

BROADCAST YEAR BOOK.

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1934 EDITION

WIRELESS

# LEADERSHIP

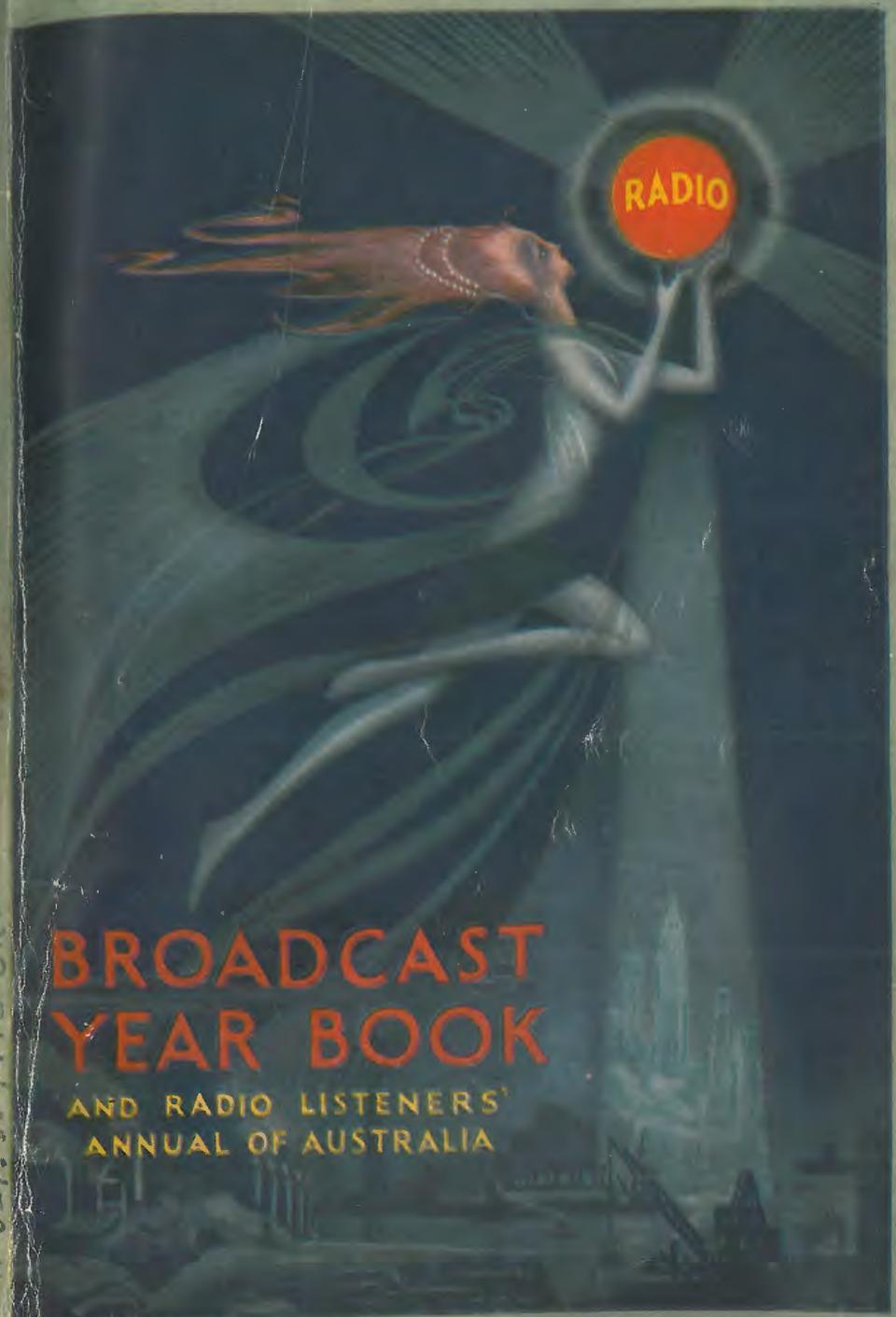


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BROADCAST YEAR BOOK 1934  
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## BROADCAST YEAR BOOK

AND RADIO LISTENERS' ANNUAL OF AUSTRALIA

PRICE: 1/6



SOMEBODY'S GOT  
BETTER RADIO!

**Mullard**  
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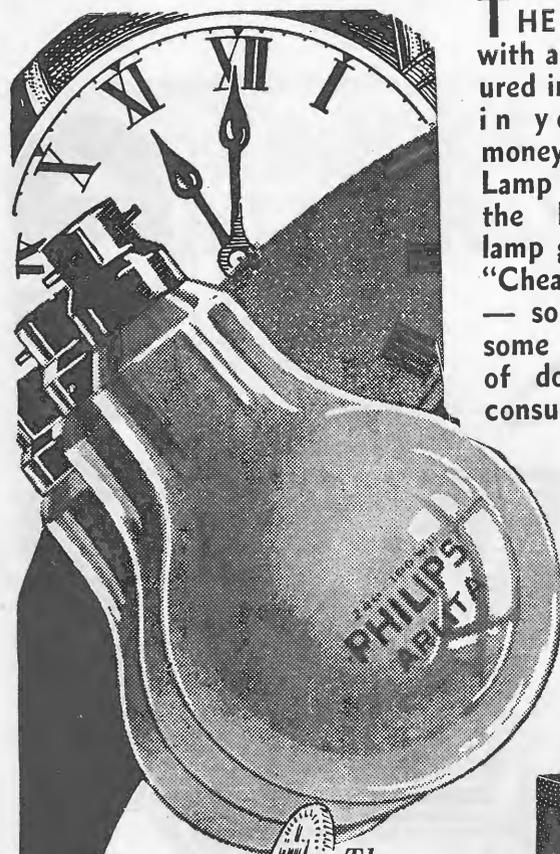


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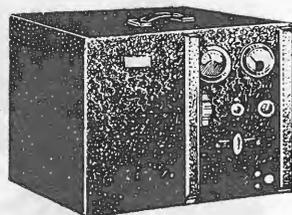


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"Cheap," inferior lamps — some unbranded — some unnamed — most of doubtful origin, are consumers of electric current which is not returned in light, but for which you must pay.

If your lighting is poor and your light account is high—check up on your lamps.

The  
Photometer,  
which proves  
the economy  
of



# PHILIPS LAMPS

MADE IN  
AUSTRALIA

3L7

# The Broadcast Year Book

AND

## RADIO LISTENERS' ANNUAL OF AUSTRALIA

### 1934

COMPILED AND EDITED BY C. C. FAULKNER AND J. D. CORBETT,  
CHALLIS HOUSE, SYDNEY.

Published by "The Harbour" Newspaper and Publishing Co. Ltd., 122 Chalmers Street,  
Sydney, for the Proprietors.

## A Word in Advance

The Broadcast Year Book and Radio Listeners' Annual is intended as a handbook and guide for listeners on the national and privately owned broadcasting stations of Australia. The facts as given have been compiled with care, but even while the book was in the press changes in personalities associated with various stations may have taken place.

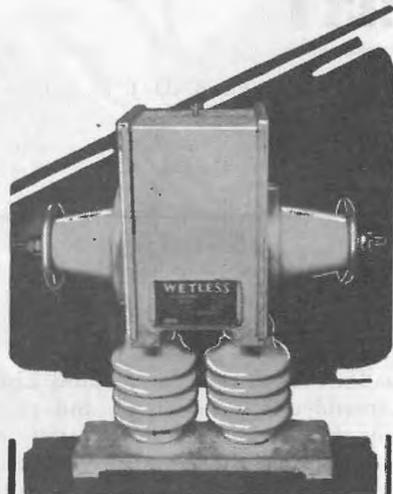
All the important B Class broadcasters in Australia responded readily to the Editors' request for information, thus assuring the accuracy of the facts. The sections dealing with the A stations were compiled from well authenticated sources, and the general manager of the A.B.C. was kind enough to give readers of the Year Book the benefit of the views expressed over his name.

As this is the first occasion so comprehensive a mass of detailed information regarding broadcasting in Australia has been collected, it may be that certain omissions or even errors have occurred. The compilers will be pleased if anything under this category is pointed out, so that in subsequent issues adjustment may be made.

C. C. FAULKNER  
J. D. CORBETT.

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ST. PETERS — SYDNEY — N.S.W.

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### ILLUSTRATIONS.

NOTE.—The illustrations contained in this volume are so numerous and diversified that altogether too much space would be occupied in indexing them. The Reader may take it, however, that most of them appear opposite pages which contain literary matter concerning them.

## Radio Exhibitions

In 1926 the radio and electrical trades of Sydney inaugurated the first trade exhibition in the State of New South Wales (although two previous small exhibitions had been held with success). The exhibition took place in the basement of the Town Hall so successfully that in the following year a similar show was held in the main hall. In 1928 and following years both the Great Hall and the Lower Hall were used for the Radio and Electrical Exhibition. The following figures show how the exhibition has grown:—1926, attendance 13,000; 1927, 23,000; 1928, 43,000; 1929, 44,512; 1930, 30,051; 1931-32, no exhibition; 1933, 59,508.

The exhibition is conducted by the Electrical and Radio Development Association, which is the publicity section of the Electrical and Radio Association. The Committee of E.R.D.A. (and of the exhibition) are Messrs. J. R. Greenwood (president), W. J. Wing, W. Wright, V. H. Mackinney, G. K. Dunbar, E. P. Bennett, R. P. Godfrey, J. N. Tait, D. J. Miles and Andrew F. O. Brown (secretary).

The next Sydney Exhibition will be held on February 28 to March 10, 1934, and the Melbourne Exhibition on May 3-11, 1934.



J. Russell Greenwood,  
President.



Andrew F. O. Brown,  
Secretary.

## Broadcasting in Australia Its Rise and Development

(By J.D.C.)

It is impossible to say: "Broadcasting commenced on such-and-such a date," for, whatever date the writer set down, he would be wrong. It certainly did not commence with the operation of the first station either in Australia or overseas. It did not start with the first public demonstration. It might (or might not) be correct to say paradoxically that Australian broadcasting commenced with Marconi's epoch-making experiments in England from 1896 onwards. Or it might have had its genesis in Fleming's two-electrode valve, in Hertz's classical investigations in 1886; or in the work of Faraday; or in Samuel Morse's experiments in Washington in 1842, when he proved that electric communication could be made across a canal without connecting wires. For these names, selected at random, are indicative of many famous pioneers without whose genius and work broadcasting would not exist to-day.

The first wireless-equipped ships to arrive in Australian ports came about 1910, the pioneers being the P. and O., Orient and Norddeucher Lloyd lines. The apparatus employed was, of course, capable of sending and receiving Morse signals only, the term "broadcasting," as it is popularly used nowadays, being unknown.

With the increasing use of this form of communication in countries overseas, the Commonwealth Government in 1912 started the erection of several wireless stations around the Australian coast, the object being to provide the necessary links for ship to shore communication. The following year Amalgamated Wireless (A'asia.) Ltd., in which the Commonwealth Government now holds half the shares plus one, was formed, and the manufacture of ships' transmitters and receivers began. The company's first factory—incidentally Australia's first wireless factory—was situated in Underwood Street, Sydney.

During the war years A.W.A. installed wireless apparatus on Australian transports and on certain British and Japanese transports. Naturally the stress of war gave the science of wireless considerable impetus, but it was not until near the end of hostilities and afterwards that really spectacular events took place.

On September 22, 1918, the first direct wireless messages from England to Australia were received by Mr. E. T. Fisk at Wahroonga, N.S.W., the transmission being made at the Marconi station, Carnarvon, Wales. This dramatic annihilation of space focussed Australian public attention on what was still regarded as a new invention.

Although certain trans-ocean radio-telephony had been carried out overseas during the war, it was not until several years after the signing of the Armistice that broadcasting proper commenced. June, July and

August of 1920 are red letter months in the history of Australain radio. At this time, before the Royal Society of N.S.W., Sydney, Mr. E. T. Fisk gave a public demonstration on broadcasting, while in Melbourne transmissions were made at the headquarters of the Commonwealth Government Radio Service, Collins House, the reception being conducted at the Exhibition building. In October, 1920, A.W.A. gave the first complete broadcasting concert at Federal Parliament House, Melbourne; and the following year the company started a weekly broadcast programme from its Melbourne station.

Restricted during the war to the use of short wave lengths (because the authorities considered these the least useful), amateur experimenters all over the world amazed themselves and others by exchanging signals over extraordinarily long distances on relatively low power, and, so far as Australia is concerned in this connection, valuable work was done by Mr. C. D. Maclurcan, Sydney, Mr. Culliver, Melbourne, and many others.

In 1922 Amalgamated Wireless made to the Commonwealth Government a proposal for systematic broadcasting, but as other firms had indicated their desire to enter the new commercial field, a conference of all interested parties was convened by the then Postmaster-General (Mr. W. G. Gibson) and held at the G.P.O., Melbourne, on May 24, 1923.

What was known as the "Sealed Set" scheme was unanimously agreed to by the conference. The Postmaster-General, who had promised to put into effect any scheme unanimously decided upon, issued regulations, and the vicissitudes of Australian broadcasting commenced.

The following companies were licensed:—

Broadcasters (Sydney) Ltd.; call sign, 2SB (afterwards 2BL); service commenced, November 13, 1923.

Farmer and Co., Sydney; call sign, 2FC; service commenced, December 5, 1923.

Associated Radio Co., Melbourne; call sign, 3AR; service commenced, January 26, 1924;

Westralian Farmers Ltd., Perth; call sign, 6WF; service commenced, June 4, 1924.

The basis of the Sealed Set scheme was that listeners' sets would be tuned (and sealed), so that only the wave-length of the particular station or stations required could be received, and that the station licensees could make their own charge for subscription by listeners. The subscription for 2SB was 10/-; for 2FC, £3/3/-; for 3AR, £3/3/-; and for 6WF, £4/4/-. In addition to the subscription, the companies were required to collect from the Department a licence fee from each licensee.

The Sealed Set scheme failed for the reason that it violated the "freedom of the air" principle, by which is meant the inherent desire of every listener to receive any station his set is capable of tuning into. No

section was satisfied, the listeners least of all. So the Sealed Set scheme was jettisoned.

To arrive at another broadcasting plan, a conference was held in Sydney in April, 1924, but the proposals which resulted were not acceptable to the Postmaster-General, who then took matters in his own hands, formulated a new scheme, and issued the necessary regulations in July of that year.

In these regulations two classes of broadcasting stations were officially recognised—A and B, a division which still exists. A Class stations were to be financed by revenue received from licences issued to broadcast listeners, radio dealers and experimenters. B Class stations were not to participate in such revenue, but to support themselves, principally, of course, by broadcast advertisements. Licence fees were to be collected by the department.

It is interesting to note that in dividing stations into two classes, the Postmaster-General virtually put into effect in Australia the two opposite broadcasting systems of Britain and the United States. In Britain the stations of the British Broadcasting Corporation are maintained by licence fees payable by listeners and the broadcasting of advertisements is not permitted; while in U.S.A. listeners are not required to pay any licence fees, the stations maintaining themselves by advertisements.

Under the regulations referred to, the following station licences were issued:—

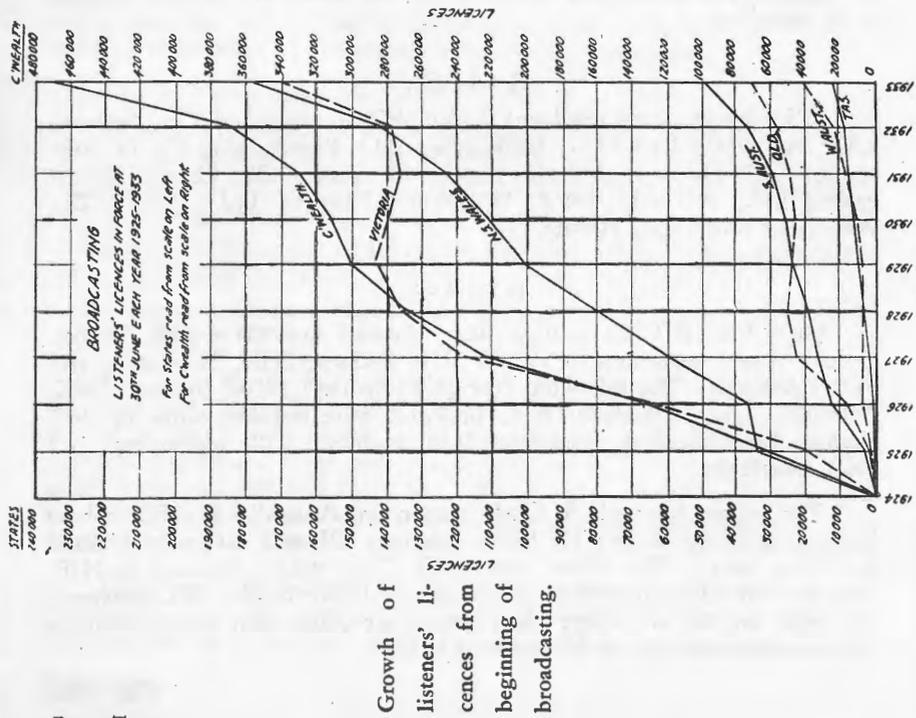
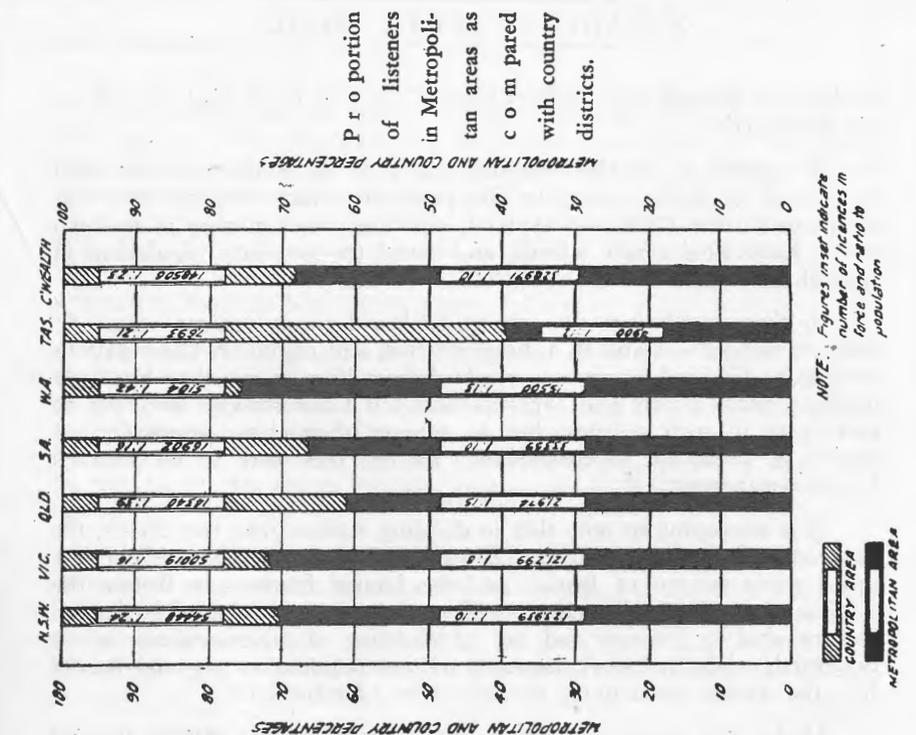
#### A CLASS.

2BL, Broadcasters (Sydney) Ltd.; 2FC, Farmer and Co., Sydney; 3AR, Associated Radio Co., Melbourne; 3LO, Broadcasting Co. of Australia; 4QG, Queensland Radio Service, Brisbane; 5CL, Central Broadcasters Ltd., Adelaide; 6WF, Westralian Farmers' Ltd., Perth; 7ZL, Associated Radio Co., Hobart.

#### B CLASS.

Only four B Class stations were licensed in 1924:—2BE, Sydney (which ceased operations in 1929); 2UE, Sydney; 2HD, Newcastle; and 5DN, Adelaide. The following year 2KY, Sydney; 2UW, Sydney; 2MK, Bathurst; 3UZ, Melbourne; 4GR, Brisbane, were licensed; while in 1926 licences were issued in respect of 2GB, Sydney; 3DB, Melbourne; and 5KA, Adelaide.

The oldest licensed A Class station in Australia is 2FC, whose licence was issued on July 17, 1924. Stations 2BL and 3LO were licensed five days later. The oldest existing B Class station licensed is 2UE, Sydney, which was licensed on November 7, 1924. Station 2BL, however, has been on the air longer than any other Australian station, having commenced its service on November 13, 1923.



Notwithstanding that progress was being made in broadcasting, there was considerable dissatisfaction, and the Commonwealth Government in 1927 appointed a Royal Commission, under the chairmanship of the late Mr. J. H. Hammond, K.C., to investigate broadcasting conditions. Upon receiving the commission's report, the Government called a conference of all A Class companies which, however, did not agree on certain questions at issue, including the matter of pooling part of the licence fees of the different States to permit of better services for those States with small populations.

Once again the broadcasting system was thrown into the melting pot. The Government in 1928 decided on a National Broadcasting Service, and an advisory committee under the chairmanship of the Director of Postal Services (Mr. H. P. Brown) was appointed. The plan submitted by the committee was approved by the Government. It provided for the establishment of a National Broadcasting Service in place of the existing A Class stations; for the continuance and extension of the B Class system; the establishment by the Postmaster-General of C Class stations, the programme time of which would be available for advertising sponsored programmes and the like; and for the continuance of the broadcast listeners' licence fee at 24/- a year, of which 12/- would be the maximum amount payable to the programme contractor. Of the balance 3/- would be payable to Amalgamated Wireless as a "blanket" fee to reimburse the company for the use of its various patents, 8/- would be retained by the P.M.G.'s Department to cover the cost of establishing and maintaining stations, studios, relaying circuits, and 1/- to cover the cost of administration in connection with licence fees. The C Class system has not yet been established.

Broadly, the new plan provided for Government control of the technical side of the A Class stations, while the programmes for all these stations would be supplied by a programme contractor.

On May 9, 1929, tenders were called for the provision of programmes. Eight were received. That of Union Theatres Ltd., Fuller's Theatres Ltd., and J. Albert and Son was accepted, and the successful tenderers thereupon formed the Australian Broadcasting Company, which entered into a contract with the Commonwealth Government to supply programme services in all the States for approximately three years ending June 30, 1932. As the licences of the A Class stations expired, the assets of the companies concerned were taken over by the department.

The last had not been heard, however, of changes in broadcasting control. The new company carried out its contract, but, as the time of expiration drew near the Commonwealth Government decided to make an important change in the system so far as it applied to programmes. The Australian Broadcasting Commission Bill became law early in 1932, and the following members of the commission were appointed in May:—

Mr. Charles Lloyd Jones, Sydney (Chairman); Mr. Herbert Brookes, Melbourne (Vice-Chairman); Mrs. Claude Couchman, Melbourne; Mr. R. B. Orchard, Sydney, and Professor R. S. Wallace, University of Sydney.

Under the A.B.C. Act the Commission is required to provide and broadcast adequate programmes from all the National stations. It also possesses wide powers in regard to publication of journals, news collection and the acquirement of land, buildings and other property. The Commission commenced control of the National Service on July 1, 1932. The control of the technical side of National transmission, together with the provision of land lines for relays, remained with the Postmaster-General's Department. The arrangement is still in force.

In the event of a national crisis, the Government would take control of the whole broadcasting system. Indeed in 1931 a short address from the Sydney National stations by the Chairman of the Commonwealth Bank Board (Sir Robert Gibson) dramatically stopped a panic-inspired "run" on the Commonwealth Savings Bank in Sydney. On that occasion, naturally the utmost co-operation was given by the B Class stations. In fact, the huge network of B Class stations dotted over the continent comprises a powerful ally, ready at a minute's notice to reinforce the publicity of the National stations in a time of national emergency. Working together according to a pre-arranged plan, National and Licensed (the modern name for B Class) stations could constitute a Gargantuan voice capable of covering the continent in an hour or so.

Apart from the changes of broadcast control indicated in this article, two major developments in the last few years call for comment—the phenomenal increase in the number of B Class stations, and the establishment of relay stations as adjuncts to the National service.

When they commenced to operate, and for some time afterwards, Stations 2FC, Sydney, 6WF, Perth, and 3LO, Melbourne, transmitted on wave lengths of 1,100, 1,250, and 1,720 metres respectively, while the other stations operated on wave lengths of 516 metres and less. Much controversy took place as to the wisdom of using such high wave-lengths as those of 2FC and 3LO, and eventually these stations came within the 500 metre band. It is, and was, common knowledge that daylight reception over long distances is better on the higher wave lengths, but there were strong arguments in favour of the general use of the lower waves. With the reduction of the two wave lengths referred to it was decided, therefore, to give country listeners a better service by establishing relay stations at selected locations. The principle of a relay station is that it relays or repeats transmissions made from another station. Relay station 2CO, Corowa, for instance, relays programmes sent from 3AR, Melbourne, or 3LO, Melbourne, a land line connecting 2CO with the Melbourne station concerned.

The Postmaster-General's Department then embarked on a plan of relay station construction. For various reasons, including the depression, the plan in its entirety has not been put into effect. It is behind schedule. But four such stations have been established, and are in operation—2CO, Corowa; 2NC, Newcastle; 4RK, Rockhampton; and 5CK, Crystal Brook, S.A. As a result, many thousands of listeners in country areas are now able to receive, on the less ambitious type of

sets, national programmes which they otherwise could not hear, or could hear only inadequately.

Important as this development is, it has been overshadowed by the rise of B Class or Licensed broadcasting. At the end of 1926 there were 12 such stations; on October 31, 1933, the total was 49. In attempting to explain the extraordinary popularity of B Class broadcasting, several factors must be taken into account. In the first place, there is that inherent desire, previously referred to, on the part of the listener for "freedom of the air." Like the man at the fair, the listener pays his money, and he likes to "take his pick." More stations mean more variety in programmes. Assuming a certain programme standard, a person is more likely to become a broadcast listener if there are five stations available to him than if there are only two. Since B Class stations must be maintained from advertising revenue, that factor, too, must be taken into consideration. When in 1927 advertising by A Class stations was prohibited, the field was left clear for the B Class stations, and an impetus was thus given to licensed broadcasting. Further, the process of educating potential advertisers to the possibilities of sales by radio was necessarily a slow one, and is only now beginning to show really satisfactory results. The number of applications received by the P.M.G.'s Department from organisations and individuals for B Class licences is another indication of the popularity of this form of broadcasting.

Further, the B Class stations, to a greater degree than the National stations, give the public what it wants. They are avowedly entertainment stations, notwithstanding that some of them have been established for propaganda purposes. National stations have national obligations. In the interests of public education they must broadcast a certain percentage of the best music (which is often not the most popular music), of lectures and talks of an educational character which do not appeal to the majority, and so forth. It must not be assumed, however, that the B stations do not transmit such worth-while items. They do, but in the ultimate and for the reasons stated, B Class programmes are more "popular" than those of A stations.

Reference has been made in this article to a controversy about wave-lengths. The discussion was re-opened in 1932, when Captain P. P. Eckersley, formerly Chief Engineer of the British Broadcasting Corporation, visited Australia, and after investigation, advocated the use of long waves for relay stations. There followed an opposing deputation to the Director of Postal Service (Mr. H. P. Brown), protesting against any such drastic change in the departments wave-length policy. Mr. Brown stated recently that the Department's mind was open on the subject, and that the question was held in abeyance pending thorough investigation by the Radio Research Board.

The controversial question of Performing Rights in relation to broadcasting is dealt with elsewhere in the Year Book.

A new complication in radio was introduced—or rather an old one revived—early in 1933, when the Commonwealth Government gave Amalgamated Wireless the necessary twelve months' notice that it was not prepared to renew the five years' agreement which exists in respect of patent rights held by the company. Like the wave-lengths question, this matter has a financial interest for listeners. The position is that while other companies hold patent rights in respect of radio apparatus, the major rights are held by A.W.A. by virtue of the company's overseas affiliations, as well as by its own research work.

In the early stages of Australian broadcasting much controversy took place as to the attitude of A.W.A. in enforcing its rights, and the Royal Commission of 1927 recommended that A.W.A. should be paid a patent royalty of 2/- a year in respect of each broadcast listeners' licence, 5/- in respect of each valve holder in manufactured sets, and 10 per cent. of the gross revenue of each B Class station. An agreement, however, was made between the Government and A.W.A. by which the Government undertook to pay A.W.A. 3/- per licence fee per annum to compensate the company for the use of its patents by both A and B Class stations and in radio receivers. Thus the patents question was temporarily removed from the field of controversy.

In giving notice of the termination of the agreement the Government took the view that, as in other industries, patentees must safeguard their own rights, radio should be no exception to this rule, and that not only A.W.A., but other firms or individuals hold patent rights which the latter themselves must safeguard. A.W.A. has offered no objection to the termination of the agreement.

It is pointed out that on the basis of the Royal Commission's recommendations as to fair and reasonable payment, the company would receive a revenue in respect of patents three or four times as great as it now receives.

