs. or less.

G.P. (Condeobolin).—Copper is quite suitable for the panel. .0001 is O.K. for the short-wave tuning condensers. You can use as small a condenser as you like, but the smaller it is the greater will be the required number of coils. Suggest you follow coils given in issue of Oct. 18 for the R.F. Four, using same aerial turns, together with the secondary and reaction turns used in r.f. coupling coil. Suggest dry batteries with two .06 valves.

"Regular Reader" (Parkes).—Yes, the UX-280 will do it. Do not worry over scheme for operating transformer on lighter load. If it is designed correctly in the first place the load it takes will change in accordance with the load taken. 24 probably will do for the secondary and 32 will just about sneak through for the secondary. See transformer article in this issue. Centre-tapped choke O.K. Values in your voltage divider system look right. By-pass condensers all go to the negative output of the filter, which goes to ground. The grid circuit of the 245 goes to this ground, but the filament of the 245 is 50 volts above the ground, due to the drop in the bias resistor. This means that the bias on the 245 is 50 volts. Have insufficient data on the speaker to design an output transformer. Suggest you buy one unless you are prepared to make one with lots of windings, and then experiment until you get the desired performance. Think enamelled wire would be O.K. for the secondary of transformer. Cotton-enamel perhaps better. Your figures and the design of the power-pack look fine. Looks as though we should be writing you for information. You're on the right track. Keep going.

A.N. (Katoomba).—There is no particular reason why the set should work. With the three-element valves you must use some method of neutralising or stabilising the r.f. amplifier. Probably the whole amplifier is oscillating powerfully all the time. If you used screen-grid valves for the r.f. stages and carefully shielded the individual stages you probably would clear things up, though even the s.g. valves may oscillate under those conditions.

K.B.F. (Bathurst).—The arrangement you suggest with the valves specified would be perfectly satisfactory. Probably the 2 to 1 output transformer would be the better, though it depends on type of speaker. It is evident that you have studied the game. Thanks for remarks.

G.G. (Sydney).—Circuit is in order. Probably poor contact in switch. Suggest you wind coil with about half turns of present secondary and one turn less on primary and reaction.

A. Hazlewood (Bathurst).—Probably a poor connection somewhere. Take out valves, starting from aerial end, and see when noise stops. Then try and locate fault. The A442 will take about the same plate current, but probably will require 150 volts for proper operation.

B. W. Lyons (Orange).—Hardly think the alterations would be worth while. The resistance coupling would be almost essential. Make a former out of a piece of 3/16 in. dowel, with three or four cardboard discs glued on it, and fill the slots so formed with about 3000 turns of 34 or 36 gauge wire.

"Marhoe" (Cobram).—Yes, the bottom end of C2 should go to the filament circuit, as shown on the opposite page. Same applies to other circuit.

C. Carmichael (Petersham).—The circuit should be O.K. with a screen-grid r.f. valve. Make sure that the coil unit coupling the r.f. valve to the detector is shielded. Hope you don't expect similar results from a loop or portable aerial as from a big permanent aerial.

"Tyro" (Lawson).—The coils look right, but there is probably something wrong in the wiring of the set. Difficult to say without further details of your set as it is wired. Hum is due to the poor eliminator. See if the set will oscillate on the lower valves. If not, look to the r.f. choke, or possibly increase reaction turns. If it oscillates, you should get lower stations if input coil tunes correctly.

C.M. (Double Bay).—It is extremely doubtful if any result would be had with the receiver from stations other than 4QG. Am not familiar with the wiring of the commercial receiver mentioned.

W.S.M. (Cremorne).—It depends entirely on how much extra apparatus you are prepared to buy. You should be able to look through the many descriptions which have appeared, and decide for yourself.

"Speaker" (Stanthorpe).—If the covering of the speaker is quite solid, and not "drummy," the failure must be the result of poor characteristics in the unit. This is hardly probable, however, and it would just seem that the covering is not thick and "dead" enough.

