

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

# Wireless Weekly

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INCORPORATING "RADIO IN AUSTRALIA & NEW ZEALAND"

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FRIDAY, APRIL 26, 1929

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GO TO  
the RADIO  
& ELECTRICAL  
EXHIBITION  
TOWN HALL  
SYDNEY

**SPECIAL  
ENLARGED NUMBER**  
(84 Pages)

Full Details of the Radio  
Exhibition

Radio in 1929

The 1929 Neutrodyne

Story by Brasso

3LO's Sporting Service

All the Programmes

**PHILIPS**  
STAND 24

Why YOU should visit

**RADIOKES** BOOTH 27  
(Great Hall)

Same location as last year

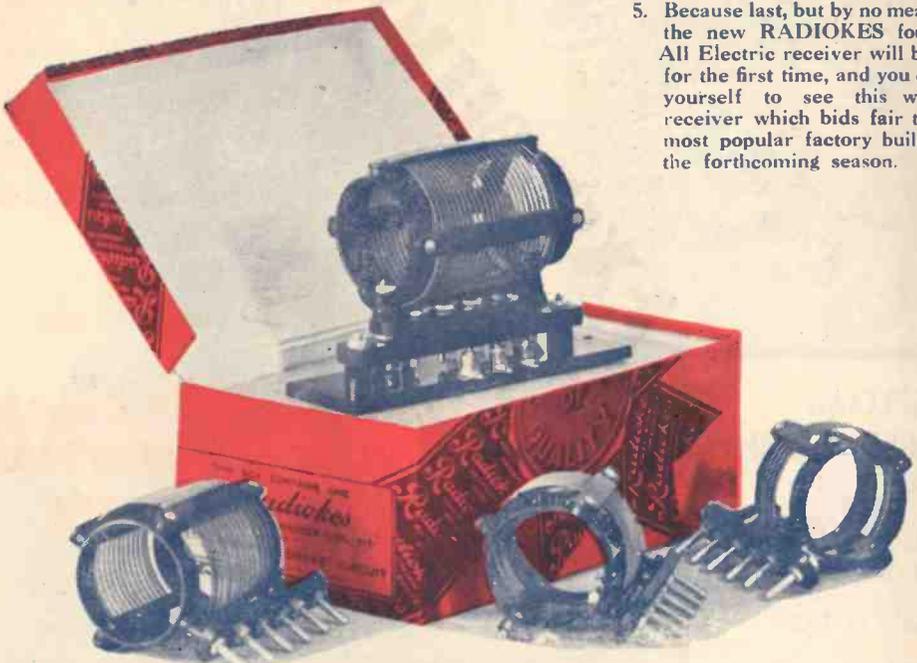
**AT RADIA SHOW TOWN HALL SYDNEY**

1. Because many years spent in manufacturing precision Radio apparatus has given Radiokes a background of quality which buyers of parts appreciate.
2. Because RADIOKES has given the set building community of the Commonwealth all the latest R.F. appliances to allow you to follow the rapid developments of the Radio art—and this season

Radiokes' range of R.F. components is very complete.

3. Because there you will be shown, and have explained all radio's latest coil kits, etc., and also how some are made up into popular receiving sets.
4. Because you are invited to bring along your radio queries to Radiokes' demonstrators and tell them about your experiences with Radiokes apparatus.

5. Because last, but by no means least, the new RADIOKES four valve All Electric receiver will be shown for the first time, and you owe it to yourself to see this wonderful receiver which bids fair to be the most popular factory built set for the forthcoming season.



This is a typical example of Radiokes latest Coil Kits—the Screen Grid Short Wave Tuner Kit represents the ultimate in coil kit construction. Don't fail to inspect the full range.

*Radiokes Products are available from all High-class Radio dealers or direct from*

**METROPOLITAN ELECTRIC CO., LTD.**

Radiokes House, 126-130 Sussex Street, or York House, Little Collins St., Melbourne

# TEN SUPERB ASTOR MODELS



From the modest Astor Two Valve to the magnificent electrically operated Astor "Duo Symphonic" (combined radio and phonograph). The Astor Exhibit will contain the most comprehensive range of receivers ever manufactured.

They are all Australian too.

CONSOLE ASTOR SHIELDED SIX complete with Amplion Speaker, Battery, £52. All Electric, £64

*See Stand No. 19, Great Hall  
RADIO EXHIBITION,  
May 1st to 11th*

*Out of Town folk, who are unable to visit the Exhibition, send the coupon for further particulars.*

**AMPLION A/SIA., LTD.,  
53-55 YORK ST., SYDNEY**

*Please forward me further particulars of the Astor Line of Radio Receivers.*

NAME .....

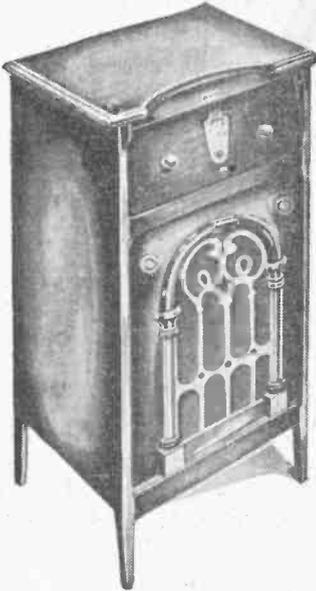
ADDRESS .....

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At the  
**RADIO EXHIBITION**  
**STAND N° 1**

On the left hand side of the Vestibule, Sydney Town Hall, May 1st-11th, 1929.

Nowhere will you see a more comprehensive and interesting exhibit of Modern Radio than at Harringtons' Stand. Some of the World's Finest Receivers, and all Radio parts and accessories will be on view. **DO NOT MISS**



**HARRINGTONS**  
**IMPERIA-3**

ALL ELECTRIC  
 or  
 Battery Operated

This entirely new Receiver has met with such success that production facilities had to be considerably augmented to supply the demand.

There are two beautiful models—the Console, illustrated above, a full length cabinet finished in two-tone effect; and the Table Model (below), encased in a gold-finished metal cabinet.

We have prepared a handsome illustrated price list of the Imperia 3. MAIL THE COUPON NOW FOR YOUR COPY.

*Other Features at Harringtons Stand*

World-famous GILFILLAN Genuine Neutrodyne Radio Sets.

Latest styles in combination Radio and Phonograph.

The recently announced PILOT A.B.C. POWER PACK, and a host of accessories produced by the best manufacturers.



**Harringtons LTD.**

386 George Street, Sydney

Branches all States and New Zealand.

Harringtons, Ltd.,  
 Box 4146X G.P.O., Sydney.

I WOULD CERTAINLY like the details of Harringtons Imperia 3—no obligation implied, of course.

NAME .....

ADDRESS .....

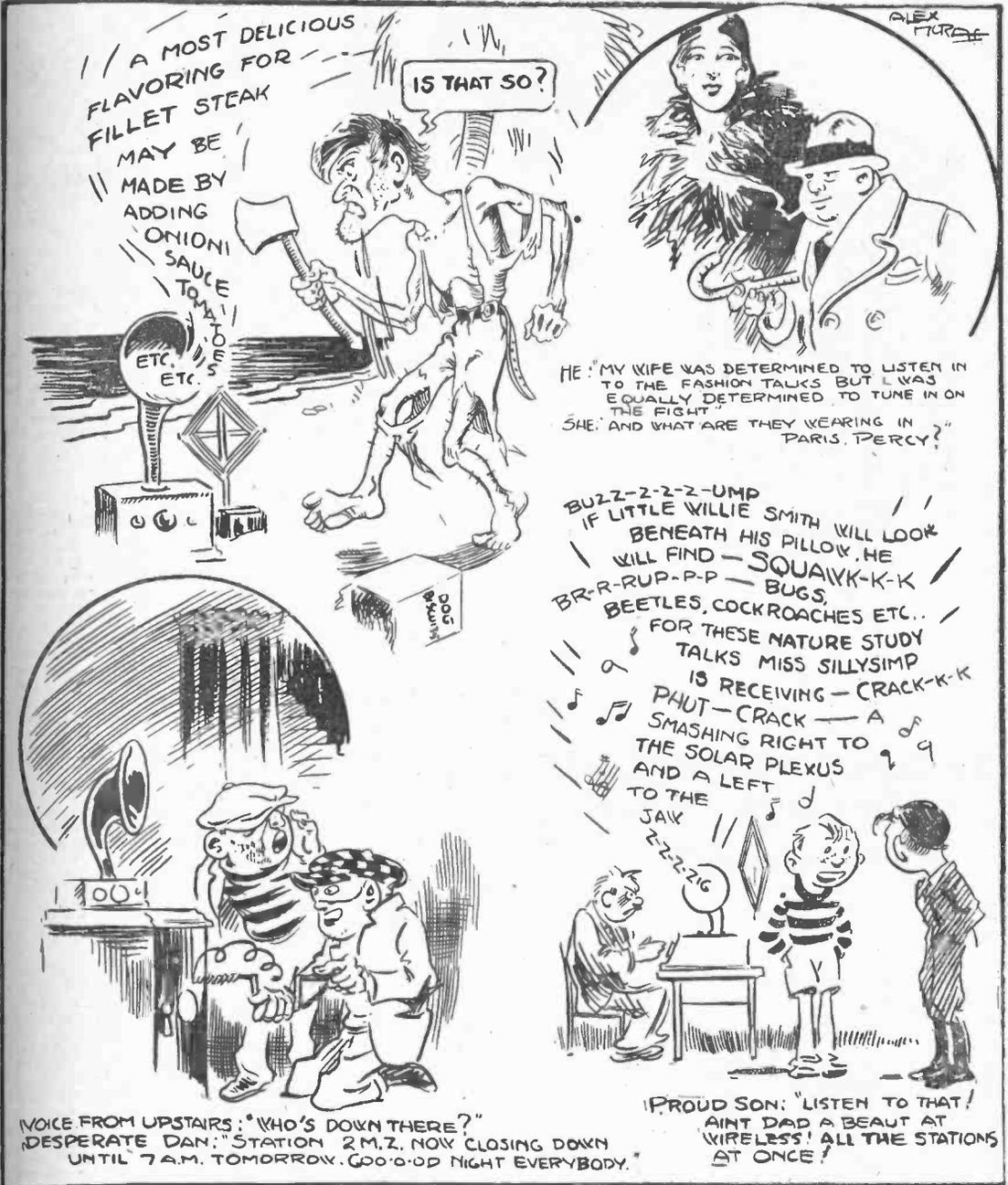
W.W., 26/4/29.

# Wireless Weekly

Incorporating "Radio in Australia & New Zealand"

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

## IT'S THE WAY YOU LOOK AT THINGS!



ALEX M'RAE

A MOST DELICIOUS  
FLAVORING FOR  
FILLET STEAK  
MAY BE  
MADE BY  
ADDING  
ONION  
SAUCE  
TOMATOES  
ETC.  
ETC.

IS THAT SO?

HE: "MY WIFE WAS DETERMINED TO LISTEN IN  
TO THE FASHION TALKS BUT I WAS  
EQUALLY DETERMINED TO TUNE IN ON  
THE FIGHT"  
SHE: "AND WHAT ARE THEY WEARING IN  
PARIS, PERCY?"

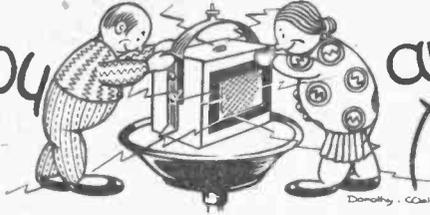
BUZZ-Z-Z-Z-UMP  
IF LITTLE WILLIE SMITH WILL LOOK  
BENEATH HIS PILLOW, HE  
WILL FIND - SQUAWK-K-K  
BR-R-RUP-P-P - BUGS,  
BEETLES, COCKROACHES ETC..  
FOR THESE NATURE STUDY  
TALKS MISS SILLYSIMP  
IS RECEIVING - CRACK-K-K-K  
PHUT-CRACK - A  
SMASHING RIGHT TO  
THE SOLAR PLEXUS  
AND A LEFT  
TO THE  
JAW  
Z-Z-Z-ZIG

VOICE FROM UPSTAIRS: "WHO'S DOWN THERE?"  
DESPERATE DAN: "STATION 2 M.Z. NOW CLOSING DOWN  
UNTIL 7 A.M. TOMORROW. GOO-O-OP NIGHT EVERYBODY."

"PROUD SON: "LISTEN TO THAT!  
AINT DAD A BEAUT AT  
"WIRELESS" ALL THE STATIONS  
AT ONCE!"

ALEX M'RAE SEES HUMOR AND "TRAGEDY" IN RADIO.

# Between You and Me and the Microphone



### Cold Logic

WHILE Captain Stevens was putting over his National Anthem session some Sundays ago, someone rang up and requested the



Esquimaux National Anthem. The Captain explained that he didn't have a copy in the studio; whereupon the voice asked, accusingly, if he knew what the Esquimaux national song was. The Captain replied that, although he was not sure whether the Esquimaux had an anthem or not, he thought the visit of the Noble expedition

might have grafted a little Italian culture on the Esquimaux mentality, and suggested that Italian opera might have influenced these Arctic tribes in their choice of a national air. "Such songs as 'Che Gelida Manina' ('Your Tiny Hand is Frozen')," he said, "would come very naturally to an Arctic people." We think the hypothesis a little far-fetched.

### Love Stories of Famous Announcers

THE B.B.C. will no longer print announcers' names in their programmes. They say that the flappers' old habits of writing to announcers whose voices they admired have been superseded by personal visits, which take up the announcer's time. Mr. Cochrane, Captain Stevens, Mr. Halbert, and Mr. Basil Kirke, so we understand, have arranged a deputation to protest to Mr. Anderson against the N.S.W.B.C.'s tardiness in allowing the B.B.C. to get in first with this fine testimonial to its announcers' Adonisity, although, to the present time, they have preferred not to broadcast the fact.

### So This is English

"AN automobeel tript onthe bittewmen oposit our bassolt Sennotaaf to-day. A cunstable was quickly on the seen, making aseetic remarks. The shofer, who was suffering slite caseawaltees, was unshagreened. He esplained, as in hate, that he was taking an urgent commewnikay from the B.B.C. to the N.S.W.B.C., which dealt with a consherited attempt to re-organise the British language. The shofer carmly chood Cow'chook while the cunstable barraashed him with cwestyons, and eventewalley was allowd to poosh thru the crowd to his destinashon. His masheen was undamad'g, ecsept for slight marks, es in larks, on the shassy; and a brake-aj, as in Neitzche, of the sentrif'ewgal steer'ing mek'an, as in beffy, is-m." We are not quite sure this is correct, but we have done the best we can to write a news paragraph according to the latest pronunciations of the B.B.C. Committee on Pronunciation. We think it is certainly an advance on the old, old method, or lack of method, in pronunciation, although where it will lead us is another, and a very much larger, question.

### A Question of Tact

ANNOUNCERS are very much concerned over an article by a man who obviously knows something, in which it was said that "mezzo," in its relation to sopranos, should be pronounced "medso," and not "metso," which means "over-ripe." Of course, they will let these gentlemanly feelings prevail.

**RADIO HEART THROBS**

*"My love," she sang, "is like the rose  
That blooms in the month of June.  
My love is like a melody  
That's sweetly played in tune."*

*"Of course," the man on trials said,  
"Her love might sound like that  
if the month were not December  
And her notes were not so flat."*

### Cruel to be Kind

A RAW countryman came down to Sydney to be operated on. Not by confidence men, but by doctors—you wouldn't appreciate the difference. It was necessary that he should be starved before the operation, and he was starved for four days and four nights. On the fourth day he told the nurse he was feeling a bit peckish. The nurse told him to listen-in to 2FC—it would wipe all tears from his eyes. So he listened for a few minutes, then the headphones clashed back to their table. "No good, nurse," he said disgustedly. "First thing I heard was one of Miss Furst's recipes for rump steak."

### Annionsir?

WHEN Uncle Bas was under the influenza influence a week or so ago, a kind listener in wrote to him, and expressed his deep sympathy, while, in a very practical manner, he enclosed eight recipes for the cure of bad throats. The "Syrup of Onion" recipe is the most interesting from a literary standpoint; so it follows:—



"Slice an onion, and cover with brown sugar. It takes about six hours to extract all the juice. To those who dislike onions the smell and taste of this mixture is very disagreeable; but it will relieve a severe cough when everything else fails." It also, says the writer, as an afterthought, "ensures a peaceful sleep when everything else fails." We asked Uncle Bas what he thought of the mixture; but he said he hadn't tried it; he was waiting till everything else failed.

### Three Relays

THERE have been two successful relays of Kai Gee Orw (Oakland) lately; one from 2FC and the other from 2BL. In both instances the announcer read out the news of the Southern Cross rescue search. This news must have travelled pretty quickly, because at 3 o'clock 2BL was relaying from America news which had been broadcast, for the first time, at 1 o'clock. 2BL's control operator and announcer managed to arrive at the studio at 5.30 to relay the English 6SW. Warm weather interfered with reception, and there was a little fading; otherwise, so we are told, everything was most desirable. Those who listened were deeply interested in a play which was being transmitted from 2LO. The technique of the production, so they say, was almost perfect. And it would take a pretty good play to reconcile a control operator and announcer to getting up at half-past 4 in the morning.



### The Prath (oun)cing Steed

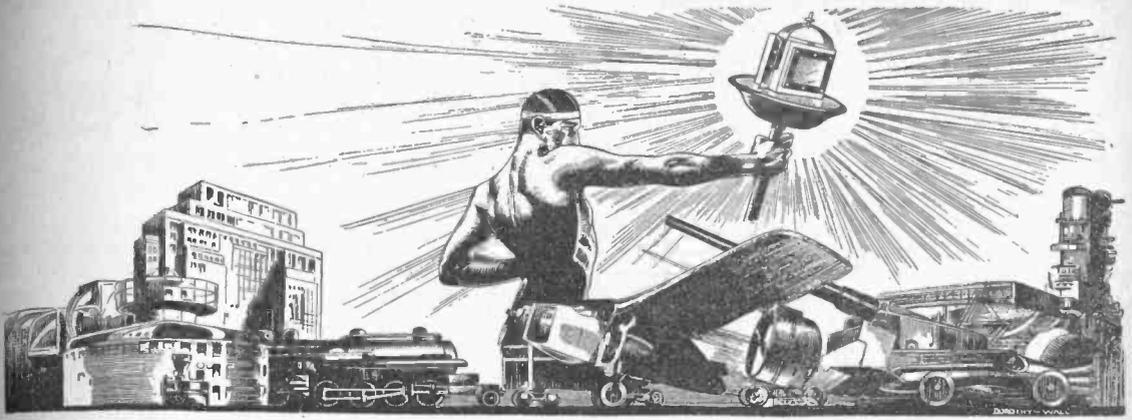
THE question of pronunciation cropped up recently during the morning track work. Mr. Perry tells the story. There was a race-horse named Chuquisaca, or very nearly that; and someone asked the boy who was up how he pronounced the name. The boy tried, and failed; and the affair became a standing joke. Not being able to stand standing jokes, he decided to re-name the horse "Chuck-a-sixer," and the name has been adopted by many punters and bookmakers since then. We should think so. Of course, the announcers don't have quite so much time as this boy to re-name the unpronounceable, but they have done fairly well in this direction, even if they have dispensed with christening.

### Still More Wallpaper

QSL CARDS are held for the following names, who are requested to either call or send stamped addressed envelopes for their belongings:—VK2EK, VK2LW, VK2PM, VK2PF, VK2ZY, VK2MF, VK2HM, VK2LG, VK2BB, VK2ZY, VK2KB, VK2TW, VK2EK, VK2LD, VK2YJ, VK2GW, VK2TW.

### Constellation Names

MOST people are aware that constellations are groups of fixed stars, and, according to Ptolemy, the famous Egyptian astronomer, who flourished in the year 140 A.D., there were 48 constellations. Since that time, however, others have been discovered and added, and there are now approximately 65. It is not generally known, however, how the constellations, such as "Orion," got their names, and this will form the basis of a most interesting talk to be given from 3LO on April 30 by R. J. A. Barnard, M.A., Senior Lecturer in Mathematics at the University who will give the origin of many constellation names.



# RADIO PROGRESS TRIUMPHANT

*Broadcasting in Victoria to be Improved*

By F. R. LEPPARD

**B**ROADCAST listeners throughout Australia are looking to the Federal Government to make good its promises to improve the conditions as a result of the new method of control to be introduced shortly. Just when the change is to take place is not known, although several official hints have been given which would lead one to believe that the middle of this year will be a suitable period.

The character of the improved services and the extent of the changes are still, to the listener, matters for conjecture; he can only live in hopes that something special is to be done towards improving the conditions for country listeners. Not much is expected in the way of improved transmission for metropolitan listeners, who indeed have little to complain of on that score now. In the areas of the country affected by fading, atmospheric, and other noises that are annoyingly prevalent wherever the signal strength is low, improved transmission can be brought about only by the installation of additional stations. No matter what alteration is made in the way of increasing the power of the existing stations in the capital cities, the areas affected by fading will be but little relieved; adequate relief can be given only by bringing the station nearer the affected districts; that is by erecting relay stations.

There are indications that something in the way of relief along those lines may be expected under the new regime. It is only fair to say, however, that relay stations would have been erected in Victoria, and inter-State relay hook-ups broadcast in New South Wales before this, but for the attitude of the Government: for some reasons, the permission to establish the stations sought by 3LO, Melbourne, was not given when it was applied for, some two or three years ago. Presumably now the Postmaster-General will himself put up the stations. And the late of the establishment of the stations cannot be far removed from now, as the Postal Department has set about buying stations, or arranging with manufacturers for the erection of a certain number of stations. Some of them, apparently, will be established in Victoria, as the conditions of the tenders for the contract for the work of installing the stations contain a clause to the effect that the plant is to be delivered in Melbourne. It does not follow, of course, that the intention thereby is to put up all or any of the stations in Victoria, but it is a fair assumption, anyway.

It is worth speculating on the prospects of Victorian

listeners obtaining benefits from any new stations that may be established in their State. There has already been a fair amount of information made public in connection with the previous attempts to put in relay stations; sites for the additional stations have been mentioned as a result of investigations carried out by the 3LO staff and their technical advisers. Whether the Postal Department will adhere to those locations is a matter upon which only the officials could speak, and, no doubt, they will not do that until it suits them. There is bound to be some relation between the company's selections and the final determination by the authorities.

The press reports of the tender conditions mention the fact that the power of the stations required by the Government is set down as three kilowatts and five kilowatts. What strikes the radio fan, of rather special interest, is the fact that the method of rating the stations is different from that usually adopted by the Postal Department. In the regulations, which we are all familiar with, the power is mentioned as the wattage in the "high frequency generator circuit;" that is the power, stated in watts, in the plate circuit of the main oscillator, and excluding the modulator power. In these tenders the power is to be the watts in the aerial. That is probably adopted as following the lead of the Americans; it is a better system to follow anyhow; as it is a better indication of the engineering capacity of the station than the other method of specifying the plate power of the oscillator alone.

Now what will a station of three kilowatts mean to listeners in the country? Let us assume that stations will be established at Ballarat, Hamilton, Wangaratta, and Sale; probably the stations will be of the larger power of five kilowatts. Anyway, if they are of only three kilowatts they will be twice as powerful as 3LO or 3AR. The effect will be very much improved signal strength in all parts of Victoria, and in parts of New South Wales and South Australia as well. Crystal reception in most of the principal towns will be possible, and excellent reception should be obtained with three valve sets anywhere in Victoria. Of course, there will be some isolated areas where the disturbing effects of fading and other hindrances to good reception will be experienced, but those areas should be exceptional and of small degree. If three or four stations can be given to Victoria, there will be much improved conditions for listeners generally.

# All Roads Lead to

*Australian radio will celebrate its sixth season at the 1929 Radio Exhibition, to be opened at the Sydney Town Hall on May 1. Every kind of radio product, from component parts and receivers to transmitting gear, will be on view. Below is given a brief description of each exhibit. Those exhibits not mentioned will be devoted exclusively to general electrical and household appliances.*

## STAND 1

**STAND No. 1**, which is on the left hand side of the Town Hall Vestibule, is that of Harringtons Ltd., the well-known radio, photographic, and cinematograph merchants.

In Harringtons' exhibit the aim has been to present radio as it appears in the home. Various models of the Gillfillan Neutrodyne radio sets are displayed, and just as attractive and popular will be that portion of the exhibit devoted to the "Popular" and "Imperia" radio sets of their own manufacture.

We were also impressed with a fine combination radio-gramophone set. Those old rivals, the gramophone and the radio set, are gradually merging into an ideal partnership. This particular radio-gramophone is housed in a normal-sized gramophone cabinet, one side accommodating the wireless receiver, and the other the gramophone. Many original ideas are incorporated in the design, and the latest type moving coil loud speaker is employed.

## STAND 2

**AT Stand No. 2**, G. C. Beardsmore, of Fourth Floor, 38 Martin Place, Sydney, will be seen. A display of both A.C. all electric and battery operated sets, varied range in design and cabinet work. To set owners considering the conversion of their existing battery operated receivers, to A.C. all electric operated, this exhibit will prove particularly enlightening, as a specialty is made of this class of work. Another novel and entertaining feature will be the demonstration of a radio mechanic at work, and useful ideas and information will be readily found by the amateur set builder. The Te Ka De wonder valve is also given attention, and a display of accessories completes an exhibit which is well worth inspection.

## STAND 5

**AMONGST** their numerous products the new Airzone A.C. three-valve set stands out in Stand 5.

The design and style of this wonder set is different, inasmuch as the Magnavox loud speaker, aerial, A.C. power pack, and all components are contained in the one cabinet, no connections are necessary, no batteries to trouble with, just plug into any lamp socket or power point.

To further modernise their receivers, Airzone are now manufacturing a very compact all-metal "B" eliminator. It has the usual Airzone efficiency, and can be used in the Airzone portable for home use, and in connection with any other Airzone receiver.

As a further adjunct, Airzone are now turning out a new 4-volt accumulator which is specially designed for use in the Airzone

portable, and the two and three valve Airzone sets, replacing dry "A" batteries. Of very compact size, 5 x 3½ x 7 inches high, solidly constructed and finished in rubber black, with a capacity of 25 ampere hours actual.

The new three-valve battery receiver is an exceptionally efficient and compact set at a popular price. It gives ample loud speaker strength, and is designed to give the best results under all conditions. Made up in a neat metal case with navy crystalline finish.

## STAND 6

"DIAMOND" batteries are now well established on the Australian market, and samples of all types can be inspected at Stand 6—Reg. Rose and Company.

The Australian factory is equipped to manufacture any size or type of battery. It is pleasing to note the wonderful support this industry is now enjoying, which, no doubt, is due to the quality of the goods. Being made of a seamless cell, they are constructed on the section-built principle, that is, at each stage they are specially insulated to protect against leakage. "Diamond" A.B. and C radio batteries are now most popular amongst set owners, as they carry an excellent guarantee, and are made in upright and flat types, with the fahenstock or screw terminals.

## STAND 7

A NOTICEABLE feature of Noyes Bros., Stand 7, is the many new 1929 releases. The Igranic Neurosonic-Seven—an outstanding 1929 production—should be seen and heard by every visitor to the exhibition.

The comprehensive collection of Igranic radio devices will create considerable enthusiasm. There is the new Igranic L.F. transformer type "J," which has been developed to meet the demand for a L.F. transformer, which, while being of small dimensions, comparatively light in weight and reasonably priced, is thoroughly efficient in performance. The new Igranic vernier drum control is well worthy of inspection, for its handsome escutcheon plate moulded in best quality bakelite will impart to any receiver a refined and attractive appearance which will make it worthy of a place in the most tastefully furnished room. Other new Igranic releases include the screened condenser, which is highly suitable for use in all circuits employing reaction on the Reinartz principle; Lokvane

square law condensers possessing several novel features and of low loss characteristics, the H.F., L.F., and power chokes, and other eliminator component parts, and De Luxe Phonovox pickups. These, with many other Igranic devices exhibited, cannot fail to interest the enthusiast that requires the best.

Then there is the extensive range of Oldham accumulators for both L.T. and H.T. use. The plates of all Oldham accumulators are made under a special activation process, a method of manufacture exclusive to Oldham, which the makers guarantee renders their accumulators exceptionally robust and long lasting. The quick-charging, slow-discharging types will appeal. The new Oldham H.T. charger will be of considerable interest to users of accumulator "B" batteries. It fits any make of H.T. accumulator (any voltage) for either D.C. or A.C. mains; works from any light socket. No valves are required, and as there is nothing to go wrong it must be practically everlasting, and a pleasing feature is that it costs practically nothing to operate. The new Oldham amp power unit will find many friends, for here is the solution to your accumulator-charging problems. Plug it into any light socket, connect the two flexible leads to the L.T. terminals on your receiver and switch on.

The British-made Brown loud speaker again appear on this company's stand. Look at the wide range exhibited, and you will soon begin to realise what the name Brown means to those seeking their ideal speaker.

Other well known and popular lines ex-



hibited are Philips valves and apparatus, Columbia and radio batteries, etc., etc.

## STAND 9

**STAND No. 9** will contain much that will interest the radio enthusiast. Here may be seen a full range of Clyde radio batteries, comprising the 2-volt heavy duty cells, such as were carried by the "Southern Cross," and the 4-volt and 6-volt assemblies. The latter two types of batteries are equipped with strong carrying handles. All Clyde batteries are encased in non-leakable hard rubber containers, which are practically indestructible.

## STAND 12

**W. HARRY WILES**, the old established and respected firm, occupy Stall No. 12, in which they feature a comprehensive range of "Wondertone" receiving sets, including "all-electric" models, from the neat little 3-valve "Wondertone" to the "multi-valve" gramophone combination. Prices to meet every purse. The radio accessories include "Tefag" speaker, the "Lion Micro" crystal detector, and "Yale" Bond heavy duty "B" batteries.

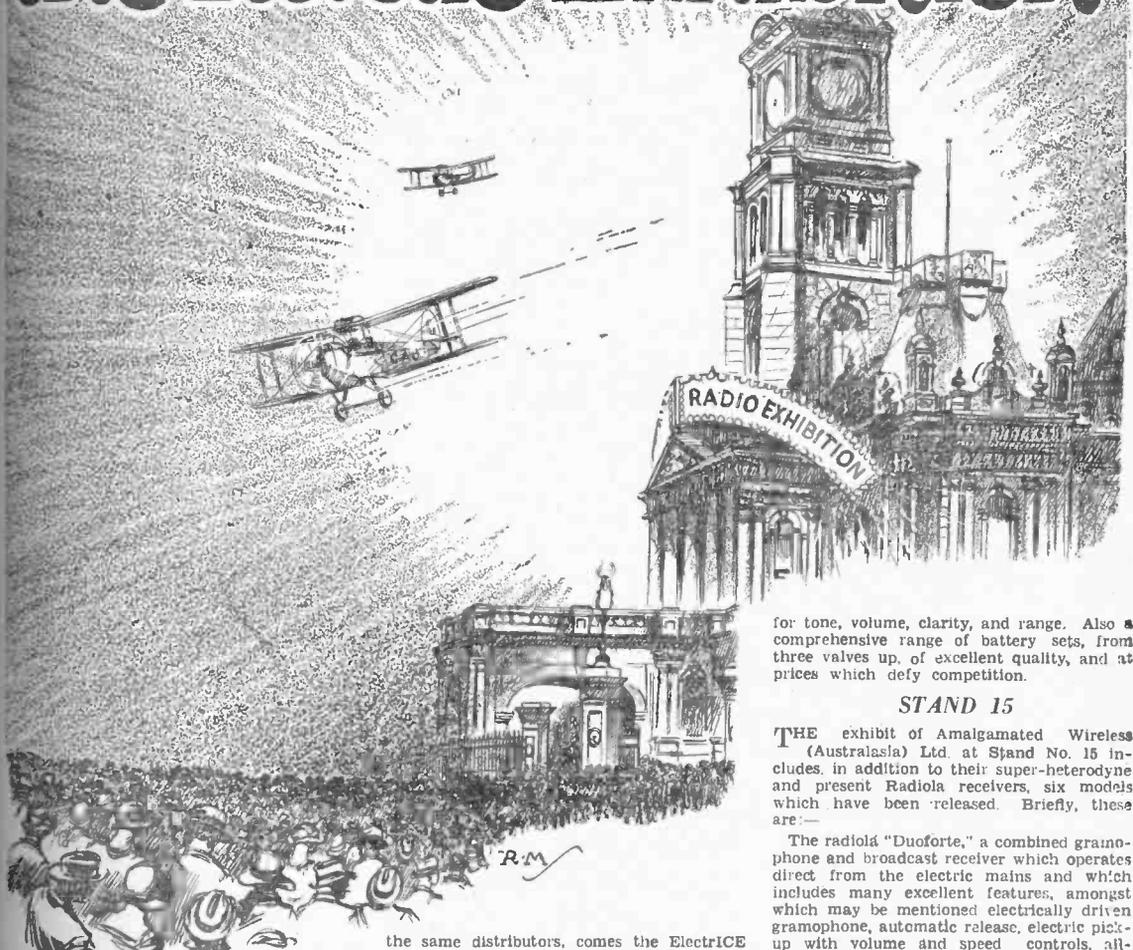
## STAND 13

**AT Stand 13** Stromberg Carlson show the wide range of their Treasure Chest re-

## STAND 48

*Do not forget to visit "Wireless Weekly" at Stand 48, at the entrance to the basement. The famous Air King Receiver, and the 1929 Neutrodyne described in this issue will be on view. Back numbers of "Wireless Weekly" will be distributed free.*

# the Radio Exhibition



for tone, volume, clarity, and range. Also a comprehensive range of battery sets, from three valves up, of excellent quality, and at prices which defy competition.

### STAND 15

**THE** exhibit of Amalgamated Wireless (Australasia) Ltd. at Stand No. 15 includes, in addition to their super-heterodyne and present Radiola receivers, six models which have been released. Briefly, these are:—

The radiola "Duoforte," a combined gramophone and broadcast receiver which operates direct from the electric mains and which includes many excellent features, amongst which may be mentioned electrically driven gramophone, automatic release, electric pick-up with volume and speed controls, all-electric 7-valve radio unit, corrugated cone dynamic speaker, and space for keeping records.

To those who are interested from the transmitting side of radio, the amplifier panels from an A.W.A. Australian-made 5 K.W. transmitter is on view. This unit is identical with those used in Empire broadcasting at the A.W.A. Experimental Station, and from it may be gained an idea of the size of the transmitters used in this class of work.

### STAND 18

**FOREMOST** in Bennett and Woods exhibit at Stand 18 are the new 1929 Stewart Warner matched unit radio receivers, which have just landed to suit 240-volt alternating current. These are worthy of the closest inspection, as they are a product of one of America's leaders in the radio industry. The Model 801, as it is known, is a powerful ultra-selective receiver that takes its power directly from any 240-volt alternating current socket. Its small metal cabinet contains the chassis of the set, the power supply unit, and a built-in light socket aerial in one marvellously compact and ingenious electrical assembly.

The CAV radiac accumulators also form a large feature of the stand; there are types

receivers. These are entirely "Australian-made," designed by Australian radio engineers, and are backed by the Stromberg Carlson laboratories, Rochester, New York, which are of international renown. They embody to the greatest possible extent the many quality features associated with the name—"Stromberg Carlson." The choice of models is very wide, and the range of prices makes it possible for purchasers of average means to acquire a quality radio receiver that will give entire satisfaction.

### STANDS 14 AND 16

**MANUFACTURERS' PRODUCTS.**—Distributors of the Emmco radio goods, ElectricICE Refrigerators, Nath. Baldwin Products, Airzone Products, and M.P.A. speakers, etc., exhibit at Stands 14 and 46. They are able to offer both the radio dealer and the experimenter quality radio components.

Emmco are operating from their new factory, which is the largest of its kind in Australasia, and manufacture a range of some 200 radio components, and no effort is spared from time to time to make improvements which are found necessary, and the introductions of new lines.

Also, from the factory of the Electricity Meter Manufacturing Co., Ltd., and through

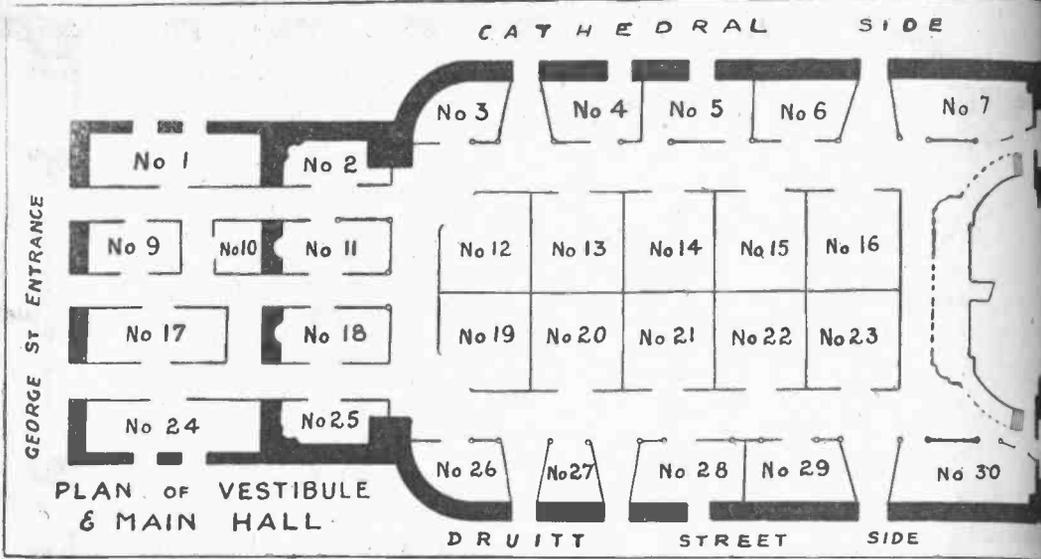
the same distributors, comes the ElectricICE electric refrigerator, which is recognised as an all-the-year-round necessity.

Airzone products are also distributed by Manufacturers' Products Pty. Ltd. The latest Airzone product is the new A.C. Three, a wonderfully compact all-electric set, made up complete with the speaker in the cabinet, also two and three valve battery sets of remarkable value. Eliminators, condensers, coils, and numerous radio component parts are also manufactured by Airzone, Ltd.

To those who really care, the Baldwin horn and cone speakers, showing here, are recognised for their true tone quality, which is supplemented with ample volume. Baldwin's very latest is a new perfected electrical phonograph pickup, which is easily connected to any phonograph. Its outstanding feature is the tension spring in the tone arm, which prolongs the life of the records.

Manufacturers' Products are also distributors of the popular M.P.A. speakers. These are featured with a sprung diaphragm, which particularly enhances tone quality, and the rendition is marked with unusual clarity. The M.P.A. is finished in a most attractive case, which must appeal to the most exquisite taste.

Also showing is a fine range of complete sets, including the attractive M.P.A.C. Three, which is made up in an attractive crystalline finish, all metal case. This set is unequalled



for every use—the claim of 100 per cent. efficiency is certainly proven from the popularity these famous batteries have enjoyed on this market over a large number of years. They are the product of CAVander-vell and Co., Ltd., London.

The Roth constant potential battery charger will be of interest to many, standing as it does for the last word in up-to-date battery charging methods. A very large number of this type of charger are being installed throughout the city and country service stations, which enable batteries to be charged in a very much shorter time.

**STAND 19**

**AMPLION (AUSTRALASIA) LIMITED**, a subsidiary of Graham Amplion Ltd., England, have one of the most interesting of displays for the broadcast listener and the amateur set constructor.

The new Amplion cone models, which have already enjoyed tremendous popularity, are on view. There is a model to suit every taste and every purse. These newest Astor receivers, marketed in New South Wales by the Amplion Company, are guaranteed to the same extent as are their well-known speakers. From the modest 2-valve battery model to the handsome "All Electric" Astor duo-symphonic, they are undoubtedly a credit to Australian workmanship. The new departure in radio frequency amplification via the screened grid valve is incorporated in the new one-dial five. They may be closely inspected. Members of Amplion staff will be only too pleased to explain this new principle.

Messrs. Amplion (Australasia) Limited have also secured the sole selling agency for "Advance," "Viking," and "Monarch" components. The prices of these parts are keenly competitive and are guaranteed—a point to be appreciated by the set constructor.

Amplion Carboncel batteries are now more popular than ever before; country people especially, have realised the numerous advantages of installing this new type of battery. These are the only primary batteries to really replace the accumulator. Types for H.T. use are now obtainable.

**STAND 20**

**EXAMPLES** of the progress made in the application of electricity to both the domestic and commercial branches of cooking may be seen in the "Magnet" domestic cooker demonstrated at Stand 20 by the

British General Electric Co. Ltd. Among the radio exhibits will be the "Osram" valve, with its new "tenacious" coating, representing the last word in valve manufacture and design. It is interesting to note that "Osram" valves were chosen by Squadron-Leader Kingsford Smith and Flight-Lieut. Ulm for use in their new systems receiver on their recent flight. Showcases illustrating the various methods used in the manufacture of "Osram" valves will be displayed, together with other interesting matter concerning valves.

A complete range of the well-known "Gecophone" loud-speakers will be shown together with a range of "Gecophone" transformers and condensers, etc.

**STAND 21**

**ONE** of the features at Stand 21 is the Cossor melody-maker, together with a full

range of Cossor radio valves. The Cossor Melody-Maker is as simple as a mechanism to assemble—you can put it together in ten minutes, even though you may know nothing about radio. It is inexpensive to buy, so simple to use, and easy to build. There is no drilling, no sawing, and no soldering. Cossor valves will also be displayed.

**STAND 22**

**W. C. WATSON** are showing at Stand 22 a range of household electrical appliances, including the wrinkle-proof and automatic irons. Actual cooking on a universal range will be carried out. In addition to these special features, a full range of electric torches, batteries, wires, cables, aluminium and wiring materials will be shown—in fact, "everything electrical."

**STAND 24**

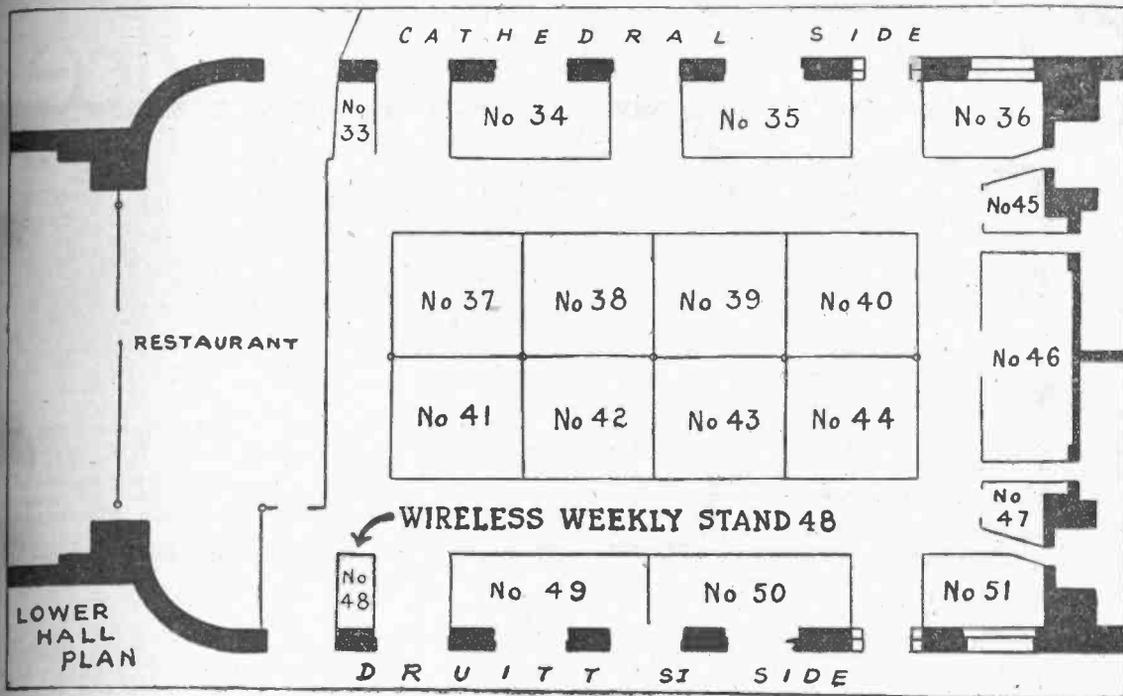
**PHILIPS'** contributions to the 1925 Exhibition at Stand 24 includes the "Melody transformer," new amplifiers, speakers, and a phonograph pick-up, and A.C. valves.

The Philips A.C. tubes are one of the greatest advances made by radio in recent years. Not only have the ordinary valves been produced for A.C. operation, the general design of corresponding tubes has been radically altered, with the result that greater efficiency is achieved. This is demonstrated by the four-valve wonder series. The E442 is a screen grid A.C. tube similar to the A442 D.C. screen grid, but its amplification factor reaches the huge figure of 1000.

For operation of the new A.C. tubes, Philips have produced an A.B.C. power grid which takes up very little space, and supplies the entire power for an A.C. receiver. For the "B" and "C" portion, apparatus identical with the 3003 power unit is employed, the voltage values being the same. For "A" supply, a filament step-down transformer has been mounted at the rear end of the power unit. The power pack is supplied with two distinct transformer units for use with 4-volt A.C. series, or valves requiring 1-2.5 volts.