The listener's special interest in the matter lies first in the fact that there is a possibility of the broadcast listener's licence fee being reduced by 3/- a year to 21/- as from March 31, 1934, because the Government will be relieved of making a payment to A.W.A. But the basis of the charges to be made by patent holders is not yet known, and it is expected that the price of receiving sets will be increased. Whatever arrangement should ultimately be entered into, it is obvious that in the interests of all parties concerned stability is necessary.

At the end of July, 1933, there were 481,374 listeners' licences in force in the Commonwealth. The half million mark was passed in September. On the basis of four listeners for each licence, the total number of listeners may be set down as over 2,000,000. Just nine years previously there were a mere 1,400 licensed listeners.

## Licences in Australia and Elsewhere, 1933

Country	Licences	Licences per 100 of Population	At end of 1933
Denmark . . . . .	514,273	14.7	April
United States of America . . . . .	17,004,781	14.6	Dec.
Great Britain . . . . .	5,498,850	12.3	March
Sweden . . . . .	632,840	10.3	March
Austria . . . . .	481,721	7.2	April
Australia . . . . .	469,477	7.1	June
Germany . . . . .	4,555,426	7	April
Canada . . . . .	716,458	6.9	Jan.
New Zealand . . . . .	95,549	6.3	March
Switzerland . . . . .	256,538	6.3	April
Norway . . . . .	132,067	4.7	April
Belgium . . . . .	382,827	4.7	April
Hungary . . . . .	322,163	3.7	April
South African Union . . . . .	53,912	2.9	March
Japan . . . . .	1,419,966	1.6	April
Italy . . . . .	329,102	.7	March
Jugoslavia . . . . .	33,634	.2	April
Morocco . . . . .	7,200	.1	April

As licenses are not issued in U.S.A., the figures given are an estimate.

## Swing to Midget Receivers

With the recent swing from the accepted console type of radio receiver to the modern version of the midget receiver, manufacturers have adopted variations in the design of the midget cabinet, resulting in some of the final products being attractive and others completely lacking in appeal to the eye, to say nothing of the ear.

It is possible to combine what may be termed a futuristic design with a quiet harmony and simplicity, and this has been done effectively in the case of the new Radiette "Personal" model, manufactured by Radiette Radio Ltd., of William Street, Sydney. The design of the cabinet is distinctly pleasing. This little cabinet contains something out of the ordinary in midget five-valve superheterodyne chassis in that the quality of reproduction contains a depth of tone which one expects to hear only in a much larger type of receiver. The tonal quality of this Radiette, combined with its remarkable performance with little or no aerial on inter-State and such stations as 2YA New Zealand, reflects great credit on its designing engineer, Mr. Reg Oxford, chief of Radiette Radio Ltd. Mr. Oxford is among the first technical men in the history of radio in New South Wales and his many years of experience are personified in this Radiette.

# ASTOR

## SUPERHETERODYNES

incorporate the world's latest Radio discoveries—

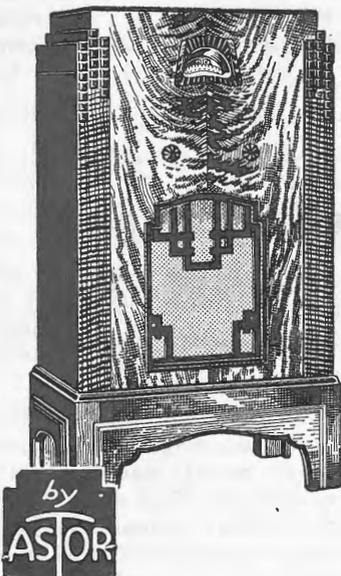
### AUTOMATIC VOLUME CONTROL

WITH

### VISUAL TUNING

(Hazeltine patents).

### AUTOMATIC NOISE SUPPRESSION



by  
**ASTOR**

The "Kismet," £24/10/-.  
(Including Tax)

In Automatic Volume Control we have, next to the Screen Grid Valve, the greatest advance of Radio in the last decade.

Astor Models:—	Inc. Tax.
"Genii" (Midget)	£14 19 6
"Cassim" .....	£18 18 0
"Kismet" .....	£24 10 0
Universal .....	£25 10 0
"Pasha" .....	£33 0 0
7-valve Battery	£29 10 0

plus cost of Batteries.

**SMITH, SONS & REES LIMITED**  
30-32 Wentworth Avenue, Sydney.  
NEWCASTLE AND PARRAMATTA.

## Complete List of Australian Broadcasting Stations

### NEW SOUTH WALES.

(The power given is unmodulated aerial rating.)

Call Sign	Wave Metres	Length K'cycles	Power Watts	Name.	Location.
2CO	535.7	560	7,500	National Broadcasting Station, relaying 3LO and 3AR.	Corowa.
2FC	451	665	2,500	National Broadcasting Station.	Sydney.
2BL	351	855	3,000	National Broadcasting Station.	Sydney.
2GB	316	950	1,000	Theosophical Broadcasting Station.	Sydney.
2UE	293	1,025	1,000	Electrical Utilities Supply Co.	Sydney.
2CA	286	1,050	50	A. J. Ryan.	Canberra.
2KY	280	1,070	1,000	Trades and Labour Council.	Sydney.
2HD	270	1,110	500	Airsales Broadcasting Co.	Newcastle.
2UW	267	1,125	1,000	Radio Broadcasting Ltd.	Sydney.
2WG	260	1,155	50	Riverina Broadcasting Co.	Wagga.
2CH	248	1,210	1,000	Council of Churches.	Sydney.
2GF	246	1,220	50	Grafton Broadcasting Co.	Grafton.
2NC	241	1,245	2,000	National Broadcasting Station, relaying 2FC and 2BL.	Newcastle.
2SM	236.1	1,270	1,000	Catholic Broadcasting Co.	Sydney.
2MO	227	1,320	50	M. J. Oliver.	Gunnedah.
2XN	224	1,340	50	G. W. Exton.	Lismore.
2GN	216	1,390	100	Goulburn Broadcasting Co.	Goulburn.
2KO	212	1,415	500	Newcastle Broadcasting Co.	Newcastle.
2WL	209.06	1,435	50	Wollongong Broadcasting Co.	Wollongong.
2AY	203	1,480	50	Amalgamated Wireless (A'asia.) Ltd.	Albury.

### VICTORIA.

3AR	492	610	4,500	National Broadcasting Station.	Melbourne.
3LO	375	800	3,500	National Broadcasting Station.	Melbourne.
3MA	333	900	50	Sunraysia Broadcasters Pty. Ltd.	Mildura.
3UZ	326	930	400	Oliver J. Nilsen and Co.	Melbourne.
3BO	309	970	200	Amalgamated Wireless (A'asia.) Ltd.	Bendigo.
3HA	297	1,010	200	Western Province Radio Co.	Hamilton.
3YB	262	1,145	25	Mobile Broadcasting Service.	Melbourne.
3SH	277.8	1,080	50	Swan Hill Broadcasting Co.	Swan Hill.
3DB	254	1,180	400	3DB Broadcasting Station Pty. Ltd.	Melbourne.
3WR	238	1,260	50	Wangaratta Broadcasting Pty. Ltd.	Wangaratta.

Call Sign	Wave Length Metres	Power Kcycles Watts	Name.	Location.
3TR	234	1,280	50 Gippsland Broadcasting Service.	Sale.
3BA	230.8	1,300	50 Ballarat Broadcasters Pty. Ltd.	Ballarat.
3KZ	222	1,350	400 3KZ Broadcasting Co.	Melbourne.
3HS	218.9	1,370	50 Wimmera Broadcasting Co. Pty. Ltd.	Horsham.
3GL	214	1,400	50 Geelong Broadcasting Pty. Ltd.	Geelong.
3AW	210.5	1,425	400 Vogue Broadcasting Co. Ltd.	Melbourne.
3AK	200	1,500	50 Akron Broadcasting Service Ltd.	Melbourne.

QUEENSLAND.

4QG	395	760	2,500 National Broadcasting Station.	Brisbane.
4RK	330	910	2,000 National Broadcasting Station, relaying 4QG.	Rockhampton.
4GR	300	1,000	50 Gold Radio Service.	Toowoomba.
4MB	283	1,060	50 Maryborough Broadcasting Co.	Maryborough
4BC	262	1,145	750 J. B. Chandler and Co.	Brisbane.
4TO	256.4	1,170	200 Amalgamated Wireless (A'asia.) Ltd.	Townsville.
4MK	252	1,190	100 Williams' Agencies Ltd.	Mackay.
4BK	233	1,290	200 Brisbane Broadcasting Co.	Brisbane.
4RO	225.56	1,330	50 Rockhampton Broadcasting Co.	Rockhampton.
4BH	217.3	1,380	600 Broadcasters (Aust.) Ltd.	Brisbane.

SOUTH AUSTRALIA.

5CK	472	635	7,500 National Broadcasting Station, relaying 5CL.	Crystal Brook
5CL	411	730	2,000 National Broadcasting Station.	Adelaide.
5DN	312	960	300 Hume Broadcasters Ltd.	Adelaide.
5PI	288	1,041	50 Midlands Broadcasting Services.	Port Pirie.
5KA	250	1,200	300 Sport Radio Broadcasting Co. Ltd.	Adelaide.
5AD	229	1,310	300 Advertiser Newspapers Ltd.	Adelaide.

WEST AUSTRALIA.

6WF	435	690	3,500 National Broadcasting Station.	Perth.
6PR	341	880	500 Nicholsons Ltd.	Perth.
6BY	306	980	50 Bunbury Broadcasters Ltd.	Bunbury.
6ML	264	1,135	300 Musgroves Ltd.	Perth.
6KG	246	1,220	100 Goldfields Broadcasters Ltd.	Kalgoorlie.
6IX	204.8	1,470	300 Western Australian Newspapers.	Perth.

TASMANIA.

7ZL	517	580	100 National Broadcasting Station.	Hobart.
7HO	337	890	50 Commercial Broadcasters Ltd.	Hobart.
7LA	273	1,100	300 Findlay and Wills.	Launceston.
7UV	205.5	1,460	200 North Western Tasmanian Broadcasters.	Ulverstone.

Official List of Experimental Stations in the Commonwealth, Papua and New Guinea.

FEDERAL CAPITAL TERRITORY.

Call Sign.	Licensee.
VK2ET	Tormey, E. A., Canberra.
VK2GY	Higgs, A. J., Mt. Stromolo.
VK2RR	Radio Research Board, Mount Stromolo.
VK2YN	Ryan, A. J., Kingston.

NEW SOUTH WALES.

VK2AB	Badger, A. V., Rozelle.
VK2AC	Edwards, A. C., Waverley.
VK2AF	Williams, A. F., Ryde.
VK2AG	Gray, A. H., McMahon's Pt.
VK2AH	Llewellyn, A. H., Artarmon.
VK2AJ	Brown, E. C., Tempe.
VK2AK	Claffey, K. J., Deniliquin.
VK2AL	Littlejohn, A. S., Leichhardt.
VK2AN	Gardner, W. E., Broken Hill South.
VK2AO	Friar, A. O., Grafton.
VK2AP	Reynolds, A. P., Oatley.
VK2AQ	Duffy, J., Redfern.
VK2AT	Altman, L., Bexley.
VK2AU	Cureton, J. P., Gordon.
VK2AV	Thurstan, A. W., West Kogarah.

VK2AW	Dye, A. W., Centennial Pk.
VK2BA	Chapman, B. A., Chatswood.
VK2BC	Harrington's Radio Club (Bathurst Branch), Bathurst.
VK2BD	Behrmann, A. E., Kensington.
VK2BE	Carter, H. R., Quirindi (Portable).
VK2BF	Forsythe, L. E., Schnapper Is.
VK2BH	Hall, W. C., Abermain.
VK2BJ	Burnett, J. K., Maroubra.
VK2BK	Edwards, J. F., Parramatta.
VK2BM	Martin, B., Bronte.
VK2BP	Ferguson, E. B., Hazelbrook.
VK2BQ	Easton, F. W. S., Bondi.
VK2BR	Brooke, Rev. W. H. L., Ter-rigal.

VK2BU	Butterworth, C., Wallsend.
VK2BV	Waverley Radio Club, Waverley.
VK2BX	Brunsdon, H. T., Leichhardt.
VK2BY	Arnold, E. C., Mona Vale.
VK2BZ	Forwood, W. R. B., Mosman.
VK2BC	Berry, W. C., Knockrow, via Bangalow.
VK2CC	University of Sydney, Sydney
VK2CD	Drew, C. W., Randwick.
VK2CF	Collard, C. J. F., West Maitland.
VK2CG	Chinner, H. C., Randwick.
VK2CJ	Callaby, C. J., Concord.
VK2CK	Warner, G. A., Wyong.

Call Sign.	Licensee.
VK2CM	Maclurcan, C. D., Strathfield.
VK2CP	Cooper, O. E., Elizabeth Bay.
VK2CR	Todd, L. V. G., West Tamworth.
VK2CS	Swain, L. T., Waratah.
VK2CU	Campbell, D. D., Ulmarra.
VK2CX	Munro, A. W., Bondi Beach.
VK2CY	Alsop, J. G., Lakemba.
VK2DA	Caldecott, H. W. S., Manly.
VK2DC	Sellenger, D. C., Hurstville.
VK2DE	Renshaw, W. P., Roseville.
VK2DH	Hutton, D., Abermain.
VK2DI	Innes, D. D., Glebe Point.
VK2DJ	Cooke, F. B., Mosman.
VK2DK	Clunne, E., Merrylands.
VK2DL	Phelps, W. J., Canterbury.
VK2DM	Maclaren, D., Haberfield.
VK2DN	Parris, J. E., Deniliquin.
VK2DQ	Nourse, J. C. D., Railway Town, Broken Hill
VK2DR	Reed, D. W., Waitara.
VK2DS	Davis, R. R., Rose Bay.
VK2DU	Millen, D. R., Wollstonecraft
VK2DW	Wilson, D. J., Five Dock.
VK2DX	Blair, K. A. W., Balranald.
VK2DY	Lindsay, D. G., Gordon
VK2DZ	Clark, J., Ashfield.
VK2EA	Fitzgerald, E. F., Bellevue Hill
VK2EB	Bryden-Brown, G. H. Drum-moyne.
VK2EC	Crouch, E. C., Mosman.
VK2ED	Bell, W. J., Campsie.
VK2EF	Fisk, E. T., Lindfield.
VK2EG	Miller, I. V., Quirindi.
VK2EK	Kenny, E. F., Granville.
VK2EL	Colyer, E. L., Rose Bay.
VK2EO	Duff, D. H. B., Stanmore.
VK2ER	Adams, F. A., Carlingford.
VK2ES	Simpson, E. M., Bellevue Hill.
VK2EV	McCredie, E. S., Burwood.
VK2EZ	Moyle, J. R., Laurel Hill, via Batlow.
VK2FA	Australian Aero Club, Sydney.
VK2FB	Australian Aero Club, Sydney.
VK2FD	Davidson, W. F., Croydon.
VK2FE	Retallick, J. M., Bellingen. (Portable).
VK2FH	Henriques, F. L., Motor Launch "Amohine."
VK2FI	Wells, A. J., Giral.
VK2FJ	Ferguson, J., Homebush.
VK2FK	Weizel, K. P. C., Clovelly.
VK2FN	Young, G. C., New Lambton

Call Sign.	Licensee.	Call Sign.	Licensee.
VK2FO	Griffiths, H. T. W., Five Dk.	VK2JC	Cawthron, E. J., Five Dock.
VK2FP	Baker, E. J., Hamilton.	VK2JD	Davies, J. B., Spring Ridge, via Quirindi.
VK2FQ	O'Dea, J. N., South Kensington.	VK2JF	Fraser, J. D., Quirindi.
VK2FR	Bassett, F. R., Singleton.	VK2JG	Maynard, F. S., Haberfield.
VK2FS	Smith, A. C., Homebush.	VK2JH	Hutchison, J. V., Kirribilli.
VK2FW	Martin, G. H., Waverley.	VK2JJ	Jennison, J. W., Mathoura.
VK2FX	Cross, F. J., Newcastle.	VK2JK	Brown, J. H. S., Botany.
VK2FY	Vaughan, D. E., Lakemba.	VK2JL	Young, J. L., Coolamon.
VK2FZ	Reid, G. W., Temora.	VK2JM	Macbeth, J. J., Punchbowl.
VK2GA	McKenzie, Mrs. C. R., Greenwich.	VK2JN	Keane, J. P. J., Cessnock.
VK2GE	Edwards, G. J., W. Maitland.	VK2JO	Caldwell, R. C., Woollahra.
VK2GF	Loving, G. F., Ashfield.	VK2JP	Pike, J. H. A., Greenwich.
VK2GH	Gibson, R. D., Alstonville, Richmond River.	VK2JQ	Nell, Rev. G. A. M., Moruya.
VK2GI	Blanch, C. K., Woodford Leigh, Clarence River.	VK2JR	Reed, J. G., Summer Hill.
VK2GJ	Jones, G. E., Willoughby.	VK2JS	Kitto, T. C., Newcastle.
VK2GK	Le Cornu, O. C., Bellingen.	VK2JT	Luckman, C. F. A., Lakemba.
VK2GL	Richmond River Listeners' League, Lismore.	VK2JU	Moyle, J. M., Ashfield.
VK2GM	McDowell, G., Grafton.	VK2JV	Roberts, C. D., Greenwich.
VK2GO	Brown, R. A., Epping.	VK2JW	Williams, E. J., Edgecliffe.
VK2GQ	Barlow, E., Cammeray.	VK2JX	Adams, P., Epping.
VK2GR	Robinson, A., Haberfield.	VK2JY	Young, J. W., Turramurra.
VK2GS	Simmonds, A. G., Arncliffe.	VK2JZ	Mather, A. S., Singleton.
VK2GT	Bruce, G. T., Tumut.	VK2KA	Truman, R. P., Wollstone- craft.
VK2GU	Penny, W. L., Woolwich.	VK2KB	Fairhall, A., Cook's Hill.
VK2GW	Woolnough, W. L., Gordon.	VK2KC	Fry, R. H., Killara.
VK2GX	Allen, K. D., West Ryde.	VK2KD	Pearson, A. W., Temora.
VK2GZ	Heathers, C. J., Bankstown.	VK2KE	Watson, W., Kurri Kurri.
VK2HA	White, E. B., Vaucluse.	VK2KF	Kurri Kurri Radio Club, Kurri Kurri.
VK2HC	Carter, H. R., Quirindi.	VK2KG	Greenhalgh, K. N., Sandgate.
VK2HF	Furze, J. A., Manly.	VK2KH	Crichton, S. R., East Mait- land.
VK2HG	Mackel, J. F., Chatswood.	VK2KI	Pickering, A. V., Bondi.
VK2HH	Davis, H. H., Strathfield.	VK2KJ	Cramond, W. H., Lane Cove.
VK2HI	Hailstone, F. H., Mosman.	VK2KK	Dodds, J. W. N., Kurri Kurri.
VH2HK	Nicolle, H. W., Strathfield.	VK2KL	Maguire, E. N., Dulwich Hill.
VK2HL	Laphorne, H. C., Chatswood.	VK2KM	Gray, T. A., Manly.
VK2HM	Marshall, H. A., Bondi.	VK2KN	Driscoll, A. E. Junr, Quir- indi.
VK2HN	Nottingham, H. A. J., North Ryde.	VK2KP	Fox, A., Rose Bay.
VK2HO	Hart, H., Roseville.	VK2KQ	Hibbert, C. T., Coota- mundra.
VK2HP	Peterson, H. F., Coogee.	VK2KR	Hardman, C. A., Gunnedah.
VK2HQ	Pottie, N. C., Hunter's Hill.	VK2KT	Seccombe, L. M., Rockdale.
VK2HR	2HR Radio Club, Rose Bay.	VK2KU	Archibald, I. W., Dulwich Hill.
VK2HS	Fanker, E. M., Woollahra.	VK2KW	Grant, A., Macksville.
VK2HT	Thomas, H. K. R., Cremorne.	VK2KX	Hogan, M. J., Crow's Nest.
VK2HU	Huey, R., Cronulla.	VK2KZ	Austin, E. M., Kurri Kurri.
VK2HV	Hutton, H. V. J., Inverell.	VK2LA	Soraghan, D. St. J. P., Rose Bay.
VK2HW	Holt, R. A., Lakemba.	VK2LB	Hackney, A. J., Young.
VK2HX	Jinks, E. W., Broken Hill.	VK2LD	Dodds, L. H., Gordon.
VK2HY	Stacey, R., Crow's Nest.	VK2LG	Wallace, J. W., Goulburn.
VK2HZ	Moore, W. M., Nth. Sydney.	VK2LJ	Rayner, J., Belmore.
VK2IC	Clarke, A. I. K., Earlwood.	VK2LL	Lane, L. S., Weethalle.
VK2IJ	Gray, A. H., Killara.	VK2LM	Wilson, L. M., Malboona Station, via Mudgee.
VK2IR	Institution of Radio Engin- eers, Sydney.		
VK2IZ	Wood, G. A., Waverley.		
VK2JB	Bradley, F. R., Mosman.		

Call Sign.	Licensee.	Call Sign.	Licensee.
VK2LN	Le Nevez, A., Marrickville.	VK2OH	O'Brien, N. B., Coogee.
VK2LO	Higgins, C. S., Pendle Hill.	VK2OJ	Arnold, E. N., Albury.
VK2LP	Bean, L. P. R., Artarmon.	VK2OL	Watson, H. L., Kiama.
VK2LG	Griffin, T. N., Hornsby.	VK2OM	Carroll, C. W. J., Leich- hardt.
VK2LR	Lakemba Radio Club, Can- terbury.	VK2OP	Roy, A. B., Waverley.
VK2LU	Prentice, E. T., Lane Cove.	VK2OQ	Skene-Smith, A., Vaucluse.
VK2LV	Chessel, J., Dulwich Hill.	VK2OR	Brown, M. A., Epping.
VK2LX	Crisp, H. C., Hurstville.	VK2OS	Rowles, C. A., Bondi.
VK2LZ	Bischoff, W. E. C., Crow's Nest.	VK2OT	Sobels, M. D., Dee Why.
VK2MA	Amalgamated Wireless, Syd- ney.	VK2OU	Wardle, S. W. L., Wood- ford Leigh, Clarence River.
VK2MB	Amalgamated Wireless, Ash- field.	VK2OZ	Olle, J. D., Ashfield.
VK2MC	Amalgamated Wireless, Lind- field.	VK2PC	Proving Radio, Club, Dul- wich Hill.
VK2MD	Amalgamated Wireless, Portable Station.	VK2PE	Perooz, J. P., Bourke.
VK2ME	Amalgamated Wireless, Pen- nant Hills.	VK2PF	Carruthers, F. A., Cowra.
VK2MF	Amalgamated Wireless, La Perouse.	VK2PH	Petith, J. R. F., Homebush.
VK2MG	Amalgamated Wireless, Tur- ramurra.	VK2PM	McLeod, N. J., Rose Bay.
VK2MH	Morton, C. E., Homebush.	VK2PN	Weeden, R., Tumut.
VK2MI	Amalgamated Wireless, Vau- cluse.	VK2PP	Phillips, J. P. C., McMahon's Point.
VK2ML	McLaughlin, W. R., Wat- son's Bay.	VK2PS	Stephen, P. G., Lidcombe.
VK2MM	Mills, R., Balmain.	VK2PT	Richardson, C. A., Five Dk.
VK2MQ	McGowan, W. E., Haber- field.	VK2PW	Wise, W. G., Summer Hill.
VK2MS	Spitzkowsky, M., Hamilton.	VK2PX	Ackling, H. D., Bankstown.
VK2MT	Hedley, C., Hamilton.	VK2PZ	Cowan, C., Aberdare.
VK2MU	Nangle, J., Sydney.	VK2QA	Russell, G. J., Tullamore.
VK2MW	Manley, W. M., Leich- hardt.	VK2QR	Burstall, J. E. R., Beecroft.
VK2MX	Holmes, D. E., Dubbo.	VK2QT	Mutton, A. H., Stanmore.
VK2MY	McGregor, J. F., Five Dock.	VK2RA	Priddle, R. A., Bathurst.
VK2MZ	Hurstville Radio Club, Hurst- ville.	VK2RC	Chilton, R., Wahroonga.
VK2NA	Callaghan, A. T., Delungra.	VK2RD	Longworth, R., North Woll- stonecraft.
VK2NB	Buchanan, N. T. O., Manly.	VK2RE	Australian School of Radio Engineering, Sydney.
VK2ND	Dahl, N. L., Wahroonga.	VK2RH	Reynolds, R. P., Leeton.
VK2NG	Gough, N., North Manly.	VK2RJ	Fagan, R. J., Mandurama.
VK2NJ	Johnson, A. K., Punchbowl.	VK2RK	Carpenter, N. D., Hurstville.
VK2NK	Ball, C. W., Hurstville.	VK2RL	Litchfield, A. R., Cooma.
VK2NL	Squire, L. L., Thornton.	VK2RM	MacFarlane, R. A., Griffith.
VK2NO	Knock, D. B., Bronte.	VK2RN	Hentze, P. R., Manly.
VK2NR	Scott, J. B., Epping.	VK2RO	Turnbull, R. W., Burwood.
VK2NS	Evans, T., Bathurst.	VK2RP	Purdie, R. R., Richmond.
VK2NX	Brooks, D. D., Kensington.	VK2RQ	Foley, J. P., Bondi.
VK2NY	Berry, R. J., Grafton.	VK2RS	Scott, R. O., Balranald.
VK2OA	Winch, R. M., Harris Park.	VK2RT	Turner, R. J., Goulburn.
VK2OB	Mashman, L. W., Bexley.	VK2RW	Cusiter, R. W., Lewisham.
VK2OC	Chapman, O. G., Wyong.	VK2RX	St. John, H. C., Rockdale.
VK2OD	O'Donnell, T. M., Hurlstone Park.	VK2RY	Brown, I. L., Drummoyne.
VK2OE	Byrnes, R., Crow's Nest.	VK2RZ	Atkinson, J. M., Carr's Park.
VK2OF	Challender, G., Glebe.	VK2SA	Salmon, W. E., North Bondi.
		VK2SB	Banks, S. W., Coogee.
		VK2SC	Municipal Council of Sydney, Crow's Nest.
		VK2SD	2nd Divisional Signal Radio Club, Paddington.
		VK2SG	Tonkin, S. G., Waverley.
		VK2SH	Short, A., Lambton.
		VK2SK	Kaufman, S. D., Belmore.
		VK2SO	Cowell, G., Merewether.

Call Sign. Licensee.  
 VK2SP—Pemberton, S. T., Ryde.  
 VK2SQ—Inglis, S. D., Enmore.  
 VK2SR—Emmelhainz, A. E., Kensington.  
 VK2SS—Wright, A. E., Coolah.  
 VK2SW—Southwell, C. L., North-  
 bridge.  
 VK2SX—Slade, C. W., Croydon.  
 VK2SZ—King, N. S., North Sydney.  
 VK2TA—Thackeray, A. M., Woor-  
 toona, via Young.  
 VK2TK—Mutter, J., East Sydney.  
 VK2TO—Ansell, L. C., Woollahra.  
 VK2TP—Wickham, A. N., Artarmon.  
 VK2PR—Conrad, R. E., Bexley.  
 VK2TS—Scotney, H. R., Auburn.  
 VK2TW—Bushby, T. R. W., Glades-  
 ville.  
 VK2TX—Levenspiel, P., Wyong.  
 VK2TZ—Sinfield, A. A., Wagga  
 Wagga.  
 VK2UF—Tarrant, F., Cook's Hill, via  
 Newcastle.  
 VK2UG—George, C. W., Mosman.  
 VK2UL—Broomhead, S. V., Campsie.  
 VK2UO—Wagga Amateur Radio Club,  
 Wagga Wagga.  
 VK2UP—London, J. W., Manly.  
 VK2UR—Henry, C. J., Uralla.  
 VK2UU—Waddle, E. M., Nimbin.  
 VK2UX—Goyen, F. M., Epping.  
 VK2UY—Clay, H. V., Ryde.  
 VK2UZ—Browne, B. B., Kogarah.  
 VK2VC—Cahill, W. B. V., Rockdale.  
 VK2VF—Fourro, R. V., Corowa.  
 VK2VG—Corthorn, R., Greenwich.  
 VK2VJ—Jarvis, V. J. E., Orange.  
 VK2VO—McPherson, C. J., West  
 Maitland.  
 VK2VR—Gammie, A. V., Artarmon.  
 VK2VS—Stanley, V. E., Carlingford.  
 VK2VW—Worswick, V. W., Concord.  
 VK2VZ—Garth, R., Clovelly.  
 VK2WA—Dwyer, J. T., Young.  
 VK2WB—Bullivant, W. N., West  
 Wyalong.  
 VK2WD—Dukes, G. W., Forest Lodge.  
 VK2WE—Standard Telephones and  
 Cables Ltd., Sydney.  
 VK2WF—Faulks, R. W., Canterbury.  
 VK2WZ—Zech, W. J., Stanmore.  
 VK2WH—Stitt, W. H. R., Forbes.  
 VK2WI—Assn. of Radio Amateurs,  
 (N.S.W.), Epping.  
 VK2WJ—Peell, W. J., Maroubra.  
 VK2WK—Kennedy, Rev. W. D., East  
 Sydney.  
 VK2WO—Woodward, G. R., Suther-  
 land.  
 VK2WP—Potter, W. F., Helensburgh.  
 VK2WR—Shipley, A., Five Dock.