Mrs. A. E. Vauloue. —It is not probable that the station is KZRM, since it is on a higher wave (that is, the ordinary station as apart from the short-wave one). We are unable to suggest who it may be unless it is one of the South Australian "B" class stations or one of the Japs.

M. Charley (Glen Innes).—Impossible to say without complete details of the set, as you have wired it. Very probably a faulty connection. Make a very careful search for the fault. It must exist.

J.A.A. (Nashdale).—The address of the Wireless Institute is Royal Society's Buildings, Elizabeth Street. No. we have not lost sight of the battery sets. Point is that hundreds of them have been described during last few years, whereas the a.c. sets are a comparatively new development, and relatively little information about them has been published.

N. M. Dunlop (Roseville).—B403 is about the highest-powered valve that could be used. Probably you would find a pentode effective, particularly if you operate a moving-coil speaker.

"Plainsman" (Nyngran).—It seems probable that a joint in the wiring has come loose, but it is

impossible to say definitely. Start removing the valves from the aerial end of set, and see when noise stops. This will help you to locate fault. Probably it is in audio stages. Sounds like partially open circuit in grid wiring. Could be fault in secondary of transformer. Can only suggest that you get help of some good radio man.

L. Roy (Petersham).—The power-pack mentioned does not supply sufficient voltage for the amplifier in question. It would be unsatisfactory. With a pair of B403's in push-pull you probably would get a satisfactory performance.

"Transformer" (Unley, Sth. Aust.).—Your letter misplaced. Sorry. See transformer article in this issue. The example given is almost identical. 4000 turns of 32 gauge on same sized core, but with air gap of 1-16 in. at one corner would be O.K. as choke.

C.W.F. (Annandale).—Any good short-wave set could be run from the eliminator. We have described several during last six months. Probably the dials on the two receivers are reversed—one being clockwise and the other anti-clockwise. Or possibly condensers increase their capacity when turned in opposite directions.

N.W.G. (Bankstown).—Try increased plate voltage on detector, also try lower values of screen-grid voltage. Type of speaker will depend on supply available. If a.c. available, suggest the model with the rectifier in it. Or if the eliminator is same as that specified you could use the high voltage type which operates from the output of the eliminator. The agents would advise you.

H. Scholz (South Brisbane).—Cannot locate any information about a station on that wave which would be operating them. The Jap. is JOKF, but we do not know his address.

D. Halley (Bandwick).—The diagrams were printed just to permit an explanation of the different types of circuit. We have described many receivers which are of the same type as the first example. The 1930 Super is an example of the second.

"Puzzled" (Sandringham).—Yes, bias sounds too high, but depends on voltage from power-pack. They make several "standard" types. The 405 needs 18 volts bias, at a plate voltage of 150. Motor boating is probably result of some back-coupling. If you couple first stage with a transformer, connect a 1 mfd. condenser from the "C" terminal of the audio transformer secondary to ground, and then put a 100,000 ohm fixed resistor in series with the bias lead. Try different bias values.

W. J. Eagles (Public School, Parramatta) invites correspondence from crystal set users. He built the Magister set, and gets what we think are fine results.

"X.F." (Lawrence).—The discussion was all concerning the transmission of still pictures. Evidently you understood it to mean television, which it does not. Television, or the transmission of moving pictures, is still very much in the experimental stage, and it certainly would not be possible to transmit plays or races. Experts agree that it will be a great many years, at the present rate of progress, before that could possibly become practical.

J.S. (Bondi Beach).—It seems highly probable that the valves are not suited for the work, and that they are not being operated with the correct voltages. Try to get more information from the people that sold you the amplifier unit. Failing that, can only suggest that you get some good radio man to rearrange it for you.