As far as audio reproduction is concerned, there are two new Philips amplifiers, both ingeniously constructed for conservation of space. One is a compact phonograph amplifier, which employs two valves, types B442 and B443, coupled with a Philips audio transformer. This compact unit may be held

- THE KEY TO THE STAND NUMBERS OF THE ABOVE PLAN IS AS FOLLOWS:—**
- 1.—Harringtons.
  - 2.—G. C. Beardsmore.
  - 3.—Martin de Launay.
  - 4.—Inter-State Sales, Ltd.
  - 5.—Atrzone, Ltd.
  - 6.—Reg. Ross and Co.
  - 7.—Noyes Bros., Ltd.
  - 9.—Clyde Engineering.
  - 10.—Hoffnung and Co., Ltd.
  - 11.—Basement Exhibitors' Information.
  - 12.—W. H. Wiley.
  - 13.—Stromberg Carlson.
  - 14.—Manufacturers' Products.
  - 15.—Amalgamated Wireless.
  - 16.—Lawrence and Hanson Electrical Co.
  - 17.—Colville-Moore Wireless Supplies.
  - 18.—Bennett and Wood.
  - 19.—Amplion (Aust.), Ltd.
  - 20.—British General Electric.
  - 21.—A. C. Cossor.
  - 22.—W. G. Watson and Co.
  - 23.—Hoover (Aust.), Ltd.
  - 24.—Philips Lamps (Aust.), Ltd.
  - 25.—Hayward C. Parish.
  - 26.—Keogh Radio Supplies.
  - 27.—Metropolitan Electric Co., Ltd.
  - 28.—Hecla Electrica (Sydney), Ltd.
  - 29.—Warburton Franki.
  - 30.—Mullard Wireless Service Co.



one hand, and is admirably suited for the electrical reproduction of phonograph records, with the aid of the new Phillips phonograph pick-up, a featherweight unit which weighs but 4 1/2 ozs. and consequently does not harm records, as would pick-ups, which are a great deal heavier than a phonograph sound-box. This unit features a special scratch filter, which eliminates the annoying scratch of the needle.

The other Phillips amplifier on exhibition is the 10-watt amplifier, an A.C. operated unit which employs one type E408 valve, the power facilities for which are incorporated in the unit itself, so that it requires but a single connection to the power socket for operation. This unit is suitable for the increased amplification required in cases of installations for hospitals, halls, and other public places where unusual volume is required.

Perhaps the most important of Phillips reproducing apparatus for 1929 are the new principle speakers, which are of the moving coil type, but have the advantage of not requiring external batteries for operation. This feature was made possible by the exceptionally powerful permanent magnets used for the creation of the field. The realism of these speakers is amazing—it is a further step in the direction of perfect reproduction, which has been the aim of Phillips for many years.

In addition to the new principle speakers, a large cone type model, similar to the PCJJ, has been introduced. Features which make this speaker such an excellent reproducer are the extra large full floating parchment cone and the larger baffle. On a comparative test this speaker is outstanding—the effect of all notes being reproduced in correct proportion, without undue emphasis of any particular tones. At the Radio Exhibition it will be featured as the Peter Pan model.

**STAND 27**

**RADIOKES** are again occupying the same stand as last year, and look forward to seeing all their friends, old and new. There will be much of interest again this year. The

progress made with the new screened grid tubes has brought to light some wonderful new developments in manufacture of radio frequency equipment, and you will see the beautiful "Screen Grid Low Wave Kit," "Screened Grid Strobodyne Kit" and many other new lines, in addition to all the popular lines arrangements for well-known standard circuits. Further additions will include a neutralising condenser, a range of very fine midget condensers, and an excellent little wave trap.

Chief interest, however, will centre in the new "Radiokes All-Electric Set." This set is just about to be released, and will be shown to the public for the first time at this exhibition. Nothing has yet been offered to the public of any part of the world to equal or surpass this instrument in the small-set field. Designed especially with regard to quality reproduction, its amplifier will deliver music with a fidelity hitherto unknown, and its appearance at the same time makes it truly a thing of beauty. When you have seen every other set in the whole

huge display, then have a look at Radtoles —last.

**STAND 30**

A SPECIAL display is being made by the Mullard Wireless Service Co. Ltd., at Stand 30, which will include the new screened grid and "Pentone" five-electrode receiving valves. The well-known range of British-made Mullard master valves will be on show, together with large transmitting valves such as are used by the broadcasting stations, and merchant navies of the world. There will also be displayed the new Mullard pure music speaker—an attractive cone-type speaker embodying a unique feature in the shape of a tone control switch—a device for counterbalancing incorrect grid bias and varying tonal reproduction. Another interesting exhibit is the potential divider, which comprises a number of resistances enclosed in a vacuum. Special detector valves, together with super-power valves, will be displayed, giving further evidence of the activities of the Mullard laboratories.

New and intensely interesting components are being shown by Ferranti Ltd. The display will include all types of Ferranti audio transformers and a complete range of Ferranti radio meters, which will no doubt excite admiration of the achievements accomplished by this well-known firm. Other exhibits include Jackson variable condensers in several types, slow-motion, plain, in both SLF and Logarithmic patterns. There will also be a new pattern accumulator known as the "Dionoid," a British-made article of unique design. In short, a very comprehensive range of new radio components will be on view at this stand.

**STAND 41**

STAND 41, in the Lower Hall, will hold the interest of all radio enthusiasts—especially those who wish to be up-to-date with all-electric sets. The exhibits of United Distributors Limited—makers of Udisco sets—are "all out" to popularise the all-electric receivers, which they are marketing at most reasonable prices.

(Continued on Page 31.)

**THE KEY TO THE STAND NUMBERS OF THE ABOVE PLAN OF THE BASEMENT IS AS FOLLOWS:—**

- 33.—Public Speech Equipment.
- 34.—Wilks and Co.
- 35.—Godfrey, Ltd.
- 36.—Amateur Exhibits.
- 37.—International Radio.
- 38.—Burgin Electric.
- 39.—New System Telephones.
- 40.—Australian Westinghouse Electric.
- 41.—United Distributors.
- 42.—Anthony Horderns.
- 43.—Electric Supplies and Engineering.
- 44.—Mick Simmons, Ltd.
- 45.—Burt Goldsmid.
- 46.—Emuco.
- 48.—"WIRELESS WEEKLY."
- 49.—Standard Telephones.
- 50.—Australian General Electric.
- 51.—Aerial Exhibit.

# 3LO'S Sporting Service

*Of all broadcasting stations in the world those in Australia pay the most attention to sport. And, perhaps, of all Australian Stations 3LO gives the largest amount of its time to sporting items. This article outlines the popular activities of that station.*

By **ERIC WELCH**  
Sporting Commissioner, 3LO



**E**VER since the inauguration of the broadcasting services in Australia in 1924 3LO has been recognised as the premier sporting broadcaster, and no effort is spared by the managers of that station to maintain that reputation. No sporting event is too small nor is any distance too great to travel to give to listeners a vivid word picture of the happenings in every branch of sport.

Pre-eminent in Australian sport is racing—the sport of Kings—and, naturally, racing takes pride of place in 3LO's arrangements. Only slightly less is the country's interest in football and cricket, and much time is devoted to those branches of sport. Other sports for which time is found are baseball, rowing, cycling, motor cycle and car racing, boxing, wrestling, and all branches of school sport in the competitions arranged by the greater public schools of Melbourne.

### THE SPORT OF KINGS.

**O**UTSIDE broadcasts were nothing more nor less than "stunts" in 1926, when 3LO, Melbourne, undertook the description of the Grand National Steeplechase at Flemington. Elaborate preparations were made, and van loads of gear were transported to the Flemington racecourse the day before the great event. But what was in those days a "stunt" has settled down now to a plain every-day feature of 3LO's programmes. At that Flemington meeting in 1926 the managers of the various departments of the station were present in force, fearful that their "great under-

taking" would fail, and that they would be held up to ridicule. But everything was satisfactory, and press notices gave 3LO great credit for the wonderful achievement which was theirs.

Comparing this with the present day one finds that broadcast descriptions of races are taken as a matter of fact by the public as well as by the press. The rapid strides made in wireless research have made a great achievement into an every-day occurrence in the short space of two and a half years.

The racing service of 3LO has become so thoroughly organised that descriptions of races are undertaken from such distant places as Albury, Wagga, Hamilton, Warrnambool, Bendigo, and Ballarat, while regular relayed descriptions of important events are received from Adelaide and Sydney. To illustrate the manner in which the fame of 3LO as a sporting station has spread" the Wagga Cup meeting is taken as an example. Twelve months ago the secretary of the Murrumbidgee Turf Club wrote to Major Conder, general manager of 3LO, asking if he would have descriptions of their races broad-

cast. The request was acceded to, and 3LO's Special Sporting Commissioner travelled far into New South Wales territory to broadcast the descriptions of the racing through a Victorian station. The use of a telephone line over 300 miles was necessary to bring the descriptions to 3LO's studio in Melbourne from where it was broadcast.

Wagga has now developed into a part of our regular routine, and I have travelled all over Victoria during the year to broadcast through 3LO the descriptions of races from practically every racing centre in Victoria. To keep thoroughly in touch with racing in Australia I also travel to Sydney for the spring and autumn meetings to follow the form of the champions who are to be seen racing there.

Six years ago, fresh from an adventurous time in the wilds of New Guinea, I joined the staff of a prominent Melbourne morning paper, and under the pen name of "Newbury" became well known to the followers of racing in Melbourne. Twelve months ago the newspaper proprietors in Melbourne decided that members of their staffs were not to participate in broadcasting, and I was persuaded

to throw in my lot with 3LO, Melbourne. Ever since I have been connected with not only racing, but also with boxing, wrestling, rowing, and many other sports. At the present time it is my duty to supervise the arrangements of the sporting events in 3LO's programmes and attend at the descriptions of various sporting events.

### A CHAMPION FOOTBALLER.

**T**HE broadcasting of football matches is in the capable hands of Rod M'Gregor, supervisor of sport in State schools in

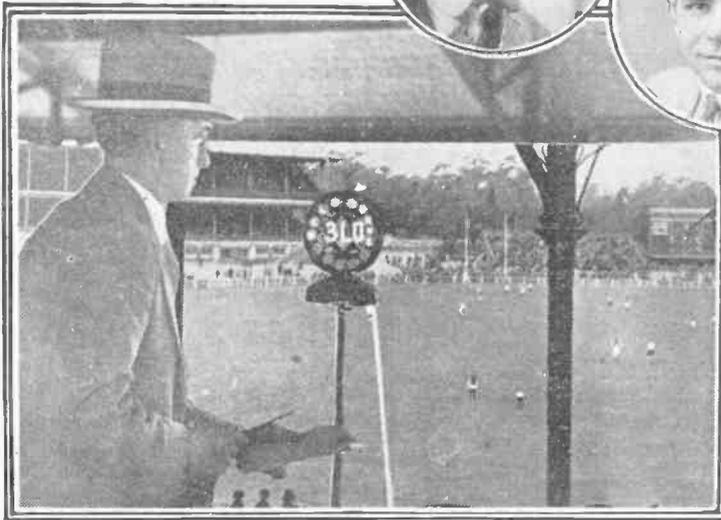
Ted Thye, wrestler and 3LO broadcaster.

Al Santel, wrestler and 3LO broadcaster.

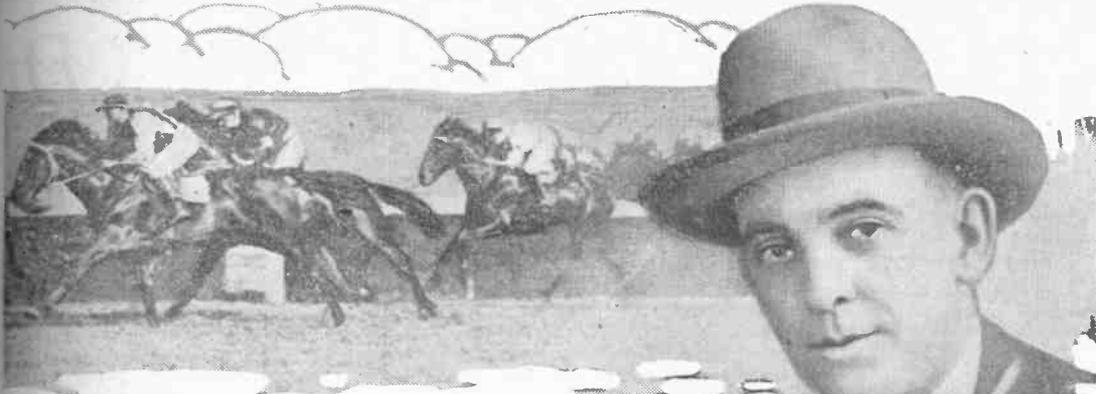


Victoria, and a member of the staff of the Victorian Education Department. Mr. M'Gregor was himself a champion footballer in his time, and he represented his State on many occasions in inter-State matches. In fact, Rod M'Gregor is acknowledged as the greatest centre player that Australian football has ever known. He played all of his football with the great Carlton Club, and had as his contemporaries in that club such remarkable footballers as Billy Dick, E. Haughton, J. Vallentine, E. Jamieson, J. Marchbanks, and many others who made fame, not only in pennant games, but also in inter-State matches.

Each week last season 3LO selected what appeared to be the best match for the afternoon, and Mr. M'Gregor broadcast a com-



Rod M'Gregor, veteran footballer, describing a match for 3LO.



plete description of the play, breaking away only to allow of the descriptions of the races to be broadcast. This season a great change is being made, and 3LO will undertake the broadcasting of the descriptions of two matches each Saturday, and the services of another expert in the game will be obtained to take over the second match. The interest in Australian Rules football in Victoria is remarkably great, and as many as a quarter of a million people attend the various League and Association matches each week, so that 3LO feels in duty bound to cater for the vast number of football enthusiasts who are not able to attend the games.

Mr. McGregor is also the premier describer of cricket for 3LO, and he has as a capable lieutenant Mr. Mel. Morris, who became famous as a member of the powerful team which represented Richmond and won for them the football pennant a few seasons ago. Mr. Morris has also played representative cricket. During the recent tour of the English Eleven continuous broadcasts of the games in which the Englishmen took part were undertaken, and Mr. McGregor and Mr. Morris shared the task. As much as 30 hours broadcasting was necessary for one of the test matches in Melbourne, and the result

was that it was necessary to have two men to share in the task of broadcasting. During the cricket season, matches in the Victorian Cricket Association's pennant competition are broadcast every Saturday, and it has been granted that the broadcasts have increased considerably the interest taken in these games.

**BOXING AND WRESTLING.**

**F**EW people will deny that broadcasting made wrestling when that branch of sport was revived in Melbourne about four years ago. For a time very little interest was taken in the wrestling until 3LO decided to broadcast descriptions of the matches. The wonderfully realistic descriptions of Mr. Norman M'Cance so stirred the imaginations of the large crowd of Saturday night listeners that within a short time the West Melbourne Stadium was not large enough to hold the vast crowds that sought to gain admission to the matches. Throughout last season the descriptions of the wrestling matches were undertaken by Eric Welch, and he quickly became popular with the vast unseen audience, which relished these stories of the wrestling matches. During the summer months, when the wrestlers are resting, Eric Welch is at his customary place in the West Melbourne Stadium describing the great boxing matches.

**OTHER SPORTS.**

**A**PART from the main attractions of racing, football, cricket, boxing and wrestling, 3LO regularly undertakes the describing of the

*Eric Welch, Sporting Commissioner, 3LO.*

great tennis tournaments, the public schools' football matches and combined sports meeting, as well as the Head of the River boat races, in which the six public schools in Melbourne and Geelong compete every May. There are also motor cycle and bicycle races to be described from the Motor-drome, and road racing during the winter months of professional and amateur cyclists as well as rowing races at the Henley and Upper Yarra regattas.

All of these sports combine to make a remarkably interesting feature of 3LO's programmes, and the Broadcasting Company always welcomes suggestions that will tend to improve the standard and universality of its sporting activities.

Much of the comprehensiveness of 3LO's sporting programme is due to the general manager of the station (Major W. T. Conder), who was himself a noted amateur sportsman. As an amateur rider in horse races he won many events, and he also made a name for himself at foot-running. Boxing, football, and cricket also engaged his attention, and he was in the first flight of exponents of each of those branches of sport.



*Norman M'Cance, dean of wrestling announcers.*

# AN ADVENTURE *in* on the HIGH

**I**T was just after the war—after that long period of awaiting stoically for the sudden violent impact of a torpedo of endless nights with all lights doused, when the moan of the wind seemed to carry the last cries of some poor devil clinging to a raft. The air was full of a glorious freedom, for the ban of "wireless verboten" was lifted forever. Joyously one could fling in the switch, start up the rotary converter, and with gay abandon call "CQ."

Gone the safety-fuse devices let into the engine room mains to guard against some bored or careless "sparks" shooting out a haphazard signal in the danger zone. Gone the safety catches over the door to ensure the automatic switching off of the lights the instant it was opened. Gone the deadly sleep-destroying "six hours on—six hours off" watches when one waited nervously in the dangerous dusk or the lush of dawn for the fatal blast. And gone the dread of copying down a message to "A.B.M.V.," reading "Enemy raider reported to be operating along such and such a route. Take all precautions." It was a new era, a period of relaxation, when one looked for any excuse to start up the screaming generator and hurl a few signals into space just for the joy of doing something that for four long years had been forbidden.

Following a howling binge owing its origin to the Armistice—a binge that left a trail of hectic nights behind it—Big Bill and I settled down to hard yacca.

The mere fact that the bank, in the person of the purser, had courteously but firmly declined to increase the overdraft, had nothing whatever to do with it. We were interested in these new-fangled valves which were coming into vogue. They intrigued us. Even in 1918 valves were mysterious "hush" affairs, except in the inner councils of the war machine. In the inner councils of the war machine, purposes, but, as any old sea-going op. will tell you, they were scarcely used elsewhere. As a matter of fact, we were sternly enjoined against using them, mainly for the reason that the shock occasioned by an exploding torpedo would snap the filament. Instead, a solid zincite-bornite crystal combination was recommended because only a direct hit from the hind leg of a cow would dislodge it.

So, therefore, we ruminated upon valves. Big Bill, I must say, was the junior op. of the Billy Hughes freighter "Bulla," owned prior to 1914, by H.I.H. Wilhelm, and now under the command of Captain A. R. Pascal: a hard-case skipper of the square rigged days. We sat upon a sea chest and gazed balefully at the type 31, balanced carbonium receiver. What grizzled brasspounder doesn't know it?

Valves at that time cost in the vicinity of £2, and there wasn't two bob in the camp.



Illustration by  
Jack Waring

A white clad figure . . . leaning  
in a headlong rush towards  
the wireless cabin.

It was while we were at the lowest ebb that the chief engineer stalked in and engaged the troops in airy conversation. The Chief was one of those old scouts who all along held the private opinion that the late war had been framed up against him personally. He had never forgiven the stroke of fortune that had dragged him out of retirement in a Leigh-On-Sea front garden and pitchforked him back amongst the whirling crankshafts down below the spiral staircase. That the big stink was over and won left him cold. He still read avidly every item of news dealing with the late enemy. He followed everything carefully. If the army of occupation on the Rhine moved a hundred yards east he knew it. If some olive branch waver advocated mercy, he snarled recriminations from the lower end of the saloon table. The Chief was a walking encyclopaedia of things of, by, for, and against the war. He was, however, an ardent devotee at the shrine of Marconi.

We led him delicately up to the subject of these marvellous valves with which, off the coast of Australia, one simply sat back and

copied press from England and America—touched sadly upon the dreadful isolation of a life at sea minus the comfort of news from the throbbing heart of the Empire, simply because we were cursed with a crystal receiver—and finally, while the going was good, we touched him for the price of a valve, and it worked.

Behold then the "Bulla," after clearing the tide rip at Port Phillip Heads, clearing the Durban, wallowing into the gloom of the Great Southern Circle.

The fame of the valve spread over the straits like a flood of golden light—every last man on board knew that in the cabin on the lower bridge there wireless blokes had a contraption up there that would do anything but talk. The Chief had been busy, even the "old man" poked a head in the door way and, with unwonted geniality quoth, "Well, plenty of news this trip." A new found dignity had been thrust upon us.

Somewhere in his adventurous past, before a slug of H.E. laid him low at Bullecourt, Big Bill had been connected with journalism.

# Journalism

By Brasso

## SEAS



From him emanated the big idea that made the greatest hit in history. Why not run a regular paper? In short order we commandeered the purser's typewriter and, with great zest, eased him of a quantity of stationery and carbons. Borrowing the name and deliberately infringing the copyright of a famous Sydney newspaper, we launched a new star in the journalistic firmament—the 'Bulla-teen'. It was accomplished without any flag-wagging.

In those days a benevolent Admiralty supplied wireless news per medium of a number of stations scattered throughout the middle and far East. Aden, Mauritius, Seychelles, Durban, Ceylon, Singapore, and Hongkong formed part of the far-flung

British Navy net which catered for ships in those waters. Others there were at regular intervals along the route from the Cape to London.

The first night out the valve more than did its stuff. In the midnight to four watch kept by me, Singapore and Awanui, N.Z. supplied a fair quota of press. Bill was up bright and early, licking the first editor into shape. The typewriter clicked merrily a couple of big sheets were filled and the inaugural issue of the "Bulla-teen" was released. One copy went to the "Old Man," one to the Chief Engineer, and the last one was shoved up on the hospital bulkhead for the firemen and tars. It went over big except for the messages wishing success to the new journal from the Governor-General and W. M. Hughes. The "Old Man" didn't like that too well. He said nothing, but he looked a lot.

During the rest of the day Bill sat frowningly before the typewriter, composing odd bits of shipboard news, to lighten things up a little, as he explained. Seeing his obviously intense desire to make the paper go over, I stifled my misgivings, though nursing the private feelings of one who treads upon the brink of a precipice. Next day's issue went well, the account of last night's "ball" on the boat deck being received silently. I may say that outside of a prowling cat there wasn't a female of any kind on board. This slight disability, however, Bill had overcome by the insertion of certain engineers' names under the ennobling title of Miss, Mrs., Mes-

dames, etc. A youth named Le Roy quite naturally came in for Mademoiselle, thus investing the hypothetical "ball" with an international significance. Well, the post war news from Singapore and Mauritius helped to put it over, but I judged it wiser to curtail my evening stroll along past the engineers' quarters. I somehow felt my welcome would be far from tropical. Big Bill treated the affair in characteristic fashion, waving my heated remonstrances aside with airy nonchalance, and bending his efforts to fresh onslaughts upon the realms of fiction. His explanation that a certain amount of journalistic licence was permissible left me quite cold.

That night I received from Singapore a joint obituary notice bracketing the name of Sir James Wallace, a British shipowner, with that of a renowned negro comedian named Al Billings. The "Bulla-teen" reported these two peaceful demises in the following fashion:—"London, 25th. Sir James Wallace and Al Billings departed for an unknown destination yesterday. Sir James will have pleasant company on his journey." This was accompanied by a vivid description of an entirely fictitious boxing match between the second and fourth officers, who had long been notoriously at loggerheads over an affair involving a certain blonde lady in a certain hostility. Breathing fire, the second officer sought the skipper. Breathing Nelson's blood the skipper sought the senior wireless operator. Persiflage was banded back and forth for some moments, after which, breathing destruction, the senior wireless operator sought the junior wireless operator and held converse in tones that were heard distinctly by the carpenter in his workshop 300 feet sternwards.

So that put an end to that sort of non-sense. Thereafter we stuck to press news written up without frills, and the entente cordiale was restored. The Chief revelled in his new found source of news, missing no opportunity of erupting from his cabin to wave the printed sheet and enter into violent argument with anyone foolish enough to tilt at him. And so things went as merrily as an Irish wake when, with dramatic suddenness, the accident happened. Bill blew the valve; how it was done has never been explained, but I have since reluctantly harbored a suspicion that he was surreptitiously trying out some dam-fool experiment.

Hell, there it was—ten days to go to Durban and no valve. What was to be done? I was for at once broadcasting the truth and getting it over. Not so Bill—he pictured the demoniacal joy of the engineers and others who had been maligned—he painted a dread canvas portraying luridly our fall from grace—of the Chief's disappointment. Weakly I fell. And so the press news continued, although we couldn't pick up a single station on the crystal. But what press news? Bill's mind went riot. Hour after hour he planned sensation after sensation, wielding a pen dipped deep into international intrigue and red ruin. Blithely he swept a large army of bearded Bolsheviks down upon the northern frontier of India. Here they waged war fiercely, only to be driven back whence they came. A strike in

the Commonwealth held the firemen and sailors spellbound for two days, when, to their unbounded disgust, it fizzled out. Aeroplanes were lost, famous statesmen were credited with utterances of the most astounding character, Germany was discredited again and again, to the great delight of the Chief, who was frequently overheard extolling his wisdom in paying for that marvellous valve.

Day followed day, each one bearing its quota of dreadful happenings duly reported in the "Bulla-teen." A war between Turkey and Bulgaria, almost involving the whole of the Balkans, was narrowly averted. The world breathed easier for twenty-four hours, only to be startled by some fearful thing in the vicinity of Japan. These events were discussed solemnly at the saloon table while, up above, Bill juggled fiendishly with the fate of Empires. The Chief predicted another war within three years, while the second officer took out his R.N.R. uniform and gave it a preliminary airing.

My feelings during this soul-stirring period can scarcely be described. In the beginning I tried hard to exercise a restraining influence upon my youthful junior. My idea had been to serve up commonplace tripe of a neutral character. Bill, while entirely agreeing with me, had his own ideas of what constituted commonplace tripe. Realising the utter futility of trying to curb his enthusiasm, I washed my hands of the whole business, wrapping myself in the stoical calm of an Indian awaiting the deathblow. I avoided the Chief like a pestilence, but he had a nasty habit of leaping upon me unawares, when he would inquire anxiously after the valve. I lied nobly. Fortunately, the interest formerly evinced by the others had waned.

So eventually we arrived at Durban, but I felt no elation, reflecting that little Daniel in the lion's coop had nothing on me. As was his wont, the Chief departed up town to the public library where it was his habit to spend a few pleasant hours sipping up the newspapers of the last few weeks. His return in the evening was heralded by a young riot. A white-clad figure bounded up the gangway like a gazelle, diving in a head-

long rush towards the wireless cabin, uttering inarticulate threats of vengeance.

He was met in the doorway by Big Bill, who eyed him with mild surprise. Soothingly, Bill chided him for his ingratitude—laboriously he explained that the news intercepted had come from official stations and intended only for navy ships. Could one reasonably expect a responsible newspaper to publish such revolutionary items? One could not. There would be world-wide unrest and distress. Open-mouthed, the Chief listened to this

high talk, accepting wonderingly that secret wave lengths had been tapped. His better sense told him it was bunk, but Bill had the persuasive manner of one who could kid a dog off a meat wagon. Finally, on an exact replica of the valve he had presented to us, the Chief was allowed to listen enraptured to his first broadcast, a gramophone record transmitted by a Durban amateur. We had purchased this valve up town that day, but he didn't know it.

### BRASSO

Every reader of "Radio" will remember Brasso, the hard-bitten brasspounder of the old school, who recounted many of his war-time adventures in that journal. Beginning as an operator on a transport, he saw service with the Mediterranean Merchant Marine fleet, was torpedoed several times, and had many other exciting experiences. This tale deals with an amusing episode in the days immediately after the war.

# I Assay TO BUILD RADIO

The average beginner's average experience with his radio-fan friends on building the average receiver for the first time. Told with more than average humor and observation.

I DECIDED to build a radio set. It was just like that—I decided. My wife had been talking about the Carraway-Smith's new set. It appeared that Smith had made it himself. Then the Fifewilsons had a set, and my wife had found out that Wilson had made it himself. There had been no trouble—all these two gentlemen whom I used to call my friends had done was to buy the "Wireless Weekly," look out the details of a set, buy the parts, and build it. Besides, my wife wanted to know, were we to sit at home every night without knowing what the outside world was doing? I said it was much better for our peace of mind that we didn't know what the outside world was doing. She said: "All right; have it your own way." So I decided to build a radio set.

Jamieson was his name. He was on the technical staff of a radio paper, and I knew him well enough to borrow money from. He said: "YOU'RE going to build a set?" as though it was as impossible as it was unbelievable. I said, "I am going to try. I thought you might give me a little advice." That is what all these radio cranks are waiting for you to say to them. You ask them for advice, and they turn it on. Jamieson talked for three-quarters of an hour on the merits of the various sets. I said "Yes"

Lash advice.



and "Quite so" at intervals, just to be polite. I woke up from an orgy of head-nodding to hear him say, "So you can see, there is no doubt about what set you should build to begin with." I said, "Yes, what is the name of it?" He said, "Good heavens! haven't I been drumming it into your head for the last half-hour?" I said, "I was so interested in your theories that I forgot the name of your set," and he became mollified, and told me that the set he had chosen for me was the Marco Four, and that he would bring me in a "Wireless Weekly" write-up of the circuit tomorrow, and make out a list of the parts.

So I went to see him to-morrow, and he produced the "Wireless Weekly," and a typed list of the parts necessary, showing me where to get them, and what to ask for. He said, "We'd better go through this first, and I'll explain what the parts are for." I said, "Yes,

and you'd better explain where they all go, because I don't know a condenser from a separator." He opened the "Wireless Weekly," and pointed to something faintly resembling a cobweb.

"That," he said, "is the circuit diagram. Here's your aerial; there's your earth; and your coils come in here. These are your fixed condensers, and these things here with the arrow through them are your variable condensers. Your valves are here, 'n' y'r first stage of audio-frequency is here, 'n' y'r second stage here. Those things there are transformers, 'n' you see that wiggly line, with a dart facing it? That's the symbol for rheostats. So there you are—it's quite easy; but a lot of people get mixed up about their valves. This is the valve here"—he indicated a circle in which there were several strange lines and blots—"here's your grid, that goes on to your transformer, 'n' this is the plate lead, 'n' these are the filaments. 'Seasy 'nough to remember—your plate is always opposite the grid—see?"

I said, "Yes, I see, but haven't you any simpler way of showing where the things go?" He sniffed, and turned over the page.

"This'll show you where to put your parts," he said, "You can't make any mistake with a wiring diagram, but you won't learn anything."

I said, "Oh, I don't want to learn anything—I only want to build a radio set." Jamieson sighed, as for the damned; and we went through the list of parts. We had an argument, Jamieson said it didn't matter whether condenser plates were white or yellow, and I insisted I had read somewhere that yellow condenser plates provoked static. Jamieson became quite annoyed, and began to explain at length, and with the kind of utterance one might use to a calf or a child of three, exactly why white or yellow condenser plates were all the same. So I broke in at the earliest opportunity, and said that I supposed I meant battery plates.

Jamieson said that battery plates were neither white nor yellow, and why the hell didn't I make sure what I was talking about before I opened my mouth. Very humbly, I picked up the list of necessities, and Jamieson's copy of "Wireless Weekly," and went out to buy parts, Jamieson yelling after me that he'd drop over to-night and put me in the right track. They have good hearts, these wireless cranks, but they don't like to be contradicted.

When I arrived home that night I had a suitcase full of everything, and an eliminator and an A battery and charger were to arrive to-morrow. I undid all the parcels before dinner, and I began to read the article on the Marco Four at the dinner table. It seemed very interesting, but I wanted to build the Marco Four, so I left off reading the article, and studied the wiring diagram. You can't beat a wiring diagram. It has the shapes of the different parts, so you can easily identify them, and it shows where they should go and how they should be joined up. I said to my wife, "There is nothing like being methodical in all things. I shall arrange all this junk on the baseboard before I screw anything down."

So, following out the wiring diagram, I ruled out lines on the baseboard and placed

my valve sockets neatly in position and put my transformers where they should go, and made allowance for my battery strip and grid-leads and fixed condensers. When all these things were in order, I put pencil marks round them, so I could replace them if they moved, and began to screw them down to the baseboard.

I had just completed these operations when



I study the circuit.

Jamieson came in. He said, "Oh! you've started already," just as anyone else might say, "Oh! making mistakes already." I said, "Yes; what do you think of it?" Jamieson peered at it where it lay on the table. "Humph!" he said, "I don't like the position of those transformers, and those valve sockets are too near the panel. Besides, your valve sockets aren't turned the right way."

I said, "Will I have to take it to pieces again?" He said, "Well, it will work all right as it is, but" (they all have the habit of saying it will work all right as it is, but), and then he saw the pencil marks on the baseboard. "What on earth's this?" he exclaimed. "Only the marks I made to plot out the positions of parts," I answered. He said, "Good heavens! do you want the thing to work. Don't you know that graphite on a baseboard leads to short circuits? You'll have to unscrew all those parts, and rub the marks off with emery paper."

I did not expostulate. I unscrewed all the parts, and rubbed off the pencil marks with emery paper. When I had done this, Jamieson arranged everything for me. "There," he said, "is an ideal arrangement. You will find that your leads will be as short as possible. Just screw it down as it is now, and wire according to the diagram. I said: "Do I have to solder anything? That's about the only thing I'm worrying about." "Soldering's quite easy," he said. "All you have to do is, shove your iron. Once your iron is properly soldered you can't go wrong. But, mind you,

# A RECEIVER

By GEOFFRY RALSTON

don't make dry or insulated joints. Give every wire a sharp tug when you have soldered it." He then explained that he had to pick his wife up at the pictures, and left me to my own devices. I screwed down the set as he had laid it out, and, feeling thoroughly exhausted, went to bed.

The next evening the Carraway-Smiths came in, and while Elsie Smith was gibbering (and how she CAN gibber) away to my wife, I took Smith to have a look at my set. "Hem!" said Smith, "Marco Four. That's a new way of laying out the valves, isn't it?" I mentioned that Jamieson had done the laying out. "Oh, Jamieson!" said Smith, carelessly. "I suppose he knows what he's doing, but—" I said, "Whats' wrong with it?" Smith said, "Nothing at all. It will work all right, but—" (they all say that). Then he bent down and peered at the baseboard. "What on earth's this?" he exclaimed. "Why, you haven't insulated your baseboard! You'll never get results if you don't insulate your baseboard. Stove polish is best. You take my advice, and insulate your baseboard with stove polish; it will make all the difference."

The next day I bought a tin of stove polish, and on my way home dropped in on a friend in the 2BL control room—Tom Innes. He said, "YOU'RE going to make a set! Good heavens!"

"What's biting you?" I asked. "I've almost made it. A wonderful circuit" (you see, I was mastering the lingo) "three condensers, four rheostats, and one of those push-pull things." "Push-pull!" he said. "My dear boy, you couldn't have done better!" The man posi-

I found Chas. Youngson downstairs, talking to Eric Bessemer. I told them I was making a radio set. When the levity had subsided, I told them I was quite sure of everything but the soldering. I said I wasn't quite sure whether I would be able to solder the connections properly. They sang in chorus, "All you have to do is, silver your iron." "Once your iron is properly silvered," said Mr. Bessemer, solus, "you can't go wrong." "But, mind you, don't make dry or insulated joints," said Mr. Youngson. "Give every wire a sharp tug when you have soldered it," they sang in chorus again, and as I left hurriedly in the

*I say a few words.*



lift I heard the old refrain, "All you have to do is, silver your iron . . ."

When I arrived home I unscrewed all the parts from the baseboard, and covered it with stove polish. Then, for the second time, I rescrewed the valve sockets, and the battery strip and the coils and the transformers. "Now," I said to myself, "I shall be able to get on with the soldering. I took the set into the kitchen, and heated up my iron on the kitchen stove. I obeyed instructions. I plastered resin-cored solder over the tip of my soldering iron till it was absolutely coated. With the silvered iron I approached the set. All the wiring was in readiness. All I had to do was solder the joints. I squeezed a drop of solder on to the iron, and held it over the first joint. Then I tilted the iron slightly, and the solder dropped neatly in its destined place—and rolled off on to the baseboard. I tried a second time. The same thing happened. I tried a third time, but the iron was cold. I put it back on the gas ring, and examined the joint.

It was caked with resin, which I had to scrape off. This completed, I tried again. This time I succeeded in getting the solder to stay there, but when I gave the wire a sharp tug the solder flew up into my eye, and I dropped the iron and said a few words.

That night I used up two sticks of resin-cored solder, and had three joints and a burnt finger to show for it. Also, my wife was most unpleasant in the morning about



*I fancied Jamieson was sneering slightly.*

some solder she had found under the gas-ring. I was to be more careful next time. I brought home four sticks of resin next time, and was more careful. Gradually I became more expert, although most of the joints on my set resemble Figure 1 on this page.

I shall cut a long story short, and sidestep the harrowing details of how I constructed my panel, and broke three pieces of bakelite, and made the wrong connections to my condensers. I was journeying home one evening with a loud-speaker under one arm and four valves and a pound of sausages under the other, when I saw Jamieson. I said, "Come home with me; I'm trying out my set to-night." He accepted my kind invitation, and we were soon—making allowances for the slowness of tramcars and the distance of my place from the nearest tram stop—standing in front of my completed set. I pushed in the valves, adjusted the loud-speaker, called my wife into the room, and breathed a prayer.

Then I pulled on the switch and adjusted the dials. Nothing happened. No music. No soprano. No race results. No oscillation. Nothing. I looked at Jamieson. I fancied he was sneering slightly, and I could have cut his throat. My wife said, "Won't it work, Geoffrey?" I said, "No, dear. This is the stations' silent hour. Beautiful, isn't it?" And some more in the same withering strain.

Jamieson said, "I might have known you'd make a mistake somewhere. I should have looked at it beforehand. Let me see." Then began a searching examination. He inspected the valves. He tested the soldering. He ran through all the connections, from the transformers to the batteries. He moved the set. He changed the wires on the loud-speaker. And then he scratched his head and said, "I don't know. Everything seems all right. It must be a radio freak." My wife looked at the set. "If it's all right," she said, "why can't I hear 2BL or 2FC?" "My dear Mrs. Ralston!" said Jamieson. "You don't understand these things, my dear!" I said. But she was not to be silenced. "Are all your connections made?" she persisted. "How about the batteries?" I had a brain-wave. I stooped and turned on the switch for the eliminator. The set squealed and squawked immediately, and we had logged 2FC and 2BL in no time.

Since then we have had no bother. I am just drawing out the plans of a new short-wave receiver. It will startle the world. Jamieson and I have agreed to name it the JAMMYROLLS, as we are now co-operating in radio research, and are thinking of joining the Proving Radio Club.



Fig. 1.

tively effused. "You can't possibly beat a stage of push-pull amplification. It's—" "Push-pull amplification nothing," I said, "I'm trying to tell you about my push-pull switch. I have a push-pull switch because I don't like those up-and-down switches. They don't look so well, don't you think so?"

"Geoffrey," he said, speaking very coldly, and in tones that cut like a blunt tomahawk, "I was just preparing to congratulate you on your wisdom in choosing a stage of push-pull amplification. I was about to explain the nature of push-pull amplification, with illustrations of its effectiveness on my own set. And you talk about switches." He did not weep, because control operators are past weeping or weeping for. He pointed to the door. "Begone, or murder will commence."

# Handling Sound before TRANSMISSION

By RAY ALLSOP

(Associate Technical Editor)  
Mr. Allsop, who is also Chief  
Engineer of 2BL, continues his  
series on Broadcasting.

WHEN material is picked up at a point remote from the broadcasting station, care must be used to avoid distortion in getting it to the station. When, as is usually the case, the point where the material is given and the broadcasting station are in the same city, it is generally possible to get suitable telephone cable circuits between the two points.

By the use of corrective distortion networks or "Attenuation equalisers" with such circuits, uniform transmission efficiency over the desired frequency range can be obtained even though the circuits themselves may have considerable distortion. With these equalisers it is possible to equalise such circuits so that the variations of efficiency over the frequency range from the average value are less than one transmission unit.

The high quality microphones which are used to pick up the material to be broadcast have energy outputs which are so low as to require amplification before they are transmitted to the broadcasting station's control room in order to over-ride extraneous noises which may be encountered. Such amplifiers, in addition to having uniform efficiency for a broad frequency range, must also be capable of giving a large range of amplification and of handling without distortion a wide range of power in order to take account of the variations in the volume of sounds which are impressed upon the microphone.

In picking up speeches, for example, different amplifications may be required for the different loudness of the voices of the speakers. In making a speech, an orator often intentionally changes the loudness of his voice for emphasis. The amplification must be such as to permit low parts to be heard satisfactorily, and also the amplifier must be capable of handling the loud parts without overloading. The amplification can be reduced for the loud parts to reduce the power handled, but the power output cannot be kept constant without spoiling entirely the emphasis effects desired by the speaker. In music, the volume of sound varies frequently, and over a large range.

Considering this matter from the standpoint of the operator of a radio receiving set, it is desired first that when the volume of the original sound is at its low point the reproduced sound should be loud enough to over-ride static and other radio frequency interference incidental noises in his set and room noises at his set. With this condition satisfactorily met, it is desired that the receiving set be capable of handling the maximum volumes of sound without overloading. The sets now available are capable of handling great amount of volume. The circuits used between the point where the material is picked up and the broadcasting station impose restrictions on this volume range. The lower limit to the power placed upon such circuits is set by the extraneous noise which may exist upon them, due to induction from other circuits. The upper limit to the power on the circuit is determined by two factors—one, the capacity of the amplifiers which may be used, and the other the interference which this circuit would cause in other telephone circuits which are in the same cables with it.

As it is desirable to have the volume control at one point, this takes place at the control room, wherein is situated the intermediate amplifier between the incoming line from the pickup point and the outgoing line to the broadcasting transmitter. Some of this control could be exercised at other points in the system, but it is obviously desirable to have it all take place at one point and keep the rest of the system fixed. For this purpose the amplifier in the control room is equipped with a means for giving a quickly adjustable amplification. To make these adjustments correctly, it is necessary for the operator of the amplifier to know what power is being delivered by it. Use is made here of the "volume indicator," which is bridged across the output of the amplifier, and the amplification of the volume indicator varied by means of a potentiometer until a standard deflection is obtained. The amplification required to get this deflection is then a measure of the output of the amplifier. This is supplemented by a monitoring head set or loud speaker bridged across the circuit at the same point. By the aid of these, the operator can check the operation of the microphone line and amplifiers, and keep the volume of electrical power delivered to the broadcasting station between certain prescribed limits which are far enough apart to give suitable expression to the music or speech. When the sounds striking the microphone become too loud, the gain of the control amplifier is reduced, and when these sounds become too low the amplification is slightly increased, these changes being made gradually in order to avoid noticeable abrupt shifts in volume. The limits between which the electrical power is kept are those which have been found experimentally to avoid overloading any part of the broadcasting system, and to keep above any extraneous noises in the system.

This adjustment of the gain of the control amplifier to keep the power delivered to the broadcasting transmitter within certain prescribed limits is required also when the pickup of the broadcasting material is in the studio.

In the broadcasting station the incoming sounds from the control amplifier are generally amplified before being used to modulate the radio-frequency carrier wave. In this apparatus the frequency and volume requirements also apply. The amplification obtained in this part of the system should generally be fixed, and all necessary adjustments during operation made in the control room amplifier. With a fixed setting of the radio transmitter, it is important to determine the maximum power which can be introduced into it without causing noticeable overloading. To do this there are required a means for indicating power, a high quality radio receiving set, a high quality loud speaker, and a high quality amplifier for operating it, and some skilled observers. With the loud speaker, first determine for speech and several kinds of music the maximum power which can be delivered by the microphone before overloading is detected. Then, with the amplifier connected to the radio transmitter, and with the receiving set and loud speaker, determine what power input into the radio transmitter causes overloading. If this is less than has been previously determined as the overloading point of the microphone and control amplifiers, the overloading is in the radio transmitter. The equipment should then be operated so that the power delivered to the radio transmitter never exceeds this amount.

# People in the Programmes

## The "Hello Man"

WITH radio announcers, the style is the man. Anyone can change his voice, and may contrive to disguise his nature for ten minutes over the air; but for him who speaks to variations of a hundred thousand people, every day of the week, year by year, it is impossible.

Therefore, when you have listened-in to a single station at a set time for a certain period, and heard the same announcer day after day, you feel that you could write a tolerably just essay on his soul, if you consider he has one, or on his morals, or on his digestion, or on the state of his liver, or on the amount of his attainments. Many listeners feel thus; but they strike horrible snags when they leave the realms of abstract mental and moral speculation, and attempt to envisage an announcer's appearance.

To some people, Mr. Cochrane's voice has made him a bright young man, with a wild taste in bow ties, and Oxford bags. To others, it conveys impressions of a beard, and contented rotundity; while to others still it brings thoughts of a clean-shaven, lean, esthetic face, and deep, burning eyes, weary with untiring searches into the destiny of—English rubber and the state of the Egg Market. Which only proves that several men may blow where only one announced before; and doesn't alter our original contention that, with radio announcers, the style is the man.

Rafael Sabatini says of one of his characters that he was "born with the gift of laughter, and a sense that the world was mad." Now, Mr. Cochrane is almost the opposite to that. Mr. Cochrane was born with a sense of the fundamental justice and respectability of things; and a gift of being able to express this sense to New South Wales listeners-in. When Mr. Cochrane opens up the 2FC morning session, and reads the weather reports, one instantly detects this quality. If the weather is fine, the

farmers out in the arid West can detect a note of sympathy in his voice, while the metropolitan parasites notice at the same time a kind of geniality; and vice versa when the weather is wet; but in all cases the voice makes it perfectly plain that 2FC is not responsible for the weather, being merely, as it were, an Instrument of Fate and Mr. Mares—both extremely just and respectable beings.

It is the same with the day's news. News read by Mr. Cochrane, becomes wholly believable. If Mr. Cochrane confirms an over-night rumor that someone has committed a murder, then, although his voice may not show complete approval of the crime, one

can be certain that a murder has been committed. If he were to announce that the moon had left her orbit and would clash with the earth in ten minutes, one would feel sure that this would happen, and that confirmatory reports of the catastrophe would be transmitted, as received, later in the day. It is the same with shipping and market reports—they are always to be heard at the right time, and they are always correct. Ships have been known to burn their bunkers rather than disappoint Mr. Cochrane.

This meticulous care characterises all Mr. Cochrane's announcing. He submerges his individuality in it, and speaks impersonally for the station. Thousands of people depend on his announcements for their news and information, and they know that these will be on time, and will be absolutely reliable. He has nearly five years' reputation to keep up.

Mr. Cochrane is tall; and not very stout. In the street you would notice his height, and his moustache. He is always immaculately dressed; and he always wears a narrow strip of white between the edge of his waistcoat and his shirt. His ties combine brightness with respectability; so does the edge of handkerchief which hovers above his coat pocket. His bearing is that of a soldier; and you might accuse him of austerity until you saw him smile; besides, we think he is a little shy with strangers. If you wish to overcome that shyness, talk to him of his Children's Session.