Call Sign. Licensee.  
 VK2WT—Watt, C. R., Tenterfield.  
 VK2WU—Macdonald, L., West Mait-  
 land.  
 VK2WX—Wray, R., Hurstville.  
 VK2WY—Butters, W. L. Bermagui  
 South.  
 VK2XB—Brownlee, T. D., Nth. Bondi.  
 VK2XC—Cuffe, I. D., Mosman.  
 VK2XD—Williams, K. J. W., Banks-  
 town.  
 VK2XG—Gray, G., Mosman.  
 VK2XH—Harman, H., Kurri Kurri.  
 VK2XI—Craig, W. A., Croydon.  
 VK2XJ—Broome, F. M., Croydon Pk.  
 VK2XK—Heavey, J. A., Maroubra.  
 VK2XO—Retallick, J. M., Bellingen.  
 VK2XP—Thompson, J., Wyong Creek.  
 VK2XQ—Traill, R. G., Quirindi.  
 VK2XR—Halloran, A. T., Mosman.  
 VK2XU—Pollock, G., Belmore.  
 VK2XV—Stirk, F. J., Maroubra.  
 VK2XW—Voysey, A. J., Ashfield.  
 VK2XY—Maguire, S. W., Rose Bay.  
 VK2YA—Black, R. C., Auburn.  
 VK2YB—Lewis, W. J., Marrickville.  
 VK2YC—Corbin, J. B., McMahon's Pt.  
 VK2YH—Hannam, W. H., Willoughby  
 VK2YI—Blue, H. W., Liverpool.  
 VK2YJ—Sansbury, R. H., Concord W.  
 VK2YK—Abbott, R. E., Telegraph Pt.  
 VK2YL—Hawkins, H., Cessnock.  
 VK2YM—Cohen, D., King's Cross.  
 VK2YO—Younger, C. H., Pelaw Main.  
 VK2UJ—Unger, H. W., Alectown.  
 VK2YR—Ringrose, W. S., Epping.  
 VK2YX—Riley, W. J., Balmain.  
 VK2YZ—Johnston, W. D., Ryde.  
 VK2ZA—Slight, A. A. B., Windsor.  
 VK2ZB—Zero Beat Radio Club, Syd-  
 ney.  
 VK2ZD—Zero Beat Radio Club, Syd-  
 ney (Portable).  
 VK2ZE—Woodman, J. H., Leeton.  
 VK2ZF—Roberts, P., Narrandera.  
 VK2ZG—Cooper, J. H., Wollstone-  
 craft.  
 VK2ZH—Macnaughton, N., Croydon.  
 VK2ZI—Glasscock, A. L. K., Lane  
 Cove.  
 VK2ZK—Henry, A. G., Sandringham.  
 VK2ZL—Otty, W., Toronto.  
 VK2ZM—Wood, J. H. C., Grafton.  
 VK2ZN—Cottrell, J. W., Dundas.  
 VK2ZO—Bridgewater, F. H., Moore  
 Park.  
 VK2ZP—Yates, A. G., Inverell.  
 VK2ZQ—Phillips, F. J. M., Bondi.  
 VK2ZR—Pinnell, J. C., Marrickville.  
 VK2ZS—Stubbs, H., Maroubra Junc.  
 VK2ZU—Gilmour, N. S., Sydney.  
 VK2ZW—Grimmett, S., Hamilton.

Call Sign. Licensee.  
 VK2ZX—Lumbewe, E. W., Randwick.  
 VK2ZY—Coffey, H. F., Maroubra.  
 VK2ZZ—Clarke, W. R., Asquith.

## VICTORIA.

VK3AB—Leonard, J. W., Black Rock.  
 VK3AF—Bent, A. F. W., West Gee-  
 long.  
 VK3AG—Glover, A. J. G., Surrey  
 Hills.  
 VK3AH—White, A. R., Stawell.  
 VK3AJ—Salamy, E., Warrnambool.  
 VK3AL—Kerr, A. D., Ballarat.  
 VK3AM—Forecast, A., St. Kilda.  
 VK3AN—Newberry, A., Red Cliffs.  
 VK3AQ—Marist Bros. College, Kilmore.  
 VK3AS—Stow, A. F., North Fitzroy.  
 VK3AV—Ternes, H. M., Carnegie.  
 VK3AX—Boast, H. D., Elsternwick.  
 VK3AY—Jenvey, W. W., Ormond.  
 VK3AZ—Avard, A. E., Northcote.  
 VK3BB—Brown, W. F., South Warr-  
 nambool.  
 VK3BC—Craw, R. B. C., Parkville.  
 VK3BD—Cox, E. H., East St. Kilda.  
 VK3BH—Whitelaw, C. R., Woome-  
 lang.  
 VK3BJ—Hanham, F. S., Essendon.  
 VK3BK—Baker, S. C., Sth. Melbourne.  
 VK3BL—Fitchett, J. C., Brighton.  
 VK3BP—Hood, J. H., East St. Kilda.  
 VK3BQ—Howden, W. F. M., Canter-  
 bury.  
 VK3BT—Barthold, G. L., Malvern.  
 VK3BW—Woolnough, A., Portarling-  
 ton.  
 VK3BX—Halley, T. W. A., Benthleigh.  
 VK3BY—Holst, H., Caulfield.  
 VK3BZ—Morris, G. I., Mordialloc.  
 VK3CA—Hughes, C. A., Williams-  
 town.  
 VK3CB—Siewers, W. F., East Rich-  
 mond.  
 VK3CD—Rich. Phillings, J., Murray-  
 dale.  
 VK3CE—McNally, R. C., Berriwillock.  
 VK3CF—Falconer, C. I., Surrey Hills.  
 VK3CG—Brogan, J. P. H., Merbein.  
 VK3CH—Harris, A. C., Birchip.  
 VK3CJ—Manning, C. J., Elwood.  
 VK3CL—Long, C. R. W., Frankston.  
 VK3CM—Jenkin, F. C., Croydon.  
 VK3CP—Pritchard, A. C. J., Kew.  
 VK3CQ—Canning, F. G., Toorak.  
 VK3CR—Doyle, H. L., Malvern.  
 VK3CW—Walters, C. A., Thorabury.  
 VK3CX—Brown, A. G., Canterbury.  
 VK3CY—Burman, A. A., St. Kilda.  
 VK3CZ—Berry, A. I., Hawthorn.

Call Sign. Licensee.  
 VK3DC—Embling, S. A., Toorak.  
 VK3DH—Morgan, I., East Malvern.  
 VK3DL—Leber, D., Richmond.  
 VK3DM—McDonald, D. C., East Mal-  
 vern.  
 VK3DR—Bennett, W. J. J., Sheppar-  
 ton.  
 VK3DT—Petruchenia, V. V., Ascot  
 Vale.  
 VK3DW—Tacey, D. W., Shepparton.  
 VK3DX—Kermond, L. J., Warrnam-  
 bool.  
 VK3DY—Dyer, C. A. R., Clifton Hill.  
 VK3EF—Maddick, H. W., Elsternwick.  
 VK3EK—Kossek, E. F., Belmont.  
 VK3EL—Boyd, N. J., Elwood.  
 VK3EM—Manifold, E. C., Malvern.  
 VK3EP—Perkin, E., Rochester.  
 VK3ER—Read, E. H. W., East Cam-  
 berwell.  
 VK3ES—Yorston, E. S., Caulfield.  
 VK3ET—Asmus, H. J., Footscray.  
 VK3FC—Clark, F. P., Hawthorn.  
 VK3FG—Ince, F. G., Caulfield.  
 VK3FJ—Edgerton, A. F. J., Moonee  
 Ponds.  
 VK3FM—Wildman, C. G., Moreland.  
 VK3FO—Olsen, F., Hampton.  
 VK3FX—McCarthy, J. K., Ascot Vale.  
 VK3FY—North Suburban Radio Club,  
 North Carlton.  
 VK3FZ—Maher, F. A., North Fitzroy.  
 VK3GA—Douglas, W. G., Lavers Hill.  
 VK3GC—Carter, G. R., Camperdown.  
 VK3GJ—Hoy, A. J., Warrnambool.  
 VK3GK—McLean, S. C., Yarraville.  
 VK3GM—McCulloch, G. R., Ballarat.  
 VK3GO—Stephens, T., Essendon.  
 VK3GP—Shields, A. J. E., East Mal-  
 vern.  
 VK3GQ—Emeny, T. F., Camperdown.  
 VK3GR—Rowland, R. G., Ballarat.  
 VK3GS—Semmens, G. S. C., Essendon.  
 VK3GT—Thompson, G., Thornbury.  
 VK3GU—Chapman, H., Ivanhoe.  
 VK3GW—Williamson, H. G., Rainbow.  
 VK3GX—Page, B. F. D., Surrey Hills.  
 VK3GY—Day, C. J., Camperdown.  
 VK3GZ—Oliver, K. W., Sth. Geelong.  
 VK3HB—Byrne, H. L., Brighton  
 Beach.  
 VK3HC—Cliff, H., Essendon.  
 VK3HF—Fuller, H., Essendon.  
 VK3HG—Templeton, N. M., Coler-  
 aine.  
 VK3HH—Maughan, F., Malvern.  
 VK3HJ—George, V. H., Heidelberg.  
 VK3HK—Heitsch, K., Mitcham.

Call Sign. Licensee.  
 VK3HL—Hutchings, A. T., Callawadda.  
 VK3HM—Hutchings, Mrs. E. L., Callawadda.  
 VK3HO—Hodges, R. A., Merlynston.  
 VK3HQ—Hutchings, Miss M. L., Callawadda.  
 VK3HR—Reid, A. H., East Malvern.  
 VK3HU—Blackman, H. H., Ashburton.  
 VK3HW—Hattam, F., Castlemaine.  
 VK3JA—Anderson, J. F., Warrnambool.  
 VK3JB—Kling, J. R., Hawthorn East.  
 VK3JC—Cassidy, J. J., Malvern.  
 VK3JD—Dunleavy, J. F., St. Kilda.  
 VK3JE—Alder, W., Chelsea.  
 VK3JG—Dixon, A. G., Hawthorn.  
 VK3JJ—McMath, J. J., Albert Park.  
 VK3JK—Herd, J. K., Wangaratta.  
 VK3JL—Osborne, C. J., Hartwell.  
 VK3JM—Bryson, R. W., Kew.  
 VK3JN—Young, L. G., Murrumbena.  
 VK3JO—Stevens, H. N., Hawthorne East.  
 VK3JP—Mitchell, H. E. H., Elsternwick.  
 VK3JQ—Brebner, W. J. A., Belmont.  
 VK3JR—Rainbow, C. J., Preston.  
 VK3JS—Schultze, J., Glenferrie.  
 VK3JT—Symons, J. L. G., Malvern.  
 VK3JU—Phillips, H. E. J., Mitcham.  
 VK3JV—James, A. G., Macorna.  
 VK3JW—Bruce, R. W., East Malvern.  
 VK3JX—Sydow, J. F., Sth. Melbourne.  
 VK3JY—Murray, J. W., Fitzroy.  
 VK3KA—Sharp, J. J. C., Caulfield.  
 VK3KB—Kissick, A. L., Brunswick.  
 VK3KC—Wilcox, S. J., Croxton.  
 VK3KD—Carlyle, A. K. H., North Carlton.  
 VK3KE—Kilborn, E. H., Hawthorn East.  
 VK3KF—Carroll, J. M., Mordialloc.  
 VK3KG—Green, K. L., South Yarra.  
 VK3KH—Anderson, E. W., Glen Iris.  
 VK3KI—Mabbitt, J. M., Lake Boga.  
 VK3KJ—Stalker, D. C., Colac East.  
 VK3KL—Philpott, C. H., Avoca.  
 VK3KN—Kinnear, H., Brighton.  
 VK3KO—Wellington, K., Malvern.  
 VK3KP—Monteath, F., Elsternwick.  
 VK3KQ—Miles, G. T., Glen Iris.  
 VK3KR—Rankin, K. R., Kerang.  
 VK3KT—Williams, A. E., Elsternwick.  
 VK3KU—Hipwell, R. A., Swan Hill.  
 VK3KV—Solomon, C., Prahran.  
 VK3KW—Keillor, W., West Geelong.  
 VK3KX—Tandy, R., Colac.

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Call Sign. Licensee.  
 VK3LB—Amor, H. R., Colac.  
 VK3LC—Burke, R., Elwood.  
 VK3LD—Richardson, L. R. N., Armadale.  
 VK3LE—Lockhart, L., Elwood.  
 VK3LH—James, H. R., Birchip.  
 VK3LJ—Simmons, L. J., East Prahran.  
 VK3LK—Geelong Radio Club, Geelong.  
 VK3LM—Lee-Archer, E. L., Wonthaggi.  
 VK3LN—Moncur, L. P., Ascot Vale.  
 VK3LP—Paul, L. A., North Fitzroy.  
 VK3LQ—Sheppard, W. H., Ascot Vale.  
 VK3LR—Research Laboratories P.M.G.'s Dept., Melbourne.  
 VK3LS—Busch, R. T., Moonee Ponds.  
 VK3LT—Thompson, L. N., Chelsea.  
 VK3LU—McPherson, C. T., Footscray.  
 VK3LW—Hiam, C., Caulfield North.  
 VK3LY—Schmidt, R. F., Sale.  
 VK3LZ—Ellis, C. A., Caulfield.  
 VK3MB—Amalgamated Wireless Ltd., Ballan.  
 VK3MC—Amalgamated Wireless Ltd., Rockbank.  
 VK3MD—Amalgamated Wireless Ltd., Portable Station.  
 VK3ME—Amalgamated Wireless Ltd., Braybrook.  
 VK3MF—Amalgamated Wireless Ltd., Melbourne.  
 VK3MH—Stuart, M. H., Rockbank.  
 VK3MI—Alsop, J. R., Kew.  
 VK3MJ—Martin, J. F., North Fitzroy.  
 VK3ML—Cunningham, R. H., Malvern.  
 VK3MM—Hooper, E. M., Burwood.  
 VK3MP—Hosken, S. V., Surrey Hills.  
 VK3MQ—Setford, H. R., Balwyn.  
 VK3MR—Campbell, M. R., Coburg W.  
 VK3MS—MacLaren, C. J. T., South Yarra.  
 VK3MT—Working Men's College, Melbourne.  
 VK3MU—Mackay, R. R., Carlton.  
 VK3MV—Crow, R. K., Caulfield.  
 VK3MZ—Melbourne Experimental Radio Club, Richmond.  
 VK3MY—Money, L. D., Canterbury.  
 VK3MX—Sebire, P. J.  
 VK3NC—Bennett, P. C., Kew.  
 VK3NG—Gunter, N. E., Caulfield.  
 VK3NK—Ballinger, J. W., Camperdown.  
 VK3NL—Lewis, C. E., Nth. Melbourne.  
 VK3NM—McLeod, N., Caulfield.  
 VK3NN—Brown, H. R., Yanac.  
 VK3NO—Nolte, G. E., Elwood.

Call Sign. Licensee.  
 VK3NQ—Watson, J. D., Darlington via Camperdown.  
 VK3NR—Mathieson, I. H., Werribee.  
 VK3NX—Houston, A. J., St. Kilda.  
 VK3NY—Marsland, J. G., Sth. Melb.  
 VK3NZ—Murfett, N. C., Terang.  
 VK3OB—Burrows, L. T., Moonee Ponds.  
 VK3OC—Ohrbom, R., Coburg.  
 VK3OD—O'Connor, J., N. Melbourne.  
 VK3OF—O'Dwyer, F. P., Middle Pk.  
 VK3OG—Menon, G. J., East Kew.  
 VK3OH—O'Hara, J. B., Maryborough.  
 VK3OL—Bibby, F. C., Hawthorn East.  
 VK3OM—Parr, J. G., Canterbury.  
 VK3OP—Brown, L. A., Camberwell.  
 VK3OQ—Pinkney, R. C., Nth. Carlton.  
 VK3OR—Orr, M. D., Kerang.  
 VK3OT—Cameron, R. M., Malvern.  
 VK3OW—Templeton, G. L., Coleraine.  
 VK3OX—Cook, R. H., Camberwell.  
 VK3OY—Quin, A. K., Hawthorn E.  
 VK3OZ—Evans, P. E., Glen Iris.  
 VK3PA—Anderson, P. J., Westgarth.  
 VK3PG—Cameron, N. M., Casterton.  
 VK3PJ—Smyth, V. L., Bendigo.  
 VK3PK—Smith, C. H., East Kew.  
 VK3PM—Frew, G., Glen Iris.  
 VK3PN—Tozer, P. J., N. Melbourne.  
 VK3PP—Payne, Capt. A. E., Toorak.  
 VK3PQ—Wilkinson, J. E. M. A., Northcote.  
 VK3PR—Jardine, W. R., Essendon.  
 VK3PS—Powers, L. A. T., Glen Iris.  
 VK3PT—Peterson, R. C., Moonee Ponds.  
 VK3PW—Webber, H. P., Eltham.  
 VK3PY—Watson, P. R., Warracknabeal.  
 VK3QH—Feldman, J. F., Sth. Geelong.  
 VK3QJ—Roseblade, R. K., Kew.  
 VK3QL—Lambert, F. R., Alphington.  
 VK3QP—Peterson, W., Toorak.  
 VK3QZ—Lauder-Cridge, W. E., Hawthorn.  
 VK3RA—Parker, R. A., Canterbury.  
 VK3RB—Buzacott, R. N., Camberwell.  
 VK3RF—Field, R. W., Caulfield.  
 VK3RG—Blake, R. L. G., Castlemaine.  
 VK3RH—Hodder, I. R., Glenorchy.  
 VK3RI—Victorian Railways Institute, Melbourne.  
 VK3RJ—Jones, R. E., Box Hill.  
 VK3RK—Evans, T. E., East Brunswick.  
 VK3RM—Easterbrook, R. W., Clayton.  
 VK3RN—Thompson, R. N., East Brunswick.  
 VK3RO—Brennan, W. E., Murrumbena.  
 VK3RP—Payne, R. L., Newtown.  
 VK3RQ—Edwards, S. R. W., East Preston.  
 VK3RS—Shortell, R. C., St. Kilda.  
 VK3RT—Tozer, R. H., Caulfield Nth.  
 VK3RW—White, R., Hawthorn South.  
 VK3RX—Serle, C., Canterbury.  
 VK3RY—Pace, R. Y., Donald.  
 VK3SC—Scotch College Radio Club, Hawthorn.  
 VK3SA—Simpson, L. R., Ararat.  
 VK3SB—Brehaut, A. L., Oakleigh.  
 VK3SK—Dalziel, K. E., Sale.  
 VK3SL—Southwell, L. W., Seymour.  
 VK3ST—Johnston, J., Benalla.  
 VK3SW—Gadsden, S. W., Kew.  
 VK3SY—Mathews, J. C., Newtown.  
 VK3TA—Hardinge, B. E., Horsham.  
 VK3TB—Barnes, T., Ascot Vale.  
 VK3TD—Dale, T. A., Cheltenham.  
 VK3TH—Thompson, G. F., Caulfield.  
 VK3TM—Buck, A. H., Hawthorn.  
 VK3TO—Rogers, J. E., Camberwell.  
 VK3TP—Prentice, T. F., Caulfield Nth.  
 VK3TX—Tregear, W. S., Upper Hawthorn.  
 VK3UH—Allen, K. G., Glen Iris.  
 VK3UJ—Roudie, A., South Yarra.  
 VK3UK—Marshall, V. E., Hawthorn.  
 VK3UX—Stearns, G. W., Mont Albert.  
 VK3UY—Fromhaltz, C. A., Balwyn.  
 VK3VL—White, V. W., Surrey Hills.  
 VK3VP—Baker, C. W., Bendigo.  
 VK3VS—Spicer, V. J., East Malvern.  
 VK3WA—Wilson, W. A. G., Ballarat.  
 VK3WB—Black, W. H., Malvern.  
 VK3WE—Williams, A. R., Birchip.  
 VK3WF—Fitzpatrick, W. P., Richmond.  
 VK3WG—Gronow, W. R., Melbourne.  
 VK3WH—Chancler, A. W. H., Caulfield.  
 VK3WI—Wireless Institute of Australia, Melbourne.  
 VK3WJ—Sandford, S. M., Kyneton.  
 VK3WK—Soumprou, E. W., Thornbury.  
 VK3WL—de Cure, J. E., Coburg.  
 VK3WO—Hall, G. G., Hawthorn.  
 VK3WS—Sweeney, W. M., St. Kilda.  
 VK3WX—Nicholls, W. J., Williamstown.  
 VK3WY—Anderson, R. A. C., South Camberwell.  
 VK3WZ—Folie, M., Hawthorn East.  
 VK3XC—Xavier College, Kew.  
 VK3XF—Chaffer, E. M., Moonee Ponds.  
 VK3XI—Duggan, H. G., Warrnambool.

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Call Sign. Licensee.  
 VK3XK—Coleston, S. R., Gardenvale.  
 VK3XL—Sydserff, W. H. B., Surrey Hills.  
 VK3XM—Barry, J. M. W., Essendon.  
 VK3XO—Adams, F. J., Middle Brighton.  
 VK3XR—Winton, J. H., Glen Iris.  
 VK3XW—Cullinan, C. A., Brunswick East.  
 VK3YF—Johnson, L. W., Deepdene.  
 VK3YJ—Wooley, G. W. L., Croydon.  
 VK3YK—Douglas, G. C., Bayswater.  
 VK3YL—Marshall, Miss M. A., Murrumbidgee.  
 VK3YO—Woodward, C., Moreland.  
 VK3RW—Waring, C. C., Canterbury.  
 VK3YX—Hardie, B., Garden Vale.  
 VK3YZ—McKeown, A. M., Northcote South.  
 VK3ZA—Sims, E. L. A., Preston.  
 VK3ZB—Brown, H. M., Oakleigh.  
 VK3ZC—Tutton, J. K., Hawthorn.  
 VK3ZF—Martin, E. H., Preston.  
 VK3ZK—Stevens, J., Swan Hill.  
 VK3ZL—Thomas, D. E., Ballarat East.  
 VK3ZM—Doble, A. M., Murrumbidgee.  
 VK3ZN—Israel, M., North Geelong.  
 VK3ZO—Cunliffe, J. A., Preston.  
 VK3ZQ—Hutchinson, H. K., Flemingston.  
 VK3ZW—Lelliott, T., Mont Albert.  
 VK3ZX—Oppenheim, O. G., Caulfield.  
 VK3ZY—Ireson, M., Kyneton.  
 VK3ZZ—McLeod, G. S., Geelong.  
 QUEENSLAND.  
 VK4AB—Bardin, W. F., Yeronga.  
 VK4AD—Dixon, A. L., Norman Park.  
 VK4AF—Marshall, A. F., Clifton.  
 VK4AG—Greenham, A., Sth. Gympie.  
 VK4AH—Hadley, A. L. T., Clifton Hill.  
 VK4AK—Milner, J., Ashgrove.  
 VK4AM—Mackenzie, H. S., Apperley.  
 VK4AR—Tonge, A. E., Taringa.  
 VK4AS—Soden, A. W., Annerley.  
 VK4AW—Walz, A. E., Nundah.  
 VK4AZ—Sharpe, F. V., Ashgrove.  
 VK4BB—Beatson, R. J., Maryborough.  
 VK4BJ—Brown, J. G., Aramac.  
 VK4BO—Scott, F. L., Thursday Island.  
 VK4BS—Grummitt, G. F., Fortitude Valley.  
 VK4BW—Couper, A., Mareeba.  
 VK4CF—Fortescue, Toowoomba.  
 VK4CG—Gold, C. H. Y., Toowoomba.  
 VK4CM—McDowall, Dr. V., Brisbane.  
 VK4CU—Walker, C., Clifton.  
 VK4DJ—Jones, D. W., Chelmer.

Call Sign. Licensee.  
 VK4DO—Hobler, H. L., Rockhampton.  
 VK4DR—Laws, D. A., Taringa.  
 VK4EA—Ashlin, E. R., Annerley.  
 VK4EB—Butcher, E. W., Lutwyche.  
 VK4EF—Fell, E. F., Ashgrove.  
 VK4EG—Gold, E. E., Toowoomba.  
 VK4EL—Lake, E. J., Kangaroo Point.  
 VK4EM—Mars, E. B., Charleville.  
 VK4ES—Sprenger, H. E., Kingaroy.  
 VK4EW—White, E. H., Red Hill.  
 VK4FB—Beech, F. S., Coorparoo.  
 VK4FK—Kenna, V. F., Hamilton.  
 VK4FM—Moody, F. P., Cairns.  
 VK4FW—Woolley, L. R., Townsville.  
 VK4GA—Shearer, G. A., Mt. Nebo, via Samford.  
 VK4GG—Heilbronn, G., Chinchilla.  
 VK4GH—Harley, G. N., Ipswich.  
 VK4GK—Mackenzie, A. H., Wynnum.  
 VK4GS—Strofeldt, G., Paddington.  
 VK4GY—Barracough, F., Kedron.  
 VK4HK—Kinzbrunner, H. C., Mareeba.  
 VK4HR—Scholz, H., Nambour.  
 VK4HS—Scott, H. G., Toowoomba.  
 VK4JA—Abbiss, J. E. F., Morningside.  
 VK4JB—Alder, O. E., Albion.  
 VK4JF—Files, J. C., Buranda.  
 VK4JG—Grant, C. J., Woolloowin.  
 VK4JJ—Jordan, J., Ipswich.  
 VK4JL—Love, J. P., Kedron.  
 VK4JM—McDermott, J. W., Rosemount, via Nambour.  
 VK4JN—Augustesen, G. G., Mitchelton.  
 VK4JO—Fittell, S. L., Gympie.  
 VK4JR—McMurtrie, S. A., Booval.  
 VK4JU—Nolan, F. W., Brisbane.  
 VK4JW—Larsen, H. P. C., Charters Towers.  
 VK4JX—Selby House, Brisbane.  
 VK4JY—Young, J. W., Sandgate.  
 VK4KA—Dahl, O. S., Ayr.  
 VK4KG—Nicholson, R. M., Ilfracombe.  
 VK4KH—Argaet, W. A., Wynnum Sth.  
 VK4KL—Johnson, I. U., Cairns.  
 VK4KO—Hart, N. V., Booval.  
 VK4KR—Hooper, A. W., Willis Island.  
 VK4KX—Cran, M. R., West End.  
 VK4KY—Martin, M., Wood End.  
 VK4KZ—Couchman, C. C. McG., Kaimkillenbun, via Dalby.  
 VK4LG—Gunn, K. C., Laidley.  
 VK4LH—Hitchcock, L. F., Woolloowin.  
 VK4LJ—Feenaghty, L. J., Ashgrove.  
 VK4LK—Kerr, V. L., Winton.  
 VK4LL—Lumb, L. J., Ashgrove.  
 VK4LM—McMahon, L. H., Toombul.  
 VK4LP—Chisholm, G., Kelvin Grove.

Call Sign. Licensee.  
 VK4LR—Thomas, R. H., Bulimba.  
 VK4LS—Williams, L. S. B., Indooroopilly.  
 VK4LW—Morris, C. R., Rosalie.  
 VK4MF—Winterford, D. C., Southport.  
 VK4MM—O'Brien, M. M., Toowong.  
 VK4MR—Stewart, J. E., Nundah.  
 VK4NG—Jonasson, R. P., Alberton, via Yatala, South Coast Line.  
 VK4NJ—Hurl, N. J., Tallebudgera Ck., via West Burleigh, S.C.L.  
 VK4NR—Richard, N., Woolloowin.  
 VK4NS—Townsville Radio Club, Townsville.  
 VK4NW—Starkie, T. W., Nundah.  
 VK4OB—Burmester, O. C., E. Brisbane.  
 VK4PH—Hardgrave, P., Sth. Brisbane.  
 VK4PK—McIntosh, S., Woodend.  
 VK4PN—Roberts, R. F., West End.  
 VK4PO—Chapman, P. C. L., Sandgate.  
 VK4PW—Wood, P., Ipswich.  
 VK4QL—Queensland Listeners' League, Paddington.  
 VK4RA—Atkinson, R. A., Sth. Bris.  
 VK4RB—Browne, R. J., Toowong.  
 VK4RC—Campbell, R., Kelvin Grove.  
 VK4RE—Regent Radio Club, Brisbane.  
 VK4RJ—Delbridge, Rev. R. J. R., Paddington.  
 VK4RL—Central Technical College, Brisbane.  
 VK4RM—Meadows, R. C., Mackay.  
 VK4RV—Vickary, R. M., Cunnamulla.  
 VK4RW—Rohde, W., Red Hill.  
 VK4RY—Harston, W. L., Clayfield.  
 VK4SL—Luckman, T. S., Kalinga.  
 VK4SS—Bentzen, I. L., Newstead.  
 VK4ST—Tumbridge, S. H., Ipswich.  
 VK4TA—Alexander, T. M., Ashgrove.  
 VK4TS—Shorten, E. W., Paddington.  
 VK4TY—Tyas, N. R. W., Gracemere.  
 VK4UK—Herschel, H. V., Toowoomba.  
 VK4UU—Chitham, W. N., Bulimba.  
 VK4VH—Wooster, H. M., Townsville.  
 VK4VJ—Jeffs, V., Taringa.  
 VK4VW—Wilson, V. J., Newstead.  
 VK4WD—Hepton, W. D., Milton.  
 VK4WH—Hagarty, W. E., Longreach.  
 VK4WI—Wireless Institute of Australia, Dutton Park.  
 VK4WJ—Farrell, J. H., Windsor.  
 VK4WO—Tilse, H., Yeronga.  
 VK4WS—Tebley, W. J., Ipswich.  
 VK4WT—Wishart, W. T., Graceville.  
 VK4XK—Richards, G., Ipswich.  
 VK4XN—Nissen, E. L., Dalby.  
 VK4YG—Yc. ng, I. H., Albion.