"Marco Four" (Darlington).—Oh, yes, it has been thought of and discussed before. The 6 volts can be rectified and filtered for A supply. The only snag is that whereas it is easy to rectify very small currents and high voltages and to filter them it is extremely difficult to rectify and filter low voltages at high currents. So difficult, indeed, that research laboratories spent millions in developing the a.c. type valve. Of course you can rectify and filter the 6 volts. A eliminators using such an arrangement have been described frequently. At the same time the expense is not justified in view of the excellence of the a.c. type valves and the simplicity of their filament supply.

D. O. McDonald (Malvern, Vic.).—No, that method would not be satisfactory for arriving at the centre-tap. Just wind the same number of turns on each half of the secondary. Not a bad idea to wind the secondary in two pieces, each of the same number of turns. The whole idea is that the winding must be continuous—in the same direction. Yes, the ratio of turns is the thing that determines the ratio of the transformer. Your suggested windings sound O.K. For the output transformer suggest lesser number of primary turns—say, 3000 and half that for the secondary. Suggest a group of windings on the secondary, and for that matter, on the primary. Then you could reap the benefit of being able to vary the ratio.

"Static" (Wollongong).—Don't understand what you mean by "balance" with the other coil kit. You can use one winding on the input coil to the r.f. valve (coupling the aerial with a small condenser), but you will need a plate coil and reaction for the second unit. The turns in the secondary and reaction will be the same, irrespective of whether they are in the form of two separate windings or one winding, with a tap for the filament. The difference is just in the method of connecting the coils and the regeneration condenser. Full details of valve base coils were given in the October 18 issue. They have been repeated several times in these pages. Don't know what you mean by "slipping back on the technical side." Evidently you think that the only technical activities in radio are those indulged in by so-called short-wave experimenters. And in this you are gloriously wrong.

W. H. Shambler.—A. Johnston, West Maitland, would like to have your address.

A. H. Behmann (Pymont).—Possibly the volume control is cutting down volume, even at maximum position. Try disconnecting it altogether, and note difference. The 500,000 ohm one probably would give you less loss at maximum position.

"D.C." (Portland).—Difficult to give definite values for resistors since we have no information on current drain of those valves at low voltages. However, starting from the positive side of output, try 2200 ohms to 67 volt tap, 6500 to 22 volt tap; 2300 to negative side—a total of 10,900 ohms. Circuit O.K., but be very careful to put plug in so that negative side of 110 d.c. mains is connected correctly. Many thanks for the suggestion about tuning. Hope use it elsewhere.

E. Bruce (Leichhardt).—See transformer article in this issue. Suggest a UX-280. Yes, the one 245 would give greater output at its rated voltage than the two others at their rated voltage.

G. Younger (Cockle Creek).—"QST" can be obtained regularly by sending two dollars and fifty cents to the American Radio Relay League, Hartford, Conn., U.S.A.

"Methane" (Henry).—No space for further repetition of the valve base coil at the moment. It was given in October 18 issue, and has been repeated several times since. In any case, the valve base coils would be inferior to the other commercial coils mentioned. Strongly advise you to use the coils mentioned as being available or to copy them on the same sort of formers. Your connections as shown are correct.

"A Beginner" (Q.).—The circuit with the crystal would not be suited for short-wave work. The "Countryman's One" is a standard type of circuit, and is that used in many short-wave sets. See above concerning coils.

W. J. Palmer (Drummoynne).—Yes, the "R. F. Four" coils would be O.K., though it may be desirable to make some slight alterations to the secondaries in order that the two tuning condensers will track together fairly well. Shielding must be carried out carefully in such a set as that suggested.

"RA97" (Blackwater).—It is extremely doubtful whether the change to 4-volt valves would make any difference. Cannot give windings, but suggest you examine present coils carefully, and then build new ones with about half the number of turns as present smallest secondaries and one or two turns less on other windings. Try different values. Can find no station listed near 3UZ which would check with that heard.