For his daily routine work, he answers to the Cochrane conscience; but for his Children's Session he answers to the Cochrane heart. It is the last of life for which the first was made. It is the Minuet in the busy day's Sonata. We like "Minuet." It has the characteristics of Mr. Cochrane's Children's Session—dignity combined with grace, gaiety, and infinite charm. It cannot possibly commence without the Chimes, at the playing of which nearly five years' practice have made Mr. Cochrane most expert. Then there are the Nursery Rhymes; and then, possibly, Mr. Cochrane will give a reading from some very interesting book, which discourses morality in terms of the farmyard. And behold! if there is a pig in the story, Mr. Cochrane finds a grunt for it; or a despairing cluck for a hen, or a quack for a duck—he is equal to the whole farmyard; and if some of the noises don't seem very convincing, well, they are sanctioned by five years' tradition. Then, perhaps, Mr. Cochrane will sing to the accompaniment of the mechanical piano; then give the birthday calls—it all depends on the convention governing the special night



of the week. For instance, we believe that if the "Hello Man" were to omit Christopher Robin's Prayer on Saturday night, he would receive many letters reminding him about it on Monday. Some of his young listeners have written to him once a week since the inception of the session; and he feels bound to keep faith; so, for his part, he has not missed one evening in five years. He says:

"Some people imagine that conducting a Children's Hour must become monotonous and wearisome. They do not see the living workings. The affection of thousands of children is not to be lightly regarded. I have always aimed at sincerity, and to give children credit for being able to understand me. Children are wiser than many people think they are. When I was twelve, in this country, I had my own rifle, and I managed it as well as any adult, because people trusted in my discretion; that is why I like to meet children at their level—it is a pretty intelligent one."

Of announcing he says: "Broadcasting has changed considerably during five years. In the early days, it was the custom to broadcast items at fifteen-minute intervals; wags between items not being considered; but as time went on, we recognised that delays were very exasperating to listeners, and that speed was essential in conducting programmes. Announcing is an arduous business; but it is not monotonous. No two days are quite the same. The work is varied and interesting; and is made more so by the indulgence and kind encouragement of listeners generally. I would like to thank listeners for their wonderful consideration, shown at all times. Their appreciation has been greatly instrumental in bringing nearer the high standard towards which the station is aimed."



A. S. Cochrane here you see. Smiling most agreeably—Smiling, with an elfin glee. To think that he CAN smile.

# Wireless Weekly

Incorporating "Radio in Australia and New Zealand."

FRIDAY, APRIL 26, 1929.

## The Melbourne Radio Festival

### Radio Exhibition

**W**TH receiving conditions in a better state than ever before in the history of broadcasting, radio is making ready for its sixth season.

It has been a period of unusual progress and development. From not more than two or three hundred early listeners has grown in that time the million which is to-day's modest estimate of the broadcasting public in Australia. What other public interest, what other industry has shown such progress? Radio is triumphant; it has left all other modern developments behind; automobile engineering, electrical engineering, and even aviation fail to show such an extraordinary growth in such a short time.

But perhaps it is not so extraordinary after all. The world was waiting for wireless; it had to come. If Marconi had not been born it would have been necessary to invent him, so that he, in turn, could invent a method of utilising the phenomena of his predecessors.

His original receiving set has been changed out of all recognition, method, and principle, and it is in this intensive field of research that we owe most to those members of the general public of a few years ago, who found a fascination in wireless experimentation.

While receivers have reached a high degree of perfection, the quality of the broadcasting stations, too, has passed through a stage of development. Early broadcasting stations were usually of low power, and the quality poor. However, the last few years have seen the erection of super-powered broadcasting plants and 200 per cent. increase in the quality of the entertainment. Programmes also have improved. On radio's first season the entertainment from stations was made up entirely of phonographic reproductions. To-day broadcasting stations have the country's best-known talent available.

1929 progress will be reflected in this year's Radio Exhibition. Public interest in each year's development and improvement is remarkably keen, and this year will be no exception. It is certain that no other industry has found such an important position in the lives of the people of Australia.

**M**ELBOURNE radio enthusiasts are having another exhibition of receiving sets. It is not the first, but the organisers aimed at making it the "best ever." The number and quality of exhibits justifies the claim. Looking back three or four years ago, and recalling the character of the exhibited receivers, one readily admits that radio has progressed wonderfully. Then there were many varieties of weird and fearsome sets, bulky in size, decorated with knobs, switches, and other gadgets on the front or top of the containing cabinets. The quality of reproduction, judged by present-day standards, was not high grade, but we thought it very satisfying. We did not complain either of the numerous things one had to do in tuning in a station.

The batteries were not much in quality in appearance, and their habit of failing at most inopportune moments was exasperating. The amateurs had a lot to do with the design and display of the listening equipments in those days, and their methods were highly satisfactory. Later on, when the radio industry became more commercially stabilised and the effect of intense research and commercial activity in America and Europe became to be felt, the appearance and design of sets again changed.

Now we have advanced a long way on the road of progress, and left behind the days when we used to say broadcasting was in its infancy. A great deal more is known of the underlying principles of receiver design, and it is seldom that any new set or circuit is developed except as the result of much experimentation, and continued tests of ideas worked out on definite theoretical principles.

But what is the purpose at the back of these exhibitions, and what lessons do they teach? Primarily it is to allow broadcast listeners—existing devotees and prospective enthusiasts (if indeed there be any still doubting)—to see what is the latest in receivers. The information may annoy some

people, who will conclude that it is necessary to change their sets, but it is always good to change if it is to be an improvement.

The exhibition will also provide an opportunity for inquiry regarding the maintenance and operation of sets. Listeners will be able to discuss their problems with traders' service men experienced in the operation and maintenance of sets.

Listeners will also have an opportunity of having a peep behind the scenes. Most people still have a crude idea of the modus operandi of the studio, and what happens in the control room. With the 3LO studio temporarily erected at the exhibition a better knowledge will be gained of what takes place. A pity it is that some listeners could not be given a close-up of the difficult, varied, and continuous work which the programme directors have to perform long before the programme is ready for the studio. They probably there would be a better understanding of the position, and a lessened desire to criticise and complain.

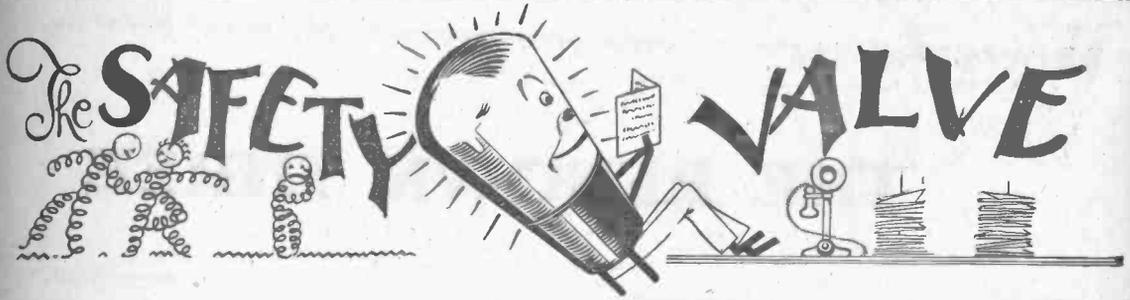
### A "Lilac Time" Singer

**VICTORIAN** listeners have not been slow to appreciate the fine bass-baritone voice of Moran Hilford, who is at present delighting audiences to 3LO with his well-rendered numbers. Mr. Hilford, who is well known throughout Australia (particularly Brisbane) as a radio vocalist, is equally well known for his fine performances with the Gilbert and Sullivan Opera Company, "The Chocolate Soldier," "Lilac Time," and many other musical productions. He is possessed of a remarkable range of voice, which has enabled him in an emergency to fill a bass role, and to deputise for the leading tenor. However, for his radio programmes Mr. Hilford intends to pin his faith to some of the fine old bass songs that have stood the test of time and can still hold their own against "all-comers."

### Selling the Old Set

No. 2





**Lack of Humor**

Dear Sir,—If I had been told beforehand that my humorous comments on well-known 2FC identities (in a previous issue) would be interpreted as “complaints” against them, I would not have believed it. Yet this is what has actually happened, as is proved by a person signing himself “Contented Listener.”

If either of 2FC’s excellent announcers chanced to see my little par. they would have enjoyed the bit of fun, as they are both blessed with that priceless possession—a sense of humor. “Contented Listener” is, of course, without one, which is a pity. Still, 2FC, covering such a wide range of subjects as they do, may possibly broadcast an educative talk on “How to Acquire a Sense of Humor.” Our contented friend should watch future announcements as to same.

A well-known Sydney “Weekly” conducted a competition last year for the best Australian novel. The judges found that the quality which was lacking in most of the 500 odd novels was humor. I can quite believe it—Yours, etc., G.D.S.

Greenwich.

**Every Day—or Minute**

Dear Sir,—After reading the number of letters in your “Safety Valve” page it brings home the old saying, “they are born every day.” We Australians know it, but why wake the outside world up to the fact that we have so many brainless wonders? Don’t like church, don’t like music, cut out horse racing, sack the announcers, alter the children’s hour, etc.! What do they want? I think I know, but at their stage of life it wouldn’t have much effect. However, let us see if a programme could be arranged to suit those disoriented few.

First item, a grizzling and winging solo by Fed-up 2; a song, “Sunday Means Nothing to Us,” by the Cookoo Club. A gamble in the grass, by the Gympie goat. Omega could render a good imitation of the braying of an ass. Finish up with an overture on the rattle.

In conclusion, I would suggest that you cut out the grizzlers, and let them make a noise in the wastepaper basket, or else alter that Safety Valve to a Children’s page.—Yours, etc.,

Dr. Hinghurst.

ROGER.

**Not Getting Fair Share**

Dear Sir,—I noticed a letter in the “Safety Valve” page of this week’s “Wireless Weekly” by “Fed-up” in reference to the church services that are broadcast by the “A” class stations—2BL and 2FC. I beg to differ with him. He states we get too much religion on a Sunday, and says one “A” class only ought to broadcast a service. I am of the opinion that religion is not getting a fair share in the programmes of 2BL and 2FC at the present time. If only one station was to have a ser-

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

vice broadcast on Sundays it would not be satisfactory, as each station fades and distorts in certain districts. If one station does discontinue the Sunday service, we ought to get a religious talk on a week night to compensate for the Sunday. Religion ought to get as much time as sporting does.

4QG is the fairest station of the lot in trying to suit everyone. On a number of week nights they will give a religious talk for a few minutes, which, I say, is to their credit. 2BL and 2FC, I will say, choose some fine preachers on a Sunday, but we do not want to lose any of them. I heard it said, “Why don’t the Churches get a station of their own, as in America?” But in U.S.A. there is no license fee. But here, while we pay 24/ a year, the church people are entitled to more religion on Sunday, and not less, as stated by Fed-up. We have six other days in the week for other music.—Yours, etc., Hamilton. MOSES.

**Radio Fan Spirit**

Dear Sir,—My request for two numbers of “Wireless Weekly,” which you kindly inserted in your valuable paper, brought so many replies that it would take me a week to reply to all. The response was overwhelming, so I would be obliged if you would thank them for me through the medium of your paper. I did not think so many people would be concerned with my little troubles. I have made some valuable radio friends, and have been awakened to the fact that there is a strong feeling of brotherhood amongst “Wireless Weekly” readers. Several readers even came to my house, and not only offered me the required books, but also any assistance they could give me. I think this is a beautiful spirit, and I thank you sincerely for what you have done, and wish you every success.—Yours, etc., Adamstown, Newcastle. S. A. GREENE.

**Golden Voice**

Dear Sir,—I crave for space to express my feelings of appreciation of a young singer whom I heard on the air in 2BL’s children’s session last Sunday (April 7), singing “My Task.” I have heard many famous singers singing various songs over the air, but none to equal the golden notes of Cousin Gwen, of 2BL’s Children’s session, and steps should be taken to assist and bring her more before the public during the evening sessions, or perhaps let us hear her in public, as the talent and the gift of singing is there. I ask all to listen in to children’s sessions, and hear this golden voice, and also ask 2BL to let us hear her in the evening sessions, and ask readers to request “My Task” and judge for themselves.—Yours, etc.,

Alexandria.

J. J. S. PADIKORI.

**Question of Speed**

Dear Sir,—Not often am I moved to ire by the insensate vapourings of misguided and misinformed radio announcers, and others, but the last straw has been laid on the donkey’s back by the programmes now being cast upon the air. I have spent some hours of diligent brain exertion endeavoring to produce a statistical graph to represent the bed-time story inflicted upon us by Mr. Lawrence Halbert, from 2FC on Saturday night, and find that his ideas and conception of the relative values of time, distance, and movement are so distorted that a scientific ocular proof is beyond production.

It is very annoying to find, by deduction from his statements, that a child of Red Riding Hood’s tender years was able to excel by decimal 596 yards per second the speed of the greyhound pursuing the fox terrier at the Stadium (vide 2BL’s description) the same evening; or that the time specified for her journey homeward via Prince’s Highway was sufficient not only to deposit her on the parental threshold, but to place her exactly one hundred and twenty-five thousand metres beyond the Broken Hill railway station!

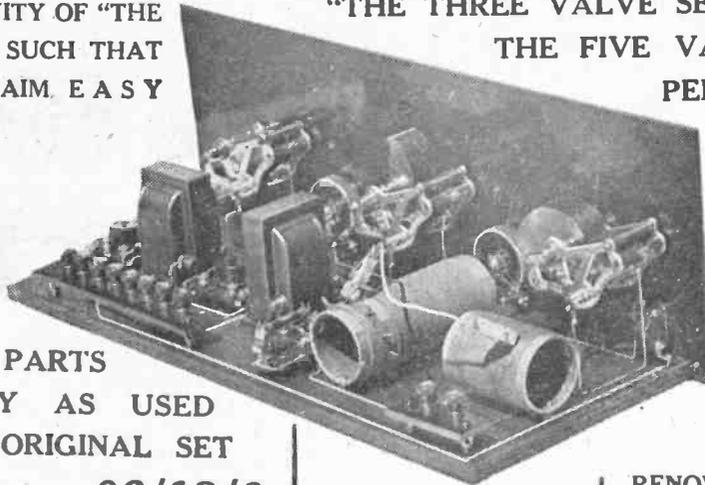
These, sir, are problems not easily solved, and when one realises, after weary hours of mental storm, that the hypothesis is faulty, one is forced to the conclusion that it would be far better to delegate the duties of programme formulation and announcers to such conscientious and intelligent persons as your correspondents, “Fed-up 1” and “Fed-up 2,” and M. Oliver, or any other humbugging semi-imbecile who imagines the world is run especially for their benefit.

Why, sir, I ask? Why should we pay a license fee amounting to almost threepence per week, and still be denied the right of monopolising the air? In this free land, let us assert our rights, and when the programmes are not to our individual liking, declare such stations black, withdraw the plug, and sit back on our haunches, as did our ancestors ten thousand years ago, and enjoy the dreamy solitude of our own camp fire.—Yours, etc., Coraki. “MUSTARD.”

# EVERYBODY'S BUILDING —THE RENOWN THREE

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- Sub-panel Brackets, pair . . . . . 3/6
- Radlokes Standard Screening Boxes . . . . . 15/-
- Radlokes 1929 Neutrodyne Coil Kit . . . . . 1/12/6
- Radlokes Neutralising Condensers . . . . . 4/9
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- 30 ohm. Rheostats, Pilot . . . . . 3/6
- Battery Switches, Imperia Toggle . . . . . 1/-
- Ferranti AF4 Audio Transformers . . . . . 1/15/-
- Ferranti OP1 Output Transformer . . . . . 2/12/-
- Single Circuit Jacks, B.M.S. . . . . 1/7
- Wireless .0003 Fixed Condenser . . . . . 1/8
- IMF Fixed Condensers . . . . . 4/9

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Modernising one of the most popular and efficient circuits ever designed in order to give better results. The fruit of recent research and design is incorporated in this article.

By DON B. KNOCK (Associate Technical Editor)

EVERYBODY who has graduated through the era of wireless broadcasting has a favorite receiver or proved capability. One of the good old circuits often spoken of affectionately in this sense is the neutrodyne. In the form in which it was finally presented (five valves with its two neutralised radio frequency amplifiers, detector, and two audio amplifiers) it has never waned in popularity, despite the development of more modern ultra-sensitive single-control receivers. Provided the neutrodyne is built with a high quality audio amplifier, and the right valves are used, it is to-day one of the best long-distance circuits which combines distance and selectivity with total quality.

It was said in the days of its inception that one needed three arms to tune the neutrodyne, and it indeed seemed a formidable business to one who had been accustomed to handling one of the old-tuned anode or PA arrangements. Fortunately much more has been learnt about tuning receivers since then, and the average operator knows (or at least it is hoped so) exactly what is happening behind the panel when he starts to twist his dials. If any information is required on tuning a receiver the article in the issue of "Wireless Weekly" for the week preceding this makes it clear in a brief manner.

We find that a surprising number of "Information Service" correspondents are neutrodyne owners. All are enthusiastic about it, and many, after trying out some new circuit with screen-grid R.F. amplifiers, seem a little confused in the idea of screen-grid valves, and revert to their original neutrodyne, which they have learned to understand. If it suits them better, everything is in order, but at the same time, as I have explained countless times, the advantages of the screen-grid valve are manifold. In a word or two, it means that using these valves in an R.F. amplifier the troubles often encountered with neutralised R.F. amplifiers are gone, and R.F. amplification to an extremely high degree is possible.

Nevertheless, the application of the screen-grid valve needs thoroughly understanding before the tyro starts in to incorporate them in a set. A properly neutralised R.F. amplifier,

using the correct valves, is capable of a really remarkable performance, not a great deal short of the S.G. valve, but with the ordinary baseboard type of neutrodyne as hitherto known, the best is not being obtained from the R.F. amplifiers, even though the results obtained may be very good.

Looking over the neutrodyne, an idea was

born, which was simply to redesign it in a more modern form, with suitable inductances, total metallic screening, and a metal chassis to simplify the wiring. One or two brother engineers asked me why I did not design the set for screen-grid R.F. amplifiers, as I have been such an advocate (and still am) of these valves. My answer to this was that the title neutrodyne could not very well be applied to the receiver in such a case, as although one may provide for the usual neutralising capacity in a circuit using S.G. valves, if the constants are correct and the circuit properly balanced, provision for neutralisation would be superfluous and only defeating the claimed object of the screen-grid valves.

The 1929 Neutrodyne, then, is NOT built around screen-grid valves, so that those readers who are afraid of them may tackle this job in peace of mind and with the certainty of very excellent results. But the 1929 neutrodyne is screened, which factor, with other considerations, makes all the difference between the old and the new.

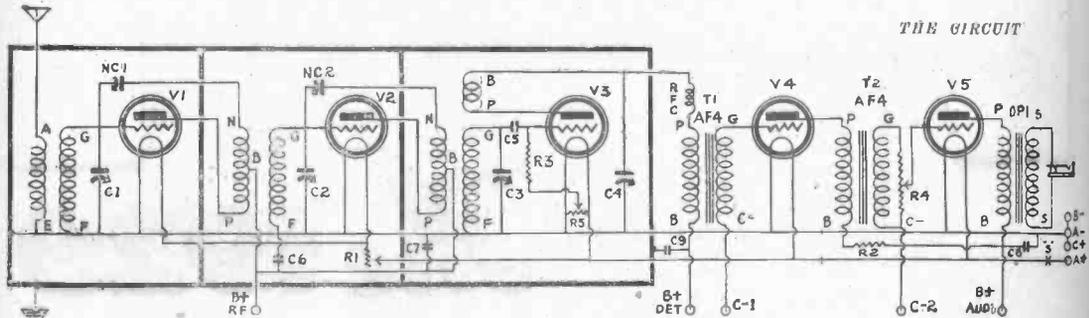
There are quite a number of new features in this modern receiver in the way of admirably suited components, but before starting on the description of the set itself I wish to say a few words, really covering old ground for "Wireless Weekly" readers, on the neutrodyne, or rather neutralisation. First it should be remembered that if a receiver of the neutralised type is not properly adjusted it may very easily be far less efficient than one in which neutralisation is not employed. The most obvious indication of incorrect adjustment of the neutralising device is self-oscillation in the R.F. circuits. As the frequency is increased this oscillation becomes more pronounced, and will cause a strong squeal or howl as the dials are tuned to receive some station. Satisfactory reception is out of the question under such circumstances, and one other unfortunate occurrence is that the receiving aerial will radiate strong oscillations, which will interfere seriously with other listeners in the neighborhood.

Correct adjustment will prevent such oscillations, and the proper setting for complete neutralisation must first be determined before it is possible to get anything like the

#### LIST OF PARTS FOR THE 1929 NEUTRODYNE

- 1 Bakelite panel, 24 x 8 x 3-16 in.
- 1 aluminium sub-panel, 24 x 8 in. (14 gauge).
- 1 pair sub-panel brackets.
- 3 Radiokes standard screening boxes.
- 1 Radiokes 1929 Neutrodyne coil kit.
- 2 Radiokes neutralising condensers.
- 5 Benjamin UX valve sockets.
- 3 Jackson S.L.F. slow motion drive .0005 variable condensers.
- 1 Radiokes 20-plate Midget variable condenser.
- 1 Emnico Baby Velmo or Kurz Kasch vernier dial.
- 1 Royally 0 to 500,000 ohm potentiometer.
- 1 30-ohm rheostat.
- 1 400-ohm potentiometer.
- 1 battery switch.
- 2 Ferranti AF<sub>2</sub> audio transformers.
- 1 Ferranti OPI output transformer.
- 1 Mullard 50,000-ohm resistance.
- 1 single-circuit jack.
- 1 Electrad or Wetless .0003 fixed condenser.
- 1 Mullard 5-meg. grid-leak with clip mounting.
- 4 Ferranti or T.C.O. 1-mfd. fixed condensers.
- 1 Alpha 7-point battery plug.
- 4 terminals.
- 18-gauge tinned copper wire and "spaghetti" Celatite wire.
- 1 gross 5BA brass nuts and bolts.

# ALUMINIUM SCREENING GREATLY INCREASES EFFICIENCY



bes. results from the receiver. Misadjustment of the neutralisers will also ruin the tonal quality of the reproduction and throw the synchronised circuits in a single-control receiver out of balance, with immediate loss of signal strength.

In a three-control receiver, such as the average neutrodyne, previously indicated dial settings will be upset. That is to say, that where the three dials were, for instance, reading respectively 50, 50, and 50 degrees, they may be 20, 70, and 50, or anything else. With valves as obtainable only in the general purpose type three years ago it was decidedly a difficult matter to harness the radio frequency energy and to keep it in the place required, and correct neutralisation was very critical. The whole trouble was caused by magnetic field, which is, of course, present in every receiver where a coil of any kind is used.

A brief explanation of the effect of the magnetic field of one coil upon another will help to show the why and wherefore of neutralisation. Energy is induced by one coil into another, the second coil picking up this energy by reason of the magnetic field. If two coils of wire are placed side by side, with both windings running in the same direction, and an electrical current is introduced into the one, a current is set up at the same time in the other coil, although there is no direct electrical connection between the two of them. This current in the second coil is known as induction, and the process we know as induction is set up by the presence of the magnetic field. If the two coils are placed closer together the induced current becomes greater, and even though the coils are placed at right angles quite an appreciable amount of current may still be induced.

It should not be hard to realise what may

happen in a receiver where there are of necessity a number of coils forming tuned circuits, which are supposed to act independently of each other. Unless some form of "buffer" is provided, the induced currents in one coil will mix with the others, and so on until chaotic results are the outcome, and the receiver only operates with a fraction of its intended efficiency. Professor Hazeltine, the "father" of the neutrodyne, arranged the coils at a certain angle, so that the magnetic lines of force cut each other in such a way as to render neutralisation comparatively easy. The neutrodyne, which was the outcome of his investigations, has stood the test of time, and has so far done all that has been expected. Since then, however, the value of metallic screening for coils was realised, so that to-day we are in a position to design a still more efficient neutrodyne, which will be as selective as possible, and, if anything, easier to construct and operate.

The 1929 Neutrodyne presented here for the benefit of "Wireless Weekly" constructors has been very carefully thought out, with a view to enabling them to make a highly efficient screened five-valve receiver with a minimum of trouble. It has been my practice recently to make a screened receiver from aluminium sheeting, cutting the metal to size for the partitions for compartments, back, and lids, etc., but at this juncture I am able to inform readers that through the enterprise of the Radiokos Company their trouble in metal work in connection with such receivers has been eliminated to a great degree. This is made possible by the introduction of the new type of Radiokos screening box, which is simplicity itself.

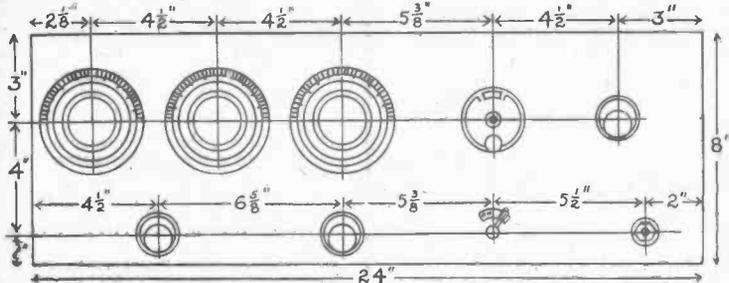
The former design of screening box turned out by Radiokos was such that the assembly was rather difficult, and when the lid was removed the whole structure fell to pieces. In the new design nothing could be more simple and effective. There are four corner posts of nickelled brass supplied, and the aluminium sides fit into grooves in these posts. The posts are attached first in a vertical posi-

tion by means of countersunk headed screws through the sheet forming the bottom of the box. The use of a small screwdriver does this in a moment or two. All that is then necessary is to slide each sheet for the front, back, and sides into the grooves in the four posts and screw the lid on by the four screws supplied at the top, and the job is done.

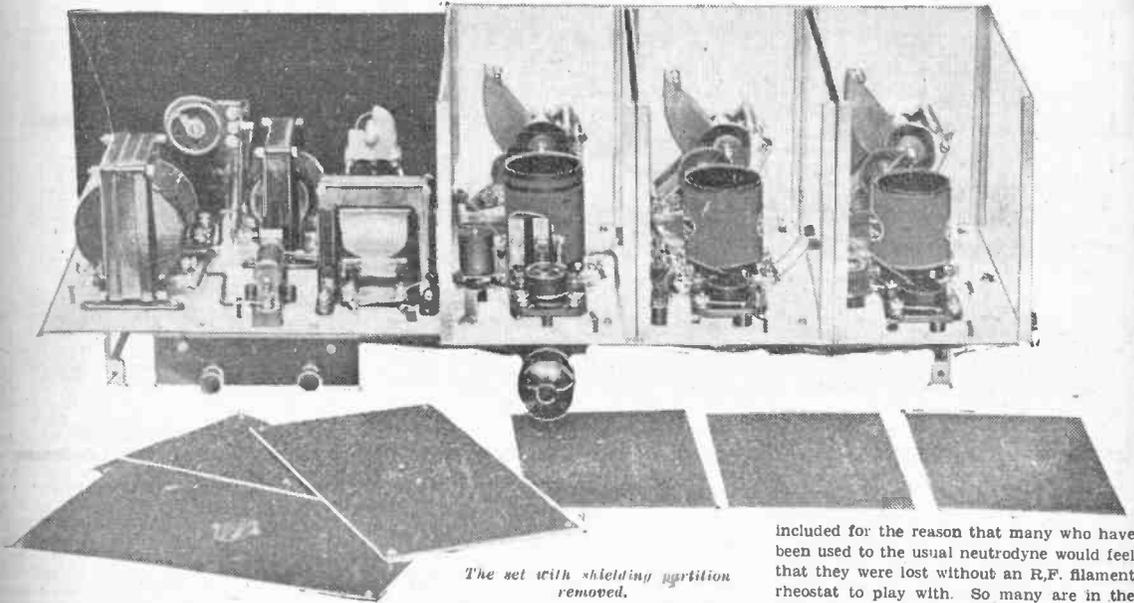
Once the reader has made use of these boxes he will not worry about the trouble of cutting up and trimming sheet metal to make screening compartments for any type of set. They are of a standard size, measuring 9 by 6 by 4 1/2 inches, and the inside is large enough to accommodate any average tuning condenser coil, and valve socket. If larger boxes are needed for any particular purpose the Radiokos Company will supply in the same new design on request. Three of these boxes are used with great satisfaction in the 1929 Neutrodyne, as may be seen from the photographs. The black crackle finish given to the aluminium harmonises well with a black bakelite panel. The sub-panel of the receiver is of aluminium, and is mounted to the panel in the usual way with Benjamin or Airrace sub-panel brackets. This metal sub-panel measures the same size as the bakelite panel, 24 by 8 inches, and it is strongly advised that readers conform to the original, and use such a metal sheet for the sub-panel, for the reason that the wiring of the assembled set is greatly facilitated.

Before going on to further constructional details I wish to run over the circuit diagram, so that the reader will know what he is dealing with and just what to expect. A special neutrodyne coil kit was designed by Radiokos for this receiver, with coils of a smaller size than usual, being 2 inches in diameter. They are mounted vertically, as may be seen from the illustrations, it being unnecessary to arrange them at the previous neutrodyne angle, owing to the metal screening. The first unit for the first R.F. stage is provided with a secondary and an aerial coupling coil, mounted inside. The second R.F. unit has the secondary and the primary mounted inside. The third has the secondary, the primary mounted inside, and a reaction winding on the same former as the secondary.

From the circuit diagram it will be seen that the primary is centre tapped, being reminiscent of the Elstree Six and the Solodyne. By this means neutralisation is more easily effected, the neutralising condenser being connected from one end of the primary to the grid of the preceding R.F. valve, the other end to the plate, and the centre tapping to the B positive R.F. plate supply. This new kit is very neat and solidly built, and is recommended, but for those who will no doubt want to make their own coils—and I know from the host of queries I get that they are legion—the following specifications



# CONSTRUCTED WITH A MINIMUM OF TROUBLE



The set with shielding partition removed.

are given. Three formers will be needed, two of them 3 inches long and one 3 1/2 inches long, all 2 inches in diameter. The longest one is for the coil unit in the detector circuit. The gauge of wire used is No. 26 D.S.C. for primary and secondary windings, and No. 30 for the reaction. Dealing with the first coil unit for the aerial coupling stage, the secondary is wound with 72 turns of the 26 gauge wire, and the aerial coupling coil (which may be on the same former or inside on a small former) with 20 turns. The second unit has again 72 turns for the secondary, but 14 turns for the primary, tapped at the seventh turn. The primary is mounted inside on a smaller former, about three-quarters of an inch long and arranged at the filament end of the grid coil. The same specifications apply to the detector unit, but spaced a quarter of an inch from the grid end of the secondary is a reaction winding, consisting of 12 to 14 turns of No. 30 gauge D.S.C. copper wire.

As all readers who are familiar with the neutrodyne know, one of the assets of the circuit is that under the correct circumstances the circuit will not oscillate, and stations are tuned at a sensitive point just short of oscillation. This is a very desirable feature, but under certain conditions with regard to location it would be an advantage to have an oscillation control for the detector, so that still greater sensitivity may be obtained, with better selectivity. These coils are designed to cover the broadcast channel of wavelengths when tuned with a .0005 mfd. variable condenser.

The variable condensers used in the 1929 neutrodyne are the new J.B. (Jackson Bros.) slow motion S.L.F. .0005 mfd. type. The slow motion drive is incorporated in the condenser structure itself, and is both ingenious and efficient. The condenser shaft for the rotor is hollow, and a small spindle runs smoothly in this, terminating at the back of the condenser

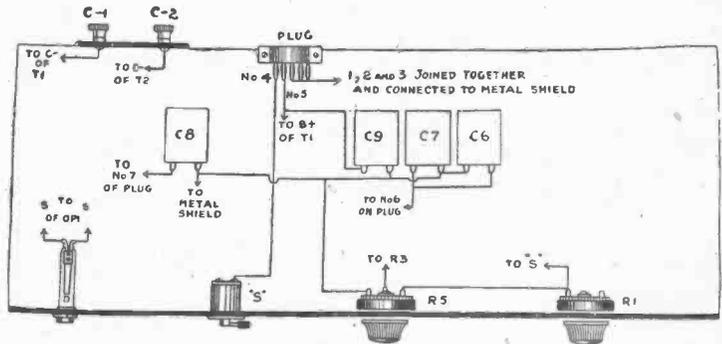
in a noiseless and beautifully smooth friction device of steel discs running on ball bearings. The dials on first appearance from the photographs of the set will seem to be plain 4 in. dials, but this is not the case. The degrees are marked from right to left, 0 to 180, and in the centre of the main hand knob is the vernier knob, which is also of a large size. The reduction ratio of the slow motion control is 50 to 1, and as these excellent condensers are also available in .00015 mfd. capacity for short-wave work, they should immediately become very popular with the rapidly increasing number of readers who are exploring that fascinating field.

The two neutralising condensers are screened with a metal case; care must be taken to insulate them from the aluminium sub-panel. This is done by mounting them on small strips of bakelite with distance pieces. A 30 ohm rheostat controls the filament supply to the two R.F. valves, and although this is not really necessary, it was

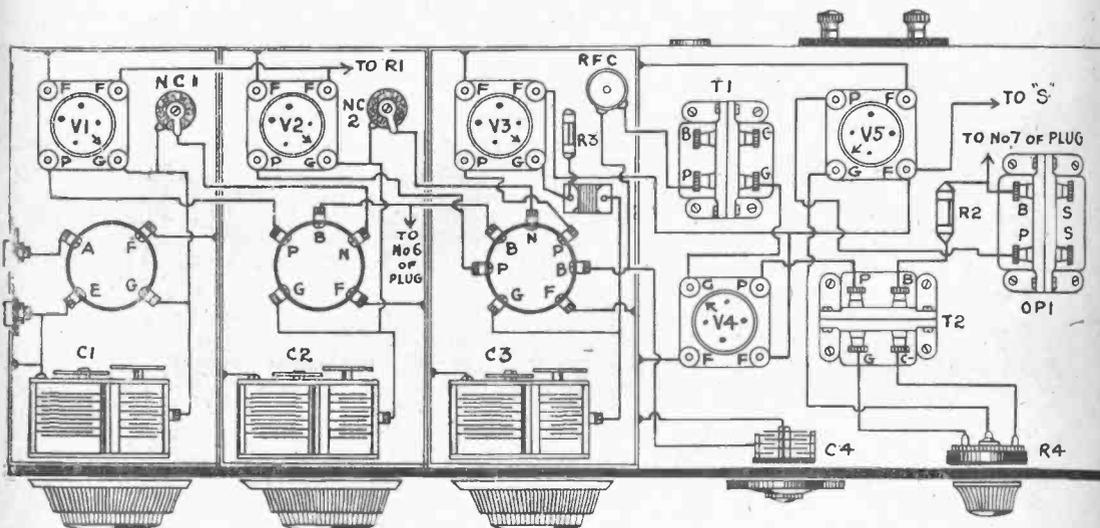
included for the reason that many who have been used to the usual neutrodyne would feel that they were lost without an R.F. filament rheostat to play with. So many are in the habit of using it as a volume control, and although it serves fairly well on strong signals it is not a practice to be followed generally, owing to a slight alteration in frequency every time the control is touched.

To make up for this a volume control of the type I fit to every multi-valve receiver is included across the secondary of the second audio transformer. This is a Royalty 0 to 500,000 ohm potentiometer (R4).

In the detector circuit, reaction is controlled by a 20-plate midget variable throttle condenser connected between the B positive side of the reaction coil and the A negative. This is the method of controlling reaction in the Go-Getter, All-Empire, and Air King receivers, and is very effective and entirely free from hand capacity effects. To further safeguard against this, a baby vernier dial is used instead of a plain knob control. The grid condenser C5 is an Electrad .0003 mfd., with a Mullard grid leak connected to a potentiometer across the filament supply. This is a useful feature, as it provides either a negative or a positive bias to the grid of the detector valve. The audio amplifier is



# EXTREMELY SENSITIVE TUNING: EXCELLENT SELECTIVITY



a very important part of the 1929 Neutrodyne, and compares this set to some of the old neutrodyne we know; for quality as a Wurlitzer organ to a small harmonium! Ferranti transformers are used throughout, both first and second stages being of the AAF4 type, and an OPI output transformer.

The value of an output transformer is probably not realised by many readers. Its chief function is to isolate entirely the loud speaker windings from the direct current supply to the plate of the output valve, thus protecting them from possible breakdown. It is far better to pay for an output transformer than to regret a broken-down loud-speaker when the time comes. The quality is undoubtedly improved by the use of these output transformers, with absolutely no loss in volume. Instead of having two separate voltage supplies to the two audio stages they are fed from one source, which is the B positive audio terminal.

In between the first and second stages is included, in series with the first, a Mullard or Ferranti 50,000 ohms wire-wound resistance. This resistance is marked R2, and not only serves to drop the total voltage to a lower value for the first audio stage, but does duty as a "motor-brat" stopper. "Motor-brat" is the term given to the popping noise often produced by the passage of R.F. current into the audio amplifier, and such an occurrence is often very baffling to the beginner.

All the B positive plate supplies are bypassed by 2mfd fixed condensers. These are marked C6, 7, 8 and 9 in the diagrams. All the battery connections excepting the grid bias negatives for the two audio stages are made through a 7-point battery plug. These plugs may be obtained from all leading radio dealers in Sydney and are one of the most useful radio components ever devised. The plug fits the socket very smoothly, and with an unfailing contact. It is very convenient to be able to disconnect a set in an instant without having to pry around unscrewing terminals and perhaps shorting wires, with disastrous results to valves.

Even the most experienced of radio engineers will sometimes be careless with a metal chassis set, in which the metal is one side of the filament supply, and it is a

harassing experience to suddenly see a blue flash and find silent rows of valve corpses in the sockets! Twice of that sort of thing is sufficient to make the most careless man fit B battery fuses to his plate voltage supplies!

Just a little tip in passing. If you have an old valve on hand which has the filament intact but is no use because of lost emission, rig it up with a socket in a convenient position, and wire it in series with the B negative supply to the set. In case of accident the valve will blow first, and save its healthier brothers, and old valves of the bright emitter kind are cheap enough round town. Some may be obtained for 1/6. Alternatively use a pocket lamp bulb as the fuse.

In the 1929 Neutrodyne the metal boxes and sub-panel also do duty as the common supply for the A negative, B negative, C positive, and earth. Quite a lot of wiring is eliminated by doing this, and furthermore, as the rotors of the tuning condensers, C1, C2, C3, and C4, are earthed to the metal hand capacity is an unknown quantity.

Now we come to the constructional details. The first things to have on hand are the bakelite panel, the aluminium sub-panel, the three Radioket boxes, and the sub-panel brackets. First of all mount the panel and sub-panel in the usual method on the brackets, using the countersunk headed screws supplied with the brackets for the front panel fixing screws. They may be touched over with black lacquer afterwards if you do not like bright screw heads on a black background. Start to assemble the four posts on one of the boxes, and when they are screwed rigidly in position place the base of the box on the top of the sub-panel, so that the edge is flush with the left-hand edge of the sub-panel. Make sure that those four countersunk head screws holding the posts upright are as tight as possible, because you will not get a chance to attend to them again if they are slack, as the base of each box is bolted to the sub-panel. Place the base of the first box in the vice, and drill four holes with an eighth of an inch clearance drill at equal positions about half an inch inside from the edge. File off the burrs on the other side, and then place the box base again on the sub-panel, and with a scriber

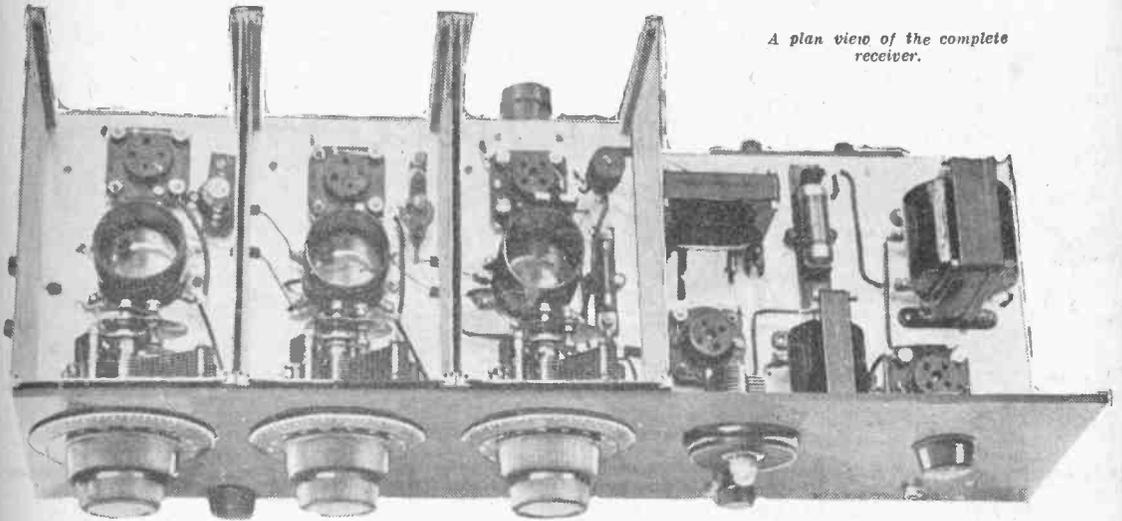
mark the positions through the four holes on the surface of the sub-panel beneath.

Next remove the base and drill through the corresponding positions in the sub-panel. That done, the base may be bolted tightly by 5BA brass, cheese, or countersunk headed screws and nuts to the sub-panel. The four corner-posts project vertically, and all you have to do to complete the box is to slip in the sides and screw the lid down. Do not do this yet, though, as there is much more drilling to come. Deal similarly with the other two boxes, working from left to right, and keeping them as hard up against each other as possible. The next step is to drill the bakelite panel for the one hole, fixing the three J.B. slow motion condensers. You will note from the drilling diagram that owing to the position of the condensers in the boxes it is necessary to set this hole a little out of the centre to enable the condenser rotor to swing without catching the side of the box.

This may be seen from the panel drilling diagram. When the holes are drilled in the bakelite slip the front of each box into the post grooves, and mark through the hole in the bakelite the position on the aluminium. Then remove the front of the box and drill likewise, afterwards filing off the drilling burr. Replace it and put the variable condenser inside, locking it up tightly and pulling the metal and bakelite together. The dials need not be mounted until the set is completed, as in the process of twisting the set around on the bench for drilling and wiring the dials may become scratched and damaged. There is method in everything, and engineering construction of any kind is merely commonsense. Having made a start on the front panel, finish the mounting of the other controls. The reaction condenser C4 and the volume control potentiometer are in line with the tuning controls. This mid-gate reaction condenser is one of the new Radioket midgates, and is a type of condenser which will meet with ready popularity. The rotor is exceptionally smooth in action, and owing to the design cannot rock in the bushing.

This, again, is a point worth remembering for short-wave receivers as well as broad-cast. The R.F. rheostat R1, the 400 ohm

# METAL CHASSIS MAKES WIRING AN EASY JOB



A plan view of the complete receiver.

potentiometer R5, the battery switch, and the jack are all mounted below the sub-panel in the positions shown in the drilling diagram.

The mounting of the various sub-panel components is the next step in the construction of the 1929 Neurodyne. Start at the first R.F. stage and assemble in the first compartment, the first coil unit, valve socket, and neutralising condenser. The Radiokes coils are supplied with angle feet at the base, allowing the coil to be mounted in a vertical position, thus taking full advantage of the screening. More space is available for the valve socket and neutralising condenser than if the coils were arranged for horizontal mounting, as the variable condenser in each compartment takes up most of the room. Be careful in the mounting of the neutralising condenser to see that it is fully insulated from the metal, as a short here will put the whole circuit out of commission. The second R.F. compartment is dealt with similarly, but in the next one for the detector are in addition, the .0003 mfd. grid condenser (C5), the grid leak (R3), and the R.F. choke. The four 2mfd. by-pass condensers, C6, 7, 8, and 9 are all arranged underneath the sub-panel, and are not visible in the photographs.

On the remaining open portion of the sub-panel we find the audio amplifier, consisting of two valve sockets, AF4 transformers, voltage drop, and anti-"motor-boat" resistance, and the OPI output transformer. The best way to lay out all the sub-panel components so as to keep wiring as short as possible may be seen from the position in the photographs and checked up with the schematic wiring diagram. The wiring of the set is done mostly with No. 18 tinned copper wire covered with "spaghetti" insulation, but where the leads from the primary of the R.F. transformers pass through the intervening partition, insulated flexible wire is used, with rubber bushings as an extra safeguard. Attend to the part of the circuit represented by the metal screens first. This is the A negative, B negative, C positive, and earth. As

the negative filament terminal of each valve connects direct to A negative, the easiest way to do this in each case is to lock a piece of wire under the F negative terminal of the socket and solder the end to the nearest of the two screw heads, bolting the socket to the sub-panel.

The wiring need not be explained in detail, as the drawings explain this fully. A total of 120 volts will be needed for most efficient operation of this set, and the values must be adjusted according to the values used.

High impedance valves, although a little more difficult to neutralise, should be used in the R.F. amplifiers, and the valve combination the set was tested with, giving very good results, is as follows:—

	1st R.F. PM5X	2nd R.F. PM5X	Detector. PM5	1st Audio. PM6	2nd Audio PM256
Mullard					
Others very suitable are:—					
	1st R.F. DEH610	2nd R.F. DEH610	Detector. JZL610	1st Audio. DEI610	2nd Audio. DEP610
Oxram	SS6075HF	SS6075HF	SS6075HF	SS610P	SS610SP
Six Sixty Philips	A630	A630	A615	A609	IB605

The PM6 in the first audio stage requires about 4½ volts negative bias at 90 volts on the plate, and the PM256 12 volts negative bias at 120 volts on the plate.