Call Sign. Licensee.  
 VK4ZO—Hillhouse, J., Collinsville.  
 VK4ZX—Bullock, A. F. W., Coorparoo.

SOUTH AUSTRALIA.  
 VK5AC—Cook, V. R. P., Kilkenny.  
 VK5AL—Lum, A. D., Joslin.  
 VK5AM—Kennedy, P., New Parkside.  
 VK5AQ—Sacred Heart College, Glenelg.  
 VK5AW—Kelly, A. W., Lyndoch.  
 VK5AX—Traeger, A. H., Corryton.  
 VK5AY—Haynes, T. A. J., Adelaide.  
 VK5BC—Lloyd, H. F., Hindmarsh.  
 VK5BF—Miller, F. G., Murray Bridge.  
 VK5BJ—Bruce, R. A., Glenelg.  
 VK5BK—Grivell, J., Yorketown.  
 VK5BM—Willoughby, E. L., Penrhyn.  
 VK5BP—Caldwell, R. B., Nth. Unley.  
 VK5BR—Blackwood Radio Club, Blackwood.  
 VK5BW—Phillips, J. G., Somerton.  
 VK5BX—Saunders, A. L., Glenelg.  
 VK5BY—Whitburn, D. R., Fullarton Estate.  
 VK5CF—Trott, C. F., Willunga.  
 VK5CH—Haines, C. L. H., Millicent.  
 VK5CM—Anthony, R. M., Unley Pk.  
 VK5CX—Moule, C. E., Parkside.  
 VK5DA—Buckerfield, S. R., Knoxville.  
 VK5DC—Shepard, A. E., Kent Town.  
 VK5DO—O'Leary, D., Tusmore Gardens.  
 VK5DP—Brock, H. E. E., Malvern.  
 VK5DQ—Horan, K. J., Unley.  
 VK5DR—Deer, P. W., Seacliff.  
 VK5DX—Taylor, D. G., Forrestville.  
 VK5FM—Bowman, H. N., Payneham.  
 VK5FT—Fitzmaurice, J. S., Walkerville North.  
 VK5GA—Anderson, G. R., Highgate.  
 VK5GK—Carter, F. P., Mile End.  
 VK5GO—Gurr, G. H., Adelaide.  
 VK5GR—Ragless, G. B., St. Mary's.  
 VK5GW—Huppertz, W. G., Cowandilla.  
 VK5HG—Cooper, H. M., Glenelg.  
 VK5HK—Bavker, E. L., Kingston.  
 VK5HW—Wheeler, H. W., Eden Hills.  
 VK5IT—Thomas, L., Mitcham.  
 VK5IV—Dennett, P. R., Berri.  
 VK5JA—Brewer, P. J., Parkside.  
 VK5JH—Chennell, V., Norwood.  
 VK5JO—Reimann, A. A., Kent Town.  
 VK5JU—Berry, H. A., Keswick.  
 VK5JW—Wilkin, J. W., Glen Osmond.  
 VK5KB—Bowen, H. K., Maylands.  
 VK5KH—Ring, K. M., Adelaide.  
 VK5KM—Magee, K. W. M., Adelaide.  
 VK5KR—Ireland, L. K., Mount Gambier.

Call Sign.	Licensee.	Call Sign.	Licensee.
VK5LA	Atkins, L. M., Tusmore.	VK5TX	Foster, J., North Kensington.
VK5LB	Badenoch, J. H. L., Trinity Gardens.	VK5UX	Wallbridge, L. W., Lower Mitcham.
VK5LC	Catford, L. E., Gladstone.	VK5WA	Adamson, W. K., Fullarton.
VK5LD	Deane, L. A., Tusmore.	VK5WB	Wilson, H. B., Wayville.
VK5LG	Cotton, L. S., Burnside.	VK5WF	Wauchope, R. W., Maylands.
VK5LJ	Davies, R. R., Goodwood Pk.	VK5WH	Barber, W. H., Port Pirie.
VK5LN	Drew, A. J., Kensington.	VK5WI	Wireless Institute of Australia (S.A. Division), Adelaide.
VK5LP	Phillis, L. V., South Payne-ham.	VK5WJ	Wiseman, W. J. C., Port Lincoln.
VK5LR	Lester, J., Renmark.	VK5WP	Pitchford, W. S., Adelaide.
VK5LZ	Smith, W. A., Wallaroo.	VK5WR	Richards, W. M., Medindie Gardens.
VK5MB	Brown, H. M., Southwark.	VK5WS	Western Suburbs Radio Club, Mile End.
VK5MD	Barbier, E. A., Stockdale Reserve.	VK5XK	Hewitt, A. J., Torrensville.
VK5MF	Smythe, A. C., Torrensville.	VK5XR	Patterson, C., Naracoorte.
VK5MK	Bentley, F. E., Cowandilla.	VK5YK	Eastern District Radio Club, Tusmore.
VK5ML	Coombe, G. S., Hindmarsh.	VK5ZC	Clayton, M. C., Edwards-town.
VK5MU	Gray, F. M., Toorak Gar-dens.	VK5ZQ	Mullett, L. F., Highgate.
VK5MW	Atkins, K. J., Semaphore South.	VK5ZY	Mutton, A. K., Toorak Gar-dens.
VK5MX	White, C. R., Kilkenny.		
VK5MY	Roberts, H. M., Alberton East.		
VK5OM	Vardon, J. E., Unley Park.		
VK5PA	Parker, K. C., Port Pirie.		
VK5PK	Nancarrow, R. S., George-town.		
VK5PR	Kilsby, K. W., Moorak.		
VK5PS	Parsons, W. W., Adelaide.		
VK5QP	Theel, K. M., St. Peters.		
VK5QR	Galle, R. V., Prospect.		
VK5RA	Routledge, R. A., Henley Beach.		
VK5RB	Bedford, R., Kyancutta.		
VK5RC	Cameron, A. R., Leabrook.		
VK5RD	Elliott, R. D., Lower Mit-cham.		
VK5RE	Hobcroft, H., Renmark.		
VK5RG	Gurner, R. C., Linden Park Gardens.		
VK5RH	Haskard, R. G., North Adelaide.		
VK5RI	South Soutralian Railways In-stitute, Adelaide.		
VK5RJ	Hancock, D. M., Kadina.		
VK5RM	Barker, R. M., Prospect.		
VK5RO	Easter, E. R., Monrieth.		
VK5RP	Parasiers, R., Forest Gardens.		
VK5RT	Manuel, R. T., Prospect.		
VK5RW	Westbourne Radio Club, Unley Park.		
VK5RX	Luxon, G. W., West Mit-cham.		
VK5SL	Fiedler, L. V., Woodville West.		
VK5SR	Signals (S.A.) Radio Club, Keswick.		

WESTERN AUSTRALIA.

VK6AC	Cozins, C. F., Perth.
VK6AG	Coxon, W. E., Mt. Lawley.
VK6AK	University of Western Aus-tralia, Perth.
VK6AM	Willis, H. O., South Fre-mantle.
VK6AT	Taylor, H. A., Victoria Pk.
VK6AY	Wireless Institute of Aus-tralia, Albany.
VK6BB	Park, J. C., South Perth.
VK6BC	Congdon, B., Subiaco.
VK6BN	Stevens, A. E., South Perth.
VK6BO	Grey, A. E., Carnarvon.
VK6CA	Bold, C. A., Beaconsfield.
VK6CB	Brown, C. W., Subiaco.
VK6CP	Cooke, C. R., Bayswater.
VK6CR	Reeves, C. H., Claremont.
VK6CX	Quin, C., Subiaco.
VK6DA	Saw, F. W., Wanneroo.
VK6DH	Hardisty, D. C., Victoria Pk.
VK6DT	Treliving, D. B. V., Ned-lands.
VK6DX	O'Donnell, A., Perth.
VK6FG	Goldsmith, F. H., Nedlands Park.
VK6FL	Lambert, F. C., Geraldton.
VK6FM	May, F., Gnowangerup.
VK6FO	Ollivier, N. F., Hollywood.
VK6FT	Tredrea, F., South Perth.
VK6FW	Webster, F. J., Victoria Pk.
VK6GF	Milner, G. F., Mt. Lawley.

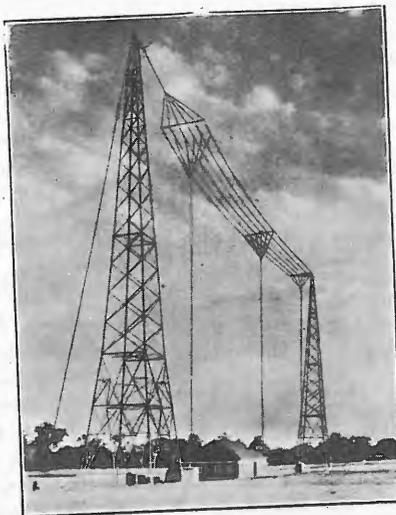
Call Sign.	Licensee.	TASMANIA.	
VK6GM	Moss, G. A., Mt. Lawley.	Call Sign.	
VK6GS	Horrocks, G. S. B., Harvey.	Licensee.	
VK6GW	Butterfield, G. W., South Perth.	VK7AG	Milne, J. C., Gretna.
VK6HD	Davies, H. T., Highgate Hill.	VK7AH	Medhurst, F. W., Lower Sandy Bay.
VK6HF	Fogg, H. L., Mt. Lawley.	VK7AR	Johnson, C. F., West Hobart
VK6JJ	Jewell, T. J., Victoria Park.	VK7BM	Sheldrick, E. C., Launceston.
VK6JK	Dewan, J. O., Mt. Lawley.	VK7BQ	Crooks, J. A. L., Launceston.
VK6JR	Clinch, F. G., Greenough.	VK7CD	Smyth, C. W., Devonport.
VK6JS	Squires, J., Cannington.	VK7CH	Harrisson, C., Bellerive.
VK6JT	Treloar, J., Beaconsfield.	VK7CK	Clark, L. F., Natone.
VK6KB	Dook, V. L., Maylands.	VK7CP	Parish, H. R., Launceston.
VK6KM	Saar, A., Geraldton.	VK7CS	Scott, A. C., Lindisfarne.
VK6KO	Rann, G. W., Nedlands.	VK7CW	Walch, C. A., Battery Pt.
VK6KR	Bell, V. F., Subiaco.	VK7DR	Devonport Radio Club, Devonport.
VK6KX	Simmons, H. T., Mount Lawley.	VK7GE	Every, G. E., Hobart.
VK6KZ	Vernon, C. H., East Fre-mantle.	VK7HL	Lovett, H. F., West Hobart.
VK6LA	Jamieson, J. E., Beaconsfield.	VK7JB	Batchler, J. C., Nth. Hobart.
VK6LJ	Mead, J., East Victoria Park.	VK7JH	Hooker, W. T., New Town.
VK6LK	Read, A. W., Mount Lawley.	VK7JW	Wallis, J. C., Longford.
VK6LX	Richardson, J. B., East Fre-mantle.	VK7LJ	Jensen, L. R., New Town.
VK6MN	Madden, S. J., Maylands.	VK7LZ	Wright, C. P., Launceston.
VK6MO	Magnetic Observatory, Watheroo.	VK7MM	Masters, W. E., Bellerive.
VK6MU	Urquhart, M. S., Cottesloe.	VK7NC	Campbell, N. D., Hobart.
VK6MY	Murray, M. L., Sth. Perth.	VK7OJ	Stevens, R. E., Deloraine.
VK6NJ	Johnston, N. B., South Fre-mantle.	VK7PK	Wellington, S. H., New Town.
VK6NO	Turnbull, N., Subiaco.	VK7RB	Burling, R., Hobart.
VK6PK	Kernick, P. E., South Perth.	VK7RC	Cannon, R. F. H., Wynyard.
VK6RA	Agnew, R. G., Nedlands.	VK7RS	Hope, R. S., Sandy Bay.
VK6RF	Fremantle Radio Club, Beaconsfield.	VK7RY	Nicholls, F. E., Devonport.
VK6RJ	Tapper, J. R., Claremont.	VK7SR	Army Signals Radio Club, Hobart.
VK6RK	Choat, R. S., Harvey.	VK7WI	Wireless Institute of Aus-tralia, Hobart.
VK6RL	Henwood, R. F., Nth. Perth.	VK7WR	Nicholas, W. R., North Hobart.
VK6RT	Trunfull, R. L., South Greenough.		
VK6RW	Muir, R. W., Wagin.		
VK6SA	Austin, S. A., South Perth.		
VK6SR	Subiaco Radio Society, Subiaco.		
VK6SW	Worth, S. E., Rivervale.		
VK6VK	Vincent, J., Kalgoorlie.		
VK6VP	Victoria Park Radio Club, South Perth.		
VK6WI	Wireless Institute of Aus-tralia, Perth.		
VK6WK	Ruse, T. W., Osborne Park.		
VK6WM	Morris, W. B., Hollywood.		
VK6WP	Phipps, W. R., Victoria Pk.		
VK6WR	Rocada, W. D., Claremont.		
VK6WW	Watson, S. W., W. Perth.		
VK6XA	University of Western Aus-tralia, Crawley.		
VK6XL	Miles, H. R., Mt. Lawley.		

PAPUA.

VK4FI	Lee, F. H. S., Kaparoko, via Port Moresby.
VK4KT	Foldi, J. R., Port Moresby.

NEW GUINEA.

VK9BA	Gray, A. H., Bulolo.
VK9EV	Evan-Evans, T., Raspindik, Rabaul.
VK9NW	Weldon, N. E., Kokopo.
VK9TC	Colquhoun, T. K., Salamaua.



Aerial of "5CK" Crystal Brook, Australia's most powerful broadcasting station.

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## The Technical Side of Broadcasting

### From Notes Kindly Supplied by the P.M.G.'s Dept.

The Postmaster-General's Department provides the whole of the technical services for the National Stations of Australia. All the lines between stations and studios, all the "outside" lines and the lines for relay work of both the A's and the B's are provided by the P.M.G.'s Department.

In providing broadcasting equipment to cater for the people of Australia two things have to be done. The first is so to plan the provision of future stations that, when combined with existing stations, they will give a satisfactory grade of service to all listeners in Australia.

The second thing is to ensure that as large a proportion of the population as possible is provided with a satisfactory grade of broadcast service as soon as possible. Obviously, these two requirements can best be met by first planning on paper the power and location of new stations to supplement the existing ones, so that when all are finally in operation the objective of the future will have been achieved; and then to build the new stations in the order which will result in meeting the most urgent needs of the community, as well as increasing the number of listeners. Those are the lines upon which the system of national stations is being built up.

Another feature having a profound effect on the plans for station location and the order in which stations should be built was the distribution of population. The bulk of the population is distributed along the coastal belt, with dense concentration in the capital cities. On the landward side this belt is bounded for many hundreds of miles by the Dividing Ranges—which stretch from the North of Queensland through New South Wales and Victoria. Mountains and broken country seriously impede the transmission of radio waves, so that the stations located in the capital cities on the coast cannot properly serve the area beyond the belt of hilly country. Hence a chain of stations inside that area must be provided.



H. P. Brown, C.M.G., M.B.E., M.I.E.E.,  
Director-General of Postal Services,  
whose Department controls Broadcasting.

BROADCASTING STATIONS.

Twelve national stations are at present operating in the Commonwealth as follow:—

- New South Wales*—  
 2BL and 2FC—Metropolitan stations located at Sydney.  
 2NC—Regional Station located at Newcastle.  
 2CO—Regional station located at Corowa, near the Victorian border.
- Victoria*—  
 3LO and 3AR—Metropolitan stations located at Melbourne.
- Queensland*—  
 4QG—Metropolitan station located at Brisbane.  
 4RK—Regional station located at Rockhampton.
- South Australia*—  
 5CL—Metropolitan station located at Adelaide.  
 5CK—Regional station located at Crystal Brook, near Port Pirie.
- West Australia*—  
 6WF—Metropolitan station located at Perth.
- Tasmania*—  
 7ZL—Metropolitan station located at Hobart.

The "regional" stations are located away from the capital cities, and are designed to serve country centres of population. The bulk of the programmes are supplied over land-lines from one or other of the "metropolitan" stations. These stations also enable items of local interest to be broadcast.

The arrangement as between "metropolitan" and "regional" stations is as follows:—

- 4RK — Rockhampton . . . . . Draws its programme from 4QG, Brisbane.
- 2NC — Newcastle . . . . . Draws its programme from 2BL and 2FC, Sydney.
- 2CO — Corowa . . . . . Draws its programme from 3AR and 3LO, Melbourne.
- 5CK — Crystal Brook . . . . . Draws its programme from 5CL, Adelaide.

Six of the metropolitan stations were originally constructed for the various companies engaged in broadcasting before the inauguration of the National Broadcasting Scheme. Since being acquired by the Department, extensive alterations have been made to make them reasonably suitable for the requirements of a modern broadcasting service; improvements are constantly being made. In one case, that of 6WF, Perth, the station was completely replaced by new and up-to-date equipment of greater power located on a new site away from the centre of the city.

This new transmitter was designed by Departmental engineers and constructed in the Department's own Workshops, and the technical quality of its transmission conforms to the highest modern standards.

The four regional stations are all new and modern installations built under contract to the order of the Department, and to the same high standard. The date of opening for service and the rated unmodulated carrier power in the aerial in each case is as follows:—

Station.	Date of opening.	Rated unmodulated carrier power in the aerial. Kilowatts.
2NC, Newcastle, N.S.W.	Dec. 19, 1930	2
4RK, Rockhampton, Qld.	July 29, 1931	2
2CO, Corowa, N.S.W. . .	Dec. 16, 1931	7.5
5CK, Crystal Brook, S.A. . .	March 15, 1932	7.5

All the new regional stations and the new 6WF station built by the Postmaster-General's Department have 100 per cent. modulation of the carrier. In addition, the Department in its reconstruction work has increased the depth of modulation of the older stations.

STATION OPERATION AND MAINTENANCE.

The work of station operation and maintenance in these Departmental Stations is carried out by officers of the mechanical staff of the Department. The work is in many respects similar to that carried out by the Department's mechanics in connection with the telephone and telegraph services, so that the Department's normal technical staff forms a large reservoir from which officers for the broadcasting services can be drawn and, when necessary, replaced.

While the station is on the air the station operator monitors the programme to ensure that it is being transmitted satisfactorily. Particularly in the case of the new stations, he exercises continuous control over the input power to the station to ensure against loss of quality due to overloading. The station meters are also read at frequent definite intervals in order to determine that all parts of the equipment are functioning properly.

The station technical staff also carries out the routine maintenance work during the period when the station is not transmitting. Every morning all power plant, including motor generators, both high and low voltage, duplicate and stand-by equipment, and batteries, are examined, cleaned and tested. The high tension insulators, busbars, arresters, etc., within the transmitter enclosure are cleaned and examined, water flow failure and water temperature alarms and overload relays are tested to ensure that they are effective in operation.

The maintenance of quality of transmission so far as it is affected by the equipment in the station is also an important function of the station technical staff. In this connection it is necessary to ensure that the depth of modulation and the station response over the transmission

band from 35 to 10,000 cycles per second does not vary beyond prescribed limits. Response measuring equipment provided in each station enables this to be checked and the electrical characteristics of the various valves, etc., are also measured at prescribed intervals to ensure that no deterioration has taken place.

The maintenance of correct station frequencies is another matter demanding the attention of the station technical staff. A check on station frequency is provided by equipment installed in the Department's Research Laboratories in Melbourne. This equipment enables the frequency of a station to be measured with an accuracy within 50 parts in 1,000,000, and each week measurements are made with it and the results forwarded to the various stations.

### PROGRAMME LINES TO STATIONS.

Distances up to several miles usually separate the station from its studio. This gap is bridged by a special telephone line. Usually a second such line is provided as a stand-by in case of failure. The mechanical construction of these lines is in all respects similar to that of the ordinary subscriber's telephone line—that is to say they may be constructed of underground cable or open aerial wires, depending mostly on the type of construction provided for the ordinary telephone subscriber along the route which the special programme lines between studio and station have to follow. It is found that for telephone purposes the reasonably faithful transmission of those sounds whose frequencies lie between 300 cycles per second and 2,800 cycles per second gives very good quality conversations. In the case of the programme lines, however, it is necessary that sounds with frequencies lying between 35 cycles per second and at least 5,000 cycles per second should be faithfully transmitted, and it is desirable that sounds with frequencies as high as 8,000 or 10,000 cycles per second should be transmitted, in order that the programme as received by the listener may retain a sufficient degree of naturalness. To meet this requirement, the telephone lines which are to be used as programme lines are fitted at the studio end with specially designed amplifiers and at the station end with specially designed equalisers. The amplifiers at the studio end are operated by the studio control technical staff to amplify the programme to the correct level for transmission to the station via the special programme line. This applies to the much longer lines over which are transmitted the programmes from the studios of metropolitan stations to the regional station situated in the country. Although the line between 4QG, Brisbane, and 4RK, Rockhampton, is almost 400 miles in length and passes through two intermediate amplifying stations on the way, the arrangement of equalisers and studio amplifiers is applied to it in just the same way.

The following table gives details of the permanent programme lines serving the regional stations:—

Lines.	Length (Miles)
4QG, Brisbane, to 4RK, Rockhampton . . . . .	398
2FC, Sydney, to 2NC, Newcastle . . . . .	110
3AR, Melbourne, to 2CO, Corowa . . . . .	226
2CO Studio, Albury, to 2CO Station, Corowa . . . . .	33
5CL, Adelaide, to 5CK, Crystal Brook . . . . .	150
Gladstone to 5CK, Crystal Brook . . . . .	18
Total . . . . .	935

Those lines and their associated equipment have a capital value between £60,000 and £70,000, and as they are used permanently for broadcasting purposes and are never employed for the ordinary telephone business of the Department, they represent an expenditure by the Department of the amount mentioned solely for broadcasting purposes.

### CONTROL EQUIPMENT IN STUDIOS.

The Control Room associated with each studio is really the assembling and clearing house for the various items which go to make up the station programme. The Studio control operator is a technical officer of the Department, and the Studio announcer, who is an officer of the Australian Broadcasting Commission, work together. The items of the programme reach the control equipment over lines connected to the pick-up microphones, which may be either in the Studio or outside it. It is the aim of all concerned with broadcasting work—the Studio control announcer, the Studio control operator, the broadcaster speaking from the outside pick-up point, and the engineers designing the Studio and other control equipment—to make changes from one item of the programme to the next as smoothly as possible, avoiding delay between the end of one item and the beginning of the next and, what is even more disconcerting to listeners, the clipping of the commencement of the second item. In some cases two lines are provided between outside pick-up points and the Studio control equipment. The technical staff in the Studios is drawn from the Department's staff of telephone mechanics in the same way as the technical staff in the Stations. In fact, the officers in the Studio and in the Station are interchangeable.

The bulk of the pick-up lines in metropolitan areas are in underground cable, a fact which in itself ensures a high degree of reliability and freedom from fault. In the case of churches, concert halls and other places from which broadcasts occur time after time, permanent pick-up lines are provided.

### THE MICROPHONE.

It will be obvious that the microphone, the device used to pick up the sound waves and to convert them to electric waves, must be of the highest quality, as otherwise all the precautions taken to ensure the transmission

of the programme from the pick-up point to the listener's receiving set without loss of quality will have failed of their purpose. There has been a constant improvement in the form of microphones used in Australia, although the earlier type has not been entirely superseded.

Listing the microphones in the order in which they have been developed and adopted in this country, we get the following:—

- (a) Double button carbon type;
- (b) Reiss carbon type;
- (c) Condenser or electro-static type;
- (d) Moving coil type;
- (e) Ribbon or "velocity" type.

A recent development is the "Lapel" type of carbon microphone, designed specially for the use of speakers who, when addressing an audience, find it very difficult to stay in a fixed position near a microphone.

It is essential that the electric current generated by the microphone should be as nearly as possible an exact copy of the sound waves at the point where it is used, and therefore it must possess what is known as a "flat frequency characteristic" over the band of frequencies which it is desired to transmit to broadcast listeners. With the effort to obtain more natural reproduction, the band of frequencies which it is thought necessary to transmit is constantly widening, and the latest type microphones now cover the range from 40 cycles per second up to 10,000 cycles per second. In addition to these requirements, it is highly essential that the microphone should not itself introduce into the programme any extraneous noise, and while the carbon type microphone has a reasonably good frequency response characteristic, nevertheless it generated what was known as "microphone hiss." Listeners will remember the background of noise which was so frequently in evidence in the earlier days of broadcasting.

#### INTERSTATE RELAYS.

The Australian Broadcasting Commission has greatly extended the practice of relaying the whole or part of its programmes for broadcasting by stations in other States. It will be at once apparent that this practice has very many advantages. Items of importance or of interest, or programmes of special merit, under this arrangement are made available to listeners in distant States instead of only to those who live in a particular State. Again, it makes for economy in providing programme items, and by so doing enables the Commission to concentrate its expenditure and effort in the direction of securing improvement in the class and quality of the items broadcast to listeners. The Postmaster-General's Department provides the lines over which the relays take place. To meet this requirement, the Department makes use of its telephone trunk line system. The telephone lines selected by the Department for use as broadcasting lines to relay programmes from State to State are specially

arranged and provided with special equipment so that in the past they have transmitted frequencies lying between 35 cycles per second and 5,000 cycles per second, and in the near future will transmit from 35 cycles per second up to at least 8,000 cycles per second.

There arise on these long interstate lines problems which are not met with—at any rate to the same extent—in the case of the relatively short lines connecting Studios and Stations. The interstate lines are so long that it is necessary to introduce into them intermediate amplifiers at points from 125 to 150 miles apart. These lines are exposed to many more sources of possible electrical interference than is the case with the short programme lines. The effect of electrical power and traction lines and of other adjacent telephone and telegraph circuits have all to be guarded against. To meet the more rigid requirements of programme relay lines, the Department first of all selects a suitable line, having regard to the possibility of interference from other circuits, then it makes measurements with specialised testing equipment to ascertain the characteristics of the line itself and the amount of interference from other circuits to which it is subjected. If it is found that the line selected is not sufficiently good, or that it is subject to an undue amount of interference, either another line is selected or steps are taken to improve it or to locate and eliminate the sources of interference. The methods by which interference is located and removed constitute a highly complicated business for which special testing instruments and a special technique have been developed.

Under present conditions there is a continually increasing demand by the National system, and also by the licensed stations, for lines for the relaying of programmes between States. Every night the trunk lines are in use for the relaying of programmes between at least two, and very often four or five States. In a relay from, say, Melbourne to a station in each of the other four capital cities on the mainland and the four regional stations, the total length of trunk line involved is over 4,200 miles. The capital value of that length of line, together with the special equipment which has to be associated with it is in the vicinity of £300,000.

At present lines are available for relays between all the capital cities on the mainland. Early in 1933 a special carrier telephone channel transmitting in the direction Adelaide to Perth was brought into service, and has enabled high quality musical programmes to be transmitted to and broadcast from 6WF, Perth. This special carrier system is unique of its kind in the world. At present, between Adelaide and Perth, a distance of 1,630 miles, one voice frequency telephone circuit and a carrier telegraph system, with seven intermediate repeater stations, are operated together over the one pair of wires. The special carrier system to be used for the transmission of programmes from Adelaide to Perth is designed to operate over this pair of wires also at the same time as the telephone circuit and the carrier telegraph system, and to avoid the cost of providing seven additional intermediate amplifiers for it, the existing carrier telegraph repeaters have been so altered by the Department's

engineers that they serve as amplifiers for it as well as for the carrier telegraph system itself.

To meet the demand for increased facilities for the relaying of programmes between the mainland capitals other than Adelaide and Perth, the Department is planning the installation of special uni-directional programme transmission carrier systems which have recently been developed for such a purpose. These systems differ from that proposed between Adelaide and Perth, and also from the carrier systems in normal use by the Department for its telephone services. They will operate at frequencies of the order of 40,000 cycles per second, and will be equipped with special devices to ensure high quality transmission of programmes.

### OVERSEAS BROADCASTING.

The reception of broadcasts from overseas has always been a matter of great interest to broadcast listeners. Reference is made in this instance to items reaching Australia either over the London-Australia telephone channel or being received by special short wave receiving sets and subsequently rebroadcast.