J. McM. (Paddington).—Circuit looks right. Sure you have rotor of second variable condenser insulated from panel? Increase turns on reaction until it does oscillate. Make certain winding is connected in correct direction. Try lower bias resistor on r.f. valve, say, 400 ohms. Make absolutely certain set is wired in accordance with your diagram.

"F.C.J." (Adelaide, S.A.).—Remember answering at least one of your previous letters. Coil windings about right, but the important thing is coupling. Just any position like that shown on your sketch will not necessarily do. Suggest make provision for sliding one coil along other. Gang will need re-tuning every time coupling is varied. Suggest grid connection from bottom end of lower coil, plate from top of coil.

"No. 46,210" (Yorketown).—Suggest you ask the Radiokes people about the suitability of their coils. You could use any standard output filter or output transformer. Connections will be given on instruction leaflet that comes with the device. If not, ask salesman. Yes, it would protect the speaker windings. A baffle probably would improve reproduction on the moving-iron speaker.

M.D.H. (Fullerton, S.A.).—Suggest you give up idea of using the special "toob." Try some standard type of one-valve set. Mightily few one-valve sets that "are designed to bring in JOAK" ever do it.

"Puzzled" (Grafton).—If you made your own coils exactly to the specification your trouble is hard to explain. You could try slightly larger plate coil on oscillator, also larger plate coil on r.f. transformer. Think plate supply probably at fault. Make absolutely certain that you are getting full voltage during operation. Check valves. Changing from six to seven valves should bring signals that have been detected to a whisper up to full blast. That is with volume control full on. If not, intermediate probably at fault. Try tuning intermediate to highest wave possible. You should never need aerial longer than about 12 feet. Invite further correspondence if trouble not cleared up.

"Beau" (Burwood).—You do not supply sufficient detail. Are you certain that you tune the set correctly. Make certain that the detector is not oscillating. Check voltage of "B" batteries. The fact that the eliminator is to cost £3 is not sufficient data on which to decide whether it will be suited or not. Even if it is to cost three times that it is not necessarily suited.

C.H.P. (Newtown).—Cost probably would be about the same as running a 50-watt lamp. No guarantee can be made for life of valves. Between 1000 and 3000 hours is possibly an average. The set, if correctly adjusted, should have ability to get any stations above the noise level. Screen-grid valves in themselves do not mean greater distance. They simply make it more readily possible to get sufficient sensitivity to bring in the stations which are louder than the miscellaneous noises of static and induction.

S.W.G. (Drummoynne).—Suggest you ask Economic Radio Co.

"Sparks" (Enfield).—You should use an aerial with a total length of about 60 feet, including the lead-in. This should help selectivity. Use even shorter aerial if still have volume to spare.

W. Barnes (Newcastle).—At the rated voltage of the valves you would have the following approximate undistorted output:—Rating, 245's, 3.2 watts; 210's, 3.2 watts; 603's, 1.5 watts; 625A's, 1.5 watts (at 180 plate volts). These figures very approximate only. Enormous volume probably would mean anything from 5 to 50 watts, depending upon the size of the room and the character of its walls and furnishing; and, of course, the interpretation of the term "enormous."

S. Cowling (no address).—You cannot expect the a.c. type valves to operate without grid bias. Cathodes should all go to a bias resistor, as shown in dozens of recent circuits, or else to a bias battery. Suggest you read recent article, "Simplifying the Plate Supply System." Then work out necessary resistors and put them in. Performance should be even better than with the battery-type valves.

W. M. Moore (North Sydney).—Elimination of "dead spots" is treated in Handbook. Coupling condenser in that case is the small condenser used to couple the aerial to grid coil. It is used in some circuits in place of aerial coil. Reduce aerial coupling. Try a different r.f. choke. Try different number of reaction turns.