Almost any good make of valve on the market may be used equally well, as the Neurodyne, especially in its 1929 screened form, is a circuit which is readily adaptable. If at any time a change of valves is required, the neutralising process must be gone through again. The reaction control in the detector circuit will be found smooth in action, but do not worry about this part of the receiver until you are quite certain that the R.F. amplifiers are properly neutralised; otherwise the presence of reaction in the detector circuit will conflict with self-oscillation in the R.F. stages. Get the R.F. right first, and then turn your attention to the detector oscillation control. This will only be found useful on distant stations,

and is certainly an improvement over the ordinary Neurodyne in bringing an otherwise weak signal up to the point of maximum sensitivity. Make sure that when the receiver is finally finished the lids of the screening boxes are screwed hard down, because, if any air spaces are left, this fact will upset the selectivity in some location.

In Randwick no trouble was encountered in cutting out the local station, 2BL, in favor of 3LO—this, of course, at full speaker volume, although at times there was just a faint suggestion of a background. A midget variable condenser in series with the aerial overcame this entirely. The control given by the J.B. slow motion condensers makes tuning a real pleasure, and I do not think at this stage it is necessary to tell most

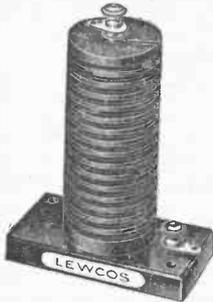
"Wireless Weekly" readers how to tune a Neurodyne. In conclusion, this receiver, together with the Air King, will be exhibited for the benefit of

readers on the "Wireless Weekly" stand at the forthcoming Radio Exhibition.

## "Dem Golden Slippers"

THERE is an interesting little story connected with "Dem Golden Slippers," which will be sung by "The Huxham Serenaders" during the programme of the old-time dance night held at 3LO on April 27. The story was told by the late Charlie Pope, who for many years was a member of a minstrel troupe touring the United States. One night, during the interval, one of the niggers called for pencil and paper, and sat down at the table. "I'm going to write a song," he announced, "that'll sell for twenty dollars." The song, "Dem Golden Slippers," was written and immediately sold for twenty dollars (£4), proving a wonderful success, and, arranged as a waltz, polka, quadrille, and lancers, was heard in every dance hall on both sides of the Atlantic, and proved a veritable gold mine to the enterprising person who had purchased it for £4.

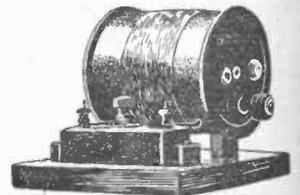
# For Better Reception You need—



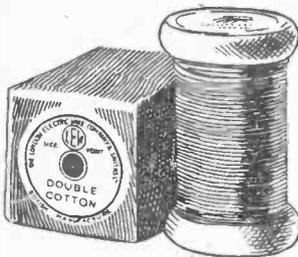
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"LEWCOS" RADIO PRODUCTS ARE OBTAINABLE AT ALL GOOD RADIO DEALERS.



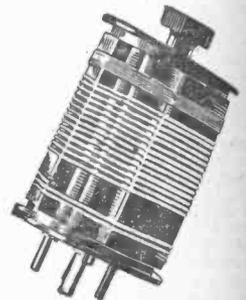
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PRICE . . . . . 25/-



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All gauges.  
Double Cotton.  
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"LEWCOS" 1927 SOLODYNE KIT.  
PRICE, complete . . . . . £4



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Base . . . . . 3/6 extra

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# 3LO Serves Tasmania During Flood

Maurice Dudley, favorite announcer at 3LO.

How 3LO and 3AR went to the assistance of Tasmania during the recent disastrous floods and maintained communication when other means were swept away. Other Melbourne notes.

(By Our Melbourne Correspondent.)



FROM 10 to 12 inches of rain in 24 hours wrought havoc to Northern Tasmania on April 6 and 7, which days will go down in history as Tasmania's black Saturday and Sunday.

Bridges that had withstood the torrents of years—one for a century—went down before the raging waters like grass before the scythe, low-lying lands in town and country became huge turbulent seas of water, homes were inundated and many washed away, and the loss of life was appalling.

With bridges, telegraph lines, roads, and railways washed away, Southern Tasmania and its capital city of Hobart were cut off from the world. It was then that radio played its part. Major W. T. Conder, general manager of 3LO, Melbourne, which controls 7ZL Hobart, who is by the way a staunch Tasmanian, arranged in conjunction with the manager of 7ZL (Mr. W. H. Sweeting) and the "Mercury" and "Examiner" newspapers for the broadcasting of news and warnings to and from Hobart and Launceston. By this means Hobart was linked up with the world, and it was with relief that the people of the south learned that the fury of the storm centre had passed away from the island without devastating their part of the State.

Throughout Saturday and Sunday, April 6 and 7, Major Conder, Senator J. D. Millen, and a special staff at 3LO worked incessantly to keep in touch with Launceston and Hobart, at which latter place Mr. Sweeting controlled a staff of tireless workers in procuring news and broadcasting it. During those dark days of Tasmania's distress radio was indeed a veritable godsend.

Its usefulness did not end with the actual floods. There was the aftermath to be considered, and it was then that its functioning was of immense value. Four thousand people were left homeless in Launceston and Northern Tasmania. Men, women, and children had to abandon their homes with such tragic suddenness that they had no time to salvage clothing and personal necessities. Station 3LO, Melbourne, and 7ZL, Hobart, broadcast appeals for money and clothing, and the response has been truly magnificent.

Senator J. D. Millen made several stirring appeals from 3LO, Melbourne, and people on the mainland were moved so profoundly that the response for money and clothing exceeded all expectations.

## For Motorists

A TALK brimful of information and of great interest to a wide circle of the community will be given from 3AR on April 23, when Mr. C. J. P. Hodges will speak on "The Care of the Car and the Art of Driving." As secretary of the Royal Auto Club of Victoria Mr. Hodges knows all there is to be known about cars and driving, how to maintain their pristine freshness, and how to calculate the moves the "other fellow" is likely to make in a crowded thoroughfare.

## English Baritone

HAROLD KYNG, the young English baritone, who has come to Australia with a great overseas reputation, will commence a short broadcasting season at 3LO on March 28, when he will be heard in a wide range of vocal contributions, embracing opera, oratorio, art songs, and German leader.

## Maurice Dudley

MR. MAURICE DUDLEY, the popular announcer at 3LO, Melbourne, who is loved by children as "Billy Bunny," is a prince among story tellers. With a remarkable fund of reminiscences and romances at his disposal, he is always the centre of a group of listeners to his amusing stories and anecdotes, and as a character actor of considerable experience he is able to tell his tales with excellent effect.

Mr. Dudley is a noted radio personality, and stands alone as an announcer. He is probably the most versatile broadcaster in Australia, and has attained tremendous popularity. His voice has been missed from the air for some weeks past, but his many friends will be pleased to learn that he is making satisfactory progress towards recovery from his recent severe illness.

## Young Violinist

ALFRED ACLAND, the talented young violinist, who will be on the air on May 2, will be remembered as the winner of the 3LO scholarship in 1927, which entitled him to three years' training at the University Conservatorium. Under the guidance of the gifted Belgian artist, Edouard Lambert, he has more than fulfilled the promise of early years, and, having gained much experience during his three years' membership of the University Symphony Orchestra, he has recently accepted an appointment to play in the orchestra at His Majesty's Theatre for the production of "The Vagabond King."

## A Rustic Wedding

A REFRESHING programme of mirth and melody will be broadcast from 3LO on May 4 by the well-known entertainer, J. Harcourt Bailey, who in connection with the popular Sundowners' Quartette Party, will give his impressions of "A Rustic Wedding." The clever work of these well-known artists needs no introduction to listeners, who with artistically rendered solos, duets, and quartettes, to say nothing of the original shafts of wit, might well be called the Radio Gloom Chasers.

## Baseball Season Opens

LOVERS of sport will be glad to learn that arrangements have now been completed by 3LO for Mr. Percy Steele to broadcast the description of the baseball matches, commencing May 4. Mr. Steele is well known in baseball circles, and his graphic description of matches in the past has pleased many hundreds of listeners who have been debarred from attending the matches in person.

## St. Mark's Boys to Broadcast

ST. MARK'S Choir Boys, who are very popular with listeners to 3LO, will give a fine programme during the Children's Hour on May 1, when they will contribute a trio, "Lift Thine Eyes" (Mendelssohn), a two-part song, and several hymns.

## Supremacy of 3LO Melbourne

THREE LO, Melbourne, is the most listened to station in the world per quota of listeners to population. This fact is shown graphically by the following figures:—

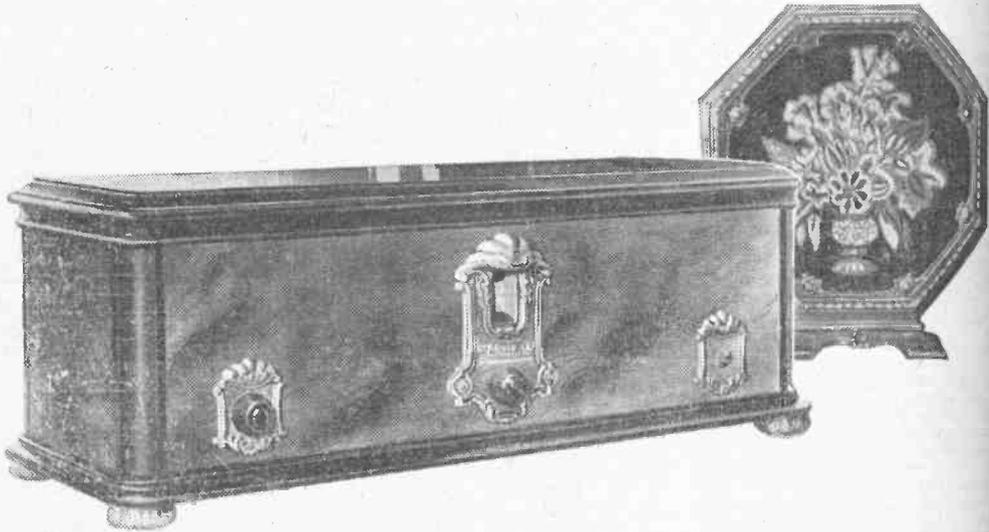
### RATIOS OF LICENSES PER 100 OF POPULATION IN VARIOUS PARTS OF THE WORLD.

Country.	Licenses in force.	Ratio.
Victoria .....	141,932 ..	8.09
Commonwealth .....	293,120 ..	4.64
South Australia .....	22,942 ..	3.97
New South Wales .....	95,437 ..	3.91
Queensland .....	24,642 ..	2.67
Tasmania .....	4,327 ..	2.05
West Australia .....	3,790 ..	.91
England and Wales .....	2,375,342 ..	5.70
New Zealand .....	40,620 ..	2.73
South Africa .....	16,855 ..	1.01
U.S.A.: Ratio 6.59.		Germany: Ratio 4.95.
France: Ratio 3.97.		

Victoria has nearly as many licenses as the whole of the other States together, and although the issue of licenses there has reached what may be regarded almost as saturation point Victoria had the lowest percentage of cancellations of all the States during the month of March.

Criticism has from time to time been aimed at sections of the programmes from 3LO, but in nearly every case the items objected to by one or two listeners are appreciated by thousands of others. It is only to human nature that with 142,000 licensed wireless receivers in use in Victoria, to which over half a million people listen in every day, there will always be a section to whom at times some items in the programmes will not be satisfying. What is balm to one may be anathema to another, and this applies to wireless broadcasting more perhaps than to anything else in the service of the public.

Criticism, however, is not limited to 3LO alone, but is world-wide. Why, even the great B.B.C. is getting it strongly from the public and the press in England. In spite of everything, the fact remains that the services of 3LO are still listened to by more people per quota of population than those of any other station in the world, and there must be a reason. The only natural assumption is that it is in consequence of the comprehensiveness and excellence of the programmes of the big Australian station that Victoria is in such a phenomenal position in regard to licenses, as shown by the above figures.



*Now!*  
**BRING IN THE PROGRAMS**

*as only this New  
 8 valve Super-het. can*

**W**HEN, last year, R.C.A. perfected light-socket radio, enthusiasts with a close knowledge of technicalities at once began to wonder how soon the R.C.A. would introduce its famous super-heterodyne circuit in a batteryless set. The answer has come sooner than all but the most optimistic expected. The wonderful sensitivity and selectivity of the "super-het." is available now—this season—in a new R.C.A. set of most remarkable quality.

Turn a single dial. Bring in a flood of melody from any broadcasting station in Australia and New Zealand (except W.A.) as if it were just over the hill. Cut out all interference sharply, even though you live in the shadow of a station. Roam round Australia for your entertainment. Move

the dial an eighth of an inch and jump from one programme to another. Bring them in full and clear. "A revelation," said the "Listener-In" in their issue of April 10th. "The R.C.A. Model 60 is the only Receiver which has ever provided interstate reception before 4 p.m., in the location at which the test was conducted."

The companion speaker to R.C.A. Model 60 is the new Loudspeaker Model 103, with its striking tapestry medallion and hand-carved effect. The new type cone and construction of the Model 103 enables it to handle the dance pitch volume that the Receiver brings in with complete fidelity and lack of distortion. Price of Receiver, complete with Loudspeaker, £85. Easy Terms.



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# THE MICROPHONE PRESENTS

Studio notes and news from 2FC, 2BL, 3L.O. and 3AR.

## Exhibition Programme

THE RADIO EXHIBITION PROGRAMME on Monday evening, May 6, will be broadcast through 2BL. The overture at 8 o'clock will be played by the 2BL Light Orchestra, under the conductorship of Horace Keats. Charles Lawrence is master of humorous ceremonies, and the Ashfield Choral Society is contributing "The Song of the Viking" (Fanning) and "Great God Pan" (Fare brother), followed by "Ye Merrie Trio" in popular vocal and instrumental numbers. On Tuesday, 7th, 2BL will again undertake the transmission from the Town Hall, and the contributing artists are Leo Rowan, Rene Rich, "The Two Wireless Wits," Graham Burgin and Ruby Dunstan (vocal duets), and the North Sydney Tramway Band. On Wednesday evening, May 8, the exhibition hour will be transmitted by 2FC. Stanley Cattet, Amy Ostinga, Frank McEachern, and the Euterpians' Female Choir are the vocalists, and instrumental items will be rendered by the "Smart Set" Trio and Arthur Stender (cornetist). Frank Ryan has the humorous section of the programme under his capable control. On Thursday, May 9, the Metropolitan Band will open the evening's entertainment, and there are items by the Crescendo Trio, David Craven, Ad. Cree, and Arthur Prince. The transmission will be through 2BL service.

## Singing Gentleman

HOWELL BRYDEN, who was with the "Hit the Deck" Company, is taking up concert work again, and is appearing at the Radio Exhibition on Friday night, May 3, when the programme will be broadcast by 2BL. The last compliment he received on his radio work was amusing, if none the less sincere. A listener telephoned: "Will you ask the gentleman who is singing on your programme to-night . . . " "But there are two vocalists on our programme . . ." he was reminded. "I said the gentleman who was SINGING. Bryden is his name. He CAN sing!" The telephonist humbly took a note of the request number without further argument.

## Lithgow Broadcast

THE CONCERT PROGRAMME arranged by the secretary of the Lithgow Municipal Band, to be broadcast through 2FC from the Trades Hall, Lithgow, on Sunday night, May 5, promises an excellent evening's entertainment. The band is opening at 8.30 with the "Tancredi" overture, and will include a selection from "Semiramide," a sacred item. "Nearer, My God, to Thee," and a characteristic number, "Sliding Thro' the Rye," in its programme. The Lithgow Band is a very fine combination, and its work should prove a pleasing feature. J. Prior and Robert Nicholson, who are doing the vocal duet, "Soldiers and Comrades," were successful competitors at the Orange Elstedford. Other assisting artists are Rita Lawless, Margaret Lean, Mrs. Robert A. Brouff, John Tougher, James Simpson, and Mrs. T. Simon. The accompanist is Mrs. Harold Cox, and the conductor of the band Mr. Charles Lewins.

## Polish Music

IN HONOR of the anniversary of the Constitution of Poland, on Friday, May 3, the Consul-General of Poland in Australia will give a short address at 2FC studio, at 7.22, and on Sunday evening, May 5, a programme of Polish music will be rendered by the Polish Association Orchestra, commencing at 8.30 p.m., which will be broadcast through 2BL service.



Genoni McNeill,  
opera singer, heard  
at 3L.O.



Samory Shields,  
the "roman heler"  
at 3L.O. and 50L

## Bertie Wright

BERTIE WRIGHT, known the world over for his inimitable humor, is at last entering the broadcasting arena. He has a host of funny stories to tell 2FC listeners—quite new ones, too—and his drolleries for the evening of May 3 would make even the microphone laugh.

## Vocal Quartet

THE DENNING LEE QUARTET, a new vocal combination, under the leadership of Colin Ferret, is providing a welcome relief to straight vocal numbers in 2FC's programme. The voices blend excellently, and Mr. Ferret, who is no stranger to radio, wisely steers clear of the florid type of item, which impresses the concert-goer but leaves the wireless enthusiast unmoved. After the last appearance of this quartet many expressions of appreciation were received, and a number of songs on their programme for the evening of May 3 are included by request.

## M. Conigrave

SYDNEY LISTENERS will welcome the news that C. Price Conigrave is going to confine his wanderings to the microphone, for a short time, at any rate. The Australian travelogue he has prepared for his studio appearances each Wednesday night throughout May, "Exploring in Kimberley," promises a vivid fifteen minutes of adventure for the stay-at-homes who prefer listening to first-hand action.

## Aren't We All?

THE H. W. VARNA COMPANY has obtained permission from J. C. Williamson, Limited, for the studio production of "Aren't We All?"—the play which created such a furore when launched by the Boucicault Company in Sydney—for their next appearance on the evening of May 8.

The story is woven round that ever-young "old sport," Lord Grenham, and his impetuous young son, who is wearing his heart out at the absence of his young wife, who is abroad on holiday through ill-health. In his loneliness he yields to the blandishments of a vampish young lady, and is caught by his wife on her unexpected return in a rather compromising circumstance.

The wily Grenham's taking the matter in hand, to lead the young couple to happy reunion; his association with that "merry widow," Lady Hinton, and his final conquest, coupled with the insincere Reverend Lyton's grievance against Grenham, together with the author's sparkling dialogue, should afford listeners a very interesting evening.

## Goulburn Relay

THE COMPLETE CONCERT arranged by the Goulburn Choral Society for the evening of May 7 will be broadcast through 2FC. The assisting artists are Alexander Sverjensky and Spencer Thomas. During the short interval, which is timed approximately for 9 p.m., Brunton Gibb will speak from the studio. Mr. Gibb has prepared a short and very interesting series of topical questions, under the heading: "Oh, by the Way," which should prove an appropriate interlude in the Goulburn transmission.

## Romeo and Juliet

INTERESTED listeners will be glad to know that the second part of the musical adaptation of Shakespeare's historic love romance, "Romeo and Juliet," will be given from 3LO on April 30 by the Meistersingers, under the direction of Mr. J. Sutton Crow. Principals include the popular broadcasting artists, John Sullivan as Romeo, and Madame Elsie Davies as Juliet. As Stephano, the page, Stella Dredge has a part admirably suited to her lyric soprano voice, and other roles are in the capable hands of Messrs. Charles Evans, Allan Eddy, and R. Grimshaw.

## Sir Harrison Moore

A MOST interesting and instructive talk will be given from 3AR on April 29, when, under the auspices of the League of Nations Union, Sir Harrison Moore will speak on "The Council of the League of Nations." It will be remembered that Sir Harrison Moore was one of the Australian delegates to the Assembly of the League of Nations in 1927-28, and spent the best part of a year in Geneva studying the operations of the League, and he is therefore able to discuss the subject with some degree of authority.

## A Rossini Treat

MUSIC-LOVERS who still cling to the tuneful operas of the past, will be glad to hear that a gramophone recital of vocal selections from Rossini's "Barber of Seville" will be given from 3AR on April 28. These records, which were made in one of the most famous opera houses in the world, and by distinguished operatic vocalists, have been carefully selected, and a thoroughly enjoyable musical feast is promised.

## Conservatorium Concert

A FINE concert programme will be transmitted from Meiba Hall on May 2 by 3AR, when the University Symphony Orchestra, under the direction of Professor Bernard Heinze, will be heard in several numbers. Of special interest to musicians will be the first performance in Australia of "Barocco Suite" (Atterburg), and "March on a Russian Theme" (Glazounov), with Miss Isabel Adams at the piano. The assisting vocalist for the evening will be Miss Kathleen Sims, who is already known to listeners, and who greatly distinguished herself by her recent appearance in oratorio with the Melbourne Philharmonic Society.

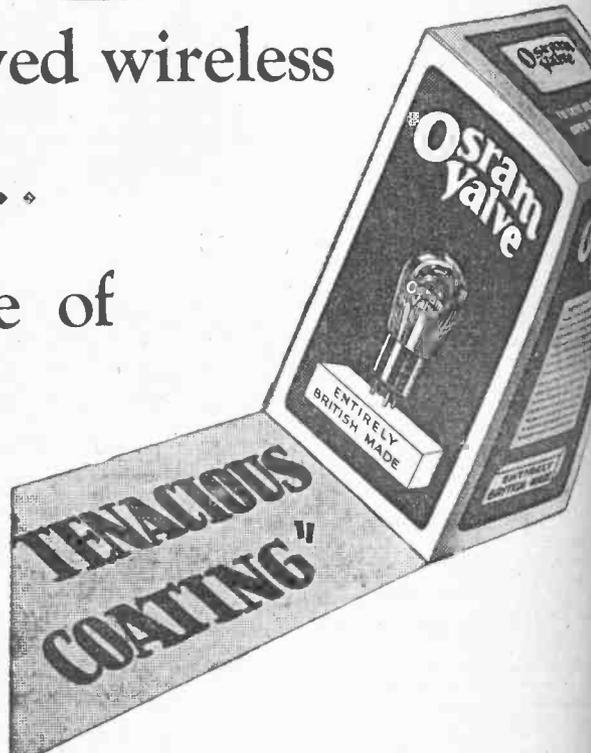
## Lambing Time

A TALK of great interest to many of the farming community will be given from 3LO on April 29, when, under the auspices of the Department of Agriculture, Mr. N. A. Bowman, sheep and wool expert to the department, will speak on "Lambing Time."

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# All Roads Lead to the Radio Exhibition

(Continued from Page 9.)

## STAND 44

MICK SIMMONS LTD. are displaying a full range of Magnavox dynamic speakers. These are represented in their respective cabinets, such as the Beverley Junior, the Beverley Senior, the Belvedere (fire-screen), the Aristocraft, and the Cordova. A range of Magnavox dynamic speaker units are also on view, and these will be of special interest to radio and phonograph manufacturers. Home-set builders might also be interested in these units, as there is a growing desire to replace older types of speakers in existing machines. Amplifiers bearing the name of Magnum will also create interest. Phonograph and radio manufacturers will find these a ready means of building electrical phonographs or converting old talking machines. When used with an electrical pick-up, and a Magnavox dynamic speaker, unexcelled tone and volume will result. These are made to plug-in to 240 volts A.C. house-lighting circuits or power-points.

## STAND 50

THE Australian General Electric Co. Ltd., of 93 Clarence Street, Sydney, are displaying a comprehensive range of R.C.A. radio receivers and loud-speakers, electric labor-saving devices, and lighting fittings at Stand 50.

The new creations this year are the two super-heterodyne models R.C.A. 60 and 62, which employ the new radiotron A.C. valves.

R.C.A. No. 60 is a table model 8-valve super-heterodyne possessing many unusual features. The chief point of interest in this type of set is that of absolute selectivity, enabling the reception of each individual station without the annoying feature of hearing both at once. Further, by a special system of amplifying, the tonal quality is unexcelled.

Model 62 is a special custom-built radio receiver employing the same circuit as that used in Model 60. The new R.C.A. dynamic speaker, Model 106, which gives unusual volume with perfect reproduction, is used in this model. Model 18, 6-valve R.C.A. power-operated receiver, while not in the same price-class as Models 60 and 62, at its new reduced price it offers wonderful value for the music-lover.

Loud-speakers produced by the R.C.A. this year include the new dynamic speaker No. 106, which covers seven octaves, with a remarkable naturalness of reproduction. Models 103 and 100A are also displayed.

A full range of R.C.A. radiotrons are shown, including the new A.C. type valves, which R.C.A. first introduced 18 months ago.

### Mr. Mares' Special Subject

THE Government Meteorologist (Mr. Mares) has prepared a special subject for his address at 2FC on the evening of April 30. It is seldom he has time to divert his attention from the difficult task of assuaging the anxiety of listeners regarding the state of the elements, and radio enthusiasts are glad of the opportunity of welcoming his reappearance on the air.

## RADIOKES

# 1929 ULTRA NEUTRODYNE

Coil Kit and other Radiokes Components are specified for this season's most popular Broadcast Receiver.

Once again Radiokes products are the choice of the Technical Editor, and he knows how to appreciate quality and efficiency.



This Genuine Hazeltine Neutrodyne Coil Kit by Radiokes represents the latest development in the famous Neutrodyne system of R.F. amplification.

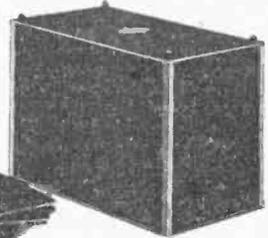
As a popular five-Valve Receiver the Neutrodyne "will sure take some beating," and this new small coil kit will tend to make this famous circuit still more popular.

Radiokes De Luxe Bakelite construction. Price per kit.

37/6

On right is illustrated the Radiokes Collapsible Aluminium Shielding Box. These Shields are designed and manufactured to obviate the necessity of every home constructor becoming a sheet metal worker.

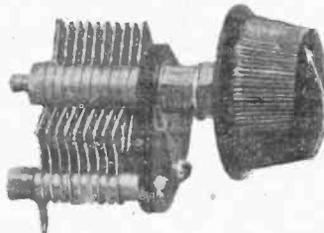
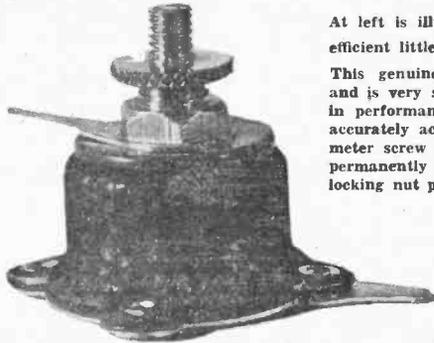
These boxes are carefully designed and accurately manufactured, and after your wiring is completed, they are assembled in your set with ease, speed, and precision, making the perfect shielding device. Standard boxes, 9in. x 6in. x 5in. Price, 15/ each.



At left is illustrated the most modern and efficient little Neutraliser yet produced.

This genuine Neutrodon is fully shielded, and is very small in size, although a giant in performance. Adjustment is simply and accurately achieved by means of the micrometer screw movement, and, once found, is permanently locked by means of the special locking nut provided.

PRICE, each, 4/9.



Above is shown the latest product of Radiokes laboratory and factory.

This is, perhaps, the finest little Mid-ge Condenser yet produced.

See one for yourself, study the accuracy of manufacture, feel the smooth, velvety action, and this condenser will always be your choice.

Made in five sizes, priced from 4/3 to 8/6 each.

Radiokes Radio Frequency Chokes are too well known to require any description here. They are a necessity in practically every modern receiver.

No "ordinary" Choke can replace Radiokes, for this choke is super efficient, is small, rugged, easily mounted and wired in set, and moderately priced at 8/6 each.

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WHEN you cannot hear an interstate station, when all the locals come in at once, when the set makes weird noises—what shall you do? Turn to Drake's Radio Cyclopaedia.

Success in radio is mostly a matter of having the right answer to a question, the right wiring layout, the right information of any kind needed with no delay. Designing, building and repairing every type and style of radio receiver since broadcasting began proved the need—also the lack—of practical and workable information in a form allowing instant reference to the one thing wanted without having to look through something else first. All the rules, methods, plans, diagrams, tables, formulas—all the "dope" the practical radio man wants in his work were gathered together in Drake's Radio Cyclopaedia—a book in form, but a tool in fact. Ownership of radio takes on new interest when you have Drake's Radio Cyclopaedia. If you like to experiment, Drake's Radio Cyclopaedia will open new fields. If you are interested in radio problems you will find the solutions. If you build or rebuild radio sets, you can make them still better. If you sell receivers you will gain sales ammunition.

Every item has passed the test of usefulness before being included. If of definite value to radio workers, it has been covered, and with all the space required. If of a technical or theoretical nature, it has been simplified and given more limited space. All long or involved calculations are translated into tables of results; practical formulas are stripped of symbols and written in words; the action of radio parts is shown in easily read graphs.

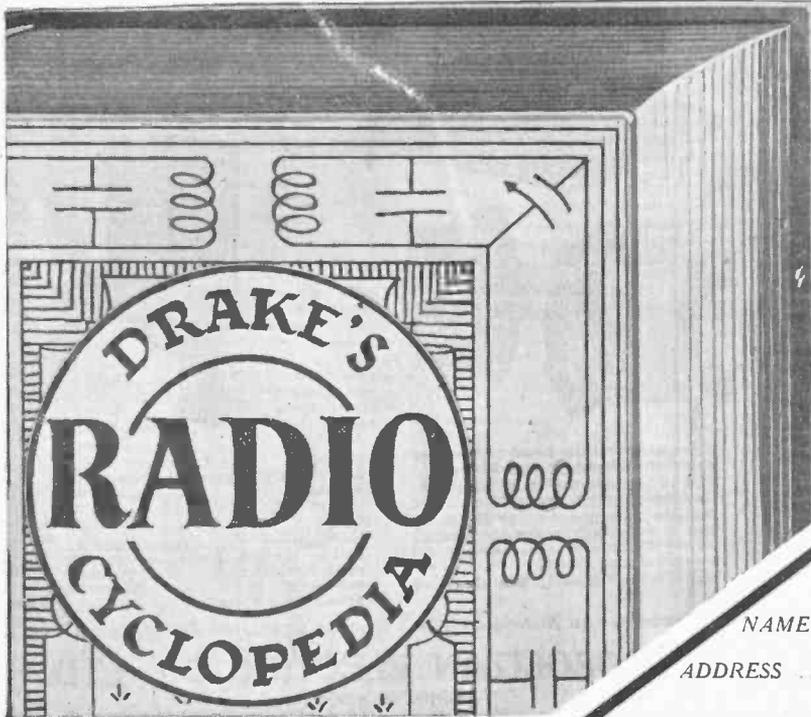
All subjects, from "A-battery" to "Zero Beat," are alphabetically arranged, with hundreds of cross references. This is just one of the features appealing to the man who wants to know how, why, what and which—and wants to know at once. Everything is in plain English, with each word and term applying to radio reception and radio-electricity clearly explained. Drake's Radio Cyclopaedia is not a technical book, yet it contains a world of technical information translated into usable form. The bulk of the material treats of the operation, construction, testing and design of receivers and allied units with enough of the fundamentals to make clear the reasons for all operations. Every illustration is especially drawn to show practical details otherwise impossible to emphasise properly.

There is more text matter than in any other book dealing with radio, and there are more illustrations than in any other book on radio. Drake's Radio Cyclopaedia is complete from every practical standpoint. It brings more satisfaction to radio men than any other investment of like amount or of many times the amount.

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Please send me for free examination and without obligation, a copy of Drake's Radio Cyclopaedia. If I decide to keep it I will send you 5/- (post, 1/- extra) within seven days of receipt—otherwise I will return the book to you immediately, when my obligation ends.



NAME .....

ADDRESS .....

# PROVING RADIO!

No. 18 Just how does a telephone receiver or loud speaker operate? How do the various principles of different types of speakers vary? What is an electro-dynamic speaker? What is a cone speaker? What is a horn speaker? What is an induction speaker? How do these different types operate? What is the best type of speakers? Answers below.

NOW that we have dealt with electro-magnets, we are in a position to understand the operation of loud-speakers. Later, we shall construct our own headphones, and the information given in this article should be of practical use.

In its simplest form, the telephone receiver or loud-speaker consists of a thin, soft-iron diaphragm, mounted close to, but not touching one pole of a bar magnet. A fine wire is coiled round one of the ends of this magnet, and the ends of this coil (which together with the bar magnet form an electromagnet) are connected directly in the circuit where the instrument is to be used. The diaphragm is rigidly supported at its outer edge, but the centre portion will be curved very slightly inward, because of the attraction between the diaphragm and the magnet. If a current is sent through the coil in such a direction that the lines of force set up by it coincide with those of the permanent bar magnet, the strength of the magnet will be increased, and the diaphragm will be drawn closer to the pole. If, however, a current is sent through the coil in such a direction as to set up lines of force opposing those of the magnet, the strength of the magnet will be diminished, and the diaphragm will spring farther from the pole.

If a current that varies in value but is always in the same direction, is sent through the coil, the lines of force induced in the magnet will increase while the current is increasing, and decrease while the current is decreasing. Thus, a varying pull on the diaphragm will cause vibrations that will be in harmony with the changes of current, whether the lines induced by the coil are in the same direction as those of the magnet or not.

If the current is an alternating one, i.e., one that is first in one direction and then in another, the lines of force set up in the magnet will change their direction every time the current changes its direction. They will thus, while in one direction, aid to the strength of the magnet, and while in the other direction, diminish it, producing a varying pull on the diaphragm.

About the only types of loudspeakers most of us are familiar with are the horn, the cone, and the electro-dynamic, but few of us know exactly how the internal working parts of each differ from those of the others. And still fewer understand the induction speaker or the capacitative speaker. These latter types are as yet not in common use, but a slight knowledge of the principles employed in each may be a welcome addition to the radio fan's fund of knowledge.

### HORN TYPES

Since the exponential horn was put on the market, the interest in this type of

speaker has revived greatly. For best results the horn used should have its diameter doubled for each foot of its length, according to certain acoustical engineers. That is, if the opening is one inch in diameter the diameter should be two inches at one foot from the opening four inches at two feet, etc. The horn should be made out of some non-resonant material, and have no natural period of vibration. The unit employed in horn speakers is usually similar to that in a telephone receiver or radio head-set. That is there is a permanent magnet, of modified horseshoe shape around each pole of which there is a coil of fine wire (in other words, an electro-magnet). These poles are close to the diaphragm, which they hold in a slightly concave position, as illustrated in Fig. 1. As the current from the output tube pulsates, the magnets are alternately made stronger or weaker, causing the diaphragm to vibrate. This causes a corresponding movement is the air resting upon it and sound is reproduced.

### CONES

The units about to be described are sometimes used in horn speakers, but are almost invariably found actuating the cone type. In these, the diaphragm is not acted upon directly by the magnets. Instead, a thin bit of iron is suspended between the two poles, and acted upon by the fluctuating magnetic force, drives the diaphragm by means of a coupling pin. Unlike the unit previously described, the diaphragm is normally under no tension when the unit is at rest. Great sensitivity is supposed to be obtainable. Means of employing the lever principle have been devised so that the diaphragm can be driven more powerfully or a greater distance than when it is directly driven. Figures 2 and 3 illustrate these ideas.

The cone may be made of stiff paper, light wood, or specially treated cloth or parchment. It is merely a large vibrating diaphragm, and creates enough disturbance of atmosphere to give ample volume without the use of a horn.

### ELECTRO-DYNAMICS

To the diaphragm of the electro-magnetic speaker, illustrated in Fig. 4, is attached a very light, small coil of fine wire, which fits closely but freely over the pole of a powerful electromagnet. An output transformer couples this coil to the last audio

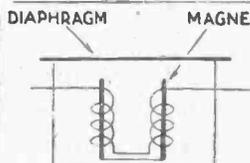


FIG. 1

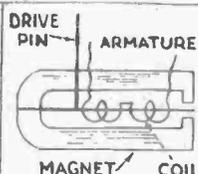


FIG. 2

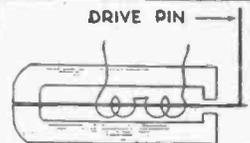


FIG. 3

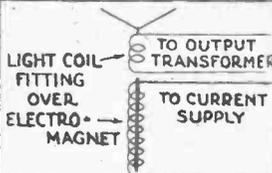


FIG. 4

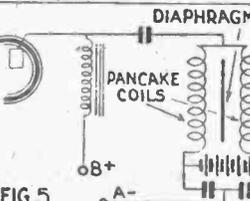


FIG. 5

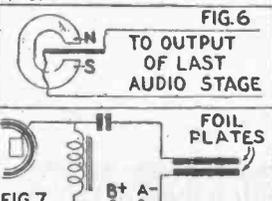


FIG. 6

stage of the set. As the current pulsations flow through the small coil, it is attracted or repelled by the electromagnet, and vibrates, carrying the diaphragm, to which it is rigidly fastened, with it. Tremendous volume may be had from speakers of this type, and they are rapidly increasing in popularity.

### OTHER TYPES

Figure 5 shows the idea on which the induction speaker is based. Speakers of this type have been heard for distances up to five miles. The coils are wound in such a manner that their centres will have opposite polarity and their peripheries the other. This induces an unlike polarity in the diaphragm suspended between them. The current pulsation re-enforces the magnetism of one coil while opposing that of the other, and as a result the diaphragm is caused to vibrate.

Two types of capacitative speakers are in general use in Europe. The first, shown in Figure 6, is a wide metal strip placed between the poles of a permanent (or electro) magnet. It gives clear reproduction but poor volume, according to reports. The second, Figure 7, employs a principle said to be winning wide favor abroad. It consists of two tightly stretched sheets of thin metal held a short distance apart. As the charges on the plates change, according to the electrical pulsations, the plates attract and repel each other, the stability of the plate connected to the negative "A" being greater than that of the other. Sometimes the space between the two plates is enclosed and a horn is affixed to an opening in its wall to increase the volume.

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# Proving Radio Club now has 113 Members

**H**UNDREDS of listeners who do not know very much about the fundamentals of radio have been keenly interested in the series of Proving Radio articles appearing in "Wireless Weekly."

These articles have set forth in a simple and interesting manner the elementary principles of radio, and have described a number of interesting experiments with radio phenomena.

The Proving Radio Club is an organisation of radio enthusiasts meeting together in many separate groups to carry out these experiments with a view to furthering their knowledge of radio, or with a view of sitting for the Amateur Operators' Proficiency Certificate some time in the future.

In the short time which the club has been in existence 14 groups have been formed, numbering in all 113 members.

Any group of radio enthusiasts meeting together to carry out these experiments may designate themselves a Proving Radio Club. Interested readers are invited either to get in touch with the groups mentioned below, or to form their own group among their friends.

## CLUB NOTES

**F**OLLOWING on the very successful visit to the A.W.A. station at Pennant Hills, the executive has decided to arrange a trip to the A.W.A. La Perouse short-wave station at an early date.

**BONDI GROUP** is still without a meeting-place. Anyone interested please note that the group representative, Mr. L. R. Barker, would be pleased to hear from them. Phone M 6661.

By request, a complete list of group representatives and their addresses is published hereunder:—

**DULWICH HILL:** Mr. C. Y. Hook, 29 Blairgowrie Street, Dulwich Hill. (This club closed for membership, but a No. 2 group will be opened in cases where local listeners desire it.)

**ARNCLIFFE:** Mr. A. G. Simmonds, "Guntown," Marsh Street, Arncliffe.

**SUMMER HILL:** Mr. E. Beely, 1 Dover Street, Summer Hill. Phone, U7980.

**CONCORD WEST:** Mr. V. Worswick, 67 Consett Street, Concord West.

**RANDWICK:** Mr. W. Tregilgas, 8 Stephen Street, Randwick. (This club closed for membership, but a No. 2 group will be opened in cases where local listeners desire it.)

**CITY NO. 1:** J. O'Dea, City Treasury, Town Hall, Sydney. (This club closed to membership, but intending members will be admitted to City Group No. 2.)

**CITY NO. 2:** Mr. Wittenberg, 475 Harris Street, Ultimo.

**ORANGE GROUP:** Mr. J. A. Allison "Brantwood," Nashdale, via Orange.

**TURRAMURRA:** Mr. J. G. Burgess, Marshall Avenue, Turramurra.

**WILLOUGHBY:** Mr. F. Ells, 22 Dawson Street, Naremburn.

**COFF'S HARBOR:** Mr. J. M. Burke, Lyster Street, Coff's Harbor.

**NEWCASTLE:** Mr. F. Meredith, Main Road, Cardiff Heights, Newcastle.

**KOGARAH GROUP:** Mr. W. Roberts, 11 Prince's Highway, Kogarah.

**CREMORNE:** Mr. S. R. D. Sherwood, 117 Milson Road, Cremorne.



This handsome certificate is presented to each member of the Proving Radio Club.

## GROUP REPORTS

**DULWICH HILL GROUP:** After returning to static again, the Dulwich Hill group has decided to construct a Wimhurst (static) machine, with which many interesting experiments will be demonstrated.

**CONCORD WEST:** New member admitted. Welcome, Reg. Myles, Concord. First experiments with electrophorus and Leyden jar. These were a failure. (Note: The deviations mentioned in your report are the evident cause.—R.M.) Then tried copper plating, which was a complete success, as was the experiment on decomposition of water. We then decided to inspect the rectifier, which had been forming during our discussion. We found that a black granular deposit had formed in patches, while the lead plate was unaltered, but we used tap water instead of distilled water. When we started to form the rectifier the lamp to be inserted in series with the primary of the transformer refused to light, so we placed a small pilot light in. This lit up. (NOTE: An ordinary lamp globe should have lit up to fair brilliancy, since the circuit through the primary is continuous, and with the exception of the voltage drop caused by the resistance of the primary, 240 volts is passing through. This points to faulty connections or a faulty transformer.)

**ARNCLIFFE:** We held a very successful meeting on Thursday night, 11th inst., and have enlarged the group with two new members, a third being promised. The two new members are Messrs. L. H. East and H. Crisp. The former comes from Mascot, and is desirous of forming a group in that district. We had a practical night with A.C., and examined its generation on a telephone magnet.

**MASCOT GROUP:** It has been suggested by Mr. L. H. Crisp that a Mascot Group be formed. As we have not been supplied with Mr. Crisp's address, we can only refer readers interested to Mr. L. H. Crisp, c/o Arncliffe Group, whose address has previously been given.

**SUMMER HILL:** This group has missed several reports, which now appear here. The

main experiment on April 4 was the A.C. rectifier. We connected up as explained in "Proving Radio," and although the rectifier was only forming for three hours a light film could be seen on the positive plate. It was discovered afterwards that zinc instead of aluminium had been used for the positive element! We shall do this experiment again. Next, we took copper plating, which was successful. We tried plating on brass, tin, tinned copper, iron, etc. The action of the plating was explained by Mr. Thomas. Then we treated magnetic and electrical induction. A battery was connected across one coil, and a galvanometer across another. When the circuit was completed, the galvanometer could be seen to swing away. The battery was then disconnected, and a magnet was held close to the coil, then drawn away, and so on. Each time the magnet was moved a slight movement of the galvanometer could be seen. The rest of the evening was taken up discussing batteries in series and parallel. Our next meeting was held on April 11. We commenced this meeting constructing a jumping spring, and trying to make it jump! We were not altogether successful, but managed to get it working in a sort of way. By giving the table a jolt the spring would vibrate, and in doing so would make and break with the mercury. (NOTE: The top of the spring must be securely fastened.) The jumping spring was then connected to the electro-magnet, and the iron filings were attracted to the electro-magnet each time the spring touched the mercury. Even when the magnet was held 2 inches away from the filings a movement could be seen.

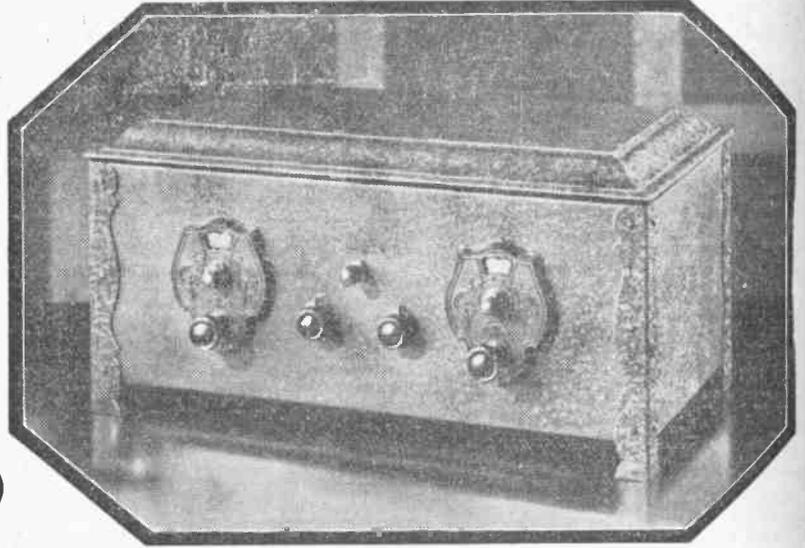
**CREMORNE GROUP:** The last meeting of the above group was held on Friday last, 12th inst., and was very interesting. The principles of the Leclanche and dry cells were demonstrated by Mr. Dempster on a blackboard. The experiments on decomposing water and electro-plate were postponed on account of the battery being flat. Next week we hope to begin on Ohm's Law, and calculation of resistances and capacities in series and parallel. Intending members are invited to write to the secretary, S. R. D. Sherwood, 117 Milson Road, Cremorne.

Mr. A. W. Cleverly (Kogarah): Get in touch with Mr. W. Roberts, 11 Prince's Highway, Kogarah.