The London-Australia telephone channel, while suitable for use in the case of certain speech broadcasts, is unsuitable for musical broadcasts. With regard to direct reception of programmes broadcast from overseas, it is evident that if the technique of short wave broadcasting and reception were such that high quality reception free from fading and noise could be secured, then it would be possible to make them available to the Australian listener through the medium of the National Broadcasting Stations. Such a service would place the listener in touch with overseas events of world-wide importance and make available to him the great musical and artistic resources of the older countries. With the object of bringing nearer the day when such a service will be available to broadcast listeners, the Postmaster-General's Department in this country has established a special experimental short-wave receiving station at Mont Park, near Melbourne. This is used at present to receive the transmissions from the Empire short-wave station erected by the British Broadcasting Corporation at Daventry, England, and also the programmes from short-wave stations of other countries, of which a great many have been given to Australian listeners through the National System.

Although experiments between Daventry and the Australian experimental short-wave stations have been in progress for some time, it is still too early to offer any predictions as to the immediate future. Atmospheric ("static") and fading still present tremendous obstacles to the successful reception of items broadcast from overseas.

### RESEARCH AND DEVELOPMENT.

In addition to providing for the construction or purchase of new stations, the maintenance and operation of stations, studios and pick-up equipment, and the provision of special lines for programme relaying and

other purposes in connection with the National broadcasting system, the Department also undertakes for that system the work of keeping it abreast of the latest developments in the radio broadcasting art and of investigating the special problems which arise from time to time in connection with it in Australia. To this end it makes use of the very extensive equipment and staff in its Research Laboratories. The Laboratories are provided primarily for research in connection with communication services, and the greater part of the establishment and staff is engaged on this work, but the fundamental similarity between the problems which arise in connection with broadcasting work and those which arise in connection with telephone and telegraph work is such that the facilities of the Research Laboratories can satisfactorily be employed for the research work required for the National Broadcasting System.

### CHILDREN IN CHARGE OF RADIO

Trieste broadcasting station, North Africa, was recently handed over to a group of "Balillas," who are a Fascist organisation similar to the Boy Scouts and Girl Guides. The "Balillas," who wear diminutive black shirts, gave a concert before the Trieste microphone for the million and a half "Balilla" boys and girls throughout Italy. The adult staff was relieved of its duties, and only one superintendent remained to see that all went well. There were boy and girl announcers, singers, violin players, story tellers, and news "declaimers," in addition to a studio director and directress. The boys and girls also sang patriotic songs in chorus.

### REALISTIC BROADCASTING

"To-night, listeners, I will give you my selections for Saturday, by courtesy of Bung's bottled beer, of which, by the way, I have half a dozen alongside the mike. Here's to your good health before I commence the programme." Then followed a musical tinkle of the liquid being poured into a glass, together with hearty gurgitations, and loud smacks of appreciation.

"I think 'Scorcher' should do very well, which reminds me that in this scorching hot weather Bung's Beer cannot be surpassed. Join me in a little liquid refreshment."

### "Wireless Weekly"

The oldest radio journal in Australia is "Wireless Weekly," Sydney, which was first published on August 3, 1922, before broadcasting began. "Wireless Weekly" is notable for its technical information in respect of which it has always held a leading place. Also it deals with the programmes of the broadcasting stations and includes many special articles of a kind interesting to listeners. The editor is Mr. G. Blunden, who is assisted by Mr. R. McCuaig. Mr. A. G. Hull, technical editor, is a brother of Ross Hull, assistant editor of "Q.S.T.," the American amateur journal.

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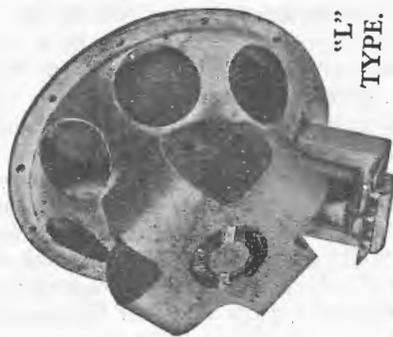
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## What the A.B.C. is Doing on the National Network

(By Major W. T. Conder, General Manager of the Australian Broadcasting Commission.)

Specially for the Broadcast Year Book.

In a recent address delivered for the British Broadcasting Corporation, that provocative man of letters, Mr. H. G. Wells, put forward the intriguing suggestion that the universities of the world should establish chairs of "The Future." It was illogical, he said, to study so minutely, through hundreds of Professors of History, the events of the past and yet to leave the events of the future so entirely to the chances of human progress; and he suggested, in short, that highly qualified men should be retained at all centres of learning for the specific purpose of examining proposed inventions and of reporting upon their probable effects on human life, before they were permitted to become public property.

Without entering into too close an examination of this idea, one may perhaps be permitted to ante-date it some ten years and to examine broadcasting as a proposed invention applying to some hypothetical Professor of Futurity for permission to continue to grope its hesitating way through the ether. In order to complete the picture, one must mentally revoke the conditions of a decade ago, and throw one's mind back to the days when the pleasure of listening to a radio set was definitely not upon the entertainment market. If you are able to remember faithfully those uncommuni-



Major Conder.

cative days—if you have not forgotten entirely the isolation, the unthinking subjection to time and place, the ever-present longing for entertainment and the continual disappointment of half-formed hopes of hearing some accomplished artist or of listening to the words of some distinguished man, then you will have no doubt that the said Professor would have given, in a single breath, his 'All Clear' signal and his benediction. And up to the present, at least, he would have seen little to make that assent rest heavily on his conscience.

Broadcasting came, as the great majority of inventions come, in obedience to the unspoken but insistent demand of humanity. In fact, if the majority of men had ever conceived any genuine and lasting desire to move mountains, it is almost certain that the Himalayas would now be shifted incontinently from place to place with the regard usually accorded to mere ornamental trees.

But at all events broadcasting is here and the big question which must concern those associated with it is whether it is satisfying the demand which produced it. Is it giving the human race what was asked of it? Is it fulfilling the mission for which it was first called into being? The answer to that question will lie in an examination of what broadcasting is doing, and so, for purposes of illustration, it is proposed to deal with Australia and in particular, with its twelve national, or "A" Class, stations; it is proposed to show, very briefly, just what those twelve stations are offering to the public and to leave the reader to decide, in his own mind, whether that is what this particular section of the world required.

First, the Commission is offering, simultaneously, every day of the year, on twelve separate wave-lengths, at least eight different programmes, each approximately eleven and a quarter hours in length; which means, quite simply, that it is gathering together and broadcasting in every twenty-four hours, sufficient entertainment material to provide for ninety hours of actual transmission from any one station; besides which it is training bands, orchestras, choirs, sextets and quartets, describers, actors, producers, speakers and announcers to present these items in worthy form; it is securing for the listening public news services, with commentaries to amplify them, together with information concerning markets and weather, and so on and on. It is continually purchasing broadcasting rights and is making arrangements to describe and/or record for the benefit of listeners all events of any importance to Australia; it is providing special sessions for women and for children and is also giving useful information in the form of lectures to farmers and graziers and in the form of lessons to pupils in the schools.

Secondly, it is encouraging the study of all forms of music, by presenting to listeners the best examples which it can secure of every type of composition and by having them rendered by the most accomplished performers available to it, and it is encouraging those performers to strive to improve, for it offers them employment and guarantees them audiences in what must unfortunately be described as lean times (apart from broadcasting) for the devotees of this particular Muse; and it is also assisting Australian composers, by giving them prizes and a market as well, to lay for their country the foundations of a musical literature, so that through that melodious medium the feelings and thoughts and characteristics of our people may find beautiful and lasting expression.

Thirdly, it is discovering to the best of its ability, the most suitable methods of making dramatic creations live again their unsubstantial lives

in the waves which surge outward from its transmitting stations, and so bringing to the minds of many thousands of listeners the thoughts and emotions and expressions of the dramatists.

Fourthly, it is sending abroad, by medium of lectures and addresses, the ideas and memories of men and women whose ability and experience give to their speech the right to claim and hold an audience, so that thereby others less fortunate may share the pleasure and turn to personal advantage the value of things which circumstances have not permitted them to obtain for themselves.

Finally, it is taking all the steps necessary to the preparation of matters such as those outlined above for their passage to its widely scattered listeners. And these steps are numberless.

That, in brief, is what the Australian Broadcasting Commission is doing, guided as it is, by its desire to give to Australian listeners things which are both useful and pleasing and spurred on by its hope that its programmes will offer an accurate and attractive picture of our national life.

Whether such was the public's unexpressed demand in pre-wireless days, others may attempt to judge. Let it suffice to remark that if all broadcasting were wiped out overnight, the hearts of many citizens would be saddened when they learned that news next morning.

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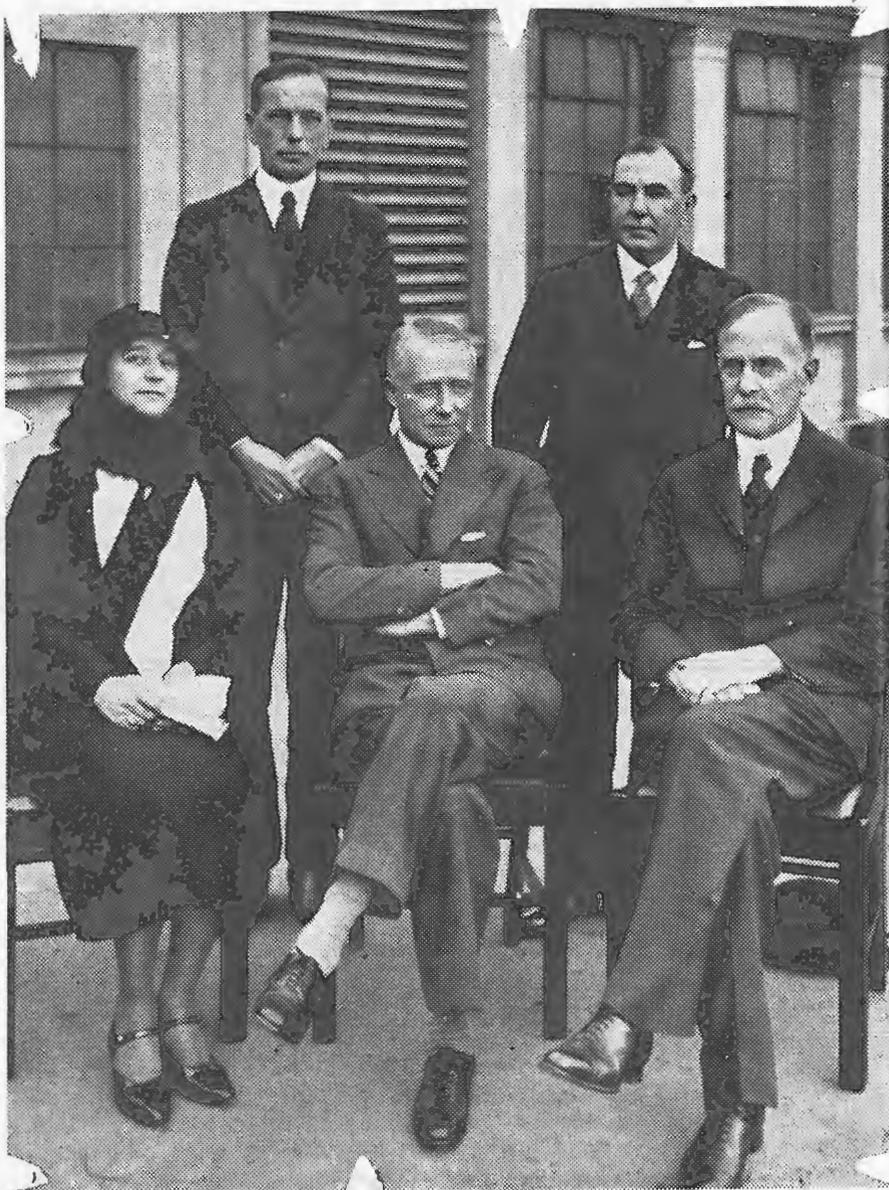
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*"THE DIAL PEOPLE."*



THE AUSTRALIAN BROADCASTING COMMISSION.

Seated: Mrs. Couchman, Charles Lloyd Jones (Chairman), Herbert Brookes.  
Standing: Professor Wallace, R. B. Orchard.

## The Australian Broadcasting Commission and its Work

Any review of broadcasting in Australia must make particular mention of the establishment of the Australian Broadcasting Commission, which on July 1, 1932, took over the provision and rendition of programmes from the A class stations of the Commonwealth.

### DEATH OF MR. H. P. WILLIAMS.

The death of the first general manager of the A.B.C., Mr. H. P. Williams, just before the year ended, was a severe blow from which the Commission will not easily recover. Everyone in the world of broadcasting mourns the loss of Mr. Williams. He was a friend to all. Big-hearted and kindly the General Manager of the Australian Broadcasting Commission carried out the duties of his important office in a way which endeared him to every member of his staff.

From the Interstate Managers to the junior typists and office boys in Sydney, Melbourne, Brisbane, Adelaide, Perth or Hobart, he was held in affectionate esteem which showed itself in a willingness to spare no effort in getting things done for the Chief. Whatever position one held in the A.B.C., one felt that H. P. Williams realised all its difficulties and potentialities. The announcers knew that he knew the awkward corners and traps which beset their paths. He had had to negotiate them himself. These men who have a good working knowledge of three or four languages, know that H. P. Williams understood what it meant to be confronted suddenly with the title of some fearsome, unheard of song or of music printed in a strange tongue. They gained inspiration and courage in their jobs by a realisation that the General Manager was himself familiar with the ordeal of being called upon at a moment's notice to fill up a gap in the programme, or to read to a critical radio audience from a badly written, unpunctuated manuscript, upon a quite unfamiliar theme. H. P. Williams had been through the mill; he had a sympathetic outlook for those who worked under him when their paths were rough.

H. P. Williams knew broadcasting inside and out. From his long experience as a journalist he perceived when this new miracle was born, that radio could render the public the service supplementary to that rendered by the newspapers. Indeed, it might almost be said that it was Mr. Williams' intimate knowledge of broadcasting intricacies which brought about his untimely end.

Hardly had the Australian Broadcasting Commission begun to function than a Royal Commission was opened to investigate the Performing Rights problem. The ramifications of this question are enormous, only those who have been dealing with the matter for years, could hope to understand it. Mr. H. P. Williams was familiar with every phase.



Hilda Woolmer,  
A.B.C. Accompaniste,  
Brisbane.



C. Fraser, A.B.C.  
Dance Band Conductor,  
Melbourne.



The late H. P. Williams, General Manager, A.B.C.



Madam Evelyn Grieg,  
A.B.C., Sydney.



Mabel Nelson, A.B.C.  
Accompaniste,  
Melbourne.

Instead of engaging lawyers to conduct the case for the A.B.C., he decided to handle it himself. He made a wonderfully good job of it. Day after day, either giving evidence himself or cross-examining other witnesses, H. P. Williams skilfully marshalled for the Commissioner's edification, the facts of the case as seen by the A.B.C. Between the sittings, he contrived to re-organise the National Broadcasting Services, and to coach the newly appointed A.B. Commissioners in the more intimate details of this great provider of entertainment and enlightenment. He visited all the States, saw everybody in the service, held long conferences with Government officers who are charged with the conduct of the technical side of broadcasting, conferred by letter, beam and radio telephone with the British Broadcasting Corporation, negotiated with musical organisations for the establishment of National Symphony Orchestras, made treaties with newspaper proprietors and sporting bodies for the use of their racing and athletic events, supervised the arrangement which made the test cricket broadcasts run smoothly and simultaneously in four States.

One day, when addressing the Royal Commission on Performing Rights, H. P. Williams placed his hand over his heart and sat down—"Just a touch of the old trouble," he replied a minute later to the sympathetic inquiry of the Commissioner and the parties in the case.

This happened more than once. H. P. Williams knew he was overtaxing his strength, his Commissioners told him not to work so hard, but he was determined not to slacken until the National Broadcasting Service was running on an even keel and the Performing Rights Inquiry was concluded. Then he intended to take a little holiday. It was not to be. Returning from Melbourne, the heart trouble seized him on the train. Only a few of his close friends knew of this. We told him he must ease down. He said he would—as soon as the Royal Commission was finished. Next day, he spoke before the Royal Commission for three hours. That was his finish. He went home to bed and lived only a few days longer.

#### BROADCASTING HOURS AND ARTISTS.

The total broadcasting time of the twelve stations during the Commission's first year was 49,133 hours. Each station was thus broadcasting, on an average, for 4,094½ hours in the year, or nearly 11¼ hours per day.

With eight separate programmes being broadcast, there has been ninety hours of programme-time to be filled by the Commission every day, requiring 54,755 different microphone appearances for the year. In addition to the 130 performers who are regular members of the staff, 17,067 musicians and singers, 1,559 actors and 1,343 speakers, making a total of 19,969, appeared on the programmes on temporary engagements. The grand total of performers was thus 20,099, and the sum of £173,452 was paid for their performances—an average of £8/12/7 per performer.

ORCHESTRAS.

The Commission early set to work upon the formation of permanent musical combinations. By the end of the year it had secured the regular services of the following musical units:—

SYDNEY: Symphony Orchestra, Concert Orchestra, Military Band, String Quartet, Wireless Chorus, Radio Choir, Male (Vocal) Quartet.

MELBOURNE: Symphony Orchestra, Concert Orchestra, String Quartet, Wireless Chorus, Military Band, Old Time Dance Band, Symphonic Dance Orchestra.

In addition, employment was given from time to time to 18 orchestras, 15 brass or military bands, 64 choirs, 20 quartets, 9 trios, 20 dance bands and 14 novelty ensembles.

In all 189,749 letters were received from listeners. A gratifying feature was the interest displayed by children from whom 57,601 letters were received, averaging 31 per State per day.

The Commission has taken the view that the function of its members—as distant from that of its staff—is to supervise rather than to create programmes and to safeguard the interests and the wishes of the public in the manner more of trustees than of entrepreneurs.

The appended table illustrates the average composition of the programmes presented throughout the year from the 12 National Stations.

PROGRAMME ANALYSIS.

Items.	Percentage of Total Programme Time.
MUSICAL:—	
Classical . . . . .	17.61 per cent.
Popular . . . . .	29.47 " "
Modern Dance . . . . .	5.68 " "
Total . . . . .	52.76 " "
DRAMATIC:—	
Operatic . . . . .	1.93 " "
Musical Comedy, Revue, etc. . . . .	3.08 " "
Plays . . . . .	2.87 " "
Total . . . . .	7.88 " "
LECTURES (Speeches, etc.) . . . . .	10.35 " "
SPORT . . . . .	9.04 " "
DESCRIPTIONS (Non-Sporting) . . . . .	.72 " "
NEWS, ETC. . . . .	3.87 " "
REPORTS (Weather, Market, etc.) . . . . .	4.21 " "
CHILDREN'S SESSIONS, Etc. . . . .	4.6 " "
CHURCH SERVICES . . . . .	3.29 " "
COMMUNITY SINGING . . . . .	.87 " "
ANNOUNCEMENTS . . . . .	2.41 " "
TOTAL . . . . .	100 " "

The table represents the Commission's compromise between its ideals and its resources, the material available, the many diverse wishes of listeners of all types and classes, and the present scope of practical broadcasting.

The Commission in 1933 held a composers' competition which it considers to have been highly successful. Consequently it is intended to arrange a competition for one-act plays in order to encourage dramatic writing.

EDUCATION BY WIRELESS.

Conferences with leading educational authorities were held and, a number of honorary committees, comprising men and women of high academic standing, were appointed, one for each State. With the advice and assistance of these committees, a system of school broadcasts was evolved. Speakers selected by those committees were entrusted with the delivering of informative lectures upon subjects actually being studied in schools. The guiding rule upon which both the Committees and the Commission are working is that these lectures must endeavour to supplement but never supplant, the work of the teacher in the school. The idea has been favourably received by a number of educational bodies and the purchasing of receiving sets and licences by schools themselves, for the purpose of taking full advantage of the added means of education, is spreading. Whether the plan is persevered with will depend upon the measure of support received from schools.

WOMEN'S INTERESTS.

The special interests of women have not been neglected, and subjects such as house-keeping in many forms, preparation for, care of and upbringing of children, knitting, sewing and fancy work, interior decoration and other matters of essentially feminine appeal have been freely discussed by speakers. An examination of the programmes reveals the fact that 5.58 per centum of the total broadcasting time has been devoted exclusively to women's particular interests.

Children's Hours have found their places regularly in the programmes of stations in each capital city to the extent of 4.6 per cent. of the total broadcasting time and, in addition, the issuing of cards and puzzles to interest and amuse children has been widely encouraged. The response has been gratifying and frequent reports of parents have indicated that they are among the keenest and most appreciative of wireless audiences. It cannot be assumed in the Commission's opinion, that the form of Children's Hours has yet been satisfactorily settled. Experimental work in this branch is being carried on all over the world. This work will continue until the Commission is satisfied that the results being obtained cannot be bettered.



J. Howlett-Ross,  
A.B.C., Melbourne.  
(Talks).



Dr. Battyé, A.B.C.,  
Perth. (Talks).



H. Kingsley Love,  
A.B.C., Melbourne.  
(Talks).



R. H. Spaven, Master  
of Ceremonies,  
A.B.C.'s Old-time  
Dances, Melbourne.



Capt. D. Maclean,  
A.B.C., Melbourne  
(Talks).



R. H. Owen, A.B.C.,  
Melbourne.



C. Vern Barnett,  
A.B.C. Accompanist,  
Sydney.



E. Roberts, Conductor  
A.B.C. Orchestra,  
Sydney.



Walter Hurst,  
Conductor, Adelaide.

## COUNTRY INTERESTS.

Attention has been paid also to Australia's extensive country interests and widely scattered rural population. A service of reports likely to be useful to the primary producer has been maintained; daily lists of market prices, weather conditions, river levels, etc., have been furnished. News services and similar forms of information have been designed to assist the family which is, to some extent, cut off from other sources of such knowledge. Descriptions of events of rural interest, such as agricultural shows; lectures capable of useful application by those on the land; educational sessions for children—all have been potent factors in lessening the normal isolation of the country-dweller. Beyond which, the very restriction of other modes of entertainment has rendered the remainder of the wireless programme of redoubled interest and value to those who live far from our great cities.

## W.A. AND TASMANIA.

Until almost the middle of 1933 facilities for the transmission of programmes from the Eastern States to Perth were limited by the absence of a land-line capable of carrying music satisfactorily. This retarded the development of Station 6WF, since it was only possible to relay thither an equivalent of 2.55 per cent. of its programmes. A suitable line, however, was eventually installed, and has since been operating well and has permitted the introduction of all the advantages of the relay system—to the satisfaction of listeners in the west.

There is no telephonic communication between the mainland and Tasmania, so that Station 7ZL has been unable, up to the present, really to come within the national network. This difficulty has been met, to some extent, by the "picking up" of programmes broadcast from the other stations. This has made possible the re-broadcasting from Hobart of a large number of items, originally broadcast from other States, which were of particular interest to listeners in Tasmania. Although not perfect, the service has shown such good results that re-broadcast items actually occupied 10.03 per cent. of Station 7ZL's total programme-time.

## OVERSEAS BROADCASTS.

On 86 occasions during the A.B.C.'s first year items were re-broadcast from short-wave transmissions from overseas. These items have had novelty and, in one or two cases, real programme-value. None the less, it must be admitted that short-wave transmission has been as yet merely in an experimental stage. Obscured by "surge," interrupted by fading and received for the most part at inconvenient hours, these broadcasts have demanded of listeners sacrifices which they are prepared to make only in exceptional cases. The Commission has, however, appreciated the usefulness of these experiments and has been anxious to assist them by co-operation with the British Broadcasting Corporation and other bodies. At an early stage, endeavours will be made to institute a reciprocal service, although at the same time the present imperfections must be realised.



Periwinkle, A.B.C.,  
Adelaide.



Miss Wireless, A.B.C.,  
Adelaide.



Big Brother and Boy Blue,  
A.B.C., Adelaide.



Aunty Peggy, A.B.C.,  
Adelaide.



The Wattle Lady, A.B.C.,  
Adelaide.

B.B.C. RECORDED PROGRAMMES.

In 1933 the Official Representative of the B.B.C. (Mr. Malcolm Frost), visited Australia and brought with him samples of the Corporation's programmes recorded for the purpose of being re-broadcast in the various parts of the Empire. The Commission made arrangements to secure for the National Stations in each State copies of ten such programmes (amounting to seven and a half hours of programme-time). As further recordings become available they will also be procured and re-broadcast from the various stations. In taking this step, the Commission believed that the majority of listeners would appreciate the opportunity of hearing the outstanding items presented by the B.B.C. and would also profit by the opportunity of comparing the work of the Commission and of their own performers with what was being produced abroad. At no time, however, the Commission declares, will the local programmes be overloaded with these records, nor will the engagement of Australian artists be restricted.

TOURING UNITS.

In order to add variety to the programmes broadcast from each centre, to provide a more uniform level of performance throughout Australia, to offer to local artists representative standards with which to compare their own work, and to direct more particular attention to the Commission's activities, the idea of sending special Touring Units from State to State has been put into operation. This method has an advantage—particularly in the all-important question of human appeal—over the Relay system. The Commission says that without in any way jeopardising the chances of employment of local artists, it is intended to develop this Unit System in the future.

S.O.S. MESSAGES.

The Commission placed its extensive facilities at the disposal of the public to broadcast from time to time as the occasion arose S.O.S. messages of varying types. 1,745 such messages were delivered to listeners during the year. Of these, 1,343 were broadcast on behalf of the police, 85 relating to bush fires, 70 were requests for volunteers for blood transfusions in urgent cases and the remaining 247 messages were of miscellaneous kinds requiring speedy communication. Of them, 1,172 (or 67.16 per cent.) are understood to have been successful in their object, 216 are known to have failed and the results of the other 357 have not been ascertained. Details are as follows:—

Type	Successful	Unsuccessful	Unknown	Totals
Police . . . . .	988	186	169	1343
Bush Fires . . . . .	85	—	—	85
Blood Transfusion . . . . .	55	7	8	70
Miscellaneous . . . . .	44	23	180	247
Totals . . . . .	1172	216	357	1745



Uncle Ted and Sandy, A.B.C.,  
Sydney.



Capt. A. C. C. Stevens, Announcer,  
A.B.C., Sydney.



Aunt Eily, A.B.C.,  
Sydney.



Bunty, Bebe,  
and Little  
Miss Bris-  
bane.



Uncle Ben and Uncle Jim,  
Brisbane.



"The Sandman,"  
Brisbane.

## CHARITIES.

The ordinary broadcasting functions of the A.B.C. have been used to assist hospitals, homes, relief committees, kindergartens and similar charitable institutions which depend for their existence upon the generosity of the public. By means of concerts, community singing sessions, birthday greetings, dances and announcements, the sum of £8,015/14/1 in cash has been raised and paid to the appropriate authorities, while innumerable parcels of blankets, clothing, jam and other commodities have been gathered together and passed on to those in need of them. Other appeals have been made in which neither goods nor money was actually handled, but in which the use of the radio to reach possible subscribers was of considerable benefit.

The efforts of the Adelaide Branch in raising £4,213/1/3 during the year deserve special notice. The Sydney office assisted to the extent of £2,055/5/10, while Melbourne collected £1,496/3/2. The Commission intends to continue this work.

## ACCOMMODATION.

When the Commission assumed control of the provision of programmes from A Class Stations, it did not purchase either studio or office accommodation, except in Adelaide, where it acquired the then existing 5CL premises from the Postmaster-General's Department.

In all other cases short-term leases of the premises previously occupied by the Australian Broadcasting Company Limited were obtained. The majority will expire during 1934. The rent of the premises, exclusive of furniture, paid to the 30th June, 1933, amounted to £5,993/10/8. £303/4/2 was paid in rates. In Perth and Hobart premises were found to be inadequate. For this reason, land has been acquired in each of the two cities named, and the Commission will construct new studios and offices.

In Newcastle, larger quarters were recently obtained on lease and the work of building and equipping a studio and control room has been completed.

## PERFORMING RIGHTS.

The question of Copyright and Performing Right is considered by the A.B.C. to be difficult and troublesome. It is virtually impossible for any broadcasting authority in Australia to conduct its business without being called upon to pay a considerable sum for the right to broadcast a large proportion of the items which appear on its programmes, says the Commission. By far the greater part of usable music of any type is subject to this restriction. The same may be said of the majority of plays, musical comedies and other dramatic performances of even reasonable merit. The position is complicated, too, by the uncertainty which exists in respect of the ownership of the rights of very many such items, with the result that it has not been infrequent for identical claims to be made from several sources. The Commission has not yet concluded a satisfactory agreement with Australasian Performing Right Association



Conrad Charlton,  
A.B.C. Announcer,  
Sydney.

Cliff Bradshaw, A.B.C.  
Announcer,  
Melbourne

N. M. Sheppard,  
A.B.C. Publicity,  
Melbourne.



F. Hatherley, A.B.C.  
Announcer, Sydney.

John L. Norris,  
A.B.C., Adelaide.



Uncle Steve.  
A.B.C. Announcer,  
Sydney.

Maurice Dudley,  
A.B.C. Announcer,  
Melbourne.