"Paris" (Tarce).—The short-wave adaptor as commonly used is nothing but a short-wave receiver, the battery terminals of which have been carried to a valve base. This base then collects the filament and plate voltage from the socket into which it is plugged. Some of the adaptors are so arranged that they feed into the audio system of the broadcast set. This is not always satisfactory. A detector and two audios are rarely sufficient for loud-speaker reception of the short-wave broadcasters, whereas they usually make too much noise for 'phone work. Strongly advise a good separate short-wave set operated from the same batteries that presently work the broadcast receiver. Such a set was detailed in the October 18 issue of last year.

Fred. Rose (Christchurch, N.Z.).—Either transformers may be used. Any of the valves mentioned would be suitable. Very clearly you have some fault in the present receiver, since it is capable of very fine results. Strongly advise you to look to your own work in it before dropping it. Quite probably you would have just the same disappointment with any other similar set. Check all wiring, valves, and batteries, and don't dream of trying another rig until you have the present one in order. You should be able to get quite good speaker signals from the bigger station.

S.J.T. (Marryatville, S.A.).—Unless you are very close to one of the stations you should not need a wave-trap. Try less coupling between the aerial and secondary coils. Try smaller aerial.

G. W. Green (Brighton-le-Sands).—You could try the bell ringing transformer, though it may not be very satisfactory. Use same rheostat in series with its secondary.

H.F. (Maryborough, Q.).—Remove some turns from the aerial coil until both condensers read the same.

Then see if they read the same all over the band. If so, they can well be ganged to a single control. Set would seem to be working very well. Good operation with small aerial is indication of satisfactory functioning in your case.

C. H. Beek (Double Bay).—Circuit as given is perfectly correct. Bias for the power valves is obtained from the drop in the bottom section of the voltage divider, the filaments of the 210's being at a potential above ground equal to the required bias voltage. The grids through the connection to the centre-tap of the input transformer secondary are at ground potential—in other words, they are negative with respect to the 210 filaments. Call up Hayward Parish, William Street. Probably you could obtain the October 25 issue from us.

J. D. Brent (Chatswood).—Probably the choke would not serve very well. Undoubtedly it was designed for operation with only a few milliamperes passing. At the current values met with in the output valve it would possibly saturate, and its inductance would fall to a low value. Suggest a special choke made for the work or a good eliminating filter choke, if you happen to have one to spare. One condenser is all that is necessary, and it may be connected in either lead. Yes, we do get fed up at times. If information seekers would only give the crank on their thinking machines a couple of jerks before writing it would be fine.

E.T. (Canberra).—The output of the detector would depend entirely on the strength of the signal being received. Two stages of good screen-grid r.f. should allow you to get 1 volt from the detector on the more important stations. If the detector is followed by two audio stages the present voltage should avoid detector overload when the 245's are running all out. If you plan to use only the one audio stage you will need a "power" detector with something more than 100 volts on its plate.

C.M. Stanmore.—Yes, the "Peridyne" is only a standard sort of circuit, and it would be satisfactory as an a.c. job with the necessary modifications. The transformer and choke sound right, though it would be as well to have two 2.5-volt secondaries—one for the r.f. det., and first audio, and the other for the power valve. Depends on what valves you wish to use. Yes, centre-tap on rectifier winding not essential.

W. Malton, Mortdale.—Seems highly probable that the reaction coil is reversed. Change over its leads. This certainly will help selectivity.

J.D.S., Dundas.—Your proximity to 2FC is reason for interference. You can hardly expect a crystal set to give you sufficient selectivity. Try shorter aerial. Try wave-trap in aerial lead. There really is no such thing as a wonderful crystal circuit. There are "wonderful" locations, however.

E. W. Benson, Mt. Morgan, complains that he has sent reports to a number of Australian amateurs, but has had no replies. This, of course, is not uncommon. It must be realised that the amateurs

are not necessarily interested in reports from relatively near-by stations; that they probably receive hundreds of them; that they are really under no obligation to enter into correspondence which they did not invite. The station probably was 5SW, though it is impossible to say without more exact information concerning the wave-length.