**COFF'S HARBOR:** As our material did not arrive we commenced static experiments with makeshift parts, but the results were not very gratifying, and the weather was unfavorable. We used linen instead of silk. Would this make any difference? (NOTE: Yes, because various substances take on different types of charge, i.e., some take on a negative and others positive, whilst others cannot be electrified by friction.) Those present were Messrs. C. Debenham (in the chair), W. H. T. Riding, J. M. Burke, H. Smith, W. Jackson, R. Jacobs, J. Cocker, T. Hannan, G. Pullen, and also two new members in the persons of Dr. D. W. Hawke and L. Kearns. Two new members are expected next meeting, when we shall commence our experiments. It is to be hoped that you will let us have our material by that date. (NOTE: Your previous letter was passed on to the organising secretary, marked "Urgent," and you will probably have heard from him before you read this.) Re the matter of certificates, have these been printed yet? If so, what steps must be taken to procure them? (NOTE: No action need be taken. Your certificates will be forwarded you within a few days.)

There are, at the present moment, 113 members in the "Proving Radio" Club.

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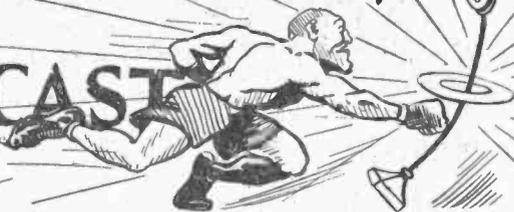
Your Receiver is no better than its valves. Improve it—get better Radio—use Cossor Valves. Cossor Valves improve any set—from a simple two valve Receiver to the most elaborate Super-heterodyne. Cossor Valves made possible the amazing efficiency of the Cossor Melody Maker—Britain's greatest Radio Achievement. For sweetness of tone, majestic volume and enormous range Cossor Valves are essential. Use Cossor Valves throughout your Set and get better Radio. Every Radio Dealer stocks Cossor Valves.

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# HITTING BELOW BROADCAST THE BELT



Short-wave and Amateur Notes by VK2NO

IT has been a heart-breaking business of QRM, power leaks, and QRN all through the week-end. Even VK2AW, who has the enthusiasm and persistency of the newcomer to the ham ranks, admitted it, and said things under his breath with me. Once upon a time—it sounds like a fairy story now—interference was non est on the 20-metre band; but 1929 has made the gang all over the world seek fresh pastures to graze in, and on Sunday afternoons the world takes a look in on 20. At least, it seems so in Sydney.

As I was one of those to advocate the use of the 20-metre band, don't let it be thought that I am crying sour grapes, but we will have to do something about this band in particular. In Australia, at least, it is the useful long-distance band, but at times to try and identify a European or American through the babel of many keys is like trying to whisper in the front line with "HE" sailing overhead!

As hams, we cause a lot of QRM among ourselves, but we can easily rectify that. What we must get down to is the established fact that high power commercial stations are spread around our supposedly reserved band from 20.8 to 21.4 metres. Here are a few, and if any hams like to write me and corroborate they are welcome to do so:—PCR in Holland (drowns quite a few Englishmen at the best DX period), XGP (who is he please?), PLJ (perhaps just outside . . . below), VTK, WPAT (may be forgiven . . . he works hams), NA (again who?), PKR, FJP (terrible 500-cycle QRM), JRRC (calmly announces he is sending on 20.55 and 20.87). There are others in the dim distance who do not cause much interference with us in Australia, but what happens to our signals by the time they get near where those stations are located? Just lost in the backwash of a 1929! The part that hurts is that if one shifts around the frequency of the receiver a little there are large gaps in the frequencies reserved for commercial work, which are as silent as the desert.

There are probably many countries which have not yet ratified the 1928 Washington Conference, and this may account for some of the bedlam on our band. It seems time that the authorities concerned took action and marshalled their big noise-makers into their own place in the sun, for it is a foregone conclusion that if amateur stations did not pay scrupulous attention to their correct frequency trouble would not be far in the offing. The Washington Conference, no matter how much it restricted the amateur, at least recognised him, which is the main thing, and from this the amateur deduces that he is entitled to ask for the removal of the offending stations to their proper quarters. In Australia the amateur knows that his authorities will do everything to help him.

but those other countries will take some "getting at."

Talking of amateur transmissions on both the 40 and 20 metre bands, it is pleasing to note that signals are improving everywhere, and more trouble is being taken over the plate supply and tuning of transmitters. There are very few of the rough RAC notes left, and those that are should be cleaned up as speedily as possible. Still, I heard one well-known N.S.W. station on Sunday, April 14, using a rough note, and with parasitic harmonics above and below his fundamental. That, to put it politely, is N.D.G., and those weak harmonics were sufficient to drown a strong American signal. It seemed as if, at the station referred to, the fowl yard fence was radiating in sympathy with stay-wires, halyards, etc.

One could decypher a few Englishmen through the medley on this Sunday afternoon, but in my own case it was really not safe to call them as someone seemed to start a vacuum cleaner or similar source of QRM every few minutes in a nearby residence to VK2NO-VK2AW. G5BY was the strongest, with G5YX next. Others were G5BZ and G5WK. I heard a Victorian calling our old-timer, G2OD, but could not locate Simmonds. So presume the Victorian got calls garbled somehow. By far the best American was W2AG, whose beautiful crystal-controlled signal, with its slight modulated whine, rocked in at QSA5 all afternoon.

In the evening about 11 p.m. W9EF was QSA5, with an AC signal, which was, nevertheless, very steady. W9BVH, whom I hooked at this time, told me that he couldn't quite follow VK2NO, because the milkman was kicking up a din with his flivver in the street! Other stations identified during the afternoon were Frenchmen, Czech-Slovakian, Dutch, Brazilian, and Chilean, so it seems the whole world is busy on 20. So chronic have the power leaks become from the nearby tram route at VK2NO-VK2AW, that the best time from all points of view seems to be from 2 a.m. to 8 a.m., when all the trams, except hourly stragglers, are asleep in their sheds and the Englishmen come through up to R4. It is difficult to raise them, though, and higher power is necessary at this time to do the trick.

The reason for this is that Australian signals are lost at this time in between the Americans, and the Americans must be all over the band in signals, as the Englishman can be heard working them as fast as they hear them. The Americans are not audible at this time, excepting under freak conditions. The nice background of silence makes the night watch worth while, and my next move is a bunk in the shack. Up on 42 metres things are quite interesting also, and from 8 p.m. onward to midnight VK2NO-VK2AW will be found with the rest.

It does not seem much use at present calling the Americans on 42 before about 11 p.m. Sydney time, as the interference at both ends is very heavy, and brute force is needed to get through. Some of the VK's might be interested to know that one or two of the most con-

sistent and strong Americans are using around 500 to 800 watts input, so what hops has a puny 50-watt signal sometimes?

VK7DX is still slamming out his high-speed, clean-cut PDC signals, and on the night of April 15 I heard him calling VK8SA. VK8SA is friend Austin, of VK6SA, who has flown north with Pilot O'Dea on the aviation rescue party. He is supposed to be on 33.5 metres, with a portable transmitter. So far I have not been able to find him, but he must be there, as VK6MU was busy working him. Austin must feel a beautiful sense of temporary immunity from QRM whilst he sojourns on the old band!

VK2ZN, in Coogee, has about the nicest signal of the N.S.W. stations on 42 metres. He is so strong in the receiver that the only way to read him is minus aerial or with the R.F. amplifier well detuned. Please, VK2FA, what are you going to do about that 1829 type note? Ever tried replacing the old Kenotrons by dull filament rectifiers of the UX281 type? Four of them, two per side, will give you that DC you are looking for.

The 42-metre band seems to have something of the quality of the 80 and 32-metre bands, combined as the West Australian stations were never heard so well in Sydney on 32 metres as they are on 42. VK6AG was busy the other night, and his signal strength was terrific here. VK6MU, who was never very strong on 32, is now a good RC consistently. Sudden fading is, however, just as acute on 42 as on 32. Last night I was in the middle of a chat with VK2CU, in Ulmarra, and his signals were R6. Even as he came back at me after a charge-over, he disappeared in 5 seconds.

The same thing probably happened at his end with VK2NO's signal, but it will be interesting to see, as the aerial used here is rather unique, being a half-wave Zepp, with three-quarter wave feeders, in the form of a Z. The full-wave Zepp on 20 metres is not yet proving as successful as the little doublet. No trouble was ever experienced in raising Europe with the same input, but with the full wave job quite a few calls seem necessary.

A new 1929 type, self-rectified transmitter is to be constructed, and kept entirely for the 20-metre band, with a doublet aerial. This is hoped, will put a signal wherever there is a short-wave receiver. Russia must be a wonderful country for DX reception, judging by the shoals of cards arriving at "Wireless Weekly" office for Aussie hams. (They are being forwarded.) How many Australians hear the Russians? From 3 a.m. to 4 a.m. seems to be the time. I heard EU2BJ R3 QSO-Ing England at this time on 20 metres. The Soviet Republic seems to be encouraging the ham as much as possible, and one card from Tiflis, in Caucasia, bears the inscription, "Radio for the Emancipation of the Oppressed." In 1919, at which time I was in this part of Russia, an aerial would have probably brought a few grenades and revolver shots. The USSR hams seem to be a very enthusiastic lot, and would be glad if we would make a point of looking out for them.

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**S**TROMBERG-CARLSON Treasure Chest Receivers are entirely "Australian-made," designed by Australian Radio Engineers and are backed by the Stromberg-Carlson Laboratories, Rochester, New York, which are of international renown. They embody to the greatest possible extent the many quality features, so well known and associated with the name—"Stromberg-Carlson."

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Stromberg-Carlson Receivers are specially designed to suit Australian conditions, and are pre-eminent in range and tonal quality.

All of our Receivers fit into the handsome wooden Console, illustrated. Into the bottom compartment can be fitted the Batteries or a Dynamic Speaker.

PRICE . . . . . £11/15/-

(Cabinet only.)

All Models Illustrated are mounted on steel chassis, and are housed in handsome Steel Cabinets, finished two-tone Brown, with Golden High-Lights. They are equipped with Beautiful Old Gold escutcheons, and are all essentially "one-dial control" machines.



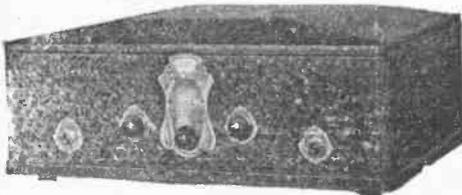
### Stromberg-Carlson Treasure Chest

BATTERY 2.

Gives a rare opportunity to people of slender means to own a quality Receiver, housed in a handsome steel cabinet, which is of the same design and finish as our dearest model.

Price £8/10/-

(Batteries, valves, and speaker extra.)



### Stromberg-Carlson Treasure Chest

ALL ELECTRIC 6

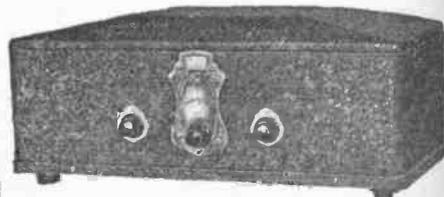
(\*7 Valves in all—see foot-note.)

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(Valves and speaker extra.)

\*IMPORTANT—All electric sets require an additional valve for purely current rectifying purposes. BEWARE of the so-called "Electric Six," with only six valves in all, or the "Electric Four," with only 4 valves in all. The former is really only a 5-valve receiver, and the latter a 6.



### Stromberg-Carlson Treasure Chest

ALL ELECTRIC 3

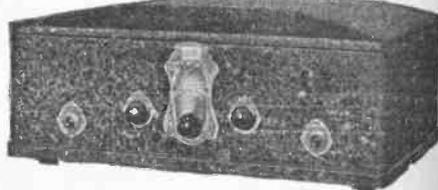
(\*4 Valves in all—see foot-note.)

No Batteries needed—simply plug into your electric light socket. Noted for its selectivity and volume.

Price £21/15/-

(Valves and Speaker extra.)

\*IMPORTANT—All electric sets require an additional valve for purely current rectifying purposes. BEWARE of the so-called "Electric Three," with only 3 valves in all, or the "Electric Four," with only 4 valves in all. The former is really only a 2-valve receiver and the latter a 3.



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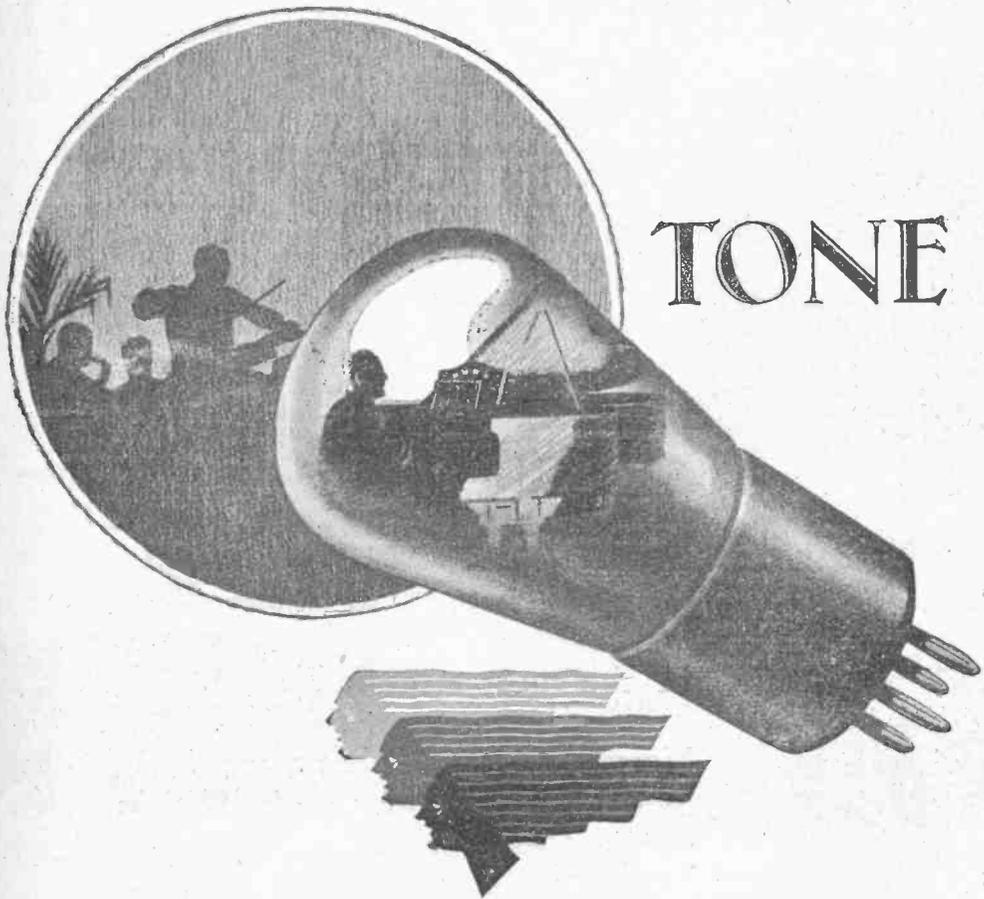
(Batteries, valves, speaker, and voltmeter extra.)

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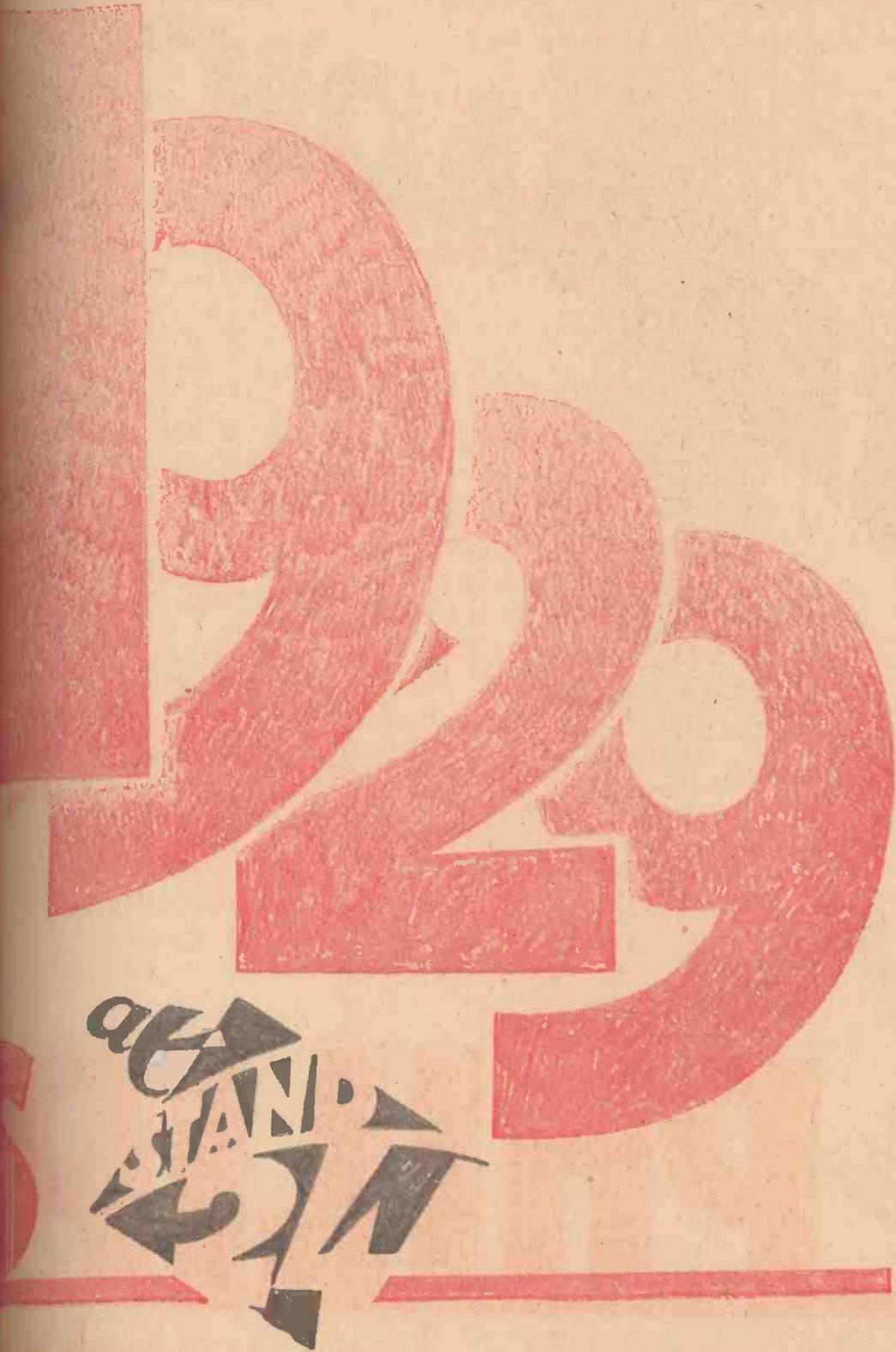
# SEE RADIO

**A** GAIN the vital interest of the Radio Exhibition will centre around the Philips Stand—24. Each year brings many sensational changes in radio—Philips Radio— and 1929, far from being an exception, will be the most remarkable yet.

Marvellous A. C. Tubes new principle Speakers, ingenious Gramophone Amplifiers, a feather-weight Gramophone Pick-Up and a new Dual-Rate Charger are but a few items of an imposing list. See also a mighty product of the Philips Laboratories—the new Portable and Dental X-Ray Outfits—amazing units made by an amazing firm—PHILIPS



# PHILIPS



# BAULK THIS LEAK-THIEF!



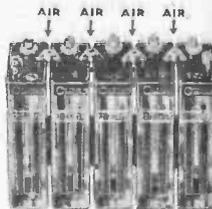
He steals energy. Electrical Leakage can sneak along smooth-top H.T. Accumulators—stealing power for which you pay. . . . .

Electrical leakage in a smooth-top H.T. Accumulator can easily ruin your reception. Without adequate H.T. current your Set cannot give of its best. Distortion sets in. It loses its tone. Its range is shortened and its volume is reduced. Electrical leakage robs you of your money and your Set of the H.T. it deserves.

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Combine with any other and bring in some useful cells

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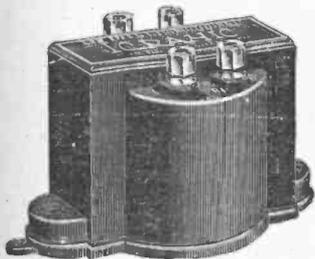
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The Igran L.F. Transformer Type "J" has been developed to meet the demand for a Low Frequency Transformer which, while being of small dimensions and comparatively light in weight, will give amplification of a standard comparing favourably with heavier and more expensive types of instruments at present on the market.

The Igran L.F. Transformer Type "J" meets all these requirements admirably. It is a remarkably efficient instrument, measuring only 3 1/8-in. long by 1 7/8-in. wide by 2-in. high, and weighing approximately 10 ozs. Its light weight and small dimensions constitute features which render the instrument particularly suitable for incorporation in portable receivers.

We can assert with confidence that the performance of this transformer is definitely better than any other transformer of similar size and price, and including many instruments selling at considerably higher prices.

**27/6**

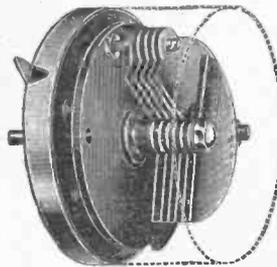
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Supplied in 2 ratios of 3:1 and 6:1.

## IGRANIC SCREENED CONDENSER

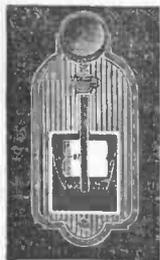
The Igran Screened Condenser will be found suitable for use in all circuits employing reaction on the Reinartz principle. It is of the straight-line capacity type, and is provided with spindle of insulating material, which, in conjunction with the screening case, enables the condenser to be used in any position without experiencing trouble due to hand capacity effects. The metal screening case also acts as an effective electrostatic screen, which is of particular importance in neutralised and short wave circuits. The vanes are of stout sheet brass, maintained rigidly in position by the same method of assembly which is a feature of the Igran "Lokvane" Condenser. Maximum capacity is .00015 mfd.

Price .....

**14/3**



## IGRANIC VERNIER DRUM CONTROL



Here is the very latest aid to rapid tuning-in. Just a few quick turns of the Drum Control, a slight adjustment, and you bring in the transmission at full strength. The Vernier Drum Control comprises a large diameter moulded driving disc, serrated for "thumb" control in coarse tuning-in and so arranged as to engage with a worm drive, which may be thrown into mesh for the purpose of providing fine Vernier Control by means of a small control knob.

This makes it possible to make rapid search for any desired station.

The main driving disc carries two sectors of white ivory, one engraved with indicating scale, and the other plain, on which may be pencilled records of stations received.

The sectors are translucent and a small electric lamp mounted on the bracket illuminates the scale readings—a great aid to making accurate tuning adjustments at any time.

Current for this lamp may be derived from the L.T. Battery, and a separate switch may be provided to allow for switching off the lamp when not required.

A beautiful escutcheon plate moulded in best quality bakelite imparts to the receivers a most artistic appearance, worthy of the best surroundings.

Price .....

**37/6**

These Igran devices are to be seen at the Radio and Electrical Exhibition, Sydney Town Hall, where every information will be gladly given at

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*As sweet voiced  
as a woodland  
Nymph*

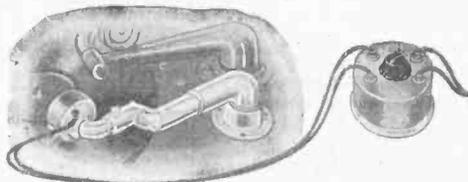
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A perfected Electrical Phonograph Pickup equipped with a special spring toner which prolongs the life of your phonograph records considerably. The Baldwin Pickup is easily adapted to any Phonograph and is equipped with volume control allowing adjustments to be made in individual conditions.

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THE M.P. STERLING 80 offers the ultimate in perfect rendition. It reproduces with real fidelity every note of the tonal range and must appeal to the most sensitive ear of the musical critic. To appreciate it you must hear it. Works direct from the A.C. Mains and has low consumption. Price, Chassis, £10/10/-

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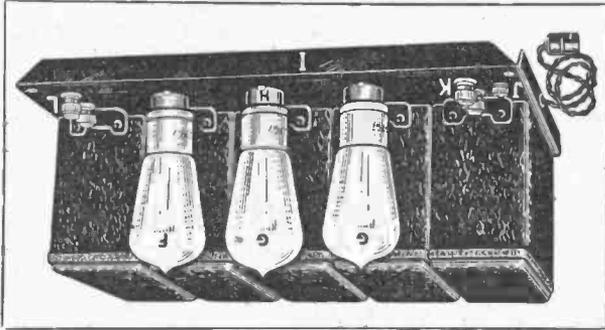
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An exquisitely finished Vernier Dial which will enhance the appearance of your set and add to its efficiency.  
 It has an exceptionally smooth velvet-like motion, strong friction drive, and very fine adjustment, which facilitates tuning operations for either clockwise or anti-clockwise movement. Positively no backlash.  
 The Mello is a beautiful precise Vernier Dial, with the escutcheon finished in oxidised silver, also Copper Bronze.  
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# Local Programmes, Friday, April 26

## 2FC

### EARLY MORNING SESSION

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

### MORNING SESSION

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

### MIDDAY SESSION

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

### AFTERNOON SESSION

Announcer: Laurence Halbert. Accompanist: Ewart Chapple. 2.30: Programme announcements. 2.32: "The Book Lovers' Corner." 3.0: "Big Ben"; popular music. 3.30: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams. 3.40: From the studio, Genevieve Eppel, soprano, (a) "The Wind in the South" (Prindle), (b) "Cupid" (Sanderson). 3.46: A reading. 4.10: Violet Hunt, contralto. (a) "The Last Hour" (Kramer), (b) "Honey Chile" (Strickland). 4.17: Popular music. 4.22: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams. 4.32: From the studio, Genevieve Eppel, soprano. (a) "The Fairy Tales of Ireland" (Coates), (b) "Life Has Sent Me Many Roses" (Loir). 4.39: Studio items. 4.45: Stock Exchange, third call. 4.47: Violet Hunt, contralto. (a) "The Three Mummies" (Head), (b) "Peace" (Fogg). 4.54: Studio music. 5.0: "Big Ben." Close.

### EARLY EVENING SESSION

Announcer: A. S. Cochrane. 5.40: The chimes of 2FC. 5.45: The children's session, conducted by the "Hello Man"; letters and stories; music and entertainment; Madame Ada Baker's pupils, vocal duet, "The Merry Bells" (Glover). Bruce and Leslie; violin duet, "The Loreley" (Silcher). Florence and Audrey; recitations by Little Joan; pianoforte solo, "Rose Dreams" (Stasny). Trevor: solo, "Nightingale's Trill" (Ganz), Bruce; "Melody in F" (Rubinstein). Lennie and Dorothy and children (vocal). 6.30: Dalgety's market reports (wheat, and stock). 6.40: Fruit and vegetable markets. 6.43: Stock Exchange information. 6.45: Weather and shipping news. 6.48: Rugby wireless news. 6.50: Late morning news by the 2FC Racing Commissioner. 7.0: "Big Ben"; late news service. 7.10: Recital of dinner music.

### EVENING SESSION

Announcer: Laurence Halbert. Accompanist: Ewart Chapple. 7.40: Popular music. 7.45: Programme announcements. 7.48: Studio music. 8.0: "Big Ben." Frank Botham, baritone. 8.7: Carlos Fakola, novelty pianist. 8.15: From the R.M.S. Narkunda, description of the vessel on the occasion of the Navy League Ball. 8.30: From the studio, Margaret Grimshaw, popular vocalist. 8.37: Phil Smith, comedian. "The Vicar's Fancy Ball" (Weston and Lee). 8.47: From the R.M.S. Narkunda, Montgomery Evans' Dance Band. 9.0: From the studio. "Big Ben." Weather report.

9.1: Frank Botham, baritone. 9.7: From the R.M.S. Narkunda, Montgomery Evans' Dance Band. 9.20: From the studio, Carlos Fakola, novelty pianist. 9.30: Margaret Grimshaw, popular vocalist. 9.34: From the R.M.S. Narkunda, Montgomery Evans' Dance Band. 9.49: From the Studio, Phil Smith, comedian. "The First Forty Years are the Hardest" (Donohue and Jerome). 10.0: "Big Ben." From the R.M.S. Narkunda, Montgomery Evans' Dance Band. 10.7: From the R.M.S. Narkunda, Montgomery Evans' Dance Band. 10.27: Late weather and to-morrow's programme. 10.30: National Anthem. Close.

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## 2BL

### MORNING SESSION

Announcer: A. C. C. Stevens. 8.0: G.P.O. chimes; metropolitan weather report. 8.1: State weather report. 8.2: Studio music. 8.15: G.P.O. chimes; news service from the "Daily Telegraph Pictorial." 8.30: G.P.O. chimes; news service continued. 8.40: Information, mails, shipping, arrivals, departures, and sailings. 8.45: Studio music. 9.15: Half an hour with silent friends. 9.45: Studio music. 10.0: G.P.O. chimes. Close down.

### MID-DAY SESSION

Announcer: A. C. C. Stevens. 11.0: G.P.O. chimes; 2BL Women's Sports Association session, conducted by Miss Gwen Varley. 11.30: Advertising Hints; talk on "Diet and Health" by Miss Dorothy de Cleghorne. 11.40: Women's session, conducted by Mrs. Cranfield. 12.0: G.P.O. chimes; special ocean forecast and weather report. 12.3: Studio music. 12.30: Shipping and mails. 12.35: Market reports. 12.48: "Sun" mid-day news service. 1.0: Studio music. 1.30: Talk to children, and special entertainment for children in hospital. 2.0: G.P.O. clock and chimes. Close down.

### AFTERNOON SESSION

Announcer: A. C. C. Stevens. Accompanist: Kathleen Roe. 3.45: G.P.O. chimes; popular music. 4.0: G.P.O. chimes; Captain A. C. Stevens will speak on "A Holiday in a Kashmir House Boat." 4.15: Gwen Neat, in popular items. 4.22: "Sun" news service. 4.30: Studio music. 4.45: Gwen Neat, in popular items. 4.52: "Sun" news service. 5.0: G.P.O. chimes Pianoforte reproduction. 5.15: Popular items. 5.30: Racing resume. 5.35: Producers' Distributing Society's poultry report. 5.37: Features of the evening's programme.

### EARLY EVENING SESSION

Announcer: Basil Kirke. Children's session, conducted by Uncle Bas; music and entertainment; letters and stories. 6.30: "Sun" news and late sporting. 6.40: A dinner music recital. 7.7: Australian Mercantile Land and Finance Co.'s report; weather report and forecast, by courtesy of Government Meteorologist; Producers' Distributing Society's fruit and vegetable

market report; grain and fodder report ("Sun"); dairy produce report ("Sun"). 7.25: Mr. Plim and Miss Pam in Advertising Talks, Handy Hints, and Nonsense. 7.53: An Ad. special. 7.55: Programme and other announcements.

### EVENING SESSION

Announcer: Basil Kirke. Accompanist: G. Vern Barnett. 8.0: G.P.O. chimes. 2BL Topical Chorus. 2BL Light Orchestra, conducted by Horace Keats. (a) Selection, "Sinbad" (Romberg). (b) "Rhapsodfantasie" (arr. Artok). 8.20: Alicia Haywood, contralto— "Three Nocturnes" (Sanderson). 8.27: Graham and Manning, entertainers— (a) "There's a Good Time Coming" (Gideon). (b) "Won't You While Away a Little While With Me?" (Ayer), Dorothy Manning. (c) "I've Got Something to Say to You" (Wood). 8.34: Lea Rowan, soprano. 8.41: 2BL Light Orchestra, conducted by Horace Keats— (a) Overture, "Stradella" (Plotow). (b) Suite, "Othello" (Coleridge-Taylor). 8.58: Dismal Desmond, comedian— "Humorous Monologue" ("Cricketer"), M.S. 9.3: Weather report. 9.4: Alicia Haywood, contralto— (a) "Hush'd Is My Lute" (Phillips). (b) "Boat Song" (Harriet Ware). 9.11: Graham and Manning, entertainers— (a) "Thanks, Very Much" (Parre), Harry Graham. (b) "Shopping" (Rome)—musical sketch. 9.21: Lea Rowan, soprano. 9.28: Aubrey Halloran will speak on the Landing of Captain Cook. 9.38: 2BL Light Orchestra, conducted by Horace Keats— Selection, "Hansel and Gretel" (Humperdinck). 9.53: Dismal Desmond, comedian— (a) "I'm Setting the Village on Fire" (Merson). (b) "I'm Going Back to Himazas" (Austin). 10.0: G.P.O. chimes; C. R. Dexter will speak on the last minute racing information.

## 2GB

10.15: The Savoyans' Dance Band. 10.30: Late Weather report. 10.32: The Savoyans' Dance Band. 10.57: To-morrow's programme. 11.0: The Savoyans' Dance Band. 11.30: National Anthem. Close.

## 2UW

12.30: Music. 1.0: G.P.O. clock and chimes; music. 2.30: Close down. 4.30: Musical programme. EVENING SESSION 5.30: Children's hour, conducted by Uncle Jack. 6.30: Close down. 7.0: G.P.O. clock and chimes; music and request items. 9.0: G.P.O. clock and chimes; comments on foreign affairs by Mr. J. M. Prentice. 9.10: Music and request numbers. 10.30: Close down.



7ZL

MID-DAY SESSION

11.30: Midlands weather forecast. 11.55: Tasmanian stations 9 a.m. weather report. 12.1: Shipping information: ships within wireless range; mail notices; housewives' guide; commercial news. 12.29: Announcements. 12.55: News service; Railway auction produce sales. 1.5: Under the auspices of the "Come to Tasmania" Organisation. A. J. Honey will speak on "An All-Australian Fruit Exhibition." 1.30: Close down.

AFTERNOON SESSION

3.0: Chimes. 3.4: Weather Information. 3.15: A studio concert by the Discus Ensemble. 4.30: Close down. During the afternoon progress results will be given of Ballarat Miners' Turf Club races.

EARLY EVENING SESSION

6.15: Selections. 7.10: News service; Railway auction produce sales, held at Railway. Tasmanian weather report.

EVENING SESSION.

Accompanist: Lella Read. Announcer: Jack Broadbent. 7.15: Sid Jones will speak on "Football." 7.30: John Benson, piano solos—"Romance in D Flat" (Sibelius). "Prelude in C Sharp Minor" (Rachmaninoff). 7.40: Doris Barker, soprano—"The Willow Song" (Otello), "One Fine Day" (from "Madame Butterfly"). 7.47: G. Cassado, cello solo—"Melodie Arabes" (Rachmaninoff). 7.50: L. Maddock, baritone—"Glorious Devon" (German), "Sally, Roses" (Bostelmann). 7.55: Lener String Quartet—"Quartet in E Minor," parts 1 and 2. 8.4: Katie Rothwell, contralto—"Softly Awakes My Heart" (Saint-Saens). "Yonder" (Oliver). 8.11: John Benson, piano solos—"Hungarian Rhapsody, No. 3" (Liszt), "Fantasie Impromptu." 8.20: Doris Barker, soprano—"Vale" (K. Russell), "Canterbury Bells" (Besy). 8.27: Cherevsky Trio, piano, cello, violin—"Spring Song" (Mendelssohn). 8.30: L. Maddock, baritone—"Prayer to Our Lady" (Ford), "Sylvia" (Speaks). 8.37: Grenadiers Guards Band—"Tom Jones." 8.40: Katie Rothwell, soprano—"Pleading" (Elgar). "A Banjo Song" (Homer). 8.45: J. M. Counsel—"A musical hour with the Old Masters." "The History and Development of Music." 9.45: News service. British official wireless news. Railway auction produce sales held at Railway. Weather Information. Hobart Stock Exchange quotations. Market reports from Messrs. Roberts and Co. Wise and Stirling, and T. Thorpe and Co. Railway week-end information. Close down.

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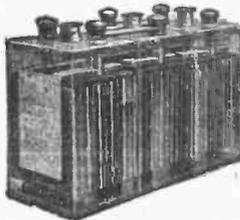
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## 2FC

### EARLY MORNING SESSION.

Announcer: A. S. Cochrane.

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

### MORNING SESSION.

Announcer: Eric Bessemer.

10.0: "Big Ben" and announcements. 10.2: Pianoforte reproduction. 10.10: "Sydney Morning Herald" news service. 10.25: Studio music. 10.30: Last minute sporting information by the 2FC Racing Commissioner. 10.40: Studio music. 10.45: A talk on "Gardening," by J. G. Locklev ("Redgum"). 11.0: "Big Ben"; A.P.A. and Reuter's cable services. 11.5: Close down.

### MIDDAY AND AFTERNOON SESSIONS.

Announcers: Ewart Chapple, Laurence Halbert.

12.0: "Big Ben" and announcements. 12.2: Stock Exchange information. 12.4: Studio music. 12.10: "Sydney Morning Herald" news service. 12.15: Rugby wireless news. 12.20: Studio music. 12.50: From Rosehill—Description of the races in the running. During intervals, from the Studio. "The Gleeful Three" will play. 4.45: Complete racing resume. 5.0: "Big Ben." Close.

### EARLY EVENING SESSION.

Announcer: A. S. Cochrane.

5.40: The chimes of 2FC. 5.45: The children's session, conducted by the "Hello Man"; letters and stories; music and entertainment. 6.40: Stock Exchange information. 6.42: Weather and shipping news. 6.45: Rugby wireless news. 6.47: Late sporting news. 7.0: "Big Ben"; late news service. 7.10: The 2FC Dinner Quartette, conducted by Horace Keats—(a) "A Summer's Morn" (Haines), (b) "Kiss in the Dark" (Herbert), (c) "Mary" (Hirsch), (d) "Valse Lyrique" (Sibelius), (e) "Song of the Volga Boatmen" (arr. Lake).

### EVENING SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

7.40: Popular music.  
7.45: Programme announcements.  
7.48: Studio items.  
8.0: "Big Ben." From the Hyde Park Band Rotunda—By courtesy of the Civic Commissioners, a concert programme, arranged by the N.S.W. Broadcasting Company, in association with Standard Telephones, Limited, and the "Daily Telegraph Pictorial." Assisting artists: Studio Dance Band, Ernest M'Neil, Charles Lawrence, Two Old Cronies, Carlton Fay, Leo Strelling.  
9.0: "Big Ben"; weather report.  
9.1: From the Hyde Park Band Rotunda—Concert, continued.  
10.28: From the Studio—Late weather; the Studio Dance Band, conducted by Cec Morrison.  
10.57: To-morrow's programme.  
10.59: The Studio Dance Band, conducted by Cec Morrison.  
11.30: National Anthem, Close.

## 2BL

### MORNING SESSION.

Announcer: A. C. C. Stevens.

8.0: G.P.O. chimes. Metropolitan weather report. 8.1: State weather report. 8.2: Studio music. 8.15: G.P.O. chimes. News service

from the "Daily Telegraph Pictorial." 8.30: G.P.O. chimes. News service continued. 8.40: Information, mails, shipping, arrivals, departures, and sailings. 8.45: Studio music. 9.15: Half an hour with silent friends. 9.45: Studio music. 10.0: G.P.O. chimes. Close down.

### MIDDAY SESSION.

Announcer: A. C. C. Stevens.

11.0: G.P.O. chimes. Women's session, conducted by Mrs. Cranfield. What's on at the pictures and theatres. 11.30: Advertising hints. 11.40: Talk on "Gardening" by Mr. Cooper, Park Superintendent, City Council. 12.0: G.P.O. chimes. Special ocean forecast and weather report. 12.3: Studio music. 12.30: "Sun" midday news service. 12.40: Studio music. 12.50: "Sun" midday news service. 1.0: Musical programme. 1.10: "Sun" midday news service. 1.20: Studio music. 1.40: "Sun" midday news service. 1.50: Studio music. 2.0: "Big Ben." Close.

### AFTERNOON SESSION.

Announcer: Basil Kirke.

2.30: G.P.O. chimes. Description of the finals in the Great Public Schools regatta. The winners of the heats conducted on the 24th. During intervals dance music from Romano's. 5.0: G.P.O. chimes.

### EARLY EVENING SESSION.

Announcer: Basil Kirke.

5.40: Children's session, conducted by Uncle Bas. Music and entertainment. Letters and stories. 6.30: "Sun" news service. 6.40: 2BL Dinner Quartette—(a) "March of the Toys" (Herbert), (b) "Rigoletto" (Verdi), (c) "Antara's Dance" (Grieg), (d) "The Desert Song" (Romberg). 7.7: Complete sporting and racing resume. 7.30: Mr. Pim and Miss Pam in advertising talks, handy hints, and nonsense. 7.53: An ad. special. 7.55: Programme and other announcements.

### EVENING SESSION.

Announcer: J. Knight Barnett.

Accompanist: J. Knight Barnett.

8.0: G.P.O. chimes. 2BL topical chorus. The Ahad Duo, steel guitars.  
8.10: "The Troubadors."  
8.24: Fred Bluett, novelty pianist.  
8.30: Popular programme.  
9.30: Weather report.  
9.31: Billie Creswell, popular vocalist.  
9.38: Fred Bluett, novelty pianist.  
9.45: "The Troubadors."  
10.0: The Ahad Duo, steel guitars.  
10.10: Alex. Whitson, baritone.  
10.17: Romano's Dance Orchestra, conducted by Bennie Abrahams.  
10.30: From the studio, late weather report.  
10.32: Alex. Whitson, baritone.  
10.39: Romano's Dance Orchestra, conducted by Bennie Abrahams.  
10.57: To-morrow's programme.  
10.59: Romano's Dance Orchestra, conducted by Bennie Abrahams.  
11.30: National Anthem.

## 2GB

5.30: Children's session, by Uncle George. 7.0: Dance music. 8.0: Request evening. 9.0: Dance music. 10.30: Close down.

## 2UW

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

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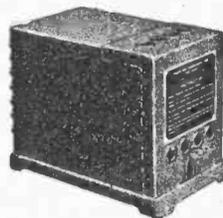
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## 3LO

**EARLY MORNING SESSION**  
7.15 to 8.15: See Friday.

**MORNING SESSION**  
11.0: General programme, including: The Radio Revellers, Anne Middleton, soprano; J. Alexander Browne baritone 11.32: Eric Welch will speak on to-day's V.A.T.C. races at Caulfield. Stella Lamond, scoubrette

**MID-DAY SESSION**  
12.0: Mid-day news session. 12.20: The Radio Revellers: Anne Middleton, soprano; Stella Lamond; J. Alexander Browne, baritone; meteorological information. 1.28: Description of Kharoutum Hurdle Race, 2 miles 65 yards. V.A.T.C. Races at Caulfield, by Eric Welch. 1.45: Description of base-ball, Melbourne v South Melbourne. at M.C.C. by Percy Steele.

**AFTERNOON SESSION**  
2.28: Description of Katandra Two-year-old Race, 7 furlongs, v T.C. Races, at Caulfield, by Eric Welch. 2.35: Description of base-ball—Melbourne v South Melbourne. v M.C.C. by Percy Steele. 2.47: Description of football match—Melbourne v South Melbourne at M.C.C., by Rod McGregor. 2.57: Description of football, Carlton v Essendon, at Carlton. 3.3: Description of Glenhumpy Handicap, 1 mile 3 furlongs, V.A.T.C. Races at Caulfield. 3.10: Description of football match—Melbourne v South Melbourne, at M.C.C. 3.20: Description of football match—Carlton v Essendon, at Carlton. 3.38: Description of Neerim Steeplechase, 2 miles 3 furlongs, V.A.T.C. Races, at Caulfield. 3.45: Interval. 4.0: Description of football match—Carlton v Essendon, at Carlton. 4.13: Description of Glenferrie Handicap, one mile. V.A.T.C. Races, at Caulfield. 4.20: Description of football match—Melbourne v South Melbourne, at M.C.C. 4.35: Description of football match—Carlton v Essendon, at Carlton. 4.48: Description of Brighton Handicap, six furlongs, V.A.T.C. Races, at Caulfield. 4.55: Description of football match—Melbourne v South Melbourne, at M.C.C. 5.0: News service. 5.10: Football descriptions continued. 5.35: Final scores. Close down.

**EARLY EVENING SESSION**  
6.5: All sporting results. 6.10: Answers to letters and birthday greetings by "Little Miss Kookaburra." 6.30: "Little Miss Kookaburra."  
**EVENING SESSION**  
6.50: Stock Exchange information. 7.0: Market reports. 7.15: News session. Final scores of football matches. 7.25: Birthday greetings. 7.29: Out of the Past. 7.30: Frederick Chapman, A.L.S., F.O.S., Commonwealth Paleontologist, National Museum, will speak on "Fossil Birds." 7.48: Dr. F. A. Leach will speak on "Scrub Wrens."

**NIGHT SESSION**  
Announcer: Reini Millar.  
Accompanist: Agnes Fortune.  
8.1: Programme announcements. Tasmanian letter to 3LO Melbourne, from the "Weekly Courier," Launceston.  
8.2: The Station Orchestra—Overture: "Franz Schubert."  
8.10: John Hobbs, bass-baritone—"Lamhouse" (W. Hyden).  
"When You're Away" (Sanderson).  
8.17: Syd. Roy's Lyrics—"The Prince of Wales Own Entertainers."  
8.42: Song Feature of the Week.  
8.47: The Station Orchestra—Selection: "Trene" (Tierney).  
9.0: Eric Welch will describe to-night's events at the Stadium.  
9.15: The Melody Makers in half an hour of melody.  
9.45: The Station Orchestra—"Schirmer's Song" (Clark).  
9.55: John Hobbs, bass-baritone—"There's a Bonnie House in Ayr" (West).  
"Beware of the Maidens" (Day).  
10.2: Eric Welch will describe to-night's events at the Stadium.  
10.15: The Station Orchestra—Selection: "Kissing Time."  
10.25: Stella Lamond will entertain you with her ukulele.  
10.32: The Station Orchestra—"Berceuse and Canzonette" (Friml).  
10.37: Stella Lamond—"Au Clair de la Lune with her ukulele."  
10.44: Late Sporting results.  
10.51: The Radio Revellers—"My Fleurette" (Kimbrough).  
"Avalon Town" (Brown).  
"Shake That Thing" (Jackson).  
"Old Rag Doll" (Agar).  
"You are Wonderful" (Ash).  
"Honeycomb Waltz" (Rennault).  
"There Ought to Be a Law Against That" (Friend).  
"Little Mother" (Raper).  
"Oh, Ya Ya!" (Frich).  
"Stars are the Windows of Heaven" (Maile).  
"That's Her Now" (Agar).  
11.30: God Save the King.