Heath Burdock,  
A.B.C. Announcer,  
Sydney.

Bert Wooley, A.B.C.  
Announcer, Adelaide.

D. Felsman, A.B.C.,  
Programme Controller,  
Brisbane.

Limited, a body which controls the broadcasting rights in Australia of the majority of works used by the Commission.

The matter is still subject to negotiation, but the Commission declares it is anxious to conclude an agreement with this organisation which will be fair both to the Composers and Publishers concerned and also to the listening public of Australia. Apart from the Association's claims the Commission has paid a considerable sum in miscellaneous copyright charges.

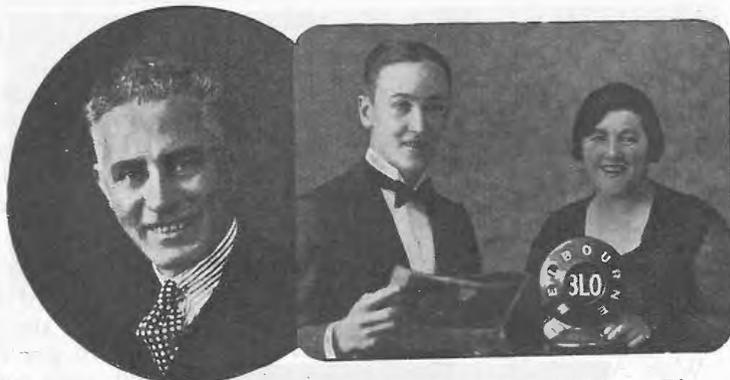
#### FINANCE.

The revenue received by the Commission for the year ended 30th June, 1933, was £250,618/10/-. To this sum New South Wales and Victoria each contributed over £90,000, or approximately 36 per cent. each. West Australia and Tasmania, on the other hand, each contributed less than £10,000 (or 4 per cent.)—a consideration which the Commission did not overlook in allocating grants to the various States for the provision of their programmes. Principal expenditure has been that required for artists' fees, programme expenses and staff salaries—the total regular staff numbering 265—under which heading the sum of £159,243/5/11 has been paid; communication both within the service and also with outside points was another substantial item and the sum of £12,211/5/8 was paid to the Postmaster-General's Department on this account; rent of offices and furniture absorbed an additional £6,770/4/6.

The first year ended with a surplus of assets over liabilities to the amount of £19,328/12/6. In that sum is included the value of property which has been acquired and the Commission has made provision out of it for the securing and equipment of other studios from time to time in the future. A building reserve fund has been created for that and similar purposes.

#### FUTURE POLICY.

The Commission's policy for the future is the improvement of its service. No radical changes are contemplated, since the increase in licences for the year, in the Commission's opinion, sets the seal of public approbation on the work that is being done. While full attention will be given to the important national duty of improving standards of culture and education in Australia, the inseparable element of entertainment will at no stage be overlooked. The audience is not compellable; the turning of a dial or the throwing of a switch by the listener can put an immediate end to any item which is being broadcast, however edifying it may be. If good work is to be done it must be done by pleasing listeners. Enlightenment must come through entertainment. The Commission therefore aims to develop side by side its two ideals of pleasing and benefiting, and this it hopes to do by continually striving to render its services pleasing and its pleasing serviceable; it will seek to appeal not to each section of the community in turn, but to all sections at all times; by presenting the best items of each type in their most attractive form, it will endeavour to enlarge the interest and the appreciation of its listeners; and at the same time it will ever improve in quality that which it places before them.



Bobby Bluegum, A.B.C.,  
Sydney.

Plain Peter and Rollicking Rita,  
A.B.C., Melbourne.



Billy Bunny, A.B.C.,  
Melbourne.



Aunty Maxine, A.B.C., Perth.



Little Miss Kookaburra,  
A.B.C., Melbourne.

## Personalities of 2FC and 2BL

### CAPTAIN STEVENS AND HIS TRAVELS.

CAPTAIN A. C. C. STEVENS, announcer, was born in Singessa, India. He was educated at Clifton and Bath, England, and won a musical scholarship of £100 a year for five years. As a boy he sang regularly at Bath Abbey, and in the Risely Concerts at the Colston Hall, Bristol. After leaving school, he studied medicine at Aberdeen University, which he left when in his fourth year, accepting a University Commission in the R.F.A. to serve in the Boer War (1899). He was invalided home and upon recovery spent five years in special service under the Colonial Office in the time of Joseph Chamberlain. From there he joined the West African Frontier Force, was selected for political duties, made Assistant Resident and then Resident of the Bassa Province in Northern Nigeria. Mr. Stevens served in India also, and it was from there in 1907 that he came to Sydney. J. C. Williamson Ltd. engaged him and he was given a small part in the Royal Comic Opera Company and became understudy to the principal baritone, the late James Hughes. After a few more experiences Mr. Stevens retired from the stage and became a partner in a dairy farm at Papa Toe Toe. The New Zealand Staff Corps claimed him for a while, and after holding various positions from 1912 to 1918, he came to Sydney and entered the journalistic world. About 1926 he joined 2BL as announcer; later he became Talks Editor for 2BL and 2FC. Now he carries out Story Reading, Old Folks Session, Poetry Session, Armchair Chat, Mental and Musical Reflections and Children's Session. Mr. Stevens is keen on golf, trout-fishing and cricket. He draws fair caricatures and paints in water-colour. Known for years as "Uncle Steve," he now also answers to "Daddy Long-Legs."

### CON. CHARLTON, WHO DID NOT GO TO SEA.

Phar Lap, Bob Fitzsimmons and Conrad Charlton all hail from Timaru (New Zealand). Con says he still has vivid recollections of the little shoeing forge where the great old fighter worked as a smith. Con always had a hankering to go to sea, and at the age of nine years climbed to the royal yards of a sailing ship. He has not forgotten what the first mate said to him. The family doctor would not pass him to go as an apprentice, and so another great mariner was lost to the nation. Con Charlton started in the world in a bank, and later joined a firm of accountants. In 1914 he enlisted and saw active service in Egypt and France with the New Zealand Forces. He held every rank bar sergeant-major, up to a temporary captaincy. Mr. Charlton was badly smashed up at the Somme and he considers that it was only through the skill of Colonel Rigby, now physician to the King, that he was ever able to walk again. On arrival back in New Zealand he was appointed a vocational training officer for the New Zealand Defence Department, to organise the training of returned soldiers. This carried the rank of captain. He

came to Australia in 1922 and took up a career on the stage. Mr. Charlton has sung throughout Australia. He had a long engagement with Sir Ben and John Fuller, worked a double act on the Tivoli for some time and at the Haymarket Pictures, and was with J. C. Williamson Ltd. for four years, playing in various productions, including Captain Tarnitz in *The Student Prince*, Boucher in *Pompadour*, and finally in *The Vagabond King*. At the conclusion of a contract with J. C. Williamson he secured a position with 3LO (Melbourne), stayed there for eight weeks and then was given a position with the Australian Broadcasting Company as announcer on 2FC.

#### HEATH BURDOCK, PARSON AND ACTOR.

Heath Burdock, Announcer, was born in Greenwich, England, in 1889. He is the son of an English rector, and was educated at Weymouth College, Dorsetshire, and St. John's, Cambridge, and then St. John's Theological College, London. In 1912 he arrived in Australia and was engaged for many years in work in the Anglican Church. He served with the A.I.F. in the Great War as a private, then as chaplain, until repatriation in 1919. Mr. Burdock resigned from active parish work, and followed the stage for several years. He was associated with J. C. Williamson Ltd., Oscar Asche, and Hugh J. Ward, and he played over fifty Shakespearean roles in Allan Wilkie's company. Mr. Burdock then began to produce for himself, and was responsible for several performances by the Shakespearean Society of New South Wales. Later he was appointed Examiner in Elocution to the State Conservatorium Examination Board, and still holds that office. While teaching and giving recitals he became an announcer at 2GB, and after two years joined the announcing staff of the Australian Broadcasting Company and remained when the Commission took control.

#### H. G. HORNER, MANAGER, AND HIS STAFF.

The managerial duties of the N.S.W. division of the Australian Broadcasting Commission rest upon H. G. HORNER. Broadcasting called Mr. Horner in 1927, when he was invited to reorganise old 2BL. This he did with vigour, speedily converting 2BL from a losing concern to a very payable proposition. When 2BL and 2FC amalgamated Mr. Horner joined the organisation. Then when the Australian Broadcasting Company took over the national stations Mr. Horner was secured as secretary. Being himself a musician, Mr. Horner is able to pass judgment on the programmes. Every programme comes before him, and he commits them into close scrutiny before they are finally approved. Mr. Horner takes his position very seriously and is to be found in his office at all times of the day or night—unless he happens to be listening in at home.

The N.S.W. Programme Director, EWART CHAPPLE, is a seasoned broadcasting personality. For nine years has Mr. Chapple devoted his services to broadcasting, commencing as a pianist at old 2FC. He also assisted in compiling the programmes. In 1931 on the establishment of the B class station 2CH, he was made general manager of that organisation. When the Australian Broadcasting Commission came into power the next year, however, he immediately transferred back. Mr. Chapple's musical knowledge is almost unlimited, and though he is acquainted with the intimate details of the lives and compositions of the classical composers, he reveals an equal intimacy with all the latest "popular hits."

Quite a few years have elapsed since LAWRENCE HALBERT delighted the Radio audience with his mellow baritone. This is because his services are now devoted to the management of the studios. Mr. Halbert was an actor on the legitimate stage before he turned to broadcasting. It is to him that we credit much of the development in the production side of broadcasting. He invented the means of making the sounds which punctuate Radio plays and revues—an aeroplane in flight, a ship ploughing through the sea, trees in a gale and so on. Mr. Halbert is well liked in the broadcasting world. He is quietly pleasant and puts everyone with whom he comes in contact at ease.

Then there is the conductor of the A.B.C. Orchestra E. J. ROBERTS. Mr. Roberts is a well-known figure at the A.B.C. Studios. He is conscientious and works his players energetically. Mr. Roberts' musical experience has been gleaned from many parts of the world. He has been associated with the Covent Garden Operatic Orchestra, the London Symphony Orchestra and the Symphony Orchestra in Cairo. He was conductor for Mr. Oscar Asche in "*Chu Chin Chow*" and "*Cairo*." Arriving in Australia with a wealth of knowledge concerning music and broadcasting, and the experience of many years abroad, Mr. Roberts was immediately captured by the A.B.C.

His colleagues in the art of conducting are FRED. WHAITE and WILLIE REDSTONE, who are to be seen daily in their office industriously transposing music and dismissing liberal decorations from too long compositions, thus rendering them suitable to broadcasting.

Mr. Whaite is quiet—in fact, his players would even say that he is gentle. His experience has been as extensive as Mr. Roberts, and he is known to listeners as an able composer as well as a conductor. His

opera, "Tin Soldier," was particularly favourably received by the listening public.

Mr. Redstone is a Frenchman of international experience. His duties are similar to those of Mr. Whaite. He has acted as conductor for J. C. Williamson and other big organisations. His methods of conducting are mild and persuasive, but his personality rules.

MADAM EVELYN GREIG has her duties in the Programme Department. She selects all records for the programmes. There is not much that Madam Greig does not know about music, and she is herself a composer and pianist of note.

MISS GLADYS OWEN (who is really Mrs. John Moore) is helping in the reorganisation of the Women's Session from 2FC and 2BL. Miss Owen is making the Women's Sessions more interesting and entertaining for hard-working country women, energetic social workers and business women who feel that they need a little stimulus after the day's work.

MISS GWEN. VARLEY, the former controller of the Women's Section, is continuing her work in connection with the Australian Women's Radio Association and the several sporting and social clubs which she has founded and sustained throughout the city and suburbs of Sydney. Miss Varley was formerly secretary of the City Girls' Association. She has a fine personality and is an enthusiastic athlete.

## Melbourne Personalities

THOMAS WILLIAM BEARUP, Manager for Victorian branch of the A.B.C., joined the Marine Staff of Amalgamated Wireless in 1916 and after five years travelling in many parts of the globe, was transferred to the Research Staff of A.W.A. In 1923 he went to England to investigate latest developments in regard to wireless. Returned to Sydney just before the opening of 2FC. Sent to Melbourne in September, 1924, to supervise erection of studio and control apparatus for 3LO. Several weeks later left service of A.W.A. to take up programme side of broadcasting, becoming Studio Manager for the Broadcasting Company of Australia. He held this until formation of the Australian Broadcasting Company in 1929 and was then appointed Manager for Victoria.

MAURICE de LACY DUDLEY. Born at Emerald Hill (Vic.); educated at the Grammar School of the old St. James' Cathedral, Melbourne. After leaving school had a picturesque and varied career, his activities ranging from legal work to auctioneering and tea-broking. Enlisted in the Artillery as a trumpeter; then went to London and began a theatrical career at Drury Lane where he spent seven years. Mr. Dudley

came to Australia for J.C. Williamson's as character actor and stage-manager. Eight years ago he entered the service of broadcasting through 3LO where he has been ever since. He is exceptionally well-known to listeners as an announcer, producer of radio plays and actor. In particular his creation of the role of Billy Bunny in the Children's Session during the last six years, has been one of the most popular wireless characters throughout Australia.

NORMAN W. McCANCE. Born at Crouch Hill, London, 1891. Came to Melbourne, 1894. Educated at Melbourne Grammar School, 1904/7; became analytical chemist, accountant, journalist on "Australian Mining Standard;" joined the "Argus" in 1913 as stock exchange reporter, subsequently special writer on boxing and wrestling, nature notes and bridge. Political writer and pictorial editor for many years with broadcasting of special descriptive events and wrestling bouts for 3LO in its early period; joined Australian Broadcasting Commission, June, 1933, as publicity officer and special descriptive broadcaster.

LEONARD RHYS THOMAS. Educated Mill Hill School and Middle Temple, England; Barrister-at-Law. Served with Auxiliary Forces since 1902. War Service—11th Division, Suvla Bay, Gallipoli (Major) and with I.E.F. Mesopotamia and on Army Headquarters Staff, Bagdad. Lieut.-Colonel, created D.S.O., 1917. 3 Mentions in Despatches. Late Registrar University of Tasmania, Hobart. Controller of Talks and Educational Broadcasts, Australian Broadcasting Commission, Victorian Division, Russell House, Melbourne.

FRANK D. CLEWLOW, is producer and studio manager for the A.B.C. in Melbourne. He joined broadcasting in December, 1930, supervising all dramatic work, revues, vaudevilles, etc. He was educated at Alleyne's Grammar School, Stone, and Birmingham University. Is a member of Advisory Committee of the Associated Musical Examinations Board of Australia and Examiner for them in the Art of Speech.

WILLIAM GARNET JAMES, composer and solo pianist; born at Ballarat, 28th August, 1895; son of Louisa Chapman, pianist, and Andrew James, publisher; married Saffo Arnov, operatic singer. Educated Melbourne University (Scholar) 1st Class Honours in each year for composition and pianoforte playing; went to London in 1914 and studied under Arthur de Greef; played several important concertos with Orchestra at Queen's Hall; from 1915 has performed at Queen's Hall Promenade Concerts, Ballad Concerts, Royal Albert Hall Special Concerts, International Celebrity Concerts, and Provincial Concerts. Compositions: A Ballet produced at the Savoy Theatre, London, 1916, and an Orchestra Suite at the Queen's Hall, composed of about 30 songs and an Operetta. Controller of Programmes A.B.C., Victorian branch.

## Personalities of 4QG, Brisbane

The control of the Queensland division of the Australian Broadcasting Commission rests upon J. W. ROBINSON, whose experience in broadcasting and wireless matters is considerable and varied. When wireless was in its early stages of development, Mr. Robinson was a keen experimenter, and was the holder of one of the first experimental licences granted by the Commonwealth Government. After serving a cadetship on the "Sydney Morning Herald," Mr. Robinson rose to the position of a senior journalist on that paper, still retaining his interest in wireless matters. While employed on the "Sydney Morning Herald" he spent his spare time studying at the Marconi School of Wireless in Sydney, and qualified himself in the new science.

The Assistant Manager of 4QG is ROBERT WIGHT, who has also been associated with the station since its inception in 1925. Like Mr. Robinson, Mr. Wight is a returned soldier, and saw considerable service with the A.I.F. After the war, he took up farming, but later became organising officer in the Council of Agriculture. It was he who arranged the early market service from 4QG under the Council of Agriculture scheme, and later he transferred his activities to 4QG as markets officer. When the Australian Broadcasting Company took charge of the station, Mr. Wight was appointed Assistant Manager.

D. A. JOSE, Senior Announcer at 4QG, is a comparatively young man, but he has had a good deal of broadcasting experience. He is the son of the historian, A. W. Jose. He was attached to the High Commissioner's Office in England, and on his return to Australia was selected from several hundred applicants as announcer at 2FC. Later he was appointed as announcer in charge of 2NC, Newcastle, then he became Senior Announcer at 4QG.

The Manager of 4QG's Programme Department, D. E. FELSMAN, has been associated with broadcasting as an artist for many years, and for the past three years has been on the staff. Mr. Felsman is a singer of no mean repute, and as an actor he has been successful in many musical comedies in Brisbane.

## Perth Personalities

### STATION 6WF.

MR. BASIL KIRKE, Manager of 6WF. Mr. Kirke is an Australian; served in the Great War and later was engaged in the planting industry in the Pacific Islands. His first association with broadcasting was with 2BL. Four years ago he was appointed Manager of 6WF.

MR. FRED ALEXANDER, M.A., Lecturer in charge of Depart-

ment of History at University of W.A. Member of Educational Broadcasting Committee. Talks on foreign affairs from 6WF.

DR. J. S. BATTYE, B.A., LL.B., Professor of Law in University of W.A. Member of Educational Broadcasting Committee.

MR. EDWARD BLACK, Mus. Bac., A.R.C.M., L.R.A.M., an accomplished musician. Four years at Adelaide Conservatorium under Dr. Davis. Studied piano, violin and composition at Royal College of Music, London.

MISS PHYLLIS BLOTT, L.A.B., L. Mus. A.—Three years at Melbourne Conservatorium. Official Accompanist and Pianist to 6WF.

MR. CHARLES COURT, Conductor of North Perth Citizens' Band and of Cottesloe Band. Has been broadcasting through 6WF since broadcasting first began.

MR. BILLIE EDWARDS, Organiser of 6WF's Community Concerts. An all-round musician and a favourite entertainer.

MISS ZIPAH FELDMAN, B.A., DIP. ED., L.A.D., A. Mus. A.—Miss Feldman entered Perth University in 1929. She graduated in 1931. Is President of the University Music Society. Broadcasts regularly as violinist from 6WF.

MR. ROY GLENISTER, Day Announcer at 6WF. Has had considerable experience on legitimate stage.

MR. KEITH GOLLAN, Racing Commentator at 6WF. Mr. Gollan is a journalist and when he is not announcing racing results he is writing them for the papers.

MR. CHARLES GORDON.—Mr. Gordon received his training in voice production at the Adelaide Conservatorium. He teaches the de Reszke method.

MR. HARRY GRAHAM, Announcer and Producer for Station 6WF. Has had varied experience in all forms of theatricals. Was formerly at 2FC.

MRS. DOROTHY GRAHAM.—Mrs. Graham conducts Women's Session at 6WF. Has studied voice production, and is identical with Miss Dorothy Manning, soprano, who sings frequently from 6WF.

MR. HORACE KEATS, Controller of Programmes for the A.B.C., W.A. Division. Pioneered instrumental combinations for experimental purposes for 2FC, Sydney. Well-seasoned broadcaster and musician of considerable ability.

Mr. A. J. LECKIE, Mus. Bac., F.R.C.O., A.R.C.M.—Studied music in London at the Royal College of Music. Former Musical Director of 6WF, now broadcasts as lecturer, performer and accompanist.

MR. DAVID LYLE, teacher of singing and voice production. Has performed at all leading broadcasting stations in the Commonwealth, and is well known by listeners.

PROFESSOR WALTER MURDOCK, M.A., Professor of English in University of W.A., and Member of the Educational Broadcasting Committee.



T. W. Bearup (A.B.C.  
Manager for Vic.)



C. M. Hosking (A.B.C.  
Manager for S.A.)



B. W. Kirke (A.B.C.)



J. W. Robinson (A.B.C.  
Manager for Q.)



H. G. Horner (A.B.C.  
Manager for N.S.W.)



F. E. Hansen (A.B.C.  
Publications Manager.)

## Performing Rights What the Royal Commissioner Reported

About 80 per cent. of the music heard over the air is copyrighted. On every item played the Australian Broadcasting Commission pays an average of  $2/4\frac{1}{2}$  for the performing right. This comes out of listeners' license fees. The B Stations pay varying amounts up to 3 pence per item, and late in 1933 they were faced with a demand to pay various rates averaging about an extra penny per item. Naturally listeners are interested in what the Royal Commission appointed by the Commonwealth Government thinks of the equity of these charges.

The Royal Commissioner recommended that legislation be introduced having the following objects:—

1. The establishment of a tribunal to determine disputes arising out of the performance in public of musical works and/or the use of records in public.



Frank D. Clewlow,  
A.B.C. Producer,  
Melbourne.



Lawrence Halbert,  
A.B.C. Studio Man-  
ager, Sydney.



Harry Graham,  
A.B.C. Announcer,  
Perth.

2. Providing that it shall be lawful for any person to perform in public a musical work or to use in public a record (the subject of the dispute), provided such person proves that he has paid or has tendered any charge and has complied with or has bona fide offered to comply with any terms and conditions imposed by such tribunal.
3. Compelling the Australasian Performing Right Association from time to time to file lists of all musical works in respect of which authority is claimed to issue or grant performing licences or to collect fees, and providing that A.P.R.A. shall not be entitled to collect any fees for licences for the performance of musical works which are not specified in such lists.
4. Compelling the filing of statements of all fees and charges which A.P.R.A. proposes from time to time to collect as compensation



Russell Sandeman,  
A.B.C., Perth. (Turf)



M. A. Ferry, A.B.C.,  
Sydney. (Turf).



R. Wight, A.B.C.  
Brisbane. (Turf).



Len. Ford, A.B.C.,  
Adelaide. (Turf).



Mel. Morris, A.B.C.  
Melbourne. (Turf).



G. R. Lamprell,  
A.B.C., Adelaide.  
(Turf).



Arnold Treloar,  
A.B.C., Adelaide.  
(Sport).



Rod. MacGregor,  
A.B.C. Melbourne.  
(Sport).

for the issue or grant of licences for the performance of musical works, and providing for the revision of the fees and charges.

5. Compelling the filing from time to time of accounts of the receipts and distribution of fees collected by A.P.R.A. and of account of fees received by the A.P.R.A. and distributed by its members.
6. Providing that, until the time prescribed for the filing of the original lists of musical works and the statements of charges has expired, the present rights of A.P.R.A. shall remain unimpaired.
7. Providing that A.P.R.A. shall lodge with the Minister security (in, say, the sum of £3,000) to meet claims made upon A.P.R.A. for costs and other moneys payable by A.P.R.A.
8. Providing a remedy in case of groundless threats of legal proceedings by A.P.R.A., adopting with the necessary modifications Section 91a of the Patents Act, 1903-1921.
9. Providing that a performing fee shall not be payable for the relay of any musical work by a broadcaster if the broadcaster has paid or tendered the forming fee due for the performance by the originating station.
10. Providing that (except where admission fees are collected or similar charges are made by the user of the receiving apparatus) there shall be no performing right in respect of the re-diffusion of any musical work in public if the broadcaster has been licensed by the owner of copyright to perform the musical work in question.
11. Providing that there shall be no fee or charge payable for the performance of any musical work in any place for religious, charitable, fraternal or educational purposes if the entire proceeds, after deducting the reasonable cost of presenting the same, are devoted exclusively to religious, charitable, fraternal or educational purposes, or for the maintenance of the place where such performance is held.
12. Providing that there shall be no charge made for any performing right in a musical work where the performance is not directly for private profit.
13. Providing that there shall be no performing charge or fee for the broadcasting of musical works forming part of religious services.
14. Determining whether a performing fee can or cannot be lawfully claimed by the manufacturer for the use of a record in public.
15. The Commission further recommends that consideration be given to the question whether the delegate of the Commonwealth of Australia to the next International Convention, to be held at Brussels in 1935, should not be instructed again to press upon the Con-

vention the claims and interests of the public in connection with performance of musical works in public and the advisability of regulating and controlling the activities of such monopolies as A.P.R.A. and similar societies. It may also be suggested that the International Convention should be urged to recognise the power of Parliament in each country of the union to regulate and control societies such as these, if their activities be detrimental to the public.

Referring to the recommendation No. 1, the Commissioner stated that a permanent court would not be necessary. What was needed was a tribunal which would act promptly, without formality, and with as little expense as possible. Costs should not be allowed to either party to the dispute, and there should be no appeal from the decision of the tribunal. As to No. 3, the Canadian Copyright Amendment Act, 1931, section 10, was stated as an example of such provisions. No. 4—provision should not be applicable to broadcasters. The filing of such statements, the Commissioner said, would probably suffice to dispose of many disputes.

Forms of re-diffusion referred to in No. 10—provision would include loud speakers operated in hotels, cafes, restaurants, boarding houses and ships for the entertainment of the clientele; loud speakers operated in shops for demonstrating wireless sets, and loud speakers operated in other classes of shops. Provision No. 12 would refer to hotels, cafes, restaurants and ships where music is performed for the benefit of the clientele. Regarding No. 14, the Commissioner suggested that the law on the point should be made clear as the performing right claimed by some record manufacturers was unreasonable.

Much attention was given in the report to the A.P.R.A. which was incorporated on January 4, 1926, under the Companies Act (N.S.W.), 1899, as a company limited by guarantee and not having a capital divided into shares. The guarantee is limited to £10 per member in the event of liquidation and otherwise, the association has practically no assets available to creditors except business premises, office furniture and so forth. The most important member of A.P.R.A. is the Performing Right Society Ltd. (England), which is represented or affiliated with similar societies in the leading countries of the world. Figures supplied the Commission were to the effect that the English society, by its foreign affiliations, had a membership or represented more than 29,000 authors, composers and publishers; while A.P.R.A. claimed that it represented some 2,000,000 musical works. A.P.R.A. further claimed that its repertoire included the best music produced, including works which had fallen into the public domain and which by re-arrangement or adaptation had re-entered the copyright field.

These claims, the Commissioner said, made by A.P.R.A. and the English society, taken generally, were not seriously disputed before the Commission; but those who used or wished to use the works said to be

within the repertoire of A.P.R.A. complained that they had not been told nor could they find out what musical works A.P.R.A. really controlled. Neither the English society nor A.P.R.A. conducted its business for profit, all moneys collected being distributed after necessary expenses had been deducted, and both bodies claimed that the net moneys so collected were finally distributed among those who, as owners of copyright or as principals, were entitled to the same.

The necessity for such bodies had been recognised by the courts, and their objects had been held to be legitimate. Since its incorporation A.P.R.A. had extended its operations to New Zealand. Generally, performing right fees had not been claimed in the Commonwealth in respect of musical works until after the incorporation of A.P.R.A., and the claim then made and since continued was due to a desire by copyright owners to obtain some compensation for the reduced sales of sheet music and records.

The Commission was satisfied that on the whole A.P.R.A. carried on its business on sound lines, was managed by capable and reasonable people, protected to the best of its ability the interests of the copyright owners it represented, accounted as best it could to those whose money it collected, and tried to give information to those who used the music it claimed to control. Charges had been made that A.P.R.A. was extortionate in its demands and brutal in its threats, but there was no evidence before the Commission to justify such grave charges.

It was, however, difficult to imagine any other monopoly with such powers as were possessed by A.P.R.A. through its affiliations and associations throughout the world. It controlled, or claimed to control, 80 per cent. of the best music subject to copyright; and no one could dispute these claims. It could dictate its own terms. It could not be said that the demands hitherto made had been extortionate, but they could be made so. Unless the law were altered, no restraint could be placed on its demands.

It was obvious that A.P.R.A. could not obtain accurately information as to what items were performed, and could not in many cases accurately distribute the moneys collected, but every effort was made to ensure that such moneys reached the right destination. Further, no author, composer or publisher had complained that A.P.R.A. had failed to account properly for moneys collected.

There appeared to be some justification for the complaints that in many instances A.P.R.A. had unfairly threatened users in public with litigation for alleged infringement of its rights. Some of the attacks previously made on A.P.R.A. might have been justified to an extent owing to hasty and ill-considered action by local solicitors and agents, but the Commission was satisfied that many of the charges against A.P.R.A. were due to ignorance of the law and of the existence of performing rights.

Undoubtedly broadcasting had affected the sales of sheet music and records. For instance, one of the most important music houses in Australia had stated that the sales of gramophones and records fell from 159,000 in 1927 to 40,000 in 1931, and sheet music from 46,000 in 1927 to 27,000 in 1931. Witnesses on behalf of A.P.R.A. had attributed practically the whole losses to broadcasting, particularly to the "B" Class stations. Broadcasting, however, had provided a source from which new revenue was being obtained, and had undoubtedly created a demand for older forms of classical music.