G.E.G., Toowoomba.—We cannot comment on the receivers described in other publications. Suggest you use the valves specified in the article. If information not available, and you wish to use that make of valve, try A442, A415, and B443.

"Hopeful," Rosewood, Q.—You misunderstood. We suggested half as many receivers twice as good in this country, meaning the country as Australia. Receivers, even in the city, cost money. In radio, as in anything else, you can't get something good for nothing. We are at work on the development of some simple sets for battery operation, but it must be remembered that the battery set had all the attention for years and years. Thousands of satisfactory battery receivers have been described in this and other publications during the past few years.

K.L.E., Granville.—Suggest you add a second audio valve. See article on subject in February 21 issue for this year. Rectifier would be suitable if you put three or four lamps in parallel to increase charging rate.

"Waybacker."—Yes, you certainly could do with a new set of valves. The difficulty is that the modern types would need some modifications in set which you may not be able to undertake. You could use the A600 for the first two valves, the A615 for the second two and C603 for the fifth. Bias voltages on the last two valves would have to be altered. Probably you would need 3 volts on the fourth valve and 13½ on the last if you have only 90 volts of B battery. You should put in a third 45-volt B battery and then use 3 volts bias on the first audio (with 90 volts on plate) and about 27 on the last valve.

J.M.H., Northbridge.—The valves and transformers would be satisfactory. The rating of the 405 is 150 volts. It would be well to operate at that voltage. You will need bias resistor of 900 ohms between the centre-tap of power valve filament winding and ground by-passed as usual. Power valve should have separate winding. Output transformer depends on speaker. Suggest you explain arrangement to be used when buying output transformer.

R.W., Wahroonga.—Yes, condenser is .00005. No, use the screen-grid valve. No, use the reaction system specified. Yes, the reception of short-wave stations is not usually as clear as that of near-by broadcasters. Remember the distances covered and the power used. Use .00025 or .0005. Try different values of plate voltage and grid leak.

C.H.P., Derrinalum, Vic.—You can get neon lamps from any big electrical store. Undistorted output rating of the amplifier would be of the order of .3 watts.

Wireless Weekly

52 ISSUES
DELIVERED POST FREE
FOR ONE YEAR

13/-

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

SUBSCRIPTION FORM

To the Editor, "Wireless Weekly," Box 3366PP, G.P.O.

Please forward "Wireless Weekly" for a period of
for which I enclose for
(Add Exchange to Country Cheques.)

NAME
ADDRESS

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



Murdoch's
Introduce
 the



Eddystone

Span the World

**SCIENTIFIC
 SHORT-WAVE
 RECEIVER**

Now . . . an economical distance-getter capable of clear, strong tone from a two-dial tuning. Employs only three Valves, but receives the world. Battery-operated.

Accessories required to complete:—1 Cabinet, 30/-; 1 Pentode Valve, 30/-; 1 screen grid Valve, 25/-; 1 detector Valve, 13/-; 1 pr. Earphones, 15/-; 1 9v. "C" Battery, 2/9; 1 4 volt "A" Battery, 25/-; 2 "B" Batteries, 29/-.

FOUNDATION KIT
 PRICE **£13'10'0**

TOTAL **£21'19'9**

If required, we will assemble and test this Set for you.

The Offer is
Unprecedented

Set receives stations from all over the world as easily as locals!

CONDENSERS.
 The new Cyldon Bebe Condensers. Ideal for S.W. work.
 .0001 8/3, .00015 9/-, .00025 10/-.

Half-freight free to nearest Port or Railway Station on Sets. Parts sent post free.

If writing, kindly address all letters to Desk "A.2," Murdoch's, Ltd., Box 3875 T.T., G.P.O., Sydney.

Murdoch's Ltd
 PARK & GEORGE ST. SYDNEY

"Specialists in all matters pertaining to the science of Radio."

SPEAKER UNITS.
 The new Brown Vee Speaker, units and chassis complete 55/-.