## 3AR

**MORNING NEWS SESSION.**  
10 to 10.59: See Friday.

**MORNING MUSICAL SESSION.**  
11.0 to 11.20: General programme. 11.50: British Official Wireless news; announcements; rates of Exchange as supplied by Messrs. Thos. Cook and Sons. 12.0: Close down.

**AFTERNOON SESSION.**  
3.0: General programme including—The Station Orchestra; the Imperial Russian Trio: Harold Webb, baritone 4.30: Close down

**EVENING SESSION.**  
6.0: General programme. 7.10: News service; announcements; sporting results.

**NIGHT SESSION.**  
Announcer: John Stuart.  
Accompanist: Reg Browne

6.0: All sporting results.  
8.30: The Imperial Russian Trio (Arved Norit, violin; Ivan Berzinsky, 'cello, and Vassili Ilister, piano)—  
Trios—  
"Menuetto" (Schield).  
"Andante Cantabile" (Tchaikowsky).  
"Syncopation" (Kretzler).  
"Adagio" (Schubert).  
Selected.  
9.0: The Smith Girls—  
"Crying Water" (Hambill).  
"Annie Laurie."  
9.7: Stanley Biggins—  
"Tambourin" (Rameau).  
"Sonata in C Major" (Mozart).  
"Moment Musical in A Flat" (Schubert).  
"Moment Musical in C Sharp Minor" (Schubert).  
"Waltzes Opus 9" (Schubert).  
9.32: Captain Donald MacLean—  
"Feats of the Mighty."  
9.47: Reg Browne, piano—  
"Ragtime."  
9.52: The Smith Girls—  
"A Cake Shop Romance" (Osborne).  
"Me and the Man in the Moon."  
10.0: Organ Recital by O. E. Monteath, F.R.C.O.—  
"Prelude in A Minor" (Bach).  
"Pastorale for Concerto" (Corelli).  
"Andante from a String Quartet" (Haydn).  
"Vesperale" (Cyril Scott).  
March from "El" (Costa).  
10.20: News service; announcements.  
10.30: "God Save the King."

## 4QG

**EARLY EVENING SESSION.**  
7.43 to 8.30: Time signals; news service; records.

**AFTERNOON SESSION.**  
3.0: A programme of records; mail train running times. 4.30: Close down.

**EARLY EVENING SESSION.**  
6.15: "Oncenslander" bi-weekly news service for distant listeners. 6.30: Bedtime stories conducted by "Uncle Ben." 7.0: To-day's race results in detail. 7.20: General sporting notes. 7.30: Sailing notes by Mr. Fred Smith.

**NIGHT SESSION.**  
Announcer: A. V. James.  
8.0 p.m.: From the Savoy Theatre—  
Overture by the Savoy Orchestra.

8.7: From the Studio—  
Isobel Andrews (soprano)—  
"Soft as the Zephyrus" (Lizst).  
8.12: Tom Muller (celonist)—selected.  
8.17: Ben Cloude (tenor)—  
"Mountain Lovers" (Squire).  
8.21: Laurie and Rave—  
Ten minutes' novelty.  
8.31: From the Savoy Theatre  
Orchestra music.  
8.41: From the Studio—  
Joice Buckham (soprano)—  
"The Bendin' Bush" (Russian folk song).  
"The Bells of Aberdovey" (Welsh).  
8.50: Tom Muller (celonist)—selected.  
8.54: Isobel Andrews (soprano)—  
"The Little Danzoni" (Novello).  
9.0: Meteorological weather forecast.  
9.1: Ben Cloude (tenor)—  
"Harlequin" (Sanderson).  
9.6: From the Speedway—  
Motor cycle races.  
9.30: From Lennon's Ballroom—  
Dance music.  
10.0: From the Studio—  
"The Sunday Mail" news; weather news. Close down.

## 5CL

**MORNING SESSION**  
12.0: Chimes. 12.1: Late selections for Caulfield races. 12.3: Probable starters and selections for Port Adelaide races, by "Silvius." 12.15: News service. 12.52: Railway and meteorological information. 1.0: Chimes; close down.

## AFTERNOON SESSION.

2.0: During the afternoon the races at Port Adelaide will be broadcast, interspersed with main time. 2.1: Resume of Port Adelaide and Caulfield race results. 2.40: Caulfield race result, Glenhumpy Handicap. 3.1: Resume of previous racing. 3.30: Caulfield race result, Neerim Steeplechase. 3.50: Caulfield race result, Glenferrie Handicap. 4.1: Resume of previous racing. 4.25: Caulfield race result, Brighton Handicap. 4.55: Resume of afternoon's sporting results. 5.0: Chimes; close down.

## EVENING SESSION.

Announcer: C. J. O'Connor. 6.0: Chimes. Children's happy moments. 6.30: Musical Parade. 7.0: Chimes. 7.1: Stock Exchange. 7.10: C. E. Hale, B.A., will talk on "Did Bacon Write Shakespeare's Plays?" 7.25: Musical Interlude. 7.35: C. J. O'Connor will talk on "Terms of Trade." 7.45: S.C.L.'s sporting service, entitled by "Sport." 8.0: Violin recital (continued): "Blonnie Dore" (Dvorak-Kretzler). "Orientale" (Gesar Cui). S.A. Railways Band, conductor, Mr. J. Padden. Fox-trot, "Chouletta" (Wynn). 9.55: Frank Thomas, baritone (winner of "The Herald" 50,000 voice contest); "Marcheta" (Schertziener). "The Baladero" (Stuart). 10.2: Gilbert Reed and Arthur Hawaiian Duo. More fascinating tunes. I.A.S. Railways Band: March, "Old Comrades" (Lizst). March, "Fifham" (Huff). 10.15: News service; meteorological information. 10.30: Modern chess numbers by the "Radio Revellers." 11.0: Close down.

## 6WF

12.0: Tune in. 12.5: Racing anticipations repeated for the benefit of our country listeners. 12.55: Pianoforte solos by Miss Audrey Dean; vocal items from the studio. 12.44: Markets; news; etc. 1.8: Time signal. 1.1: Weather bulletin, supplied by the Meteorological Bureau of West Australia. 1.2: Close down. 2.30: Tune in; sporting session; racing and other sporting results will be broadcast each 15 minutes during the afternoon. 5.30 (approx): Close down. 6.45: Tune in. 6.47: Bedtime stories by Uncle Duffy. 7.12: Sporting results. 7.30: Commercial and general information. 7.45: Talk on "Toc H" by Mr. Don Cleland. 8.0: Time signal. 8.1: First weather bulletin. Popular programme. 8.3: Relay of dance music from the Temple Court Cabaret; musical programme from the studio. 8.5: Late news items, by courtesy of the "Daily News" Newspaper Co., Ltd.; station announcements; items within range announcement; late weather bulletin. 9.5: Programme continued from Temple Court Cabaret and the studio. 10.30: Close down. 104.5 metre transmission—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres commencing at 6.45 p.m.

## 7ZL

**MID-DAY SESSION**  
11.0: Description of the Public School Rowing Championships, rowed on the Derwent, described by "Olympus." 11.34: Midlands weather forecast. 11.54: Weather report. 12.1: Shipping information and within wireless range; mail notices; housewife guide; commercial news. 12.30: 3LO, Melbourne last-minute selections for Melbourne races, plus selections for the Sydney races by our special representative. 12.55: News service. 1.30: Running description of Kharoutum Hurdle Race, 2 miles 6 yards, Caulfield, Victoria. 2.30: Description of Khatandra Two-year-old, 7 furlongs, Caulfield Victoria. 2.35: Close down.

**AFTERNOON SESSION**  
3.0: Chimes. 3.5: Description of Glenhumpy Handicap, 1 m. 3f., Caulfield, Vic. 3.40: Transmission from the North Hobart Oval. Football match, New Town Cannore, described by Sid Jones. 3.40: Description of Neerim Steeplechase, 2 miles 3 furlongs, Caulfield, Victoria. 3.45: Transmission from the North Hobart Oval. 4.15: Description of Glenferrie Handicap, 1 mile, Caulfield, Victoria. 4.20: Transmission from the North Hobart Oval. 4.50: Description of Brighton Handicap, 6 furlongs, Caulfield, Victoria. 4.55: All sporting results to hand. 5.0: Close down.

**EARLY EVENING SESSION**  
6.0: All sporting results to hand. 6.15: Musical selections. 7.15: News session.

**EVENING SESSION**  
7.30: Debate: Alderman H. H. Pacy and John Oiding on "Is Tasmania the Natural Holiday Resort of Australia?" John Oiding will take the affirmative, and Alderman H. H. Pacy, in the negative. 7.4: J. M. Counsel, will speak on "Eropian Affairs." 8.0: G.P.O. clock chimes the hour. 8.6: Selections. 8.15: A special studio concert. 10.0: Chimes 10.5: Close down.

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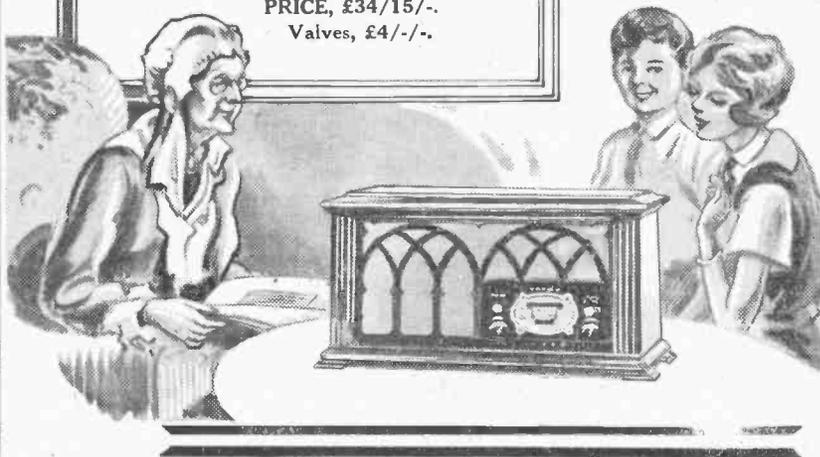
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# Local Programmes, Sun., April 28

## 2FC

### MORNING SESSION

Announcer: A. S. Cochrane.

- 10.0: "Big Ben" and announcements.
- 10.2: Studio music.
- 10.20: The captain to his comrades.
- 10.35: The comrad's bookshelf.
- 10.40: Studio music.
- 11.0: From the Oxford Street Methodist Church.

Morning service, conducted by Rev. Thomas Jenkin.  
Hymn.  
Prayer, followed by Lord's Prayer.  
Solo.  
Psalm (congregation recites with minister alternate verses).  
Hymn.  
Scripture lesson.  
Children's hymn.  
Children's portion.  
Notices. Anthem. Offering.  
Hymn.  
Discourse.  
Hymn.  
Benediction.

12.15 (approx.): Close down.

### AFTERNOON SESSION

Announcer: Eric Bessemer.

- 2.30: Programme announcements.
- 2.32: Children's session, conducted by the "Hello Man."
- 3.15: W. F. Kay will speak on "Life in the Early Goldfields."
- 3.30: From the Manly band rotunda, Manly Beach, the Manly Municipal Band, conducted by James Pheloung.
- 5.0: "Big Ben." Close.

### EVENING SESSION

Announcer: Laurence Halbert.

- 6.0: "Big Ben." Programme announcements.
- 6.2: S. H. Bowden will speak on some "Masterpieces of the Vatican Museum."
- 6.20: From Petersham Congregational Church, organ recital, arranged by Ambrose F. Gibbs.
  - (a) "Fanfare Militaire" (Ascher).
  - (b) "Ave Maria" (Mascheroni).
  - (c) "Pastorale" (Merkel).
  - (d) "Intermezzo" (Mascagni).
  - (e) "Marche Funebre" (Guilmant).
  - (f) "Grand Choeur in D" (Guilmant).
- Violin solo by Donald Macdonald, "Romances" (Svendsen).
- Vocal Solo, soprano.
- 7.15: Divine Service, from Petersham Congregational Church.
- Evening Service, conducted by Rev. A. P. Doran.
- Invocation and Lord's Prayer.
- Hymn No. 13, "Lift Up to God the Voice of Praise."
- Isalah, Chapter 55.
- Male quartette, "Remember Me, O Mighty One."
- Lesson.
- Hymn No. 683, "Brightly Gleams Our Banner."
- Prayer. Anthem.
- Hymn No. 457, "Gulde Me, O Thou Great Jehovah."
- Sermon.
- Hymn No. 600, "Abide With Me."
- Benediction.
- 8.30: From the studio. Weather report.
- 8.30: Muriel O'Malley, contralto.
- 8.38: Madame Evelyn Grier, dulcitone.
- 8.45: Muriel O'Malley, contralto.
- 8.52: Madame Evelyn Grier, dulcitone.
- 9.0: "Big Ben." A studio production, "Romeo and Juliet," featuring Marie Brinner and Herbert Brown.
- 10.28: To-morrow's programme.
- 10.30: National Anthem. Close down.

## 2BL

### MORNING SESSION

Announcer: A. C. C. Stevens.

- 11.0: G.P.O. chimes. From St. John's Church of England, morning service, conducted by the Rev. Canon Cakebread. 12.15:

Approx., from the studio, "Sun" news service. 12.30: Studio music. 2.0: G.P.O. chimes. Close.

### AFTERNOON SESSION

Announcer: Basil Kirke.

- 3.0: G.P.O. chimes. Studio music. 3.18: From the Arcadia Theatre, Chatswood, Nicholas Roblins, organ recital - (a) "Zanipa Overture" (Herold), (b) "Meditation" (Morel), (c) "Scarf Dance" (Chamaade), (d) "Idillio," Op. 134 (Lack), (e) "La Cinquantaine" (Marie), (f) "Salut d'Amour" Op. 12 (Elgar). 4.0: Chimes. E. J. Davidson will speak on the Toc H movement.
- 4.10: From the Arcadia Theatre, (g) popular number, "My Tonla" (Brown), (h) popular number, "Me and the Man in the Moon" (Monaro), (i) popular number, "When Love Comes Stealing" (Polack), (j) "Caprice Viennois" (Kreisler), (k) "Consolation March" (Clark). 4.40: From the [?], selected record recital. 5.0: "Big Ben." Close. From the studio, selected record recital. 5.0: "Big Ben." Close.

### EVENING SESSION

Announcer: Basil Kirke.

- Accompanist: G Vern Barnett.
- 6.0: G.P.O. chimes. A programme specially arranged by the members of the Cheery Society.
- 7.15: From Chalmers Street Church.
- 8.30: From the Hyde Park Band Rotunda, the Musicians' Union Band.
- 9.30: From the studio, Ethel Friend, contralto.
  - 9.37: Farnsworth Hall, violinist.
  - 9.44: Ethel Friend, contralto.
  - 9.51: Farnsworth Hall, violinist.
  - 9.58: Late weather report.
  - 10.0: "Big Ben." Close.

## 2GB

- 10.0: Organ music from St. Alban's Church, Redfern. 10.15: Morning service from St. Alban's Church. 12 noon: Close down. 1.15: Music session. 5.30: Children's session by Uncle George. 7.0: Lecture from Adyar Hall. 8.0: Music from studio. 8.15: Sacred concert from Adyar Hall; Rosenkranz piano solos. 8.23: Miss Ethel Muller, contralto. 8.30: Miss Leila Waddell, violiniste. 8.38: Mr. Victor Earle, baritone. 8.45: Miss Gladys Aubin, soprano. 8.52: Rosenkranz piano solos. 9.1: Miss Ethel Muller, contralto. 9.7: Miss Leila Waddell, violiniste. 9.15: Mr. Victor Earle, baritone. 9.22: Miss Gladys Aubin, soprano. 9.29: Rosenkranz piano solos. 9.35: Close down.

## 2UW

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

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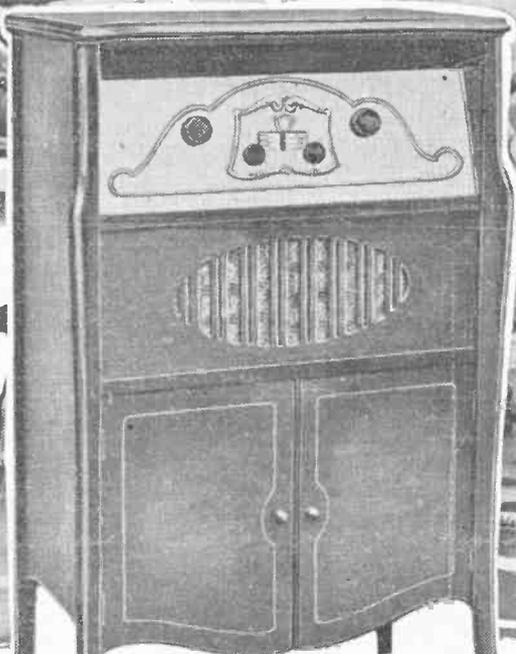
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# Interstate Programmes, Sun., April 28

## 3LO

### MORNING SESSION.

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

### AFTERNOON SESSION.

2.0: Sonora recital of the world's most famous records. 3.0: Pleasant Sunday afternoon service, transmitted from Wesley Church, Central Mission, Lonsdale Street, Melbourne. Chairman, Rev. J. H. Cain. Musical selection, Madame and Mr. Gregor Wood. Orchestra. Speaker, Rev. William Coyn. Subject: "The Challenge of Youth." 4.30: Close down.

### CHILDREN'S HOUR.

5.45: Shipping information. 5.47: Answers to letters and birthday greetings by "Bobby Bluegum." 6.25: "Brother Bill's" talk on this week is entitled: "There is no place like home." 6.45: Adult birthday greetings and program of announcements. 6.47: Bells from St. Paul's Cathedral, Melbourne.

### EVENING SESSION.

7.0: Evening Service from Scots Church, Collins Street, Melbourne. Special Service attended by members of the Australian Student Christian movement, from Scots Church, Collins Street, Melbourne. The service will be conducted by Dr. W. Borland, assisted by representatives from the Australian Student Christian movement. Address: "The Modern University and the Bible." Mr. D. K. Flecken, M.A., Master of Ormond College and Chairman of the A.S.C.M.

### NIGHT SESSION.

Announcer: Benn Millar. Accompanist: Mabel Nelson.  
8.30: Cecil Parkes (violin), Kingsley Parkes (viola), Myra Montague (piano), Frank Johnstone (cello)—"Quintette," "The Diamond Lake" (Quincke).  
8.35: "Polonaise" (Beethoven).  
8.38: Lolya Lescaut, soprano—"Elizabeth's Prayer" (Tannhauser) (Wagner).  
8.43: Cecil Parkes (violin), Kingsley Parkes (viola), Myra Montague (piano), Frank Johnstone (cello)—"Piano Quintette, Op. 47, Flat (Beethoven). Grave—Allegro ma non troppo. Andante Cantabile. Rondo.  
9.3: Herold Kyng, basso cantante—Recit. and Aria: "Although an Host Encamp" (Bach).  
"O Lord Thy Mercy is in Heavens" (Bach)  
"Blow Out Your Bugles" (Ireland).  
"The Cloths of Heaven" (Dunhill).  
9.13: William Tainsh will sneak on "An Adventure in Contentment," by David Grayson.  
9.25: Cecil Parkes (violin)—Kol Nidrei (Max Bruch). Moment Musical (Schubert). Valse Triste (Schubert). Turkish March (Beethoven).  
9.39: The Strad Trio (Cecil Parkes violin, Myra Montague piano, Frank Johnstone cello)—"Romance" (Rumel).  
"The Dance" (Debussy).  
"Extract from Brandenburg Concerto" (Bach).  
"The Merry Tramp" (Hamblyn).  
"Jesus of Nazareth" (Hamblyn).  
"Tress" (Rasbach).  
9.58: News service; announcements.  
10.0: God Save the King.

## 3AR

11.0: Morning Service from St. Paul's Cathedral, Melbourne. 12.15: British official wireless news. 12.30: Close down.

### AFTERNOON SESSION.

3.0: Ballads and organ and orchestral music. 4.30: Close down.

### EVENING SESSION.

5.0: "Brer Rabbit"—"Stories for the Children." 5.30: Close down.

### LATE EVENING SESSION.

7.0: The Dances, in vocal selections from "The Barber of Seville" (Rossini). 7.50: Half an hour with Keleby and his Orchestra.

### NIGHT SESSION.

Announcer: Maurice Dudley. Accompanist: Vera Howe.  
8.0: Malvern Tramways Band. Fantasia, "Under Sunny Skies" (Rimmer).  
8.10: Joseph Holm, tenor—"The Blind Ploughman." "Ave Maria" (Kahn).  
8.17: Malvern Tramways Band—"Unfinished Symphony" (Schubert).  
8.27: The Smith Girls—"Favorite Hymns."  
8.34: Malvern Tramways Band—Selection, "The Bells of Brittany" (Talbot).  
8.46: Betty Ross Clarke. In readings from the Psalms.  
8.4: Ina Mornement, piano recital—"Gavotte In A Major" (Cluck). "Caprice on Ballet D'Alceste (Gluck-Saint Saens) "Le Concor" (Darquis). "Belle Music from Oper Le Cid" (Massenet). "Castillane, Andalous, Aragonaise. Aubade." "Coronach—A Highland Lament" (Edgar Bar-trait).  
9.34: Joe & Jo Holm, tenor—"Auld Scotch Mither."

"The Great Awakening."  
9.41: The Smith Girls—"Favorite Hymns"  
9.48: Malvern Tramways Band—Spanish Selection. Santiago (Corbin).  
9.54: News service; announcements. "God be the King."

## 4QG

### MORNING SESSION.

11.0: The complete morning service will be relayed from the Baptist City Tabernacle. 12.15: Close down.

### AFTERNOON SESSION.

3.15: The programme of test music by the radio bands desirous of playing regularly will be relayed from the Brisbane Botanic Gardens. Service will complete. These will be graded and will play as follows:—Major Grade—"Mendelssohn" (Flight and Return); Minor Grade No. 1—"Faust" (No. 1); Minor Grade No. 2—"Spirit of Spring" (Greenwood). 4.15: Close down.

### EARLY EVENING SESSION.

6.30: Greetings to little listeners, and replies to letters.

### NIGHT SESSION.

7.0: The complete evening service will be relayed from the City Tabernacle. At the conclusion of the church service the concert by the Brisbane Music Concert Band will be relayed from Wickham Park. 9.30: Close down.

## 5CL

### MORNING SESSION.

10.45: Carillon of bells from the Adelaide Town Hall. 11.0: Chimes. 11.1: Divine Service from St. Bartholomew's Church of England. 12.10: British official wireless news. 12.20: Close down.

### AFTERNOON SESSION.

3.0: Chimes. 3.1: A pleasant Sunday afternoon service from Maughan Church, Franklin Street. 4.0: Close down.

### EVENING SESSION.

6.0: G.P.O. chimes. 6.1: Children's happy moments and stories by "Miss Wireless." 6.15: Bird Lady and "The Sunshine Songsters." Chimes. 7.1: A religious service from Parkside Baptist Church.

### NIGHT SESSION.

8.20: The Adelaide Trio (H. Brewster-Jones piano, H. Kugelberg 'cello, Bertha Jones violin). Movement, Op. 59" (Schubert). 8.30: Erling Berntsen, the Danish Caruso, who will sing "The Song" from the opera, "Pagliacci." 8.35: "Jazz" violinist accompanied by H. Brewster-Jones. "Evening" (Martin). "Fifth Hungarian" (Brahms). 8.40: Owen Collett, contralto, "With Me" (S. Liddle). "Yonder" (Herbert Gray). 8.47: The Adelaide Trio (H. Brewster-Jones piano, H. Kugelberg 'cello, Bertha Jones violin). 8.50: Arnold Matthers, baritone, who is shortly to sing for England: "The Lark in the Clear Air" (Grove). "Carries" (Clarke). 9.0: A pianoforte recital by H. Brewster-Jones: "Fingale" (Liszt). 9.2: Aria and Trialet (de Res. Franck). "The Lark in F Minor," Op. 16 (Mendelssohn). "Evening" (de Plego). "Take Up My Cross" (de Grant). 9.22: "Cellist and Violinist" (H. Brewster-Jones), accompanied by H. Brewster-Jones (Chopin). "La Chanson" (Gabriel-Marie). 9.29: Arnold Matthers. 9.30: Aria and Trialet (de Res. Franck). "The Lark in F Minor," Op. 16 (Mendelssohn). "Evening" (de Grant). 9.35: "The Lark in F Minor," Op. 16 (Mendelssohn). "Evening" (de Grant). 9.40: Mr. P. H. Nichols will give an interesting talk on "The First Submarine." 9.50: General news service. 10.0: Close down.

## 6WF

10.25: Tune in. 10.30: Special half-hour for an enthusiastic listener-in. 11.0: Morning service from St. Mary's Cathedral. 12.15: Close down. 3.0: Tune in. 3.25: Musical programme from the studio, including "The Sunshine Songsters" (Miss V. Waterman violin, Miss E. Waterman 'cello, Mr. L. Judson piano. 4.30: Close down. Tune in. 7.5: Chimes relayed from St. George's Cathedral. 7.50: Evening service, relayed from St. George's Cathedral. 8.15: "Auld Scotch Mither" given by the Perth City Band, conducted by Mr. de Price. 10.5: Close down. 10.5 metre transmission—Simultaneous broadcast on 194.5-metre programme given on 1250 metres, commencing at 10.5.

## 7ZL

### MORNING SESSION.

11.0 to 11.30: Transmission from St. David's Cathedral, Murray Street, Hobart.

### AFTERNOON SESSION.

3.30 to 4.30: A programme arranged by the P.M.A. Association.

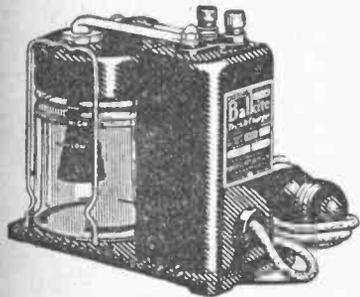
### EARLY EVENING SESSION.

6.15: Chorus singing. 6.50: Bertha Southey Ball mail.

### EVENING SESSION.

Announcer: J. M. Counsel. 7.0: Transmission from the Melville Street Methodist Church. 8.35: Programme of sacred music arranged by J. M. Counsel. 9.45: News service. 9.50: Close down.

# SENSATIONAL REDUCTIONS!



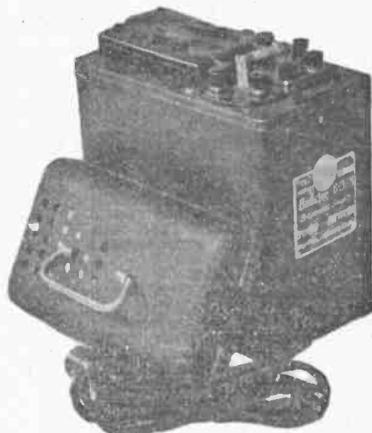
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# Local Programmes, Monday, April 29

## 2FC

### EARLY MORNING SESSION.

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

### MORNING SESSION.

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

### MIDDAY SESSION.

Announcer: A. S. Cochrane. 12.0: "Big Ben" and announcements. 12.1: Stock Exchange, first call. 12.3: Official weather forecast; rainfall. 12.5: Studio music. 12.10: Summary of news, "Sydney Morning Herald." 12.15: Rugby wireless news. 12.18: A reading. 12.30: Studio music. 1.0: "Big Ben"; weather intelligence. 1.5: From the Aeolian Hall, Pitt Street, lunch-hour chamber music recital, Sverensky Quintette. 1.35: "Evening News" midday news service. Producers' Distributing Society's report. 1.52: Stock Exchange, second call. 1.54: Popular studio music. 2.0: "Big Ben." Close.

### AFTERNOON SESSION.

Announcer: Laurence Halbert.  
Accompanist: Ewart Chapple.  
2.30: Programme announcements. 2.32: The Book Lovers' Corner. 3.0: "Big Ben" Studio music. 3.30: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams. 3.40: From the studio, Florence Grant, soprano—(a) "Villanelle" (Del Aquila), (b) "Hame o' Mine" (Murdoch). 3.45: A reading. 4.10: Edith Harrison, pianist—Sonata in B flat, Op. 22 (Beethoven), minuet, rondo. 4.20: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams. 4.30: From the studio, Florence Grant, soprano—(a) "Spirit Flower" (Tipton), (b) "Moonlight Elves" (Temple). 4.37: Edith Harrison, pianist—Bluettes (Schutt), Nos. 1, 2, and 4. 4.46: Stock Exchange, third call. 4.48: Popular music. 5.0: "Big Ben." Close.

### EARLY EVENING SESSION.

Announcer: A. S. Cochrane.  
5.40: The chimes of 2FC. 5.45: The children's session, conducted by the "Hello Man." Letters and stories. Music and entertainment. 6.30: Dalgety's market reports (wool, wheat and stock). 6.40: Fruit and vegetable markets. 6.43: Stock Exchange information. 6.45: Weather and shipping news. 6.48: Rugby wireless news. 6.50: Late sporting news. 7.0: "Big Ben." Late news service. 7.10: The 2FC Dinner Quartette, conducted by Horace Keats. (a) "Veerschmate Liebe" (Lincke). (b) "The Vagabond King" (Friml). (c) "Meditation" (Bach-Gounod). (d) "Danse Tzigane" (Nacher). (e) "A Dream Garden" (Phillips).

### EVENING SESSION.

Announcer: Laurence Halbert.  
Accompanist: Ewart Chapple.  
7.40: Popular music.  
7.45: Programme announcements.  
7.48: Studio music.  
8.0: "Big Ben." From the Wahroonga Town Hall—a concert arranged by the N.S.W. Broadcasting Company, Limited, in aid of the Wahroonga Hospital. The Illawarra Male Voice Choir, winners in the recent Radio Eisteddfod, and the Tydesly Bros. also competitors in the Eisteddfod conducted by the N.S.W. Broadcasting Co. Ltd., will contribute to the programme. Assisting artists: Mrs. A. B. Green, soprano; D. Williams, baritone; Wally Baynes, comedian.  
9.0: "Big Ben." From the studio, weather report; studio items.

9.10: From the Wahroonga Town Hall, concert continued.  
10.28: From the studio, late weather and tomorrow's programme.  
10.30: National Anthem. Close.

## 2BL

### MORNING SESSION.

Announcer: A. C. C. Stevens.  
8.0: G.P.O. chimes; Metropolitan weather report. 8.1: State weather report. 8.2: Studio music. 8.15: G.P.O. chimes; news service from the "Daily Telegraph Pictorial." 8.30: G.P.O. chimes; news service continued. 8.40: Information, mails, shipping, arrivals, departures, and sailings. 8.45: Studio music. 9.15: Half an hour with silent friends. 9.45: Studio music. 10.0: G.P.O. chimes. Close down.

### MID-DAY SESSION.

Announcer: A. C. C. Stevens.  
11.0: G.P.O. chimes; 2BL Women's Sports Association, conducted by Miss Gwen Varley. 11.30: Advertising Hints; talk on "Diet and Health," by Miss Dorothea de Cleghorne. 11.40: Women's session, conducted by Mrs. Cranfield. 12.0: G.P.O. chimes; special ocean forecast and weather report. 12.3: Studio music. 12.30: Shipping and mails. 12.35: Market reports. 12.48: "Sun" mid-day news service. 1.0: Studio music. 1.30: Talk to children, and special entertainment for children in hospital. 2.0: G.P.O. chimes. Close down.

### AFTERNOON SESSION.

Announcer: A. C. C. Stevens.  
Accompanist: Kathleen Roe.  
3.45: G.P.O. chimes; Melody Trio. 4.0: G.P.O. chimes. Captain Fred Aarons will speak on the "Advantages of Home Life." 4.15: Maisie Barnett, contralto. 4.22: Christopher Faulkner, cornet solos: (a) Fantasia, "There is a Flower that Bloometh" (Brange), (b) Fantasia, "Pretty Jane" (Hartmann). 4.29: Melody Trio. 4.39: Maisie Barnett, contralto. 4.46: Christopher Faulkner, cornet solos: (a) Fantasia, "Der Freischutz" (Weber), (b) Waltz song, "El Bacio" (Arditi). 4.53: Melody Trio. 5.3: "Sun" news service. 5.10: Melody Trio. 5.20: Studio items. 5.30: Resume of the trots. 5.37: Features of the evening's programme.

### EARLY EVENING SESSION.

Announcer: Basil Kirke.  
5.40: Children's session, conducted by Uncle Bas; music and entertainment; letters and stories. 6.30: "Sun" news and late sporting. 6.40: 2BL Dinner Quartette—(a) Waltz, "Eugene Onegin" (Tschalkowsky), (b) "The Crystal Gazer" (Carr), (c) "Valse Suite" (Brahms), (d) "Barcarolle" (Offenbach), (e) "Valse in E Minor" (Chopin), (f) "You Came to Me" (d'Hardelet), (g) "Wonder Eyes" (Fletcher). 7.7: Australian Mercantile Land and Finance Co's report; weather report and forecast; by courtesy of Government Meteorologist; Producers' Distributing Society's fruit and vegetable market reports; grain and fodder report. (8.00), dairy produce report (8.00), 7.25: Mr. Pim and Miss Pam in Advertising Talks Handv Hints, and Non-sense. 7.53: An Ad. special. 7.55: Programme and other announcements.

### EVENING SESSION.

Announcer: Basil Kirke.  
Accompanist: G. Vern Barnett.  
8.0: G.P.O. chimes; 2BL Topical Chorus; 2BL Light Orchestra, conducted by Horace Keats.  
8.15: The Mutiny of the Bounty: A play produced by Scott Alexander, conducted by C. C. Faulkner. Assisting artists: Wilfred Thomas and Joe Cahill.  
9.15: Weather report.  
9.16: 2BL Light Orchestra, conducted by Horace Keats.  
9.20: Wilfred Thomas, basso.  
9.27: Joe Cahill, entertainer.  
9.44: 2BL Light Orchestra, conducted by Horace Keats.  
10.0: G.P.O. chimes; G. J. Hill. Idiosyncrasies of the Motor Car.  
10.15: 2BL Light Orchestra, conducted by Horace Keats.  
10.30: Late weather report.  
10.32: Romano's Dance Orchestra, conducted by Bennie Abrahams.

10.57: From the studio: To-morrow's programme; late "Sun" news service.  
11.7: Romano's Dance Orchestra, conducted by Bennie Abrahams.  
11.30: National Anthem. Close.

## 2GB

10.0: Music. 10.10: happiness talk by E. Bennett. 10.20: Music. 10.30: Women's session, by Miss Heien J. Beegling. 11.0: Close down. 2.0: Music. 2.5: Women's radio service, by Mrs. Dorothy Jordan. 2.50: Music. 3.15: Close down. 5.30: Children's session by Uncle George; movie know all. 7.0: Music. 8.0: Miss Edith Allen Taylor, mezzo-soprano. 8.7: Miss Mollie Jones, pianiste. 8.15: Miss Leslie Herford, baritone. 8.22: Instrumental music. 8.30: Humorous interlude by Mr. Jack Win and Mr. Heath Burdock. 8.35: Miss Gladys Verona, soprano. 8.45: Address. 10.0: Weather report. 9.3: Miss Edith Allen Taylor, mezzo-soprano. 9.15: Miss Mollie Jones, pianiste. 9.23: Mr. Leslie Herford, baritone. 9.33: Mr. Heath Burdock, Shakespeare recital. 9.45: Instrumental music. 10.5: Dance music. 10.30: Close down.

## 2UW

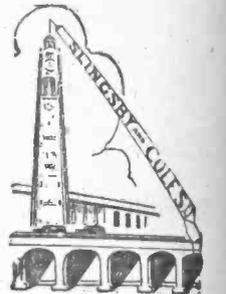
### MIDDAY SESSION

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

### EVENING SESSION

5.30: Children's hour, conducted by Uncle Jack. 6.30: Close down. 7.0: G.P.O. clock and chimes; music and request items. 7.45: Wireless talk, hints, and advice by Mr. E. Humphrey. 8.0: Music. 9.0: G.P.O. clock and chimes; comments on foreign affairs by J. M. Prentice. 9.10: Music and request numbers. 10.30: Close down.

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# Interstate Programmes, Monday, April 29

## 3LO

### EARLY MORNING SESSION:

7.15 to 8.15: See Friday.

### MORNING SESSION:

11.0: To-day's radio recipe—Passion-fruit salad.  
11.5: Miss Olga Parker will speak on—Stories to tell the Children: "The Works of E. Nesbit—Part II."  
11.25: Miss I. V. Crawford will speak on—"Practical Psychology." 11.45: Under the auspices of the Boy Scouts' Association.

### MIDDAY NEWS SESSION:

12.0: Melbourne Observatory time signal. 12.1: British official wireless news from Rugby; Reuter's and the Australian Press Association cables; "Argus" news service. 12.15: Newmarket stock sales; entries for the market for Tuesday, Wednesday, and Thursday, by the Associated Stock and Station Agents, Bourke Street, Melbourne. 12.20: Community singing, transmitted from the King's Theatre, Russell Street, Melbourne. Conductor, John Stuart. The Radio Revellers, with Hugh Ruxham. 12.40: Stock Exchange information. 12.43: Community singing, resumed. 1.45: Meteorological information; weather forecast for Victoria, New South Wales, South Australia, and Tasmania; ocean forecast; river reports rainfall. 1.52: Close down.

### AFTERNOON SESSION:

Announcer: John Stuart. Accompanist: Agnes Fortune. 2.15: General programme, including—The Morar Orchestra, Clella Gannon M'Neill, soprano; Morton Hilford, basso; Jean Lewis, contralto; The Imperial Russian Trio. 3.35: Captain Donald MacLean—"The Feats of the Mighty." 4.0: Fred Sutcliffe, tenor. 4.57: News service; Stock Exchange information. 5.10: Close down.

### CHILDREN'S HOUR:

6.0: Answers to letters, and birthday greetings. By "Billy Bunny." 6.30: William C. Groves will tell about "The Peter Pan of the Pacific." 6.45: "Billy Bunny" has a quiet story.

### EVENING SESSION:

7.5: Stock Exchange information. 7.18: Market reports. 7.30: News session. 7.43: Birthday greetings. 7.45: Out of the past. 7.46: Under the auspices of the Department of Agriculture, N. A. Bowman, sheep and wool expert, will speak on—"Lambing Time."

### NIGHT SESSION:

8.0: Programme announcements.  
8.1: Royal Victorian Liederhall concert, transmitted from the Town Hall, Melbourne.  
10.30: News service; meteorological information; British official wireless news from Rugby; announcements.  
10.40: Bob Molyneux, baritone—  
"Latest Hits."  
10.47: The Radio Revellers—  
"Toy Town Artillery" (Garlton).  
"Promise Me" (Van Couth).  
"Ready for the River" (Morel).  
10.57: Bob Molyneux, baritone, request items—  
11.4: The Radio Revellers—  
"My Stormy Weather Fair" (Plantadosi).  
"Dawning" (Silver).  
"What'll You Do" (Cohn).  
"Do You" (Plantadosi).  
"Pat's Old Hat" (Gay).  
"Colombo" (Nichols).  
"I Fell Head Over Heels In Love" (Thayer).  
11.30: God Save the King.

## 3AR

Announcer: Maurice Dudley. 10.0 to 10.59: See Friday.

### MORNING MUSICAL SESSION:

11.0: Terpsichorean "Tintinnabulations." 11.20: British official wireless news; announcements. 12.30: Close down.

### AFTERNOON SESSION:

3.0: The Strad Trio. 3.28: Cecil Parkes, violin. 3.47: Myra Montague, piano. 4.17: Trio. 4.30: Close down.

### EVENING SESSION:

8.0: Gyratory Gurgles. 7.10: News service; announcements. 7.20: Gyratory Gurgles, continued.

### NIGHT SESSION:

Announcer: Renn Millar. Accompanist: Reg. Browne.  
8.0: E. C. H. Taylor will speak on—"School Life and School Sport."  
8.15: Under the auspices of the League of Nations Union, Sir Harrison Moore will speak on—"The Council of the League of Nations."  
8.30: The Firm will speak on—"Books of Yesterday, To-day, and To-morrow."  
8.40: The Radio Revellers—  
"Daybreak" (Evans).  
"Counting the Milestones" (Tilsley).  
"Dorothy Dooley Do" (Sherwin).  
8.49: Allan Adeock, entertainer—"The Egg" (Newman).  
8.51: The Ramblers—  
"Little Irish Rose" (Zamecnik).  
"When You Said Good-night" (Donaldson).  
"Meeraska" (Sissell).  
9.0: The M'Haggis—the Australian Scot—"Kitties and Cakes."  
9.3: The Radio Revellers—  
"Me and the Man in the Moon" (Monaco).  
"Forever Romo" (Burnett).  
"Rose Time" (Hall).  
9.12: E. Mason Wood, baritone—"Red Roofs" (Brahe).

9.15: The Radio Revellers—  
"The Dance of the Blue Danube" (Fisher).  
"What a Girl" (Sanders).  
"It Goes Like This" (Caesar).  
9.24: Allan Adeock, entertainer—"Come, List to Me."  
9.27: The Radio Revellers—"The Desert Song" (Romberg).  
"One Alone" (Romberg).  
"When the Right One Comes Along" (Gilbert).  
9.36: The M'Haggis, the Australian Scot—"Auld Reekie" (Winkles).  
9.39: The Radio Revellers—"Flower of Love" (Ruby).  
"Honey" (Simons).  
"Gypsy" (Gilbert).  
9.49: E. Mason Wood, baritone—"Carroll" (Priest).  
9.52: The Radio Revellers—"Jo-Anne" (Ward).  
"Roses of Yesterday" (Berlin).  
"Just Keep Singing a Song" (Sissell).  
10.1: Allan Adeock, entertainer—"Just Another Joke."  
10.4: The Radio Revellers—"Pineapple" (Williams).  
"Minnetonka" (Wallace).  
"In the Woodshed She Said She Would" (Johnson).  
10.13: The M'Haggis, the Australian Scot—"Tartan on the Tapis."  
10.16: The Radio Revellers—"Constantinople" (Carillon).  
"Japansy" (Chanler).  
"That's Her Now" (Ager).  
10.25: News service; announcements; Eric Welch's selections for Warrnambool races. "God Save the King."

## 4QG

### EARLY MORNING SESSION:

7.43 to 8.30: See Friday.

### MORNING SESSION:

11.0 to 12.0 noon: See Friday.

### MIDDAY SESSION:

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

### AFTERNOON SESSION:

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

### EARLY EVENING SESSION:

6.0: Mail train running times; mail formation; commercial announcements. 6.30: Bedtime stories conducted by "The Sandman." 7.45: News in brief, meteorological information, etc. 7.55: Lediutette: "Ask Talk for Pig Raising" by Mr. E. J. Shelton (Senior Instructor in Pig Raising).

### NIGHT SESSION:

Announcer: H. Humphreys.  
8.0: The Studio Orchestra (conductor, A. R. Featherstone)—  
"Overture"—"Crown Diamonds" (Auber).  
8.1: Dorothy Mowlam (soprano)—  
"The Waking of Spring" (Del Riego).  
"Tell Me, My Heart" (Bishop).  
8.18: The Rio Grande Serenaders—  
Five minutes' selected melodies.  
8.21: The Studio Orchestra—  
"Valse"—"Wedding of the Winds" (Hall).  
8.28: A. V. James (baritone)—  
"Four and Twenty Sailors" (Coleridge-Taylor).  
"Trade Winds" (Keel).  
8.30: Vera Parker (contralto)—  
"Coming Home" (Willeby).  
"Beloved, It is I" (Aylward), accompanied by the Studio Orchestra.  
8.44: Frank Warwick (pianist)—  
"Chova's Friends" (Bach-Busoni).  
"Prelude" (Rachmaninoff).  
8.54: The Studio Orchestra—  
A symphonized version of "Rhapsody" (Cross).  
8.59: The Rio Grande Serenaders—  
Five minutes' selected melodies.  
9.3: Metropolitan weather forecast.  
9.4: Bill Murray (baritone)—  
"The Net Merder" (Clark).  
"Cupid" (Sanderson).  
9.12: Herbert Jackson (cornetist)—  
"Tender" (Lé Thère), accompanied by the Studio Orchestra.  
9.18: W. Crisp (tenor)—Selected.  
9.28: Maud Williams (violin), Carl Hansen (clarinet), accompanied by the Studio Orchestra—  
"Duet," "Cute and Cunnin'" (Kempinski).  
9.33: Joyce Buckham (soprano)—  
"The Sun is Low" (Russian Folk Song).  
"Congo Madrigal" (Irish).  
9.41: The Studio Orchestra—  
"Valse Brillante"—"Wild Roses" (Johnson).  
Melody, "Songs d'Amour" (Sanderson).  
9.50: The Rio Grande Serenaders—  
Five minutes' selected melodies.  
9.58: The Studio Orchestra—  
March, "Imperial Britain" (Chanler).  
10.0: Weather news; close down.

## 5CL

### MORNING SESSION:

11.0: Chimes. 11.1: Morning melodies. 11.45: Miss Laurie McLeod, of Weber, Shortness, and Rice, will speak on "Physical Culture for Women." 12.1: Mid-

day music. 12.15: General news service. 12.18: British official wireless news. 12.52: Railway information. Stock Exchange information. 1.1: Luncheon recital. 1.59: Meteorologist information. 2.4: Close down.

### AFTERNOON SESSION:

3.0: Chimes; general programme, including Smith's quartette: Alice Mallon, soprano; Paula Abrahams, entertainer; Enrico Palmetto, the Studio Caruso; Guido Giacchino, cellist; Norah Stone, contralto; Pauline Abrahams, entertainer. 4.0: Stock Exchange information. 5.0: G.P.O. cinema close down.