As to the national stations, A.P.R.A. offered about June, 1932, to grant to the Australian Broadcasting Commission a licence for the use of A.P.R.A.'s copyright works at the rates of (a)  $2/4\frac{1}{2}$  per item per main station on the basis of 350,000 licensed listeners, and (b)  $\frac{3}{4}$ d. per item per main station for each additional 10,000 licensed listeners. The Australian Broadcasting Commission refused the offer, but offered 5 per cent. of its total revenue, plus exchange on the net amount of fees received from the Commission and remitted abroad. The parties having failed to agree, the Australian Broadcasting Commission was making no payments to A.P.R.A., but detailed lists and accounts were being kept.

Dealing with the B Class stations, the Commissioner said such stations met a public demand which the National stations could not fill for some years. It was true that they operated for profit, but none the less they rendered a useful public service. During 1932 A.P.R.A. allowed these stations to use its repertoire on payment of charges varying from 3d. an item for the larger stations to  $\frac{1}{2}$ d. an item for some country stations. The B Class stations regarded the present charges as the maximum they could afford, and in many cases that contention appeared to have been established.

The Commissioner also dealt with the claims and rights of the manufacturers of records in Australia—the Gramophone Co. Ltd., the Parlophone Co. Ltd., and the Columbia Gramophone (Australia) Ltd., which manufacture in Australia all the records they sell, importing only the necessary matrices from England. The associated manufacturers had claimed that the sales of their records had seriously fallen off, due to the fact that the broadcasting stations were broadcasting records from early morning till late at night. Matters came to a crisis in November, 1931, when the associated manufacturers forbade the use of their records for broadcast purposes. Negotiations followed between the manufacturers, the Australian Broadcasting Commission and the Australian Federation of Broadcasting Stations; but, in October, 1932, the manufacturers, who had entered into a temporary agreement with the Australian Broadcasting Commission, refused further to negotiate with B Class Stations.

The Commissioner said it seemed clear that the associated record manufacturers practically controlled the manufacture and sale of almost all the records which were vitally important, especially to broadcasters.

He was satisfied that even under present conditions valuable advertisement was given to records through broadcasting, so long as individual records were not played too frequently and reasonable announcements of the make and title of the records were made.

Dealing with the claim of the associated manufacturers to be entitled to performing rights in respect of their records, the Commissioner was by no means satisfied that claim had been made out. Its undoubted result would be to subject the user to two performing fees in respect of the same musical work—one payable to A.P.R.A. or other authors or composers, and one to the maker of the record. It was not unreasonable to suggest that if there ought to be only one performing right in a musical work, the creator should possess it and not the maker of a mechanical contrivance. Litigation on the question was pending in Britain, but legislation by the Commonwealth Parliament was necessary to make the legal position clear. In fairness to the manufacturers, the Commissioner said their records enabled the public, through broadcasting, to hear the world's finest artists and the best music.

The evidence before the Commission established:—

That A.P.R.A. was to all intents and purposes a super-monopoly, able to dictate its own terms; that disputes have arisen and are likely to arise between A.P.R.A. and practically all classes of users of musical works in public; that the Associated Record Manufacturers practically control the Australian market for high-class records and can impose such conditions as they think fit on records for users in public; that all broadcasting stations are dependent on the manufacturers for records for broadcasting, without which broadcasting could not be efficient; that disputes have arisen, and are likely to arise, between the manufacturers and the B Class stations; that the existing agreement with the Australian Broadcasting Commission for the use of records was only temporary, and that the record manufacturers were able to dictate their own terms in the future; that the public interest demanded that harmonious relations should be restored between the parties, and that some form of tribunal should, failing agreement, determine the disputes between the parties.

The Commissioner expressed the following opinions:—

That the claims for payment of performing right fees made on the Australian Broadcasting Commission were excessive, and that the offer made by the Australian Broadcasting Commission, if increased to 6 per cent. of its revenue, would be fair; that the rates payable for 1932 by the B Class stations were fair; that substantially the other conditions of user offered by A.P.R.A. to both classes of stations were not unreasonable; that possibly some B Class stations in Queensland and other States were entitled to special conditions or rates owing to atmospheric conditions; that the conditions in the agreement between the Associated Manufacturers of Records and the Australian Broadcasting Com-

mission appeared to be reasonable, but that the terms should be offered to all B Class stations, while in the case of smaller B Class stations in the country, permission to broadcast records more frequently should be allowed; that the terms of agreements or licences for the use of musical works and records by all classes of users in public should be two to three years.

It had been contended that the Commonwealth Parliament, by adopting the Imperial Copyright Act, 1911, no longer had unfettered right to legislate on copyright, but the Constitution appeared to make it plain that this was not so. It had also been suggested that Parliament had no power to deal with combinations as such; but the regulation and control of the exercise of such privileges and rights as are claimed to be conferred by the Commonwealth Copyright Act might well be within the competence of Parliament. Even if Parliament had, by adopting the Imperial Act, limited its power to legislate for individuals, was it not within the competence of Parliament to control and regulate the activities of a combination of authors and composers?

The Associated Record Manufacturers did not rely on the International Conventions; they suggested that their right as owners of copyright to charge a performing fee was derived from the Imperial and Commonwealth Copyright Acts, and that the Commonwealth Parliament could not take away that right. In answer to this, the Commissioner said it had been contended—seemingly with sound reason—that the restrictive sections were confined to “authors” and that a record-maker was not an author within the meaning of the acts in question.

#### COPYRIGHT ACT AMENDED.

A scheme for the settlement of disputes on copyright by means of voluntary arbitration is contained in an amending Copyright Bill which was passed through the Federal Parliament in the second week of December, 1933. This legislation provides that in the event of a dispute arising between the owner of a copyright or any person claiming the right to payment of royalty in respect of copyright in literary, dramatic, musical or other work, or between the manufacturer of records and any person using or desirous of using any such works or records regarding the rates and methods of payment or the terms and conditions, any party to the dispute may apply to the Attorney-General for the determination of the dispute by voluntary arbitration. The arbitrator may be mutually selected by the parties or failing selection appointed by the Governor-General. Copyright shall not be deemed to be infringed by the performance or use in public of any work or record, if payment for the right is made in accordance with the determination of the arbitrator. The Bill forms part of the Government policy for the settlement of the copyright situation.

## Listeners' Interests in Respect of Radio Patents

A position of interest to every listener has arisen in the radio trade of Australia in respect of patent rights, owing to a decision of the Australian Government to terminate as from March 1, 1934, an arrangement by which Amalgamated Wireless (A'asia.) Ltd. receives 3/- a year out of every listener's licence of 24/-. This sum is paid to Amalgamated Wireless in return for the rights of listeners, manufacturers and broadcasting stations to use A.W.A.'s patents.

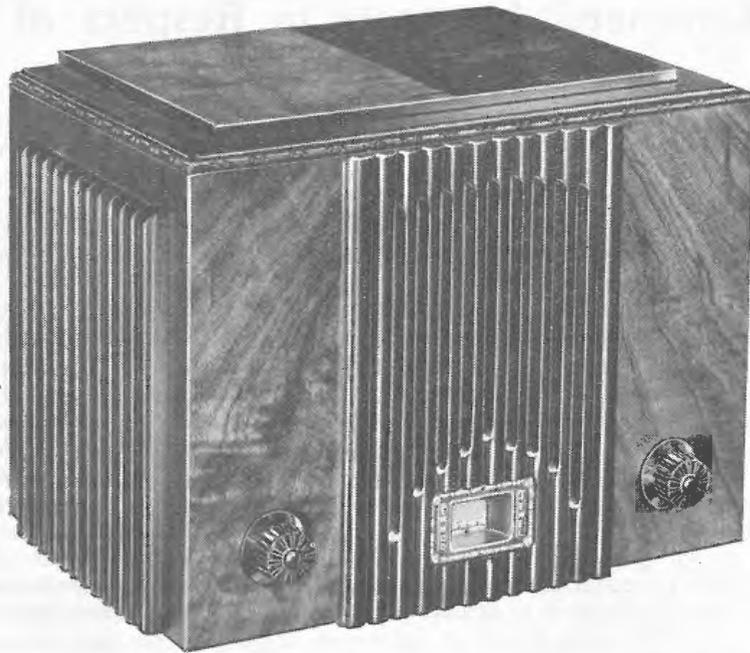
Amalgamated Wireless is a £1,000,000 company in which the Commonwealth Government holds half the shares plus one. The company holds the Australian and New Zealand rights of the Marconi Company of England, the Radio Corporation and the General Electric Company of America, the Telefunken Company of Germany and the Societe Francaise Radio Electrique of France. In the early days of broadcasting in Australia, constant disputes and some litigation took place because A.W.A. claimed from manufacturers of receiving sets 12/6 for every valve socket. In 1927 a Royal Commission of inquiry was held under the chairmanship of Mr. J. H. Hammond, K.C., and reported that the charges made by A.W.A. upon B class (privately owned) broadcasting companies and radio manufacturers were excessive. The Royal Commission recommended that A.W.A. should receive a royalty of 2/- a year on each listener's licence, 5/- on each valve holder in sets manufactured, and 10 per cent. of the gross revenue of each B Class broadcasting station.

This proposal would have suited A.W.A. excellently, because that company had had difficulty in collecting its royalties. The scheme suggested would have yielded a constantly increasing revenue which, by the present time, would have amounted to about £200,000 a year.

After certain litigation and protracted negotiations, the Managing Director of A.W.A., Mr. E. T. Fisk, however, proposed to the Commonwealth Government that A.W.A. should receive 3/- a year out of each listener's 24/- license, in return for which broadcasting companies, manufacturers and listeners should have the full use of all A.W.A.'s patents. This proposal was accepted and incorporated in an agreement for five years. Last year it yielded about £60,000 to A.W.A. The Commonwealth Government has now notified A.W.A. that it will not be continued on expiration next March.

Many listeners hail this announcement with satisfaction, as they think it means that their licence fees will be reduced. This is hardly to be expected, however, as manufacturers and broadcasting stations will now have to negotiate direct with the company for the use of its patents, and the cost of receivers is sure to be affected. It is pointed out that the basis put forward as fair and equitable by the Royal Commission in 1927 would give the Company 3 or 4 times its present revenue from patents.

A certain alarm has arisen in the radio trade, which sees the possibility of confusion arising, as was the case before the present agreement



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was made. An association known as Radio Interests Ltd. has been formed with a nominal capital of £10,000 to safeguard the interests of the trade. The position is complicated by the fact that the Hazeltine Corporation of America is now operating in Australia. That organisation claims to hold valuable patents apart from those belonging to A.W.A. Standard Telephones and Cables and Philips Lamps also claim to have patent rights which entitle them to consideration.

At the moment of writing four writs covering six individual patents have been issued in Melbourne on behalf of the Hazeltine interests with a view to enforcing alleged rights. Radio Interests Ltd. are defending these actions on behalf of shareholder members. Amalgamated Wireless, Philips and Standard Telephones are negotiating jointly with Radio Interests with a view to making an agreement covering the patents of those three companies.

**MANUFACTURERS AND PATENTS HOLDERS AGREE.**

As this book is about to go to press it is learnt that an agreement has been arrived at between Radio Interests and Australian Radio Technical Services and Patents Co. Ltd., which is an organisation comprising Amalgamated Wireless, Standard Telephones and Philips, three important patents owners. The agreement is for five years and it provides that manufacturers who take out a license from the new organisation will pay royalties at the rate of 3/6 per valve socket per set with reductions varying according to the output of each manufacturer. Thus a manufacturer using over 2000 valves (say 400 sets) will pay 3/5 per valve, one using 4000 valves will pay 3/4, 10,000 3/1, 60,000 valves 2/7. The agreement provides that manufacturers shall have the right to use all the patents of the three companies mentioned. Preference is given to Australian manufacturers as oversea makers will not be licensed.

The new arrangement will be more costly to the public than the old one even assuming that the license fees are reduced by 3/- a year. Hitherto listeners have paid 3/- a year for patent rights. Under the new arrangement the manufacturers will pay an average of, say, 3/- per valve socket. This will mean 15/- in an ordinary five-valve receiver. That 15/- paid by the manufacturer will be somewhere around 30/- by the time it is charged up to the user of the receiver. Allowing five years as the life of a receiver, listeners will find that the cost to them is about 6/- a year or double what they now pay.

**AUSTRALIAN RADIO NEWS**

Though only a couple of years in existence "Australian Radio News," a Bulletin publication has attained popularity with a wide circle of readers. The editor, Mr. Norman Campbell, is an experienced Melbourne journalist; Mr. Don. Knock, the technical editor, is favourably known for his construction articles to a very wide circle of experimenters and general radiists. "Radio News" is published in Sydney, but has many friends and subscribers in other States also.



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## Wireless in Commerce and Social Life

While broadcasting plays a great part in the life of Australia, no less important is the part of radio in commerce and business. The enormous development in this side of radio science is due to Amalgamated Wireless (A/sia) Limited, the million-pounds semi-Government organisation.

To-day facilities are provided by which business or social telegrams may be transmitted from Australia to Great Britain and Canada by Beam Wireless. Thence such messages may be sent on to European and North American countries and parts of Asia and Africa. Thus Australia is in touch with practically the whole of the civilised world by wireless telegraph.



E. T. Fisk, F.Inst.R.E., A.M.I.E.  
(Aust.), Chairman and Managing  
Director of Amalgamated Wireless  
(A/sia) Ltd.

### RADIO AT SEA.

On a hundred steamers of the Australian Mercantile Marine wireless is carried. Messages may be passed to and from the various coastal stations of Australia and shipping in any part of the world. No longer is a business man out of touch with his headquarters when he travels abroad. Thanks to marine wireless, he can be in daily communication with his executives at home or his business associates in London, New York, Paris, Berlin, Yokohama—indeed, almost anywhere. The first use of wireless in Australia was in respect of shipping. Some of the more recently-built ships have been fitted with direction finding equipment, which enables them to locate their exact position at any time. Fog and rain make no difference; and they can travel regardless of currents which ordinarily might divert a ship from its course. Such vessels are the "Manunda," "Westralia," "Wanganella," and "Rangitira."

### AUSTRALIA'S COAST STATIONS.

As a means of communicating with shipping, nineteen coastal stations are situated at the following places:—Sydney, Brisbane, Rockhampton, Townsville, Cooktown, Willis Island, Thursday Island, Darwin, Wyndham, Broome, Geraldton, Perth, Esperance, Adelaide, Flinders Island, Melbourne, King Island, Hobart, Lord Howe Island. These were formerly under the jurisdiction of the Postal Department. In 1922 they were taken over by Amalgamated Wireless (A/sia) Ltd., under an agreement whereby that company brought them up to date by the installation of new plant designed and manufactured in the company's

own works. In addition, the A.W.A. organisation has two commercial stations in Papua, namely, Port Moresby and Samarai, nine in the Mandated Territory of New Guinea at Rabaul, Bitapaka, Kieta, Madang, Manus, Salamaua, Wau, Aitape and Kavieng; also five in Fiji—Suva, Labasa, Lautoka, Savu Savu and Taveuni. These stations provide a means of intercommunication throughout the south-western Pacific so that business and private persons can at any time get in touch with each other and with Australia, whereby they are linked by means of the Beam Wireless with every other part of the world.

### TELEPHONY ROUND THE WORLD.

The longest telephone service in the world is the Anglo-Australian Radiophone, whereby telephone subscribers in Australia may speak direct to those of Great Britain. No matter where a person may be living in the Commonwealth, he can go to the nearest telephone, ring up his local exchange, secure connection with the G.P.O., Sydney, and from there with the Anglo-Australian Wireless Telephony Service, which is operated by Amalgamated Wireless in conjunction with the Postal Department. A similar service is provided for telephone communications between Australia and New Zealand, and between Australia and Java. New Zealand residents can thus communicate with telephone subscribers in the United Kingdom through the exchange at Sydney. From England many telephone channels, both by cable and wireless, lead to European and American countries, so that Australian residents can have their calls extended to North and South America, to twenty-two countries in Europe, and to parts of Africa.

It is estimated that the half-million private and business telephones in Australia are thus in touch with 33,000,000 telephone subscribers in the world, equalling 95 per cent. of the total. This enables some tremendously long distance calls to be made. One Sydney man spoke to a resident of San Francisco, the call passing through London and New York. On another occasion a conversation took place between Sydney and Valparaiso via London and the South Atlantic.



Modern Ship's Wireless Installation, designed, manufactured, installed and operated by Amalgamated Wireless.

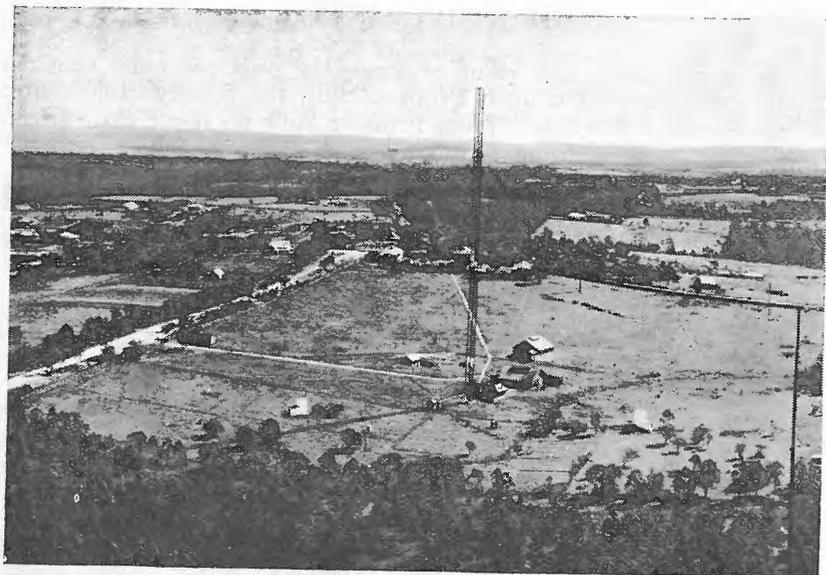
### PENNANT HILLS STATION.

From the commercial point of view, the principal radio activities of Australia are centred upon Pennant Hills, the Sydney radio centre of Amalgamated Wireless. From Pennant Hills no fewer than fifteen services are operated, being as follows:—

1. Overseas Wireless Telephony Service, by means of which Australian residents can speak to friends and business connections in Britain, Europe, North and South America, and parts of North Africa.
2. World-wide short-wave broadcasting service which is heard in every civilised country.
3. Telephony Service to Java, establishing relations with the great Dutch community to the North-West of Australia.
4. Telephony Service to New Zealand, enabling practically any telephone subscriber in Australia to talk to citizens of both islands of the Dominion.
5. Beam Feeder to Melbourne connecting with the great Beam Transmitter at Fiskville, Victoria, which despatches messages direct to England and Canada.
6. 600, 700, 800 metres and long-wave VIS, communicating with ships in Australian and New Zealand waters.
7. 2FC broadcasting service.
8. VIS long-distance service to ships.
9. Trawler service, by means of which the captains of the trawling fleets are kept in constant touch with their owners.
10. Police Service, enabling the crews of the Police patrol cars to receive instructions from the Police Department at any moment.
11. Ships' press, providing for despatch of news for publication in daily papers printed on vessels at sea.
12. Noumea Service.



Section of Beam Aerial System, Fiskville, Victoria.



A.W.A. Radio Centre, Pennant Hills, SYDNEY.

13. Rabaul, Suva and Port Moresby Services.
14. Adelaide, Perth, Brisbane, Townsville.
15. 2SM Broadcasting Service.

Each of these branches of wireless activity is represented by a transmitter which is in charge of resident radio engineers.

The Pennant Hills Station was established in 1912 as the first permanent Coastal Radio Station in Australia. For some years it was operated by the Commonwealth Government Radio Service, and during the War by the Naval Department.

In conjunction with the Australian Coastal and Island stations, it was taken over by A.W.A. in 1922, several of the more important transmitters having been added since that time.

#### LA PEROUSE RECEIVING STATION.

In conjunction with the Pennant Hills transmitting station, the La Perouse receiving station of Amalgamated Wireless is operated. This station overlooks Botany Bay, and is the most important and largest of its kind in the Southern Hemisphere. Here are received messages from,

shipping all over the world. La Perouse is the receiving point for the wireless telephony services from Great Britain, New Zealand and Java. At that centre the operators of A.W.A. are in touch with commercial stations—long, medium, and short-wave—in Britain and Europe, the United States, Canada, Africa, Asia, and the Dutch East Indies, besides such places as Rabaul, Suva, Noumea, and San Francisco. The receiving operators at La Perouse wear headphones, and as the messages come through they reply either by speech or Morse, the voice or the Morse signals being carried out from the transmitters at Pennant Hills 16 miles away. It is at La Perouse that press news is received from England and the Continent.

#### BEAM WIRELESS.

The Beam Wireless transmitting station for direct communication between Australia and Great Britain is located at Fiskville, Victoria, an isolated locality in open country about 60 miles from Melbourne in the direction of Ballarat. The receiving station for the Beam is at Rockbank, about 20 miles from Melbourne. The Beam Wireless Service was opened for commercial traffic on April 8, 1927. It is the longest and fastest direct telegraph service in the world. Low rates for telegrams via Beam were quoted, and it is claimed that these have resulted in a saving to the Australian public of no less than £860,000 since the inception of the service. Seventy-six per cent. of the total traffic between England and Australia is despatched "via Beam." On June 15, 1928, the Beam Service between Australia and Canada was opened, thus connecting the whole of the telegraph systems of North and South America with that of Australia by way of Montreal. Beam messages are despatched from either the Melbourne or Sydney offices of Amalgamated Wireless, the operators in those cities working the transmitter at Fiskville by "remote control."

#### A.W.A. BROADCASTING DEPARTMENT.

Among the more recent activities of A.W.A. is the establishment of a department to cover all the requirements of the broadcast station proprietor and a service to all those who utilise radio as a publicity medium. The most important functions of the Broadcasting Department are the supply of equipment, frequency measuring service for broadcasting stations and radio advertising service. The Department acts as advertising agents for most of the leading licensed broadcasting stations in the Commonwealth. Amalgamated Wireless is about to make available another service to the National advertiser. Selected programmes will be produced and recorded so that the best entertainment that the metropolis can offer will be made available to the more remote centres of the Commonwealth. The control of this department has been vested in Mr. V. M. Brooker, M.I.R.E., who has for many years been associated with the development of radio broadcasting.



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Full facilities are available to individuals, associations, partnerships, trusts, etc.

## The Development of Radio Drama

The varying conditions under which A and B Class broadcasting is conducted have caused the radio play in Australia to evolve in two different directions.

The A stations choose a play, perhaps something already produced by the British Broadcasting Corporation. It may have six, eight or ten characters. Each part is allotted to an actor. Two or even three of the smaller parts may be taken by the same player, but it is quite customary for six or eight persons to take part. As there is a rehearsal or two before the play goes on the air, the expense is fairly considerable. Perhaps that does not matter greatly, seeing that the listeners' license fees provide the wherewithal.

The B stations, on the other hand, are under the necessity of making the plays pay for themselves. That means that some outside firm or organisation must sponsor them. Therefore they must not be too costly. This fact causes the producer to use his ingenuity. He writes, or adapts the play himself—like Shakespeare did three centuries ago—or he arranges his play in a way which limits the number of players required. His actors double up as a matter of course. Mr. George Edwards, the well-known 2GB producer, recently played the parts of 19 characters and used 19 different voices in half an hour.

The producers at the A Class station of Australia sigh for the mechanical effects which they have heard are in use with the British Broadcasting Corporation. The B.B.C. may use half a dozen studios to render a play. In one studio are the actors, in another the effects man, an orchestra is ensconced in a third. In yet another is a man ready with gramophone records. If a bell is to be sounded it may be done from a fifth studio, and for an echo a special studio must be used. The producer sits by himself in still another place (as in the talking pictures). He receives voices, music and effects from the various points of origin, and blends them as he thinks right. In Australian stations the luxury of separate studios is not available. The A station formerly made their own effects as the play proceeded. Water splashed in a bucket and a sheet of tissue paper rattled in the hand constituted the very mischief of a storm at sea. Now a great deal is done with records, and in Sydney alone the A.B.C. has a sound library of 200 records representing street crowds, cats fighting, the rushing of fire engines, the crying of a baby, the noise of a naval bombardment, and the crash of motor cars in collision.

Some of the B Class producers are not convinced of the need for all this paraphernalia. To pause at a dramatic moment while the man in the control room comes in with a record of a horse galloping may be quite good if the timing is perfect, but half a second too slow or too fast spoils the whole business. Mr. Edwards prefers to create his own noises. If you shut your eyes while he taps the half of a coconut shell held in the palm of his hand you will swear a horse is trying to win the Melbourne Cup. He does a wolf cry in the back of his throat which sounds quite

uncanny, and one of his assistant's dog barks (from Pomeranian to Alsatian in tone) would deceive the judge at the dog show.

There is a tendency on the part of producers to direct their actors much more closely than was the case in the early days, when each participant was left more to his own resources. Mr. James Donnelley, of 2UW "conducts" his people like he would an orchestra. He stands in front, holds them with raised hands, speeds them up or slows them down. He dominates the whole production, keeps the entire caste in rhythm with his own ideas. Evidently he does this to good purpose, because the Donnelley fifteen minute thrillers are among the most popular shows on the air.

While apparently the A stations regard the broadcasting of plays as still in the experimental stage and long for the time when they will have several studios to do a play in, the B's go straight ahead, securing a measure of realism from simple effects which convince listeners and bring forward the indispensable sponsors. Recently Mr. Edwards was producing as many as 16 plays in a week, all written, rehearsed and presented with a handful of actors and writers. His Sunday and Thursday night shows are relayed to 4BC, Brisbane, 3KZ, Melbourne, and 5DN, Adelaide.

Apart from imperfections, there can be no doubt of the increasing popularity of the Radio play whether put on at the expense of listeners by the A stations or whether sponsored by the B. A glance over the programmes of the past few months reveals that the following were played by the Sydney A stations alone:—

Diplomacy, The Green Goddess, The Patsy, Captain Swift, Canaries Sometimes Sing, Disraeli, Mrs. Dane's Defence, Hobson's Choice, The Naughty Wife, Scandal, Fedora, Tea for Three, The Hypocrites, The Cardboard Lover, Bought and Paid For, The Best People, The Calliope Gale, Peg o' My Heart, The First Mrs. Fraser, Nothing but the Truth, The Cinderella Man, Within the Law, Richard the Second, Mozart, Verdi, The Merchant of Venice, A Midsummer Night's Dream, The Last of Mrs. Cheney, Friday Morning, The Skin Game, The Tyrant, The Passing of the Third Floor Back, The Laughter of Fools, So This is London, Peg Woffington, When Knights Were Bold.

Musical Plays.—The Student Prince, Sally, Floradora, The Count of Luxembourg, Show Boat, Katinka, Maid of the Mountains, Dearest Enemy, Collitt's Inn, The Belle of New York.

### Woman Announcer Tried Out

Beginning on July 24, 1933, a woman announcer was employed experimentally at Broadcasting House, headquarters of the British Broadcasting Corporation. This was an innovation for London, although occasionally announcements have been made by women members of the B.B.C. staff at regional centres for some years. After two months the lady "resigned" and was given other duties.

## Broadcasting from a Woman's Viewpoint

(By Muriel Sutch.)

If I were asked to say what the average woman in the home first requires in a radio set I would say appearance. To men that may seem illogical, but it really isn't. I ask those of you who were "wireless widows" eight years ago or so to cast your minds back to the appalling contraptions that our husbands or male friends made, and proudly displayed in the middle of a Jacobean suite setting or some other furniture design equally artistic. Weird things, these sets were—black, oblong slabs with countless knobs and dozens of wires sprawling from the storm centre over the carpet in every direction.

If you lived in Sydney it was, "Hush, here's Melbourne!" If you lived in Melbourne it was, "Do keep quiet. Here's Sydney!" Geography had no effect on the disease. Then from one of those funny-looking, funnel-shaped speakers came a mixed assortment of mushy words and staccato. We women had to endure all this. More than that, we had to believe it was a triumph, that distance was being annihilated, or something like that.

How could broadcasting progress when sets of this kind were forced among our best furniture? It was impossible. How different it is to-day! Manufacturers have come to realise that a radio set should be an artistic piece of furniture, and it is the women of the community who have forced the change.

Next to appearance women ask that a set should be capable of being tuned easily, and that it will reproduce clearly. Whether it will "get" Timbuctoo or other distant stations does not concern us. We want to be able to turn a dial and tune in to hear the items that interest us most.

What interests women most? That is a big question, but it can be answered.

We need music, of course. We need music more than men need it, for the radio set is in the home and most women are in the home more than men are. Without opening up another controversy about "high class" music and jazz (which some wit defined as "musical shorthand"), it can be said that the monotony of the domestic routine calls for a background of relief. Broadcasting gives us such a background—a background of music.

What a pleasure it is, as one performs one's never-ending monotonous duties in the kitchen, to hear from the next room a perfectly reproduced rendering of a song sung by a world-famous artist—an item by a first-class symphony orchestra—a medley of old-time melodies! Romance steals through the house—romance that not even an array of pots and pans can take away!