### EVENING SESSION:

6.0: Chimes. 6.1: Children's happy moments. 6. An Interlude of Dinner Music. 6.55: Stock Exchange information. 7.0: Chimes. 7.1: General market reports. 7.10: Under the auspices of the South Australian Agricultural Department: Mr. C. M'Kenna, B.V.Sc., M.R.C.V.S. (Govt. Veterinary Surgeon), will speak on "Lice and Tick in Sheep." 7.30: The 5CL Twinkler Boys' Club.

### NIGHT SESSION:

Announcer: J. L. Norris. 8.0: Chimes. 8.1: Studio Orchestra (conductor by Linette Ford): Overture, "Pine Dame" (Stunpel); fox-trot, "That's My Now" (Ager). 8.12: Alice Mallon, soprano; Edna Lyons from her repertoire. 8.15: Seth Smith, baritone; "Hawaii Love Waltz" (Lohr). 8.18: Enrico Palmetto, the Studio Caruso (Cowan). 8.25: Enrico Palmetto, the Studio Caruso; "To the End of the World With You" (Ball). "Home, Sweet Home" (Bishop). 8.28: Studio Orchestra: "Pale Moon" (Loren). "My Love" (Cohn). 8.42: Mrs. Leslie Mattheus, contralto; "O Love From Thy Power" (C. Saint-Saens). "The Excuse and the Bee" (C. Warford). 8.49: Marcus Tozer and Bondi Randall, baritone; Eric Shelton, Hawaiian melodies. 8.55: Eric Shelton, bass; "Song of the Bow" (Florence Ayward). "Cladiator" (Adams). 9.1: Meteorological information, including Semaphore slides. 9.2: Overseas news report. 9.3: Studio Orchestra: "Dance of the Sylphs" (Ponchielli); suite, "Sunshine and Shadow" (Lohr). 9.15: Alice Mallon, soprano; Selections from her repertoire. 9.28: Seth Smith, baritone; "The Little One" (Brandon). "Darkies' Dream" (Singer). 9.28: Enrico Palmetto, the Danab Cam Selection from opera, "Martha" (G. 9.34: Studio Orchestra: Selections from "The Marriage of Figaro" (Mozart). 9.44: Mrs. Leslie Mattheus, contralto; "Carole" (May Brakel). "Annie Laurie" (Lisa Lehmann). 9.49: Marcus Tozer and Bondi Randall, Hawaiian melodies. More melodious tunes. 9.55: "The Skipper" (Jude). "Invictus" (Rubin). Studio Orchestra: Selections. "The Girl Who" (Rodgers). "Serenade" (Liszt). 10.15: General news service; British official news, meteorological information. 10.30: Dance numbers by the "Radio Revellers." 11.4: Close down.

## 6WF

12.30: Tune in. 12.35: Markets; news; and announcements. 1.0: Time signal. 1.1: Weather bulletin supplied by the Meteorological Bureau of Warrnambool. 1.3: Panstrove concert, broadcast from Mrs. Musrow's, Ltd. Lyric House, Perth. 2.0: Close down. 3.30: Tune in. 3.35: Musical programme from the Lyric House Cafe; vocal item from the studio. 4.30: Close down. 4.45: Tune in from Perth. 5.0: Tune in. 5.15: Tune in. 5.30: Tune in. 5.35: Tune in. 5.40: Tune in. 5.45: Tune in. 5.50: Tune in. 5.55: Tune in. 6.0: Tune in. 6.05: Tune in. 6.10: Tune in. 6.15: Tune in. 6.20: Tune in. 6.25: Tune in. 6.30: Tune in. 6.35: Tune in. 6.40: Tune in. 6.45: Tune in. 6.50: Tune in. 6.55: Tune in. 7.0: Tune in. 7.05: Tune in. 7.10: Tune in. 7.15: Tune in. 7.20: Tune in. 7.25: Tune in. 7.30: Tune in. 7.35: Tune in. 7.40: Tune in. 7.45: Tune in. 7.50: Tune in. 7.55: Tune in. 8.0: Tune in. 8.05: Tune in. 8.10: Tune in. 8.15: Tune in. 8.20: Tune in. 8.25: Tune in. 8.30: Tune in. 8.35: Tune in. 8.40: Tune in. 8.45: Tune in. 8.50: Tune in. 8.55: Tune in. 9.0: Tune in. 9.05: Tune in. 9.10: Tune in. 9.15: Tune in. 9.20: Tune in. 9.25: Tune in. 9.30: Tune in. 9.35: Tune in. 9.40: Tune in. 9.45: Tune in. 9.50: Tune in. 9.55: 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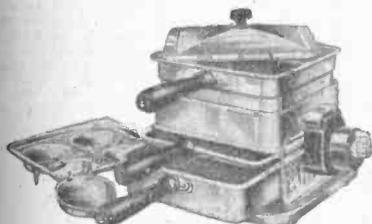
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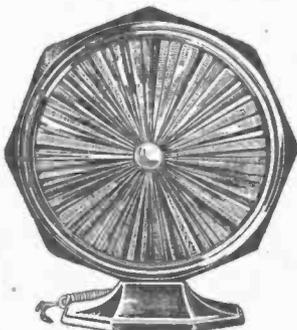
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THE UNIVERSAL ELECTRIC TOASTER have your toast piping hot for cold winter mornings. Toast right on the breakfast table—as you need it. Many attractive designs are on view.



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CLEARER TONE—GREATER VOLUME. Owing to the entirely new principle (covered by 18 patents), the new Sonochorde gives absolutely natural tone—and the volume depends entirely on what your set can deliver to it, anything from a whisper up, but at all volumes the clarity and purity of tone is amazing.



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BRANCHES IN ALL STATES

# Local Programmes, Tuesday, April 30

## 2FC

### EARLY MORNING SESSION.

Announcer: A. S. Cochrane.

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

### MORNING SESSION.

Announcer: A. S. Cochrane.

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

### MIDDAY SESSION.

Announcer: A. S. Cochrane.

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

### AFTERNOON SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

2.30: Programme announcements. 2.32: The Book Lover's Corner. 3.0: "Big Ben"; Popular Trio. 3.15: Studio items. 3.30: Iris Kidd, soprano—Songs of the Southern Isles—A. B. and C. (Lohr). 3.37: David McKissock, cellist—(a) "Romance" (Tchereshn. yeff). (b) "An Old Melody" (arr. Squire). 3.45: A reading. 4.10: Popular Trio. 4.20: Mrs. Scott will give a survey of the play "Marbeth" in connection with the forthcoming Intermediate Examinations. 4.30: Iris Kidd, soprano—(a) "Good Morning Brother Sunshine" (Lehmann). (b) "I Wonder if Love is a Dream" (Forster). 4.37: David McKissock, cellist—(a) "Aubade" (Godard). (b) "Legende" (Squire). 4.45: Stock Exchange, third call. 4.47: Popular Trio. 5.0: "Big Ben." Close.

### EARLY EVENING SESSION.

Announcer: A. S. Cochrane.

5.40: The chimes of 2FC. 5.45: The Children's session, conducted by the "Hello Man," assisted by Aunt Eily; letters and stories; music and entertainment. 5.30: Dalgety's market reports (wool, wheat, and stock). 5.43: Stock Fruit and vegetable markets. 5.45: Weather and Exchange information. 6.45: Weather and shipping news. 6.48: Rugby wireless news. 6.50: Late sporting news. 7.0: "Big Ben"; late news service. 7.10: The 2FC Dinner Quartette, conducted by Horace Keats—(a) "Mauresque" (Coates). (b) "High Jinks Waltz" (Friml). (c) "Oriental March" (Rosse). (d) "In a Persian Garden" (Lehmann). (e) "Forest Fancies" (Haines).

### EVENING SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

7.40: Popular music. 7.45: Programme announcements. 7.48: Studio items. 8.0: Metropolitan Band, conducted by Joseph Palmer. 8.20: Roy Dunne, baritone. 8.27: The Two Revellers. 8.37: Reta Lancaster's Choir—(a) Part Song, "A May Morn" (Kenza). (b) Part Song, "Absent" (Metcalfe).

(c) Trio from "Carmen" (Bizet). 8.47: D. J. Mares, Divisional Meteorologist, will speak on "Australian Meteorology and its Increasing Utility."

9.0: "Big Ben"; weather report. 9.1: Metropolitan Band, conducted by Joseph Palmer.

9.15: Will Carter, sketch—"The Old Prospector."

9.25: Roy Dunne, baritone. 9.32: The Two Revellers. 9.42: Metropolitan Band, conducted by Joseph Palmer.

9.47: Will Carter, Bush Cameos—(a) "The Parson's Horse."

(b) "Bingle Visits Old Friends."

10.7: Reta Lancaster's Choir—(a) Solo and chorus, "Cupid" (Sanderson).

(b) Part Song, "The Barcarolle" (Offenbach).

(c) Solo and chorus, "Bell Song" (De Koven).

10.17: Studio Dance Band, conducted by Cec Morrison.

10.28: Late weather report. 10.30: Studio Dance Band, conducted by Cec Morrison.

10.57: To-morrow's programme. 10.59: Studio Dance Band, conducted by Cec Morrison.

11.30: National Anthem. Close.

## 2BL

### MORNING SESSION.

Announcer: A. C. C. Stevens.

8.0: G.P.O. chimes; metropolitan weather report. 8.1: State weather report. 8.2: Studio music. 8.15: G.P.O. chimes; news service. 8.30: G.P.O. chimes; news service continued. 8.40: Information; mails; shipping, arrivals, departures, and sailings. 8.45: Studio music. 9.15: Half an hour with silent friends. 9.45: Studio music. 10.0: G.P.O. chimes. Close down.

### MIDDAY SESSION.

Announcer: A. C. C. Stevens.

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

### AFTERNOON SESSION.

Announcer: A. C. C. Stevens.

Accompanist: Kathleen Roe.

3.45: G.P.O. chimes; popular music. 3.50: Romano's Cafe Dance Orchestra conducted by Bennie Abrahams. 4.0: G.P.O. chimes. Madge Helmrich, contralto—(a) "The Rosary" (Nevin), (b) "Bonnie George Campbell." 4.7: Frank Buckell will speak on "Development of the Thermionic Valve." 4.22: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams. 4.30: From the Studio—Madge Helmrich, contralto, (a) "Hush Song" (Kahn). (b) "The Dreary Steppe" (Grachaninov). 4.37: "Sun" news service. 4.40: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams. 4.50: From the Studio—Popular music. 5.0: G.P.O. chimes; pianoforte reproduction. 5.15: Studio items. 5.28: Producers' Distributing Society's poultry report. 5.30: Racing resume. 5.37: Features of the evening's programme.

### EARLY EVENING SESSION.

Announcer: Basil Kirke.

5.40: Children's session, conducted by Uncle Bas; music and entertainment; letters and stories. 6.0: Mr. Norman speaks to the big-

ger boys. 6.45: "Sun" news and sporting. 6.55: 2BL Dinner Quartette—"The Desert Song Valse" (Romberg), "Marche Turque" (Ellenberg), (c) "Invrai" (Amadei), (d) "Hungarian Rhapsody" (Liszt), (e) "Farnieute" (Cul), (f) "One Alone" (Romberg), (g) "Serenade" (Schubert). 7.7: Australian Mercantile Land and Finance Company's report; weather report and forecast, by courtesy of Government Meteorologist; Producers' Distributing Society's fruit and vegetable market report; grain and fodder report ("Sun"); dairy produce report ("Sun"). 7.25: Mr. Pam and Miss Pam in Advertising Talks, handy hints and nonsense. 7.53: An Ad special. 1.15: Programme and other announcements.

### EVENING SESSION.

Announcer: Basil Kirke.

Accompanist: G. Vern Barnett.

8.0: G.P.O. chimes. 2BL topical chorus. Liza Lehmann's Song Cycle—"In a Persian Garden," sung by the 2BL Quartet under the direction of G. Vern Barnett. Gladys Carlisle, soprano. Amy Ostinga, contralto. Lance Jeffrey, tenor. Peter Sutherland, basso. 8.46: C. N. Beyeretz—Great Writers I Have Met—"Bernard Shaw."

9.1: Weather report. 9.2: Lloyd Davies, violinist. 9.9: Peter Sutherland, basso. 9.16: G. Vern Barnett, piano solos. 9.26: Amy Ostinga, contralto. 9.33: Lloyd Davies, violinist. 9.40: Lance Jeffrey, tenor. 9.47: G. Vern Barnett, piano solos. 9.57: Gladys Carlisle, soprano. 10.4: G. Vern Barnett, piano solos. 10.14: Late "Sun" news service. 10.28: Late weather; to-morrow's programme. 10.30: National Anthem. Close.

## 2GB

10.0: Music. 10.10: Happiness talk, by A. E. Bennett. 10.20: Music. 10.30: Women's session, by Miss Helen J. Beegling. 11.15: Close down. 2.0: Music. 2.5: Women's radio service, by Mrs. Dorothy Jordan. 2.50: Music. 3.15: Close down. 5.30: Children's session, by Uncle George. 7.40: Music. 7.30: Feature story. 7.40: Talk from the radio service department, by Mr. Stan Crittenden. 8.0: Mr. William Green, tenor. (8.7: Mr. Reginald Duncan, violinist. 8.15: Miss Thelma Lansdowne, contralto. 8.22: Instrumental music. 8.30: Humorous interlude by Mr. Jack Win and Mr. Heath Burdock. 8.35: Mr. Clifford Lathlean, baritone. 8.50: Miss Ada Brook, pianiste. 9.0: Weather report. 9.1: Address. 9.15: Mr. William Green, tenor. 9.28: Mr. Gregory Valentine, violinist. 9.5: Humorous interlude, by Mr. Jack Win and Mr. Heath Burdock. 9.45: Instrumental music. 9.50: Miss Thelma Lansdowne, contralto. 10.0: Dance music. 10.30: Close down.

## 2UW

### MIDDAY SESSION.

12.30: Music. 1.0: G.P.O. clock and chimes. 12.30: 2.30: Close down. 4.0: Musical programme.

### EVENING SESSION.

5.30: Children's hour, conducted by Uncle Jack. 6.30: Close down. 7.0: G.P.O. clock and chimes; music and request items. 9.0: G.P.O. clock and chimes; comments on foreign affairs by Mr. J. M. Prentice. 9.10: Music and request numbers. 10.30: Close down.

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**6WF**

12.30: Tune in. 12.35: Markets; news; trotting handicaps; mall timetable. 1.0: Time signal. 1.1: Weather bulletin, supplied by the Meteorological Bureau of West Australia. 1.3: Music relayed from the Primrose Cafe; items by the Misses Marshall and Chapman. 2.0: Close down. 3.30: Tune in. 3.35: Musical programme from the studio, including pianoforte solos by Miss Audrey Dean, station pianiste; violin solos by Mr. Frank Romaine. 4.30: Close down. 6.45: Tune in. 6.48: Bedtime stories, by Uncle Duffy. 7.5: Light music by the Perth Piano Trio. 7.30: Commercial and general information. 7.45: Talk by Dr. J. S. Battye, B.A., LL.B. 8.0: Time signal. 8.1: First weather bulletin. 8.3: Concert by Mr. Ned Taylor and His Entertainers. 8.50: Late news items, by courtesy of the "Daily News" Newspaper Co., Ltd.; station announcements; ships within range announcement; late weather bulletin. 9.5: Programme continued from the studio. 10.30: Close down. 104.5-metre transmission—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres, commencing at 6.45 p.m.

**7ZL**

**MIDDAY SESSION.**

11.30 to 1.30: See Friday, 2.40: Results will be given of Trial Handicap, six furlongs, run at Warrnambool racecourse, Warrnambool, Melbourne, Victoria. 2.45: Description of Briery Steeple, two miles, run at Warrnambool racecourse, Victoria. 2.50: Close down.

**AFTERNOON SESSION.**

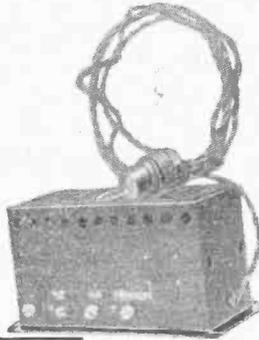
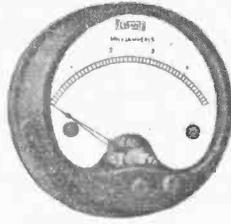
Announcer: Jack Broadbent. 3.0: Chimes. 3.4: Weather information. 3.30: Description of Wanganong Handicap, seven furlongs, run at Warrnambool racecourse, Warrnambool, Melbourne, Victoria. 4.20: Description of Merri Handicap Hurdle Race, two miles 38 yards, Warrnambool, Melbourne. 5.5: Description of Torow Welter Handicap, one mile, Warrnambool, Melbourne. 6.10: All sporting results to hand. 5.15: Close down.

**EARLY EVENING SESSION.**

8.30: "The Story Lady" will tell a story to the wee folk. 8.45: Basil Sproute will play for the wee folk. 7.9: Answers to letters and birthday greetings by Uncle David and the Story Lady. 7.15: News session.

**EVENING SESSION.**

7.30: "Ouvrier," American electrical expert, will speak on "The Talkies." 7.45: W. E. Puller will speak on "Literary Lapses and Library Lists." 8.0: Chimes. 8.15: A dance programme by Reg. Jones and His Orchestra, "The Blackbirds are Bluebirds Now" (Friend), "High Upon the Hill Top" (Baer), "Mexican Serenade" (Tennessee). 8.24: Gresham Singers, "After Many a Dusty Mile" (Eigan). 8.25: Reg. Jones and His Orchestra, "Out of the Dawn" (Donaldson), "Mother, I Still Love You" (Jolson), "When Love Comes Stealing." 8.36: Robert Radford, bass, "In Cellar Cool," "Rocked in the Cradle of the Deep" (Knight). 8.43: Reg. Jones and His Orchestra, "My Angel" (Rapee), "Beloved" (Kahn), "The Kinkajou" (Tierney). 8.52: De Reszke Singers, "Adoration" (Beethoven), "On Wings of Song" (Mendelssohn). 8.59: Reg. Jones and His Orchestra, "There's a Rainbow Round My Shoulders," "Sally of My Dreams" (Kennell), "For Old Time Sake" (De Silva). 9.8: Goodrich Silverton Quartet, "Under the Clover Moon" (Healy), "Who's Blue Now?" (Green). 9.15: Reg. Jones and His Orchestra, "Get Out and Get Under the Moon" (Tobias), "That's My Weakness Now" (Green), "Chiquita" (Wayne). 9.24: Ernest McKinley, tenor, "Waltz Maori" (A. Hill), "Song of the Locust" (A. Hill). 9.31: Reg. Jones and His Orchestra, "Is It Gonna Be Long" (Cowan), "The Wings Home" (Tobias), "Rain" (Ford). 9.40: Jack Lumsdaine, baritone, "That's My Mammy" (Pearse), "Good Night" (Wood). 9.45: News session. 10.0: G.P.O. clock chimes the hour. 10.1: Close down.



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# Local Programmes, Wednesday, May 1

## 2FC

### EARLY MORNING SESSION.

Announcer: A. S. Cochrane.

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

### MORNING SESSION.

Announcer: A. S. Cochrane.

10.0: "Big Ben" and announcements. 10.3: Pianoforte reproduction. 10.10: "Sydney Morning Herald" news service. 10.25: Studio music. 10.45: A talk on "Home Cooking and Recipes," by Miss Ruth Furst. 11.0: "Big Ben"; A.P.A. and Reuter's cable services. 11.5: Close down.

### MIDDAY SESSION.

Announcer: A. S. Cochrane.

12.0: "Big Ben" and announcements. 12.1: Stock Exchange, first call. 12.3: Official weather forecast; rainfall. 12.5: Studio music. 12.10: Summary of news, "Sydney Morning Herald." 12.15: Rugby wireless news. 12.18: A reading. 12.30: Studio music. 1.0: "Big Ben"; weather intelligence. 1.3: "E Evening News" midday news service; Producers' Distributing Society's report. 1.20: Studio music. 1.28: Stock Exchange, second call. 1.30: From Pitt Street Congregational Church—Organ recital, arranged by Lillian Frost, assisted by Helena Stewart, soprano. 2.0: "Big Ben." Close.

### AFTERNOON SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

2.30: Programme announcements. 2.32: A record recital. 3.0: "Big Ben." From the Sydney Town Hall—Official opening of the Radio and Electrical Exhibition, 1929. 3.30: Foster and Finlay, instrumentalists. 3.37: Mabel Batchelor, soprano. 3.44: Charles Lawrence, entertainer. 3.51: R. A. Bartleman, baritone. 3.58: Foster and Finlay, instrumentalists. 4.5: Mabel Batchelor, soprano. 4.12: Charles Lawrence, entertainer. 4.22: R. A. Bartleman, baritone. 4.30: From the Studio—Popular music. 4.45: Stock Exchange, third call. 4.47: Studio items. 5.0: "Big Ben." Close.

### EARLY EVENING SESSION.

Announcer: A. S. Cochrane.

5.40: The chimes of 2FC. 5.45: The children's session, conducted by the "Hello Man," assisted by Uncle Ted and Sandy; letters and stories; music and entertainment. 6.30: Dalgely's market reports (wool, wheat, and stock). 6.40: Fruit and vegetable markets. 6.43: Stock Exchange information. 6.45: Weather and shipping news. 6.48: Rugby wireless news. 6.50: Late sporting news. 7.0: "Big Ben"; late news service. 7.10: The 2FC Dinner Quartette, conducted by Hrcace Keats—(a) "Mazurka" (Delibes), (b) "As Once in Flanders" (Davy) (Popper), (c) "The Waltz Dream" (Strauss), (d) "At the Fireside" (Janssen). (e) "Frivolette" (Ring).

### EVENING SESSION.

Announcer: Laurence Halbert.

Accompanist: Ewart Chapple.

7.40: Popular music.  
7.45: Programme announcements.  
7.48: Studio music.  
8.0: "Big Ben." Madame Evelyn Greig—A classical concert, arranged by Madame Evelyn Greig. Assisting artists: Margery Beby, Richard McClelland, Dagmar Thompson, Gladstone Bell.  
9.0: "Big Ben"; weather report.  
Scott Alexander will speak on "Broadcast English."

9.15: Madame Evelyn Greig—Second half of classical programme.  
10.15: Celebrity records.  
10.28: Late weather and to-morrow's programme.  
10.30: National Anthem. Close.

## 2BL

### MORNING SESSION.

Announcer: A. C. C. Stevens.

8 a.m.: G.P.O. chimes; Metropolitan weather report. 8.1: State weather report. 8.2: Studio music. 8.15: G.P.O. chimes; news service from the "Daily Telegraph Pictorial." 8.30: G.P.O. chimes; news service continued. 8.40: Information, mails, shipping, arrivals, departures, and sailings. 8.45: Studio music. 9.15: Half an hour with silent friends. 9.45: Studio music. 10.0: G.P.O. chimes. Close down.

### MID-DAY SESSION.

Announcer: A. C. C. Stevens.

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

### AFTERNOON SESSION.

Announcer: A. C. C. Stevens.

Accompanist: Kathleen Roe.

3.45: G.P.O. chimes. Popular music. 4.0: From Paling's Concert Hall: A recital by the students of Rex de Calros Rego. 5.0: G.P.O. chimes. From the studio: The Melody Trio. 5.15: "Sun" news service. 5.22: The Melody Trio. 5.32: Racing resume. 5.37: Features of the evening's programme.

### EARLY EVENING SESSION.

Announcer: Basil Kirke.

5.40: Children's session, conducted by Uncle Bas; music and entertainment; letters and stories. 6.30: "Sun" news service and late sporting. 6.40: 2BL Dinner Quartette—(a) "Florindo" (Bergmalm), (b) "Down in the Forest" (Ronald), (c) "The Prince of Pilsen" (Luders), (d) "Abandonee" (Franceschi), (e) "Danse des Miriltons" (Tschalkowsky), (f) "Canzonetta" (Tschalkowsky). 7.7: Australian Mercantile Land and Finance Co.'s report; weather report and forecast, by courtesy of Government Meteorologist; Producers' Distributing Society's fruit and vegetable market report; grain and fodder report ("Sun"); dairy produce report ("Sun"). 7.25: Mr. Plm and Miss Pam in Advertising Talks. Handy Hints and Nonsense. 7.53: An Ad. special. 7.55: Programme and other announcements.

### EVENING SESSION.

Announcer: Basil Kirke.

Accompanist: G. Vern Barnett.

8.0: G.P.O. chimes. 2BL topical chorus.  
8.1: From the Sydney Town Hall—Radio and Electrical Exhibition, 1929.  
Marrickville Silver Band—  
(a) March, "Under Two Flags" (Coles).  
(b) Selection, "The Soldiers' Chorus" (Faust), (Gounod).  
(c) Fantasia, "Home, Sweet Home" (Arr. Leiden).  
8.15: Theodore Atkinson, baritone, winner in the recent Radio Elsteddfod, conducted by the New South Wales Broadcasting Company, Limited—  
(a) "Time to Go" (Sanderson).  
(b) "The Rebel" (Wallace).  
8.22: Josef Kaartinen, saxophonist, winner in the recent Radio Elsteddfod, conducted by

the New South Wales Broadcasting Company, Limited—

(a) "Vais Vanite" (Wiedoeff).  
(b) "Saxo-o-phun" (Wiedoeff).  
8.30: Graham and Manning, entertainers—  
8.38: Evelyn Hall, contralto—  
(a) "The Lost Chord" (Sullivan).  
(b) "Sapphic Ode" (Brahms).  
8.46: Marrickville Silver Band—  
(a) Trombone solo, "My Task" (Ashford), soloist, J. Pearce.  
(b) "Memories of Otrra" (Sutton).  
(c) "Selected."  
9.0: From the Studio—Weather report. Theodore Atkinson, baritone—  
(a) "Maire, My Girl" (Aitken).  
(b) "Port of Au Revolv" (Lohr).  
9.7: Josef Kaartinen, saxophonist—  
(a) "Wiedoeff's Rubato" (Lake).  
(b) "Saxarella" (Wiedoeff).  
9.16: From the Capitol Theatre—The Capitol Unit Orchestra.  
9.30: From the Studio: Evelyn Hall, contralto—  
(a) "Danny Boy" (Weatherly).  
(b) "O, Western Wind" (Brahe).  
9.37: Graham and Manning, entertainers.  
9.44: Marrickville Silver Band—  
(a) Selection, "Ora Pro Nobis" (Piccolomini).  
(b) Selection, "Gems from Columbia No. 2" (Goldsmith).  
(c) Grand March, "Regeneration" (Langworthy).  
10.0: Claude Corbett will speak on general sporting.  
10.15: Romano's Dance Orchestra, conducted by Bennie Abrahams.  
10.27: From the Studio—Late weather report.  
10.30: Romano's Dance Orchestra, conducted by Bennie Abrahams.  
10.57: From the studio—To-morrow's programme.  
10.59: Late "Sun" news service.  
11.7: Romano's Dance Orchestra, conducted by Bennie Abrahams.  
11.30: National Anthem.

## 2GB

10.0: Music. 10.10: Happiness talk by A. E. Bennett. 10.20: Music. 10.30: Women's session, by Miss Helen Beegling. 11.30: Close down. 2.0: Music. 2.5: Women's radio service, by Mrs. D. Jordan. 2.30: Music. 2.45: Talk. 3.0: Labor-saving demonstration. 4.0: Close down. 5.30: Children's session, by Uncle George. 7.0: Music from studio. 7.30: short talk by Miss Beegling. 8.0: Miss Dorothy Stacey. 8.7: Mr. Leonard Brewer, violinist. 8.15: Mr. J. Lou Walters, baritone. 8.22: Instrumental music. 8.30: A humorous interlude by Mr. Jack Win and Mr. Heath Burdock. 8.35: Miss Florence Gordon, contralto. 8.45: Address by Professor Ernest Wood. 9.0: Weather report. 9.3: Miss Dorothy Stacey, soprano. 9.13: Mr. Leonard Brewer, violinist. 9.23: Mr. J. Lou Walters, baritone. 9.30: A humorous interlude by Mr. Jack Win and Mr. Heath Burdock. 9.38: Instrumental music. 9.48: Miss Florence Gordon, contralto. 9.58: Miss Ada Brook, pianist. 10.5: Dance music. 10.30: Close down.

## 2UW

### MIDDAY SESSION

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

### EVENING SESSION

5.30: Children's hour, conducted by Uncle Jack. 6.30: Close down. 7.0: G.P.O. clock and chimes; music and request numbers. 8.1: G.P.O. clock and chimes; comments on foreign affairs by Mr. J. M. Prentice. 9.14: Music and request numbers. 10.30: Close down.

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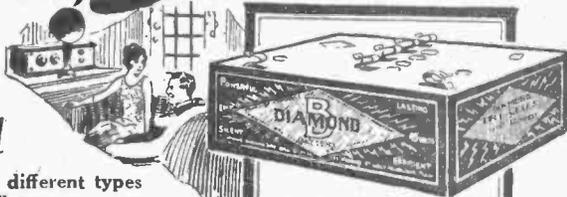
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# Interstate Programmes, Wednesday, May 1

## 3LO

### EARLY MORNING SESSION.

7.15 to 8.15: See Friday.

### MORNING SESSION.

Announcer: John Stuart. 11.0: To-day's radio recipe—White Rabbit. 11.5: Miss I. D. Beaven will speak on "Home-made Confectionery." 11.25: Mrs. M. Callaway Mahood will speak on "The Art of Decoration." 11.45: Mrs. Clarence Weber will speak on "Physical Culture for Women—Breathing for Health." 12.0: Melbourne Observatory time signal. 12.1: Metal prices received by the Australian Mines and Metals Association from the London Stock Exchange this day; British official wireless news from Rugby; Reuter's and the Australiapp Press Association cables; "Argus" news service. 12.15: Newmarket stock sales; cattle sales report; bullocks and calves, by the Associated Stock and Station Agents, Bourke Street, Melbourne.

### MIDDAY MUSICAL SESSION.

12.20: The Radio Revellers. 12.30: "The Smith Girls." 12.37: Stock Exchange information. 12.40: The Radio Revellers. 12.50: Tom Semple, tenor. 12.57: The Radio Revellers. 1.8: Meteorological information; weather forecast for Victoria, New South Wales, South Australia, and Tasmania; ocean forecast; river reports; rainfall. 1.13: Description of Wellington Stakes, one mile, Warrnambool Amateur Turf Club races, by Eric Welch. 1.18: The Radio Revellers, by Eric Welch. 1.30: Speeches transmitted from the Rotary Club luncheon, at the Freemasons' Hall, Collins Street, Melbourne—The Right Rev. Bishop Cranwick will speak on "Boys' Work." 1.58: Description of Trial Handicap, six furlongs, Warrnambool Amateur Turf Club races, by Eric Welch. 2.5: Close down.

### AFTERNOON SESSION.

2.15: The Station Orchestra. 2.25: E. Mason Wood, baritone. 2.32: The Station Orchestra. 2.38: Description of Pony Race, five furlongs, Amateur Turf Club races at Warrnambool. 2.45: Ciella Genoni McNeil, soprano. 2.52: Captain Donald MacLean. 3.7: The Station Orchestra. 3.16: Jean Lewis, contralto. 3.23: Description of Amateur Turf Club Plate, one mile, at Warrnambool. 3.30: Ina Monnement, piano. 4.0: The Station Orchestra. 4.8: Description of Hurdle Race, 2 miles 58 yards, Amateur Turf Club races at Warrnambool. 4.15: E. Mason Wood, baritone. 4.22: The Station Orchestra. 4.32: Ciella Genoni MacNeil, soprano. 4.40: Tasma Tiernan, 'cello. 4.45: Jean Lewis, contralto. 4.53: Description of Handicap Flying Stakes, six furlongs, Warrnambool Amateur Turf Club races. 5.0: "Herald" news service; Stock Exchange information. 5.10: Close down.

### CHILDREN'S HOUR.

6.0: Answers to letters and birthday greetings by "John, the Piper's Son." 6.25: Captain Donald MacLean will tell another adventure story. 6.40: "St. Marks Choristers." 6.50: "John, the Piper's Son" will tell "Another Adventure of Nosey Parker."

### EVENING SESSION.

Announcer: Frank Hatherley. 7.5: Stock Exchange information. 7.15: Market reports. 7.45: Out of the past. 7.45: Under the auspices of the Department of Agriculture, R. Crowe, Exports Superintendent, will speak on "Marketing Methods." 8.0: A maker of history.

### NIGHT SESSION.

Announcer: Frank Hatherley. Accompanist: Agnes Fortune. 8.1: Programme announcements. The Station Orchestra—Overture, "Raymond" (Thomas). 8.10: Ciella Genoni MacNeil, soprano—"Nel cor più non sento" (Paisiello). "Ardon gli incensi" (Donizetti). 8.17: The Station Orchestra—Selection, "The Barber of Seville" (Rossini). 8.27: Ciella Genoni MacNeil, soprano—"The Old Refrain" (Kreisler). "Ah, fors è lui" (Verdi). 8.34: E. Harding, publicity officer, Commonwealth Railways, will speak on—"The Lure of the West and the West Australian Centenary." 8.44: The Station Orchestra—"Little Serenade" (Gruenfeld). "Berceuse" (Kargueller). 8.50: Piano recital by Lindsay Biggins—"Fantasie in D Minor" (Mozart). "Sonata in A Major" (Mozart). "Refrain Berceuse" (Palmgren). "Irish Tune from County Kerry" (Grainiger). "Prelude" and "Claire de Lune" (Debussy).

9.20: "Seven Women." by Sir James Barrie. Produced by Terence Crisp. Characters:

Mr. Tovey ..... W. H. Chandler  
Mrs. Tovey ..... Betty Rae  
Captain Rattray ..... Terence Crisp  
Leonora ..... Ruby May  
Scene: Mrs. Tovey's drawing-room, Chelsea (London).

9.45: The Station Orchestra—Selection, "The Chocolate Soldier" (Strauss). 9.54: "Argus" news service; meteorological information; British official wireless news from Rugby; announcements. 10.4: The Imperial Russian Trio (Arved Norit, violin; Ivan Berzinsky, 'cello; Vassili Ilster, piano)—"Song of the Mountains" (Grieg). "Serenade" (Haydn). "Valse" (Coleridge Taylor). Selected. 10.30: "The Smith Girls"—"The Two Clocks" (Rogers). "Southern Memories" (McArthur). 10.37: The Station Orchestra—Selection, "Chu Chin Chow" (Norton). 10.44: "The Smith Girls"—"Golden Slumbers" (Newton). "Mexican Serenade" (Terese). 10.52: Ern. Hall's Radio Revellers, with Hugh Huxham—"Stars Are the Windows of Heaven" (Mallé). "That's Her No" (Ager). "Japansy" (Klenner). "Constantinople" (Carlton). "In the Woodshed She Said She Would" (Johnson). "Minnetonka" (Wallace). "Fireworks" (Williams). Selected. 11.30: God Save the King.

## 3AR

### MORNING MUSICAL SESSION.

10.0 to 10.59: See Friday. 11.30: The Imperial Russian Trio (Arved Norit, violin, Ivan Berzinsky 'cello, and Vassili Uster) piano; Trio, "Aria" (Medini). "Caucasienne Dance." "Elegie" (Massenet). "Request Items." 12.30: British official wireless news; announcements. 12.30: Close down.

### AFTERNOON SESSION.

3.0: Sea chanties. 3.35: Captain Donald MacLean—"Feats of the Mighty." 3.50: Piano and Violin Recital, Dorothy Taylor violin, Florence Elsworth piano. 20 beautiful ballads.

### EVENING SESSION.

6.0: Tonic tones and semitones at teatime. 7.10: News service; announcements. 7.20: Tintinnabulations.

### NIGHT SESSION.

Announcer: Renn Millar. Accompanist: Reg Browne. 8.0: P. W. Pearce, physical culture expert, will speak on "Those Joints of Ours." 8.15: Under the auspices of the National Health Association, Dr. Krank Kerr will speak on "Influenza." 8.30: The Brunswick City Band—Selections: "Echoes of the Ocean" (Greenwood). "The Lowlands" (Leschitzky). "Farewell and Adieu" (Anon). 8.50: Brunswick City Band—March, "On the Quarter Deck" (Allford). 9.0: J. Alexander Browne, baritone—"Young Tom of Devon" (Kennedy Russell). "The Sea Gipsy" (Head). 9.7: Captain Donald MacLean—"Feats of the Mighty." 8.50: Brunswick City Band—Selection, "H.M.S. Pinafore" (Sullivan). 9.32: The Sundowners' Quartette—"Nancy Lee." "Larboard Watch." 9.39: Piano recital: In Mornement—"Ballet des ombres Heureuses" (Gluck-Friedman). "The Two Skylanders" (Leschitzky). "Skipton Rag—A Morris Dance" (Holliday). "By the Burnsides" (McCunn). "Hornpipe," from "Water Music" (Handel-Grainiger). "Cradle Song" (Brahms-Grainiger). "Country Gardens" (Grainiger). "Irish Tune from County Kerry" (Grainiger). "Music Box" (Ludov). "Leschitzky." "Music Box" (Stern). 10.3: J. Alexander Browne, baritone—"Nightfall at Sea" (Montague Phillips). "The Pirate" (Turner-Matley). 10.10: Brunswick City Band—Selection, "Sea Song." 10.20: News service; announcements. 10.30: God Save the King.

## 4QG

### EARLY MORNING SESSION.

7.43 to 8.30: See Friday.

### MORNING SESSION.

11.0 to 12.0 (noon): See Friday.

### MIDDAY SESSION.

1.0: Market reports and weather. 1.20: The Postal Institute Orchestra. 2.0: Close down.

### AFTERNOON SESSION.

3.0: Records. 3.30: Mail train running time. 4.8: Afternoon news. 4.30: Close down.

### EARLY EVENING SESSION.

6.0: Mail train running times; mail information; shipping news. 6.5: Dinner music. 6.25: Commercial announcements. 6.30: Bedtime stories conducted by "Little Miss Brisbane." 7.0: News in brief. 7.1: Stock exchange news. etc. 7.45: Close down.

### NIGHT SESSION.

Announcer: H. Humphreys. 8.0: Alf Featherstone and his Dance Orchestra—Symphonic fox-trots—"Dawn and Dew" (Packay). "Paradise and You" (Packay). 8.10: Annie Adams (soprano)—"Where My Caravan Has Rested" (Teschmacher). "Wait" (d'Hardelo). 8.20: Alf Featherstone and his Dance Orchestra—Fox-trots (Anon). "Mother Goose Parade" (Bresau). "Lila" (Tobias). 8.30: Aloha Novelty Trio—selected Hawaiian melodies. 8.35: B. Clouffe (tenor)—"The Siesta" (Souire). "There's a Big Lot of Sunshine Coming Soon" (Hay). 8.45: Alf Featherstone and his Dance Orchestra—Jazz Waltz, "I Love You" (Hargreaves). 8.50: Alice Gill (contralto)—"A Reunion" (Woodford Finden). "When the Heart is Young" (Glick). 9.0: Metropolitan weather forecast; movement of Leithport steamers. 9.5: Alf Featherstone and his Dance Orchestra—Novelty One-steps—"General Mixup" (Allen). "Near Beer" (Costello). 9.15: Laurie and Rayne (entertainers)—A quarter of an hour's novelty. 9.30: Aloha Novelty Trio—selected Hawaiian melodies. 9.35: Alf Featherstone and his Dance Orchestra—Fox-trots—"Sh-shivering" (Doody). "Informal Cafe" (Anon). 9.45: Isabel and Rayne (entertainers)—"A Night in May" (Brahms). "Sing Merry To-day" (Phillips). 9.55: Aloha Novelty Trio—selected Hawaiian melodies. 10.0: The "Daily Mail" news, the "Courier" news, weather news. 10.15: Alf Featherstone and his Dance Orchestra—Three-quarters of an hour's dance music. 11.0: Close down.

## 6WF

12.30: Tune in. 12.35: Markets, news; etc. 1.0: Time signal. 1.1: Weather bulletin, supplied by the Meteorological Bureau of West Australia. 1.3: Tune in "Care of the Sick," by Dr. Winifred Halloway of London. 1.20: Music. 1.30: Close down. Tune in 3.35: Musical programme, relayed from the Primrose Cafe. Various items from the studio. 4.30: Close down. 6.45: Tune in 6.45: Bedtime stories, by Uncle Duffy. 7.5: Light music by Perth Piano Trio. 7.30: Commercial and general information. 7.45: Talk on a popular science by Mr. Hal McKail. 8.0: Tune in 8.0: First weather bulletin, supplied by the Meteorological Bureau of West Australia. 8.3: Vocal and instrumental items from the studio; relay of dance music from Temple Court Cabaret. 8.50: Late news. 9.1: Station announcement: ships within range announcement; weather bulletin. 9.5: Programme continued from the studio. 10.30: Tune in 10.3: station transmission—Simultaneous broadcast on 104.5 metres of programme given on 1250 metres, commencing at 6.45 p.m.

## 7ZL

### MIDDAY SESSION.

Announcer: Jack Broadbent. 11.30 to 1.30: See Friday. 2.0: Description of Trial Handicap, six furlongs, run at Warrnambool racecourse, Warrnambool, Melbourne, Victoria. 2.5: Close down.

### AFTERNOON SESSION.

2.40: Description of Pony Race, five furlongs, Warrnambool, Melbourne. 3.4: Weather information. 3.25: Description of Amateur Turf Club Plate, one mile, Warrnambool, Melbourne. 4.0: Description of Hurdle Race, two miles 58 yards, Warrnambool, Melbourne. 4.15: Readings from the "Illustrated Australian." 4.30: Close down. 4.55: Description of Handicap Flying Stakes, six furlongs, Warrnambool, Melbourne. 5.0: Close down. 6.0: All sporting results to hand.

### EARLY EVENING SESSION.

6.15: Music. 6.30: Bertha Southey Bramhall will tell a fairy tale, "The Sea Horse's Daughter." 6.45: W. E. Masters will speak on "Fanny Pets." 7.4: Answers to letters and birthday greetings. 13: Thora Mather will recite to the wee, lol, etc. 7.15: Advice on fruit sales, from Melbourne, news session.

### EVENING SESSION.

7.30: Geo. Nation will speak on "Gardening." 7.45: Sporting gossip. 8.0: Chimes. 8.5: Recital of instrumental and vocal items by our leading international artists, supported by Findlay's musical session. 10.0: Chimes. 10.1: Close down.

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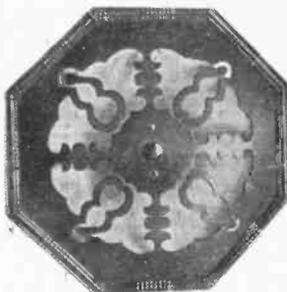
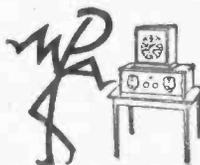
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# Local Programmes, Thursday, May 2

## 2FC

### EARLY MORNING SESSION

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

### MORNING SESSION

Announcer: A. S. Cochrane.  
10.0: "Big Ben" and announcements. 10.2: Piano/forte selections. 10.10: "Sydney Morning Herald" news service. 10.25: Studio music. 10.30: Last-minute sporting information by the 2FC Racing Commissioner. 10.40: Studio music. 11.0: "Big Ben." A.P.A. and Reuter's cable services. 11.5: Close down.

### MID-DAY SESSION

Announcer: A. S. Cochrane.  
12.0: "Big Ben" and announcements. 12.1: Stock Exchange, first call. 12.3: Official weather forecast, rainfall. 12.5: Studio music. 12.10: Summary of news. "Sydney Morning Herald." 12.15: Rugby wireless news. 12.18: A reading. 12.30: Studio music. 1.0: "Big Ben." Weather intelligence. 1.3: "Evening News" mid-day news service. Producers' Distributing Society's report. 1.20: Dance music. 1.28: Stock Exchange, second call. 1.30: Popular studio music. 1.50: Last-minute sporting information by the 2FC Racing Commissioner. 2.0: "Big Ben." Close.

### AFTERNOON SESSION

Announcer: Laurence Halbert.  
Accompanist: Ewart Chapple.  
2.30: Programme announcements. 2.32: The Book Lover's Corner. 3.0: "Big Ben." From Paling's Concert Hall: A recital by the students of Laurence Godfrey Smith. 4.0: From the Studio: A reading. 4.15: Popular trio. 4.30: Dorothy A. Nall will speak on "India." 4.45: Stock Exchange, third call. 4.47: Popular trio. 5.0: "Big Ben." Close.

### EARLY EVENING SESSION

Announcer: A. S. Cochrane.  
5.40: The chimes of 2FC. 5.45: The Children's Session, conducted by the "Hello Man." Letters and stories. Music and entertainment. 5.30: Dalgely's market reports (wool, wheat, and stock). 6.40: Fruit and vegetable markets. 6.43: Stock Exchange information. 6.45: Weather and shipping news. 6.48: Rugby wireless news. 6.50: Late sporting news. 7.0: "Big Ben." Late news service. 7.10: The 2FC Dinner Quartette, conducted by Horace Keats—(a) "Moresca" (Silesu). (b) "Serenade Passounee" (Silesu). (c) "Lohengrin" (Wagner). (d) "Minuet in F" (Logan). (e) "Melodie" (Rachmaninoff). (f) "Mon Paradis" (Clarke).

### EVENING SESSION

Announcer: Laurence Halbert.  
Accompanist: Ewart Chapple.  
7.40: Popular music.  
7.45: Programme announcements.  
7.48: Studio music.  
8.0: "Big Ben." From the Sydney Town Hall. Radio and Electrical Exhibition, 1929. Randwick Presbyterian Choir. Winners in the recent Radio Elsteddoff, conducted by the New South Wales Broadcasting Company.  
8.17: Victor Evans, basso.  
8.24: Wendling and Molloy, instrumentalists—  
(a) March, "Preparedness" (Wendling).  
(b) "Rose of Flanders" (Offagan).  
(c) "If your Face Wants to Laugh" (Carlton).  
8.34: Miriam Pope, soprano.  
8.40: Wally Baynes, comedian.  
8.50: Randwick Presbyterian Choir. Winners in recent Radio Elsteddoff.  
9.0: "Big Ben." From the Studio. Dagmar Roberts, pianist—  
(a) "Ror Elise" (Beethoven).  
(b) "Amassonata Sonata—Finale" (Beethoven).  
9.10: Miriam Pope, soprano.  
9.17: Wendling and Molloy, instrumentalists.

9.27: Victor Evans, basso.  
9.34: Vincent Aspey, violinist.  
9.41: Randwick Presbyterian Choir. Winners in the recent Radio Elsteddoff.  
9.51: Dagmar Roberts, pianist—  
(a) "The Prophet Bird" (Schumann).  
(b) "Little Bird" (Grieg).  
(c) "Doves" (Hill).  
(d) "The Nightingale" (Alabieff).  
10.1: Wally Baynes, comedian.  
10.8: From the Hotel Australia: Morrison's Dance Band.  
10.20: From the Studio: Bernice Patterson, popular vocalist.  
10.27: Late weather.  
10.30: Bernice Patterson, popular vocalist.  
10.37: From the Hotel Australia: Cec Morrison's Dance Band.  
10.57: From the Studio: To-morrow's programme.  
10.59: From the Hotel Australia: Cec Morrison's Dance Band.  
11.30: National Anthem. Close.

## 2BL

### MORNING SESSION

Announcer: A. C. C. Stevens.  
8 a.m.: G.P.O. chimes: metropolitan weather report. 8.1: State weather report. 8.2: Studio music. 8.15: G.P.O. chimes; news service from the "Daily Telegraph Pictorial." 8.30: G.P.O. chimes; news service continued. 8.40: Information, mails, shipping, arrivals, departures, and sailings. 9.45: Studio music. 10.0: G.P.O. chimes; close down.

### MIDDAY SESSION

Announcer: A. C. C. Stevens.  
11.0: G.P.O. chimes; 2BL Women's Sports Association session, conducted by Miss Gwen Varley. 11.30: Advertising hints. 11.40: Women's session, conducted by Mrs. Cranfield. 12.0: G.P.O. chimes; special ocean forecast and weather report. 12.3: Studio music. 12.30: Shipping and mails. 12.35: Market reports. 12.45: "Sun" midday news service. 1.0: Studio music. 1.30: Talk to children and special entertainment for children in hospital. 2.0: G.P.O. chimes; close down.

### AFTERNOON SESSION

Announcer: A. C. C. Stevens.  
Accompanist: Kathleen Roe.

3.30: G.P.O. chimes; from the Sydney Town Hall. Radio and Electrical Exhibition, 1929. David McKissock, cellist, winner in the recent Radio Elsteddoff, conducted by the New South Wales Broadcasting Co., Ltd. 3.37: John Warren, tenor. 3.44: Dismal Desmond, comedian. 3.51: Rae Foster, popular vocalist. 3.58: David McKissock, cellist, winner in the recent Radio Elsteddoff. 4.6: John Warren, tenor. 4.14: Dismal Desmond, comedian. 4.22: Rae Foster, popular vocalist. 4.30: From the studio: "Sun" news service. 4.40: Romano's Cafe Dance Orchestra, conducted by Bennie Abrahams. 4.50: From the studio: popular music. 5.0: G.P.O. chimes: "Sun" news service. 5.7: Studio items. 5.20: Piano/forte reproduction. 5.30: Popular music. 5.37: Features of the evening's programme.

### EARLY EVENING SESSION

Announcer: Basil Kirke.  
5.40: Children's session, conducted by Uncle Bas; music and entertainment; letters and stories. 6.30: "Sun" news and late sporting. 6.40: 2BL Dinner Quartette—(a) "Serenade d'Amour" (Waldan). (b) "Second Gavotte" (Sapellinkoff). (c) "La Tosca" (Puccini). (d) "Menuet-Pastel" (Paradis). (e) "Little Lady of the Moon" (Coates). 7.7: Australian Mercantile, Land, and Finance Co's report: weather report and forecast by courtesy of Government Meteorologist; Producers' Distributing Society's fruit and vegetable market report; grain and fodder report ("Sun"); dairy produce report ("Sun"); weekly traffic bulletin. 7.25: Mr. Pim and Miss Pam in advertising talks, handy hints and nonsense. 7.53: An Ad Special. 7.55: Programme and other announcements.

### EVENING SESSION

Announcer: Basil Kirke.  
Accompanist: G. Vern Barnett.  
8.0: G.P.O. chimes; 2BL Topical Chorus.

From the Prince of Wales Hospital, Randwick: Concert arranged by the Railway and Tramway Institute:—  
Miss Elsie Findlay, soprano—  
(a) "The Sands o' Dee" (Clay).  
(b) "Buy my Strawberries" (Olliver).  
Railway and Tramway Institute Symphony Orchestra, conductor, Mr. H. W. Williams—  
Selection, "The Bohemian Girl" (Grafton).  
Mr. Will. Lochrin, popular vocalist—  
(a) "Me and the Man in the Moon."  
(b) "Dewey Day."  
Railway and Tramway Institute Symphony Orchestra—  
(a) March, "Viscount Nelson" (Zehle).  
(b) Valse, "Nights of Gladness" (Amcliffe).  
Signor Ferrali, tenor—  
(a) "Sally Horner."  
(b) "La donne mobile."  
Railway and Tramway Institute Symphony Orchestra—  
Mazurka, "Bella" (Churza).  
Miss Elsie Findlay, soprano—  
(a) "April is a Lady" (Phillips).  
(b) "Danny Boy" (Irish air).  
9.0: From the studio: weather report.  
G. Vern Barnett, piano solos.  
9.9: Lawrence Broadbent, basso—  
(a) "A Lover's Garland" (Parr).  
(b) "When the Swallows Home-ward Fly" (White).  
9.16: Stewart Jarbo, excerpts from "Kipling"—  
(a) "Mandalay" (Kipling).  
(b) "Tommy Atkins" (Kipling).  
9.26: Hilda Lane and Dorothy Benbow, vocal duets.  
9.36: G. Vern Barnett, piano solos.  
9.46: Lawrence Broadbent, basso—  
(a) "A Vagabond Song" (Cundell).  
(b) "Pagan" (Lohr).  
9.53: Stewart Jarbo, excerpts from "Kipling"—  
(a) "The Last of the Light Brigade."  
(b) "A Code of Morals" (Kipling) (Kipling).  
(c) "Mother o' Mine" (Kipling), by request.  
10.3: Hilda Lane and Dorothy Benbow, vocal duets.  
10.13: Late "Sun" news.  
10.28: To-morrow's programme.  
10.30: National Anthem; close down.

## 2GB

10.0: Music. 10.10: Happiness talk by A. E. Bennett. 10.20: Music. 10.30: Women's session, by Miss Helen Beelinge. 11.30: Close down. 2.0: Music. 2.5: Women's radio service, by Mrs. Dorothy Jordan. 2.30: Music. 2.45: Talk. 3.0: Music. 3.15: Close down. 5.30: Children's session, by Uncle George. 7.0: Music. 7.30: Short talk, by Mrs. Jordan. 8.0: Signor Mario Gustavo, baritone. 8.1: Mr. Cedric Ashton, cellist. 8.15: Miss Edie Brown, soprano. 8.25: Instrumental music. 8.30: Mr. Jack Win and Miss Nora Windle, in a dramatic sketch. 8.40: Miss Jeanette Patterson, pianiste. 8.50: Madame Penrose, North, contralto. 9.0: Weather report. 9.1: Address. 9.15: Signor Mario Gustavo, baritone. 9.25: Mr. Cedric Ashton, cellist. 9.34: Humorous interlude by Mr. Jack Win and Mr. Heath Burdock. 9.40: Miss Elsie Findlay, soprano. 9.50: Mr. Jack Win and Miss Nora Windle, in a humorous sketch. 10.0: Madame Bennett North, contralto. 10.10: Dance music. 10.30: Close down.

## 2UW

### MIDDAY SESSION

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

### EVENING SESSION

5.30: Children's hour, conducted by Uncle Jack. 6.30: Close down. 7.0: G.P.O. clock and chimes; music and request items. 8.15: Garden talk by Mr. S. H. Hunt. 8.30: Musical items. 9.0: G.P.O. clock and chimes; comments on foreign affairs by Mr. J. M. Penrice. 9.10: Music and request numbers. 10.30: Close down.

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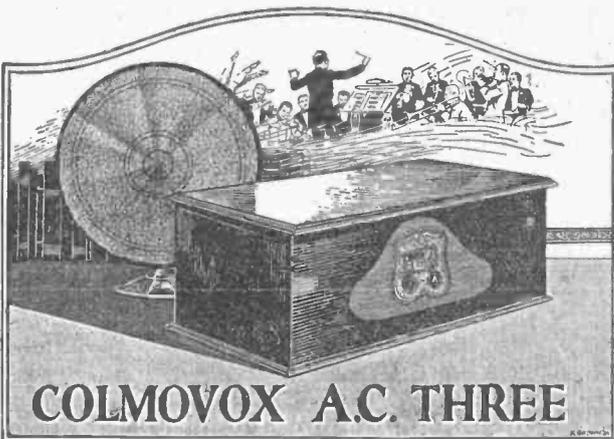
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# Interstate Programmes, Thursday, May 2

## 3LO

**EARLY MORNING SESSION.**  
7.15 to 8.15: See Friday list.

**MORNING SESSION.**  
Announcer: John Stuart. 11.0: To-day's radio recipe: Australian Gens. 11.5: Mrs. F. Bersford Jones. 11.20: Musical Interlude. 11.25: Captain Donald MacLean: "Famous Women of History." 11.40: Musical Interlude. 11.45: Sister Purcell will speak on "Infant Welfare."

**MIDDAY NEWS SESSION.**  
12.0: Melbourne Observatory time signal. 12.1: British official wireless news from Rugby; Reuter's and the Australian Press Association cables; "Argus" news service. 12.15: Newmarket stock sales; cattle sales report, bullocks and calves, by the Associated Stock and Station Agents, Bourke Street, Melbourne. 12.20: Community Singing, transmitted from the King's Theatre, Russell Street, Melbourne. Old-time choruses conducted by Frank Hatherley. 12.40: Stock Exchange Information. 12.43: Community Singing resumed. 12.58: Description of Union Handicap. 6 furlongs, Warrnambool Racing Club, by Eric Welch. 1.05: Community singing continued. 1.48: Description of Hopkins Hurdle Race, 2 m. 58 yds, Warrnambool Racing Club's races, by Eric Welch. 1.50: Meteorological information; weather forecast for Victoria, New South Wales, South Australia, and Tasmania. 2.5: Close down.

**AFTERNOON SESSION.**  
2.15: The Station Orchestra. 2.20: "The Smith Girls." 2.27: The Station Orchestra. 2.33: Description of Warrnambool Cup, a mile 3 furlongs, Warrnambool. 2.40: Ciella Genoni MacNeil, soprano. 2.47: Alfred Ackland, violin. Dr. Loftus Hills will speak on "Topics of the Week." 3.20: Fritz Hart will speak to students of music. 3.35: Rev. Wm. Bodtomey will continue his series of talks on "Stigmata of the Volungus," by William Morris. 3.50: The Station Orchestra. 4.3: Description of Handicap Pony Race, 5 furlongs, Warrnambool Racing Club's races. 4.10: "The Smith Girls." 4.17: The Station Orchestra. 4.25: Ciella Genoni MacNeil, soprano. 4.32: The Station Orchestra. 4.4: Musical selection transmitted from St. Paul's Cathedral, Melbourne. 5.30: Result of Handicap Flying Stakes, 5 furlongs, Warrnambool Racing Club's races, run at 4.45 p.m. Acceptances and barrier positions for the Mentone Races on Saturday, 4th inst. 5.32: Close down.

**CHILDREN'S HOUR.**  
6.0: Answers to letters and birthday greetings by "Bobby Bluegum." And then for some fun "Bobby Bluegum" has a new lot of songs and stories, and a story in verse entitled: "The Tale of Tinkle Mopsy," about a little fairy who lost his wings.

**EVENING SESSION.**  
7.5: Stock Exchange information. 7.15: Market reports. 7.30: News session. 7.43: Birthday greetings. 7.45: Out of the past. 7.46: A dressing room talk. 8.0: A maker of history. Programme announcements. 8.1: Rod M'Gregor will speak on "Football."

**NIGHT SESSION.**  
Announcer: Frank Hatherley. Accompanist: Agnes Portune.

8.15: The Radio Revelers—  
"Constantinople" (Carlton).  
"My Angelina" (Wayne).  
"There's a Rainbow Round My Shoulder" (Johnson).

8.24: Will Davies, bass—  
"Three for Jack" (Squire).  
8.27: The Radio Revelers—  
"Mississippi Mud" (Harris).  
"Oh, Is She Mad at Me" (Friend).  
"High Upon a Hilltop" (Bary).

8.34: The Smith Girls—  
"Joyful Jazz."  
8.39: The Radio Revelers—  
"When Love Comes Stealing" (Rapee).  
"Some Day, Somewhere" (Rapee).  
"To-day, To-morrow, Forever" (Nichols).

8.48: Bob Molyneux, baritone.  
8.51: The Radio Revelers—  
"Who Knows" (Dixon).  
"Tin Pan Parade" (Gillespie).  
"I'm Crazy Over You" (Lewis).

9.0: M'Haegle, and Australian School—  
"In Something Different."  
9.3: The Radio Revelers—  
"Wipin' the Pan" (Bary).  
"My Dream Sings" (Hall).  
"Guess Who's in Town" (Razall).

9.12: Will Davies, bass—  
"Feg Away" (Bavan).  
9.15: The Radio Revelers—  
"That Stolen Melody" (Fisher).  
"Lenora" (Gilbert).

"Japanese Mammy" (Donaldson).  
9.24: The Smith Girls—  
"Smiles and Sympatcon."  
9.27: The Radio Revelers—  
"There's a Ricketty Racketty Shack" (Turk).  
"That's What You Mean to Me" (Davis).

"All by Yourself in the Moonlight" (Wallis).  
9.36: Bob Molyneux, baritone.  
9.39: The Radio Revelers—  
"She's Got a Great Big Army of Friends" (Nelson).  
"Querida" (Simon).

"Falling in Love with You" (Mayne).  
9.48: M'Haegle, and Australian School—  
"In Something Different."  
9.51: The Radio Revelers—  
"I Love to Dunk a Hunk of Spongekack" (Castell).  
"I Just Jog Along" (Rose).

"The Voice of the Southland" (Austin).  
10.0: News service; meteorological information;

British official wireless news from Rugby, announcements.

10.15: The Radio Revelers—  
"My Heaven Is Home" (Collin).  
"Dream House" (Fox).  
"Mother, Still Have You" (Johnson).

10.24: Will Davies, bass—  
"Old Barty" (Grant).  
10.27: The Radio Revelers—  
"Out of the Dawn" (Donaldson).  
"The Prune Song" (Crumit).  
"Sincerely I Do" (Davis).

10.37: The Smith Girls—  
"Rio Rita" (Tierney).  
"The Kink-a-Jou" (Tierney).  
10.48: Bob Molyneux, baritone.

10.51: The Radio Revelers—  
"Next to Me I Like Me Next to You" (Bito).  
"Anywhere is Heaven" (Brady).  
"Down Where the Sun Goes Down" (Jones).

11.1: The Radio Revelers—  
"Can You Blame Me" (Goodwin).  
"I Want to be Alone With Mary Brown" (Leslie).  
"Comin' Up To-night, Huh?" (Lewis).  
"Forty-seven Heeled Sailors" (Barony).  
"High Tension" (Bee).

"A Bungalow, a Radio, and You" (Dempsey).  
"Back in Your Own Backyard" (Johnson).  
"My Heart Still" (Rodgers).  
"Give Your Baby Lots of Lovin'" (Burke).  
"When You Know Me" (Baden).  
"I'm Sorry, Baby" (Kahn).

"My Blackbirds Are Bluebirds Now" (Friend).  
"Casablanca" (Evans).  
11.30: God Save the King.

## 3AR

**MORNING MUSICAL SESSION.**  
10.0 to 10.50: See Friday. 11.0: Masterpieces by modern musicians. 11.30: Beautiful ballads. 12.30: British official wireless news; announcements. 12.30: Close down.

**AFTERNOON SESSION.**  
Announcer: Maurice Dudley. 3.0: A Bravura of Beautiful Ballads. 3.30: Captain Donald MacLean: "Feats of the Mighty." 3.45: Beautiful ballads. 4.0: The Imperial Russian Trio. 4.30: Close down.

**EVENING SESSION.**  
Announcer: Renn Millar. 6.0: The Station Orchestra. 6.10: Beautiful ballads. 6.20: The Station Orchestra. 6.50: The Station Orchestra. 7.10: News service announcements; acceptances and barrier positions for Mentone races on Saturday. 7.25: Ballads by the modern masters.

**NIGHT SESSION.**  
Announcer: Renn Millar. Accompanist: Reg Browne.

8.0: Dr. Loftus Hills will speak on "Life's Facts and Fancies."  
8.15: Under the auspices of the Nurserymen and Seedsmen's Association, a talk will be given.

8.30: The Victrola in Happy Harmony.  
8.45: The Imperial Russian Trio (Arved Norit violin, Ivan Berinsky cello, and Vassili Ister piano) Trio—  
"Spanish Dance No. 2" (Moszkowski).  
"Le Cygne" (Saint-Saens).  
"Dance Characteristique" (Rebikov).

9.0: Concert by the University Symphony Orchestra, transmission from Meiba Hall, University of Melbourne—  
(Conductor, Professor Bernard Heinze).  
Pianiste, Lorna Triste.  
Kathleen Simms, soprano. "Synnove's Song" (Kierulf).  
Orchestra, "Concerto—1st Movement" (Grieg).  
Kathleen Simms, soprano. "The Plague of Love" (Arne).  
Orchestra, "Barocco Suite" (first performance in Melbourne) (Aterburg).  
Kathleen Simms, soprano. "My Lovely Celta" (Munro).  
Orchestra "March on a Russian Theme" (first performance in Melbourne) (Giazontov).

10.0: Graham Burgin, baritone—  
"The Two Grenadiers."  
"To Arithen."  
10.7: Madge Sissons, piano—  
"Witches' Dance" (MacDowell).  
Rhapsodie, No. 11 (Liszt).

10.14: Graham Burgin, baritone—  
"Love-illy" (Thompson).  
"Harlequin."  
10.20: News service; announcements; God Save the King.

## 40C

**EARLY MORNING SESSION.**  
7.43 to 8.30: See Friday.

**MORNING SESSION.**  
11.0 to 12.0 (noon): See Friday.

**MIDDAY SESSION.**  
1.0: Market reports and weather. 1.15: A lunch-hour address. 2.0: Close down.

**AFTERNOON SESSION.**  
3.30: Records, etc., to 9.0: Close down.

**EARLY EVENING SESSION.**  
6.0: Mail train running times; mail information; shipping news. 6.5: From the Wintergarden Theatre Wurlitzer organ. 6.25: Commercial announcements. 6.30: Bedtime stories conducted by "The Sand-

man." 7.0: News in brief. 7.5: Stock Exchange news. 7.8: Metal quotations. 7.7: Market reports. 7.8: Fenwick's stock report. 7.30: Weather information. 7.40: Announcements. 7.43: Standard time signal. 7.45: Lecture—"A Talk on Books," by M. J. Doyle (M'Leod's).

**NIGHT SESSION.**  
Announcer: A. V. James.  
8.0: The Orpheans (conductor, T. Muller)—  
"We Meet Again To-night, Boys" (College Song).  
8.4: Ray Bruce (tenor).  
"Waiting for Ships" (Olman).  
8.9: J. P. Cornwell (bass)—  
"Bandolera" (Stuart).  
8.15: Frank Warbrick (pianist)—  
A ten-minute-recital, including—  
"Berceuse" (Bax).  
"Spanish Dance" (De Falla).  
8.25: G. H. (tenor).  
"Sleeping Camp" (Jude).  
8.30: The Orpheans—  
Octette, "Awake, My True Love" (Slicher).  
8.36: Francis Lane (contralto)—  
"A Night of Love" (Sper).  
8.40: Tom Muller (elocutionist)—  
"In Other Words" (Agg).  
8.45: Ernest Haiper (bass)—  
"What Am I Love, Without Thee" (Adam).  
8.50: The Orpheans—  
Octette, "Drink to Me Only" (Kerwin).  
8.55: J. P. Cornwell (bass) and G. Williams (tenor)—  
Vocal duet, "Tenor and Baritone" (Black).  
9.0: Metropolitan weather forecast. 9.1: Movements of lighthouse steamers. 9.3: Fred Garce (baritone).  
"I Fear No Fate" (Pinsult).  
9.7: The Orpheans—  
Octette, "On the Sea" (Buck).  
9.12: Francis Lane (contralto)—  
"A Kiss Before the Dawn" (Perkins).  
9.16: The Orpheans—  
"We'll Sing a Merry Roundelay" (Nicholl).  
"All, If I Could But See Her" (Sister).  
9.30: The Orpheans, electrically-reproduced records. 10.0: News, weather, close down.

**6WF**

12.30: Tune in. 12.35: Markets, news, etc. 1.0: Time signal. 1.1: Weather bulletin, supplied by the Meteorological Bureau of West Australia. 1.3: Perth trophe, relayed from Messrs. Musgrove, Ltd. 1.40: Close down. 3.30: Tune in. 3.35: Musical programme, relayed from the Carlton Gaiety, road items from the studio. 4.30: Close down. 4.40: Tune in. 6.48: Bedtime stories, by Uncle Duff. 7.5: Light music, by the Perth Piano Trio. 7.10: Commercial general information. 7.45: Tune in. 8.0: Time signal. 8.1: First weather bulletin. 8.2: Concert by the Perth City Band, conducted by Mr. Les M. Price. 8.50: Late news items, by courtesy of the Daily News. 9.0: News, with range announcements; late weather bulletin. 9.5: Band concert continued from the studio. 9.45: "Health" talk by Mr. E. All. 10.0: Musical selections. 10.5: Musical selection. 10.30: Close down. 10.4: 5-metre transmission. 10.45: 5-metre broadcast on 104.5 metres of programme given on 1250 metres, commencing at 6.45 p.m.

**7ZL**

**MIDDAY SESSION.**  
11.30 to 1.30: See Friday. 2.55: Results will be given of the Union Handicap, six furlongs and the Warrnambool Cup, one mile and three furlongs.

**AFTERNOON SESSION.**  
3.0: Chimes. 3.1: Musical selections. 3.4: Weather information. 3.55: Result of the Grand National Steeplechase, three miles. 4.0: Description of Handicap Pony Race, five furlongs, Warrnambool, Melbourne. 4.5: A representative of the Child Welfare Association will speak on "Ten Year Old." 4.30: Close down.

**EARLY EVENING SESSION.**  
6.15: Musical selections. 7.0: Answers to letters and birthday greetings. 7.5: Musical selections. 7.15: News session.

**EVENING SESSION.**  
7.30: W. H. Cummins on "Empire Shopping Week." 7.45: Mrs. E. O. Rowlands, secretary, ladies committee of Children's Library, will speak on "Work of Children's Library." 8.0: Chimes. 8.6: Musical selections. 8.15: ZZZL community singing, items by the Orpheus Club, all "Drink to Me Only," "Fading Matilda." 8.22: Quartet (C. B. Rowe, E. Allen, H. Foster, W. Hunt), "Old Farmer Buck." 8.5: "Ramona." 8.55: Quartet (C. B. Rowe, H. Foster, H. Allen, W. Hunt), "Spin Spin." 8.33: All, "Old Folks at Home," "Robin Adair." 8.40: Trevor Trappes, tenor, "Love Me or Not." 8.43: All, "Juanita." 8.45: My Head Beneath a Shoe." 8.50: H. Foster, tenor, "On the Road in Nudage." 8.53: All, "Sally Horner," "On the Road in Nudage." 9.0: W. Thompson, baritone, "Ode on the Deep." 9.3: All, "Comin' Thru the Rye." 9.4: "Four Waggon." 9.10: W. Cliffe, baritone, "Blow, Blow, Thro' Angry Winds." 9.13: All, "Moonlight and Roses." "Annie Laurie." 9.20: Miss Ada Blyth, elocutionist. 9.23: All, "Robin Adair." "Mother Macbride." 9.30: Fred Kammer, tenor, "Celeste Aida." 9.33: All, "Good-night, Ladies." "John Brown's Body." 9.40: B. Osborne, bass, "The Trumpeter." 9.43: All, "Auld Lang Syne." 9.5: News session. 10.0: Chimes. 10.1: Close down.

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Transformers, from	7	6	
Triple Capacity "B" Bat-			
teries, 45 volt	17	6	
Single Valve Sets, complete			
with Phones and Bat-			
teries	3	10	0

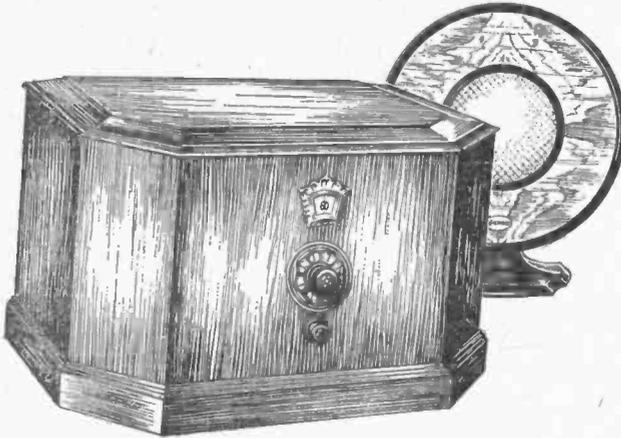
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	Cash Price.
	£ s d
COLMOVOX "B" BAT-	
TERY CHARGER	5 10 0
Deposit 11/-, and 19 Weekly	
Payments of 5/6.	
COLMOVOX "A" and "B"	
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Deposit 13/-, and 19 Weekly	
Payments of 6/6.	
EMMCO TRICKLE CHAR-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

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**A.F.4.**  
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U.L.

The WIRELESS WEEKLY

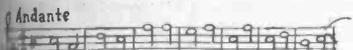
RADIO INFORMATION

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

Service

Correspondence Answered only through these Columns (See Coupon Below)

G.R. (Cheltenham)—Kindly send me a few parts for a number of selective crystal sets for receiving Broadcasters. I am living only half a mile from Farmer's transmitting station. Answer: Right. See below.



A.R.B. (Gladesville)—This Information is given in article. Read it. No. Marnock Five will be OK. We don't receive programmes from broadcasting stations till dates shown. Losen coupling of aerial coil as much as possible without loss of signal strength. Resonance coils apparently not correct for B.C. band. Should have 45 turns. Understand this coil is variable in relation to secondary. P.M.G. (Murgon)—Soldering aluminium is a—Is roton job! Aluminium solder will be required. Greater heat than usual will be necessary. A.C.W. (Gatran)—Think I've warned you about using long letters before Marco Four every time. Same coils. Circuit recently published in Queries. Same wire. Using two inch formers in primary by four turns, and other coils in

proportion. For choke. wind 200 turns 34 gauge D.S.C. wire on 1/4in. former. Hope your hands ache. Superhet. Marnock Five simpler to build. 1228 Seldyne good set. Try reversing connections to tuning condenser. Reason why transformers will not step up D.C. (your queries in connection "Proving Radio") should be apparent if you performed the experiment using galvanometer and two coils (Part 6). You were told that a direct current flowing in the primary would cause a current to flow in the secondary by means of induction, only when the circuit was suddenly made or broken, i.e. there would be a deflection of the needle (which would immediately return to its proper place) as soon as the switch was closed. A similar motion would be apparent when the key was opened. But with alternating supply the current is continually reversing, and magnetic lines of force are thus thrown out, which cut the secondary. If the A.C. were rectified, i.e. one half of its wave removed, only one half of it could be transformed. If this half were smoothed out, it could not be transformed. A.C. rapidly changes from zero to maximum, and vice-versa. You will find that (if you do the experiment) a current can be made to flow continually if you keep closing and opening the switch (in the experiment described). This is nothing more, really, than pulsating D.C. Material of different makes for best results, not particularly as regards efficiency, but also as regards space, shape, etc. Don't advise you to use transformers mentioned. Re the two circuits you wish us to publish. Sorry, but you've had too much space already, but if you wait a couple of weeks, will be pleased to publish them.

J.R.S. (Inverell)—Yes, you could use the 1 mfd. condenser in place of the other. Try resistances across transformer secondaries. Midnight for PH. and afternoon or early morning (8 a.m.) for U.S.A. R.E. (Queensland)—Go-Getter published again last week. No doubt you have copy now. G.P. (Dundas)—Not enough details. R.F. (Glebe Point)—Where's that coupon? Quite O.K., but be careful in layout. Parts are rather cramped as it is, and will be more so on your small baseboard. Mount transformers side or back of cabinet to save room and interaction. Keep them low down. Parts O.K. 90 volts O.K. on amplifier. R.C. (Pittiech Hill)—Four letter dated 22/2/29 had no stamps attached, but in any case we have no copies. Some reader may have a copy dated 25/1/29. Inquirer. R. Clothier. 19 Ness Avenue Dulwich Hill. F.F. (West Maitland)—See Proving Radio article in connection with rectifying. C.G.P. (Brisbane)—Not your turn yet. Basket of queries you saw were one week's issue only. Any valve of the Philips, Marconi, Osram, Radiotron, Ceco, etc. type will be O.K. The signals are fed back to the valve in such a manner that it acts also as a radio-frequency amplifier. B.C.J. (S.A.)—Experiment with coils and condensers. R.W. coil requires more turns. Station you heard was P.H. Java. Yes. A and B stations on broadcast band. F.W.V. (Summer Hill)—Quite O.K. Increased volume. Place of apparatus marked is a choke. Transformer could not be two A109 valves in parallel. Re B terminal—no. Arrangement O.K. Sneaker you mention not obtainable in Australia, but I think Levenson's is the units. Have run out of copies of Proving Radio you require. If you had sent full address would have published an inquiry par. for you. E.F. (Roschank)—No, there is no station 2XAD now. This call sign is now altered to WXO. F.L.R. (Brisbane)—Same as for Marco Four. A.G.H. (Stammore)—That's so. Volume control as in Air King, published a few weeks ago. Place a fixed condenser of .001 mfd. across primary of transformer. The choke may make all the difference, too. Anxious (Newtown)—Yes a choke. Large ratio transformer in this stage always. A.N.P. (Willoughby)—Worth while obtaining the other valves. If you intend to stick to your idea, though, repeat request, and circuit will be published using other valve. Husky (Bronte)—License necessary before you can transmit. Amplion will advise. You can buy a complete telephone outfit from some second-hand shops for 5/. Many amateurs are making use of the microphone. Cheap microphone that gives good results is the Sterling. Swains used to sell Skin-deriven buttons. Cost 5/-. You can get a good one from a post office microphone, which is sold, complete with stand, diaphragm, etc., ready to use.

for 1/ (second-hand, of course), Amplion sell earpieces with low resistances. Yes, second-hand. There is a place near the Railway arch, in Elizabeth Street. Accumulator B battery O.K. for S.W. (see below). Your idea dangerous if 001 condenser blows. Doubtful if this will work at all. C. E. Cross, "Largo," 41 Gardyne St. Bronte, requires a copy of W.W. No. 3, Vol. 13. R.D. (Paddington)—Keep on reading W.W. E.P.D. (Peakhurst)—Trannys O.K. Circuit ditto. Output transformer Ferranti OP3C. Some type speakers incorporate output transformers. Fault in your A climinator. Not supplying enough current, perhaps. An article on Dynamic Speakers will appear before long. E.T. (6th, Kensington)—Look up A.R.L. Handbook. Melbourne is the only place. Re smoothing circuit, yes. Re detector for Martin S.G. File. 200A. Re grid bias—this must not be done. I.T. (Newtown)—Your bad luck, and someone else's fortune. Someone near you installed a valve receiver, the re-radiating signals from their aerial affecting your reception. Advise looking for aerial and running yours at right angles. A valve receiver (say one valve) would be better. E.P.D. (Queensland)—Yes. You must not reverse coils. Wrong wiring somewhere on your part, but not enough details to judge. The condenser saves the valves if the variable condenser plates touch. Audio (Mitchell)—Cost of transmitter's license, £1. 12 gauge copper. Receiving condensers O.K. Best type of valve, UX210. Better with B battery reversed. Cannot accede to your request for layout of transmitter. You must first obtain your license. By the time you are fit to obtain your license you will laugh at the idea of a baseboard layout of a transmitter. Your own senses will tell you where these things should go. F.H.B. (Wagett)—Transformer O.K. Voltage O.K. You have to experiment to find correct voltage. Remember the detector in the A.E. receiver is a power valve. S.G. valve is O.K. Too much reaction. A.J.R. (Paddington)—As you see, I am following your suggestion in connection with queries, only I have gone one better. E.C.D. (Queensland)—Thanks for the report. Space does not permit us publishing it here at present, but we may use it later. T.U. (Brisbane)—70 turns, tapped every tenth turn. Transmitter (Longreach)—Have you got a license? Use white toothpaste for filling in engravings. It will dry up quite hard. H.T. supply for mitter O.K. Filter circuit in order. Aerial 30 feet high, 40 feet long, single, inverted L. Re Ford Coil, do not advise it for this purpose. Use two turns heavy gauge insulated wire coupled over grid end of secondary for modulation. G.W.W. (Greenwich)—No, add more turns to L3, move L1 farther away, or increase capacity of reaction condenser. Circuit in Marco Four. Try .001 condenser across primary of first transformer. S.G.

You Can Have Your Present Set Converted to an All-Electric Call at Stand No. 2, G. C. Beardsmore, at the Radio Exhibition, and inquire about having your battery operated set made into a genuine All-Electric model.

No batteries—just plug in and switch on. All types of Electric Sets on display at Exhibition—Stand 2. G. C. BEARDSMORE. And at Fourth Floor, Kincoppal Chambers, 38 MARTIN PLACE, SYDNEY, Opposite old Govt. Savings Bank Buildings. 'Phone: B 1773.

QUERY COUPON If you are in difficulties about reception or set-construction, let us know, and we will endeavor to give you the right answer. Make your questions brief to the point, and, where possible, show layout and wiring design. Under no circumstances will answers to queries be made by letter or by telephone. All answers will appear in the columns of this department in the next issue in which they are received. The Radio Information Service, 47/178, BSS, Waverley, N.S.W. Please enclose the accompanying cut-out with your question. Service Department, at that column in order to facilitate this in a home-made reader.

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A "Magnavox" loud speaker, rich in tone and beautiful in appearance. Price . . £18/10/-

# FARMER'S

PITT, MARKET AND GEORGE STREETS

excellent. Yes, push-pull amplification well while. Yes, eliminator O.K. Re 2FC, remains will cover this. Try fixed condenser in earth lead or build Interference Eliminator, which appeared in these columns recently.

**B. (Bexley?)**—Try reversing connections in condenser. May be necessary to shield back of grid Rheostat to help here.

**C.A. (Buderim Mt.)**—Yes, Air King expensive batteries. Use wet B batteries. Adaptor built. Try another valve.

**C.M. (North Coast)**—Coil O.K. Mount on board. My error, sorry. Piece of insulation may be used over winding. Valves O.K.

**W.R.M. (Glen Innes)**—Glad you like Oneman's Onesvalver. Take about ten turns of 160n coil, and readjust. Try a 002 fixed condenser across secondary of first audio stage. Try transformers O.K. for Renown.

**J.R. (Mortdale)**—Try removing the output transformer, which may be faulty. Failing that, the trouble is probably in your speaker, or one of your valves has lost its emission.

**F.L. (Queensland)**—Sorry, no information on you mention. No room for your notes at present, may use them later. Thanks.

**E.B. (Adelaide)**—Hole should just clear the 6A valve. Leads mentioned may be insulated, but those that are connected straight to the metal. Range 200-600 metres. Will bring in 7M easily.

**O.T. (Georgica)**—Cannot resist publishing your letter, which, thank goodness, was brief.—A transformer marked OS is OP IP, which is the P.G.B. terminals of the transformer.—The answer, of course, is a lemon. It is B plus. OP is plain B is grid, and OS is filament.

**W.R.M. (Arncliffe)**—Grid trouble. See also the detector valve is making contact in its socket.

**Superheterodyne (Dundee)**—Valves O.K. For use filament controls for R.F. stages, oscillators and detectors. Audios not so important. You have B plus lead. N.C. Connect pick-up to grid coil filament of detector valve.

**G.W. (Queensland)**—Yes, you could remove shield the receiver. Yes, sheet brass could be used throughout, but it would make the set very heavy. 00015 condenser O.K. Transformer ditto. 200 turn inch former, 200 turns approximately. Yes—before results on local stations than B.D. Not so good on distant stations. Glad you like "Proving Fish".

**A.H. (Boonah)**—We don't all live at Boonah! You write shorter letters! I told the inquirer that he could not expect Inter-State stations on a speaker on two valves. His address was Dunburghurst, five minutes' walk from the city of Sydney with its power lines, electric light wires, telegraph wires, power plants, broadcasting stations and what not. Where's your argument! See a diagram for rebuilding your two-valve Renown into a Renown Special? See "WIRELESS WEEKLY" March 22, 1929.

**R.S. (Wages)**—No, your theory is wrong. R.F. impulses travel much too fast to be bent before rectification. The range of audibility for the human ear is 16 to 30,000 cycles p.s. R.F. oscillations travel at a considerably greater speed.

**GREEDY (Queensland)**—Objection over-ridden. It is the better receiver. Added in usual manner. Eliminator would not deliver enough current to supply Solodyne. You'll have to bring something better than that to worry.

**G.T.R. (Turramurra)**—The set mentioned, the wave trap will be quite suitable. The wave trap discussed quite O.K.

**E.S. (Brisbane)**—Thanks very much for your goodness. Our inquirer will be very pleased. Glad also you like the Go-Getter.

**R.F.N. (Queensland)**—Acknowledgment received. Chassis O.K. Martin Coil K11 obtainable from Bakes. An article covering coils will be published shortly. See next paragraph under "General".

**GENERAL**—In accordance with many requests, article will shortly be published, giving specifications of all coils for previous articles, where an article did not give these specifications, but recommended ready-made kits.

**R.J.W.M. (Rankins Springs)**—A three-valve Bazartz. Renown Three. A S.W. adaptor will be necessary for S.W. reception. As you already have a good set for all Australian stations, suggest you build the Go-Getter S.W. receiver.

**A.H.R. (Leichhardt)**—Battery needs re-charging. Station you heard probably a Jap.

**G.G. (Croydon)**—42-volt battery should be secured at 25 volts. Will not injure set, unless you try to force volume by increasing filament voltage.

**OPE (Goaragoala)**—0000005 variable condensers are no good for the Renown Three. They will be too small even for a short-wave receiver, or for a neutralising condenser. Haven't you tried somewhere? Ameg. leak O.K.

**R.A.H. (Vic.)**—Reason why equal emitter and speaker when you try to turn resistance full (All Empire), is because you are putting too high voltage on the detector. R.F. Circuit of All Empire O.K. for All Empire. Keep R.F. coil a little higher than detector. Just a matter of getting set to your set. Put two more plates in R.F. tuning condenser or take a turn or two off detector S.W. coil.

**E.P. (Winham)**—Power leak or broke-down transformer.

**R.S. (Nabiac)**—New Systems only place where these can be obtained.

**V.G.R. (Rockdale)**—Depends on what harmonic you want. The fifth harmonic is the fundamental divided by six. The fourth harmonic is the fundamental divided by five. The first harmonic is the fundamental divided by two. The second harmonic is the fundamental divided by three, and so on. Eliminator O.K. sometimes. Depends on filter system. You were probably on the 80-metre band.

**L.C. (Darlinghurst).**—W. G. Watson.

**A.B. (Grenfell).**—Main tuning condenser is .0005.

**A.M. (Trandley).**—Sheet zinc and glass tubes obtainable from practically any chemist.

**MERRIMEE (Tullamore).**—Valves N.G. They consume three 190 valves for economy. Another suggestion (not quite so economical but good) 201A's. Less economical but better still, one 201A and two UX201A's. Yes, they would be as good as the other valves you mention.

**B.C. (South Aust.).**—A woman can often be heard from the Javan station. May have been the Dutch station also.

**P.T. (New Plymouth).**—O.K. Wind coils for Air on old valve bases a la Midget B.G. Four.

**L.G.R. (Belmore).**—It should be understood that inductance coil and transformer winding are one and the same matter, has a natural period of its own. The signal is near that of the frequency, it is amplified very well by the circuit assembly. Other frequencies may be poorly amplified. In several amplifiers are used, it is well to use transformers of different characteristics, so that they tend to amplify signals of any particular frequency more than others is minimised. This explains why we often use two transformers of different makes.

**R.J.M. (Bendigo).**—Easy, especially when you are using D.C. Economic Radio or Colville Moore. Specify Eliminator. Condensers and chokes. Two or three pounds. Well worth while. No. place a 1000 condenser tested 300 volts in the aerial lead, and another in the aerial lead. If you use an aerial either arrangement will be O.K.

**BO NAME (Guyra).**—Marco Four.

**A.W.A. (Mascot).**—Old type condensers. Plated can made to eject from left of rotor plates as well as right. Result, two readings for stations at ends of band. Painter reception of station is harmonious. Ordinary torch bulbs for fuses. Fuse wire is too heavy. Life of Fuller Rechargeable "B" battery about 18 months to two years, but varies. No need to replace acid. Only replace distilled water when evaporation takes place. Only when acid has spilled should any be replaced, and then the whole cell should be emptied, and refilled with fresh electrolyte.

**A.B. (N.Z.).**—End of aerial coil further away from grid than connected to aerial. End of secondary coil of aerial coil connected to grid of valve. Tune plates.

**R.W.E. (Toorak).**—Suggest that tuning condensers be slipped round on shaft until frequency matches as near as possible, then balance up Feridyne shields.

**I.P. (Lakemba).**—Coils out of proportion. Primary Secondary should be 50 turns. Reaction should be 25 turns. Use 24 gauge wire, and wind them on 1/2 inch formers.

**W.F.R. (Manly).**—Copy posted. See below.

**F.D. (Vic.).**—Sorry sold out W.W. containing battery. Some reader may be able to help. Inquirer, V. T. Duggan, 48 Mowbray Street, Albert Street, Vic.

**W.F.R. (Manly).**—Yes, will suit your requirements. My own method quite successful. Still used. Glad to hear of P.R.

**L.A. (Earlwood).**—Same number of turns for coils as Go-Getter. About 200 turns 30 gauge wire for broadcast band.

**C.G.G. (Hurstville).**—You will be able to see the results in Neutrodine receivers at the Exhibition. Will be on show ("Wireless Weekly" stand).

**A.L. (Lakemba).**—No. Wound specially to give full current.

**A.F.B. (Newcastle).**—Fault is mine. Circuit for regeneration to any receiver has appeared in my columns twice since last year. No harm to do. Advise use of a .00025 variable condenser. This control reaction well. Don't use a condenser in place of the resistance as suggested. Frost your minimum panel with caustic soda.

**P.B.J. (Belangra).**—Follow out R.F. stage of any receiver published in this paper, but use same system as in detector, same size coils, etc. Former coupling allows of greater amplification and is quite suitable for S.W. Three stages of recoupling are better than two stages of transformer coupled. Best plan is to write to several radio houses in Sydney offering your services. State qualifications if any. Murdoch's Ltd., can advertise for assistants.

**L.M.L. (Wey Woy).**—You would have to build a wave adaptor.

**A.S. (Crockwell).**—You can get down to about 150 metres with a 12 turn coil (2 1/2 ins. dia.) but tuning is very broad. Your writing is so bad that I don't make out what wavelength you wish to tune. A S.W. adaptor will be necessary for good reception.

**A.V. (Concord).**—Build Interference Eliminator and has appeared in these columns two or three times quite recently.

**H. M. (City).**—Yes, aluminium O.K. If screened, it will be unnecessary to screen the coils separately. Turns need not be altered. Eliminator O.K. Transformers O.K.

**H.S. (Artarmon).**—Broken down condenser or plates touching.

**M.W.A. (Queensland).**—Use resistance voltage divider. Your local dealer will understand your requirements as regards mains, etc.

**H.B. (Wynnum South).**—Don't resist publishing circuit. I built a one valve Marnikay, and am not sure the wiring was right, but owing to the inductive sisters of mine the circuit went west. I want another good circuit? Suggest the Countess's One. Would suit your location. Many amateurs have had good results with this little receiver.

**A.L. (Thirroul).**—Insufficiently charged or else contacts are faulty.

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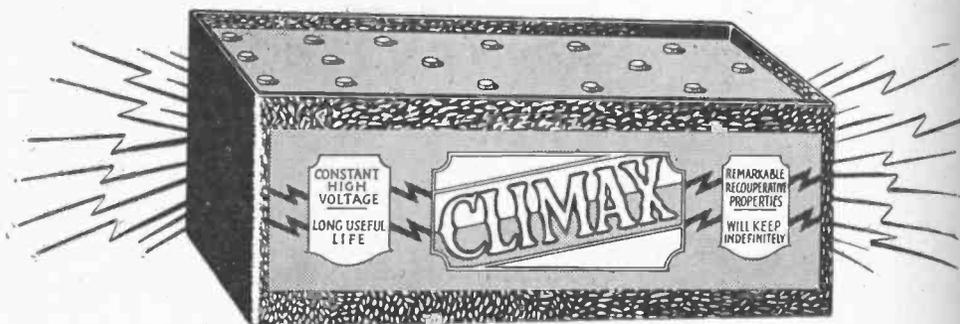
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30 Volts, 8/-; 45 Volts, 12/-; 60 Volts, 16/-; 90 Volts, 24/-.

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The next time you order torch batteries, see they are “CLIMAX.” You will be rewarded with a steadier, brighter, and never-failing light, plus longer life and service, than you have ever had before.

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