Perhaps the most convincing proof of women's special interest in broadcasting is the women's session, without which no programme would be

complete. These sessions provide rallying points where matters essentially feminine are discussed. What a field is covered! Social fixtures, fashions, beauty culture, home management, home decoration, recipes, health questions and a dozen and one related subjects. With so many stations on the air the spirit of healthy rivalry is abroad. Each station, of course, tries to attract as many listeners as possible. This reminds me of a phase of the women's sessions that I think is of particular value—the encouragement given to listeners to write to the stations and the broadcasting of personal messages in reply. Apart from the desirable intimacy thus secured, it is a source of much pleasure, especially to country women, to hear these messages addressed to them. It puts them in touch with "the heart of things."

Another important development is the increasing number of talks on feminism now broadcast. One does not need to be a rabid "woman's righter" to appreciate these. One may—as one often does—disagree with the excessively controversial attitude taken up by some speakers, but when all is said and done, they do express a feminine viewpoint which needs expression. The emancipation of women is proceeding apace. To appreciate this, one has only to compare the trim, prim conventions of pre-war days with the comparative freedom which women now enjoy. Radio has played a not unimportant part in feminine emancipation.

I have been asked to suggest ways in which broadcasting might be made even more popular for women than it is. I really hesitate to reply. It is so much a question of opinion, of trying to read the minds of thousands of women. I can only give my personal views, backed by the opinions of many of my friends. Women are at heart bargain-hunters. That is a truism. As far as the B Class stations are concerned, they are catered for in this respect, but I think more could be done.

Working in conjunction with broadcasting stations, firms could offer special inducements, such as samples, cut prices for a short period, or something like that, to encourage women listeners to buy. Provided that the advantage to the listener is real (though it may be small) and provided that the talks are "put over" with restraint and not inflicted on us every few minutes, I think the benefit to the advertisers would be considerable.

While on the subject of radio advertising I would like to say that in the past there was a deplorable absence of proper technique. There was a tendency to make the advertisement supreme and the programme secondary. Of course, the proper procedure is quite the opposite. Nowadays, I am glad to notice, both restraint and artistry are in evidence. After all, why not? If a printed advertisement can be made a work of art, so can a radio advertisement. I know there is the problem of discovering what is really a new technique—but it is being discovered.

The decision of the Australian Broadcasting Commission early in the year to extend its women's sessions shows again how important these sessions are. It is proposed to include book reviews and talks on mothercraft, among other subjects. Mothercraft talks, in particular, are of great value, especially to women in the country. I would like to see such talks a feature of all stations.

Many stations make a feature of "Happiness Clubs," the membership of which is almost entirely recruited by radio. These are enormously successful, as is shown periodically when the stations concerned hold social functions to which members are invited. The attendances at some of these gatherings prove just what a powerful recruiting power broadcasting is.

I think this appeal to women, wide as it now is, could be made even wider. The community aspect, in its broader sense, has not yet been touched upon. If one station can attract a large gathering of women to a social function, two or more stations could attract a larger one. I realise that numbers do not necessarily indicate the success of a function, but what I have in mind is massed gatherings for special occasions. Suppose the B Class stations, working in conjunction with the promoters of the Radio Exhibition, combined to hold a rally of the members of their different women's clubs—why, the Town Hall would not be big enough to hold all who came. What a fillip that would be to broadcasting!

In these days when employment is an all-absorbing topic, the part that broadcasting plays in providing positions for women is important. In the early days various "aunts" were brought before the microphone to act as foils to the loquacious "uncles" for the edification of children during the bed-time sessions. That was about the extent of women's work on the announcing side. As a sex we were not considered suitable for the onerous duties of announcing that "the next item would be a song by Miss So-and-So," or that the forecast for the evening was "Fine and Mild."

These called for masculine effort and ability!

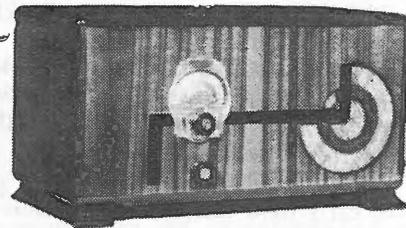
What a change has taken place! The increasing number of women announcers at the stations shows the trend. Indeed, it is noticeable that some of the leading stations employ male and female announcers during a session to introduce dialogue and so make their advertisements more attractive. Where the partners are suited to each other's style I think the innovation is excellent. I have not mentioned the subject of the employment that broadcasting gives to women vocalists because, although this is a factor, it is offset, perhaps, by the loss of "legitimate" engagements which broadcasting has brought about.

I cannot conclude without saying something of what broadcasting means to the women outback. You women in the cities, do you realise the discomforts and hardships your sisters in some country places have to endure—a telephone ten miles away, shops 20 and 30 miles away, children riding on horseback through miles of bush or over barren plains to school. Such women are the heroines of Australia. Day after day they carry out their household tasks uncomplainingly with rarely a friendly voice from the outer world to cheer them.

To them broadcasting comes as a benediction. No matter how isolated they may be, a new world is open to them when they turn the dial. They hear the voices of their own sex, music comes from the void, talks, chatter and laughter and the appearance of civilisation, if not civilisation itself, is created for them.

**RR**

## The New "Personal" R25 for a Finer Appreciation of Radio



**T**O the remarkable advance in the quality of the Broadcasting we offer our sincere thanks to these gentlemen:—

MR. BROWN ..... 2BL and 2FC.  
MR. SHULTZ ..... 2GB.  
MR. McNEILL ..... 2CH.  
MR. BEARD ..... 2KY.  
MR. CARLIN ..... 2UW  
MR. STEPHENSON ..... 2UE.  
MR. SHARLAND ..... 2SM.  
MR. MACDONALD ..... 2SM.

Listening to these stations on the new "Personal" 5-valve superheterodyne, retailing at £13/19/6 will enable you to fully appreciate our remarks of the tone, quality and variety of programmes available to-day.

Again, gentlemen, we thank you.

## Radiette Radio Ltd.

FL 1020.

Sydney

FL 1020.

## B Class Broadcasters & Record Makers Settlement of Two Years' Dispute

After a dispute extending over nearly two years, the B class broadcasting stations in July, 1933, composed their difficulties with the Associated Gramophone Record Manufacturers and made an arrangement which gives them the right to broadcast the records of those companies—His Master's Voice, Columbia, Parlophone, Regal and Zonophone.

The dispute between these interests became acute in 1931. The B class broadcasters steadfastly refused to pay for the right to use the records of these companies, claiming that they already paid the Australasian Performing Right Association royalties on the same music. Thereupon the gramophone record makers banned the broadcasting of their records and placed labels on all new recordings prohibiting them from being broadcast in any circumstances. This step considerably embarrassed the private broadcasters as the Associated Gramophone Companies control almost all records available in Australia.

The National stations had been equally concerned in the dispute and had even obtained records from the B stations. In October, 1932, however, the Australian Broadcasting Commission made a compromise agreement with the gramophone makers which gave the national stations the right to broadcast the records provided they announced the title and makers in each case. The larger B class broadcasters in the meantime imported records from England and the Continent. Many thousands of songs and compositions were thus heard in Australia which would not otherwise have come to the notice of listeners in this part of the world.

After protracted negotiations, a contract form was devised by the gramophone companies and the broadcasters which has been accepted by all members of the B class Federation and become operative immediately. It is provided that each B class station shall pay to the gramophone companies a fixed sum every year for the right to broadcast their recordings. The amount is fixed on a graduated scale according to the importance of the stations concerned. It is understood that one of the most powerful stations pays £250 a year, others £175 and smaller stations down to £30. Under the agreement, in addition to the annual payment, the B class stations each devote half an hour a week to a special advertising session of the records of the gramophone companies. They also announce at intervals the name of the maker of records as they are played. Certain restrictions are placed on the number of times particular records may be broadcast; this applies particularly to new recordings. The agreement is for a period of a year as from July 1, 1933.

It is considered that the half hour of special advertising is very valuable to the gramophone makers. One leader of the B class stations, says that the broadcasters are proving to the record makers that broad-



*The hidden Magic of*

**GE**

**Jone Perfect**

**SUPERHETERODYNE RECEIVERS**

*lies in the marvellous realism of every sound produced!*

**"BELIEVE YOUR OWN EARS!"**

fine radio has achieved its enviable reputation for quality through adherence to an inflexible policy of high standard workmanship and price moderation. In pursuit of this ideal the skill of the greatest scientists and research laboratories in the world have been requisitioned and no expense or trouble spared.

Special attention is directed to the latest models now on sale and which are definitely in advance of all ordinary radio. They show increased range, new circuits and remarkably realistic tone with a minimum of background noise and interference.

**On Sale at all Radio  Dealers**

*Advertisement of:—*

ASSOCIATED GENERAL ELECTRIC INDUSTRIES LTD.,  
93 Clarence Street, SYDNEY.

*also in*

MELBOURNE, BRISBANE, ADELAIDE.

Offices and Agents throughout the Commonwealth.

casting can help them to sell records. In the opinion of this authority, broadcasting has always helped the sale of records. In support of this contention he pointed out that after October, 1932, when the ban on the broadcasting of records was first imposed, the sales of recordings dropped even lower than before the ban.

Incidentally, the Australian Broadcasting Commission has come under criticism for the allegedly excessive amount of recorded music which is broadcast. The Royal Commissioner on Copyrights reported that station 2FC broadcast 59 per cent. mechanical music in July, 1932, 61 per cent. in August, and 58 per cent. in September. More than half of the programmes of the national stations were made up of recordings for which the national service paid nothing at a time when the B class broadcasters were debarred from using the records of the principal makers. The contention put forward is that the A Stations have a duty to present "flesh and blood artists," leaving programmes of recordings to the B class stations.

## Causes of Interference

### One Curable, the Other—

Interference to broadcast reception is of two kinds—the first is due to natural phenomena and the second to the normal operation of certain electrical devices.

Natural interference, better known to the average listener as "static" or "atmospherics," is proceeding continuously in varying degrees of intensity all over the world, and is at present regarded as incurable. This form of interference comes in the form of bursts, cracks or crashes, and usually precedes stormy or sultry conditions. Listeners have noticed the intense noise in their receivers during the approach and currency of an electrical storm or even during the progress of a tropical downpour.

Interference emanating from electrical consuming devices usually take the form of a rhythmical sound, and in the cases of moving machines, such as motors, generators, fans, etc., the rhythm increases with the speed of the machine and ceases suddenly when the appliances are switched off. This form of noise generally affects the receiver over the whole tuning dial, perhaps with a little diminution towards one end of the scale.

The latter form of interference can be prevented at its source, and the Postmaster-General's Department maintains an expert staff in each State for the purpose of assisting listeners to eliminate it. Any licensed listener whose reception is spoiled in this way is welcomed by the Radio Inspectors. The address of the Radio Inspector in each State is:—

Sydney:	635 George Street.
Melbourne:	Treasury Gardens.
Brisbane:	General Post Office.
Adelaide:	General Post Office.
Perth:	General Post Office.
Hobart:	Telephone Building, Harrington Street.



# Stromberg-Carlson

the Synonym for

## QUALITY IN RADIO

From the commencement of its Radio Manufacture in Australia, Stromberg-Carlson has concentrated its energies upon the design and construction of Radio equipment possessing an incomparable and unmistakable element of Quality. The name of Stromberg-Carlson has been renowned in all countries of the older world since 1894, and Stromberg-Carlson has revitalised a tradition by building, in Australia, of Australian materials and workmanship, Radio Receivers of distinction.

No effort or expense has been spared to attain the highest degree of efficiency in design and construction and, to-day, Stromberg-Carlson offers confidently to the Australian public an unequalled range of Quality-built Radio Receivers.

**"There is Nothing Finer than a Stromberg-Carlson."**

## Empire Day Broadcast

Australia Achieves the "Impossible."

The most ambitious broadcast hitherto attempted in Australia by the national stations was provided on May 24, 1933. The occasion was the annual dinner of the Royal Empire Society (Sydney branch), the outstanding importance of the event arising from the world-wide field covered and the intricacy of the arrangements.

The dinner took place at the Wentworth Hotel, Sydney, and the proceedings were broadcast over the entire network of the Australian Broadcasting Commission, stretching from Rockhampton in Queensland to Perth in West Australia—a distance of 4,000 miles; also throughout the New Zealand National System, and to the ends of the earth by means of the short-wave stations VK2ME Sydney and VK3ME Melbourne.

From a broadcasting point of view the main difficulties consisted in receiving, and including in the programme, speeches made at dinners in Melbourne, Adelaide, Hobart, Christchurch, Rotorua, and Wellington, and further speeches from London and Montreal. The speeches originating in Australia were relayed to the scene of the dinner by the Postal Department's landlines. Those from New Zealand were received via the Trans-Tasman wireless service at Sydney by the A.W.A. station at La Perouse. The Hobart address was picked up in Melbourne by the Commonwealth Postal authorities from station 7ZL and transmitted by landline to Sydney. The London speech of Mr. J. H. Whitley, Chairman of the B.B.C., was received via the Anglo-Australian Radiophone Service, and the speech of Sir Henry Gray, President of the Montreal Branch of the Royal Empire Society, came by a telephone channel arranged on the Canadian beam circuit.

In addition to speeches, Maori hakas and other items which were received by wireless telephony and rebroadcast throughout Australia simultaneously, messages were received during the evening, by radio-telegraphy, from outlying parts of the Empire in the Pacific including the A.W.A. stations at Suva (Fiji), Moresby (Papua), Rabaul (New Guinea), Lord Howe Island, and the British stations at Nukualofa (Tonga), Talugi (Solomon Islands), and Nauru (Gilbert Islands). These were read amid considerable enthusiasm. The whole broadcast was a triumph of organisation, and in view of the fact that wireless authorities of the British Post Office and the British Broadcasting Corporation had expressed the opinion that the task was impossible of achievement, Amalgamated Wireless particularly is to be congratulated on the outstanding success achieved.

The Empire Dinner and the Southern Seas Broadcast was intended as a "gesture to the world expressing the unity of the British people in the Southern Seas, and a demonstration of the efficiency of the link throughout the Pacific in the chain of the Empire's communications." In this it must have been extraordinarily successful. The proceedings which were all timed to the minute, took place exactly as scheduled. The

voice of Mr. Conrad Charlton, the A.B.C. announcer, around whom the broadcast necessarily centred, rang clear and confident, reminiscent of the wonderful Christmas broadcast of the B.B.C. in 1932.

Mr. Lyons, Prime Minister of Australia, from Canberra, followed the roll-call of the National stations in Australia and New Zealand. "Advance Australia Fair" was sung in the Great Hall of Sydney University by combined choirs with orchestral accompaniment, and after the Chairman of the Royal Empire Society (Sir Hugh Denison) had read messages of greeting, the Chairman of the Christchurch Branch of the Society joined in the broadcast from New Zealand. So the dinner proceeded. The speeches from London and Canada were received with great clarity, though with just a suspicion of fading—not sufficient to mar the effect. The Hobart address suffered somewhat from distortion.

Among other speakers at the dinner, or whose direct voices were heard from various parts of the Empire, were Mr. A. E. Flower, Chairman of the Christchurch Branch Royal Empire Society; Admiral Earl Jellicoe, President of the Empire Day movement throughout the Empire; Sir Isaac Isaacs, Governor-General of Australia; Lord Bledisloe, Governor-General of New Zealand; Mr. C. M. C. Shannon, Chairman Sydney Branch Council Royal Empire Society; Sir James Barrett, President Victorian Branch R.E.S.; Sir William Irvine, Lieutenant-Governor of Victoria; The Duke of Connaught, President of the Royal Empire Society in London; Sir Henry Gray, President of Montreal Branch, R.E.S.; Mr. Archdale Parkhill, Postmaster-General of Australia; Mr. C. Lloyd Jones, Chairman of the Australian Broadcasting Commission; Sir Josiah Symon, President Adelaide Branch, Dr. W. M. Robertson, President Queensland Branch, R.E.S.; Mr. A. G. Kemp, President Tasmanian Branch, and Mr. E. T. Fisk, Chairman of Amalgamated Wireless. Musical items were interspersed with the speeches, the items selected being of Empire and patriotic significance.

From the ordinary listener's point of view the broadcast was mainly of interest because of the intricacies of the inter-locking of the services of the Australian Broadcasting Commission, the Postal Department, Amalgamated Wireless, the British Broadcasting Corporation, and the New Zealand Broadcasting Board, and the Canadian Beam authorities. As an entertainment, speeches are likely to become tiring, but this tendency was largely overcome by the fact that each speech was limited to four minutes. The musical items were excellently rendered by combined choirs numbering 200 voices, with the accompaniment of the A.B.C. Symphony Orchestra.



## Nearly 6,000 Unlicensed Listeners Fined

Under the Wireless Telegraphy Act and Regulations every person who installs or uses receiving equipment is obliged to obtain a Broadcast Listener's licence from the Post Office. The occupier of any premises is also obliged to see that any apparatus in his premises which is capable of being used for the reception of broadcasting is covered by a current listeners' licence.

Some listeners endeavour to evade the law, and the Department maintains a staff of inspectors whose duty is to detect and prosecute unlicensed listeners.

Since the inception of broadcasting up to June 30, 1933, persons had been convicted for operating unlicensed receivers as follows. They were fined varying amounts up to £10.

N.S.W. . . . .	2,031
Victoria . . . . .	1,571
Queensland . . . . .	388
South Australia . . . . .	726
Western Australia . . . . .	240
Tasmania . . . . .	164

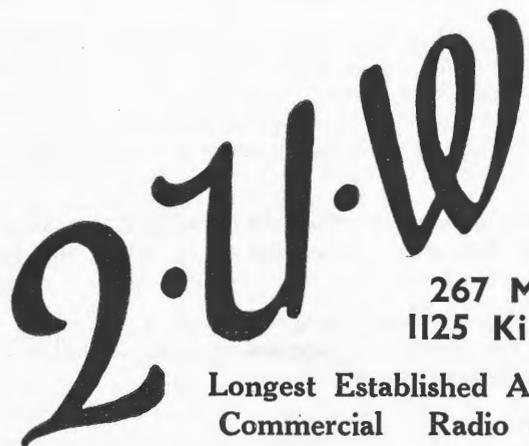
The practice of pirating or sneaking shows no sign of abating, and the Department has increased its staff in order to ensure, so far as possible, that the broadcasting services are paid for by all those who avail themselves of them. The Department's powers to deal with offenders include the right to obtain a Search Warrant in cases where the existence of unlicensed apparatus is suspected. Listeners are therefore urged to see that they have a broadcast licence, and to renew it promptly each year.

### DEMONSTRATIONS BY RADIO DEALERS.

Demonstrations by Radio Dealers holding broadcast listeners' licences are not permitted in the homes of prospective purchasers unless they comply with certain conditions, particulars of which can be obtained from the Radio Inspector.

### WAVE-LENGTH AND FREQUENCY.

The wave-length of a radio station in metres, multiplied by the number of kilocycles equals 300,000. Thus a station with a wave-length of 300 metres has a frequency of 1,000 kilocycles; one on 500 metres equals 600 kilocycles. If you know the frequency you simply divide that number into 300,000 to ascertain the wave-length.



267 Metres  
1125 Kilocycles

Longest Established Australian  
Commercial Radio • Station.

Has carried out more Interstate Relays of National Events and Entertainment Feature Programmes than any other Station in the "B" Class field.



Owned and controlled by the company which provided the National programmes for three years prior to the establishment of Commission administration, radiates entertainment from its new home on the seventh floor of the majestic State Shopping Block, and takes its rightful place at the cross-roads of Sydney as "The Voice of the State."



### **Commonwealth Broadcasting Corporation Limited**

TELEPHONES:

M6686 (5 LINES).

TELEGRAMS:

TWOUW, SYDNEY.

Directors: STUART F. DOYLE, Esq. (Chairman); SIR BENJAMIN FULLER;  
FRANK ALBERT, Esq.

State Building, SYDNEY.

## **Broadcasts from Britain**

### **B.B.C. Recognises Its Difficulties**

Empire Broadcasting from London was formally inaugurated at Christmas, 1932. So far as Australia is concerned it has been anything but satisfactory, although at times reception has been splendid.

An official statement on the position by the British Broadcasting Corporation has just reached the editor of this Year Book. In it the Director of Empire and Foreign Services says:—

"It was always realised—for we had been experimenting since 1927—that Empire Broadcasting was in more senses than one a tricky business. Technical obstacles had to be overcome, questions of time and space circumvented; there was a large and scattered audience whose daily habits varied in accordance with occupation and situation. It would therefore have been foolhardy to start with anything in the nature of an ambitious scheme of programmes, of long broadcasting hours, of elaborate and exaggerated publicity.

"At the outset we discovered that owing to the very considerable time variation within each of the zones to which the Empire Service was directed, some people were better off than others. In Zone 1, for instance, with the original transmitting hours of 9.30 to 11.30 a.m., persons living in the populous districts of Eastern Australia could hear us from about 8.0 to 10.0 in the evening. But New Zealand, with its summer-time during our six winter months, had to wait until 9.30 to 11.30 p.m. In Western Australia, on the other hand, it was rather early (5.30 to 7.30 p.m.). No ideal arrangement could be made to cater for everyone; but something to start with was essential.

"Then, as regards habits and customs. The B.B.C. might get the times more or less right, but it suspected considerable variation in the customs of people, i.e., when they went to bed at night, when they had dinner, when they finished work, etc. The home criterion was no use as a guide. Programmes also presented many problems. The corporation set out to solicit the co-operation of listeners themselves. Before the Daventry Empire Station opened, and after the opening, over the Empire microphones, the fact was stressed that progress would only be achieved in accordance with the measure of helpful suggestions and criticism, both technical and of a programme nature received from Empire listeners.

"The first letters from listeners began to arrive early in January (1933) and the B.B.C. has now (July) received over eight thousand from all over the world. This is a magnificent response, and the Corporation is immensely grateful to all those who have written. In general terms the letters show a great appreciation for this new link with Home, and this comes not only from the exile, but also from the man and woman born and bred in the Dominions or Colonies.

"Not until we have completed a full year shall we be in possession of many of the facts which it is essential for us to know, but since the service opened the whole Empire has had the opportunity of sharing with listeners in Great Britain the outstanding events of the home programmes."

## Station 4TO, Townsville



Sitting: H. E. Cox, Manager-Announcer; Miss J. Gray ("Cousin Jean"). Standing: (left) W. B. Hunton, Assistant Announcer; A. O. North, Assistant Announcer.

## Biggest B Class Hook-up

On New Year's Eve, 1932, practically all the B Class stations of Australia co-operated in the most comprehensive land-line hook-up in the history of radio in this country. In the space of  $3\frac{1}{2}$  hours 42 stations, from Perth to Townsville, were connected to the continent-wide network, each station for five minutes.

From 7 p.m. till 7.40, Eastern Standard Time, the following eight Queensland stations were connected:—

4TO, Townsville; 4MK, Mackay; 4GR, Toowoomba; 4BH, Brisbane; 4RO, Rockhampton; 4MB, Maryborough; 4BC, Brisbane; 4BK, Brisbane.

From 7.40 till 8.55 the following 15 New South Wales and Federal Capital Territory stations were connected:—

2XN, Lismore; 2KO, Newcastle; 2HD, Newcastle; 2GN, Goulburn; 2WG, Wagga; 2UE, Sydney; 2SM, Sydney; 2MO, Gunnedah; 2WL, Wollongong; 2CA, Canberra; 2AY, Albury; 2KY, Sydney; 2CH, Sydney; 2GB, Sydney; 2UW, Sydney.

From 8.55 till 9.55 the following 12 Victorian stations were connected:—

3WR, Wangaratta; 3BO, Bendigo; 3HA, Hamilton; 3TR, Sale; 3AW, Melbourne; 3GL, Geelong; 3BA, Ballarat; 3SH, Swan Hill; 3DB, Melbourne; 3UZ, Melbourne; 3KZ, Melbourne; 3AK, Melbourne.

From 9.55 till 10.15 the following four South Australian stations were connected:—

5PI, Port Pirie; 5DN, Adelaide; 5AD, Adelaide; 5KA, Adelaide.

From 10.15 till 10.30 the following three West Australian stations were connected:—

6KG, Kalgoorlie; 6PR, Perth; 6ML, Perth.

The three Tasmanian B Class stations could not be included in the hook-up because of technical difficulties.

Leading citizens spoke from the different stations, and the Postmaster-General (Mr. Archdale Parkhill) afterwards replied over the complete network. More than 14,000 miles of telephone wire were used, and the number of listeners was estimated at a million.

The hook-up was arranged by Station 2UW, Sydney. It reflected great credit on the B Class stations concerned and on the technical officers of the Postmaster-General's Department.



(1) A Studio, (2) Oswald Anderson, (3) N. J. Lyons, (4) F. R. Thompson, (5) Linda Littlejohn, (6) Joan Harvey, (7) Myra Dempsey, (8) J. M. Prentice, (9) C. J. Arnold, (10) Alf Andrew, (11) V. Sellars.

## 2UW Expands Under New Regime

Ever since the Commonwealth Broadcasting Corporation, with Messrs. Stuart Doyle, Sir Benjamin Fuller and Frank Albert as directors, took over Station 2UW in the middle of 1933 each activity of the station has been under review. Progress is the order of the day. Radio personalities of note have been added to the Staff; sessions of popular diversion have been extended.

Consider the newcomers. Norman Lyons (who recently came to 2UW from the National Service), acts as Studio Supervisor, in addition to conducting sessions for adolescent boys and girls, in which he has been signally successful in the past. Mr. Alfred Andrew with nine years' experience on various stations in Melbourne and Adelaide, has joined the staff as producer and announcer, and his coming brings a new and pleasant radio personality on the air. Charlie Lawrence, inimitable in his own field, is in charge of community singing, and is featured in revues, while Miss Amy Ostinga, well-known as the possessor of a beautifully-trained mezzo-soprano voice, has been recruited from the National Service to watch over auditions, and share in the concert programmes and production.

All the well-known personalities of 2UW are being retained. J. M. Prentice is in control of the Children's Sessions, directs operatic sessions and symphonic works and continues his comments on Foreign Affairs. Clifford Arnold is heard at the piano, as announcer, and in his association with Jack Win, a combination unsurpassed for wit and clean humour. In addition, Mr. Arnold arranges programmes. Mr. Win continues to interest and instruct with his Piebald Philosophy. Sport is controlled by V. Upton Brown (The Captain), whose authoritative comments are heard on Friday nights and throughout Saturday afternoons, with a recapitulation of all important events on Saturday night.

Other well-known personalities are Vernon Sellars, who conducts the bright and entertaining breakfast session and runs the 2UW Breakfast Club, as well as appearing in concert sessions with his exquisitely trained baritone voice. He is heard also in association with James J. Donnelly and Clifford Arnold. Mr. Donnelly contributes "thrillers," plays and continuities. Cec. Morrison's Dance Band is now exclusive to 2UW so far as radio is concerned; devotees of grand opera and symphonic music, still find that these are a feature of 2UW as in the past. Moving pictures, sport, the theatre—both professional and amateur—international affairs, revues from the studio and from outside, community singing, studio plays, all have their place. The improved 2UW Transmitting Station employs crystal control and the whole equipment has been brought right up-to-date; the full power allotted to the station is to be used through a remarkably efficient aerial system situated some 250 feet above street level and clear of all tall buildings. The new 2UW transmission, which is being installed at the time of going to press, is the last word in technical construction. 2UW

**STATION  
2UW  
SYDNEY**



(1) 2UW Orchestra, (2) Vestibule, (3) C. Lawrence, (4) Jack Win, (5) Amy Ostinga, (6) Marjorie Skill, (7) Sybil Barncastle, (8) J. J. Donnelly, (9) C. N. Baeyertz, (10) V. Upton-Brown, (11) S. E. Baume, (12) Hamilton Webber, (13) Cec. Morrison's 2UW Dance Band, (14) Cec. Morrison.

is permitted by the Department to employ the biggest power granted to a licensed station, and being on the air longer than any other station in the Commonwealth (namely 120 hours a week), the station will possess two complete transmitters—the second, of course, being used for relief during adjustments to the main transmitting plant.

**Personalities at 2UW**

**OSWALD ANDERSON.**—General Manager since March, 1930. In December, 1923, he accepted the position of Manager of 2FC Broadcasting Service, with which he was associated until August, 1928, when 2FC and 2BL were merged into the N.S.W. Broadcasting Co., of which he was appointed General Manager. When the Australian Broadcasting Co. was formed in 1929 to provide national programmes, he was again appointed Manager for these activities, from which he resigned in 1930. Prior to entering the broadcasting field in 1923, Mr. Anderson was for 10 years closely identified with musical activities in England and Australia, where before joining Palings in 1919 he managed numerous concert tours, including Peter Dawson, 1916/1918. There is no person in Australian broadcasting more widely liked than Mr. Anderson.

**J. M. PRENTICE.**—Studio Director and Chief Announcer at 2UW. Has had a very extensive experience in broadcasting, having started with 2BL in 1924, and also with the principal radio stations in New Zealand. He has occupied the position of Musical Director at 2UW since 1928 and has the advantage of having travelled extensively before his association with broadcasting. He has a wide knowledge of music, and is in addition a linguist with several languages at his command. He served through the World War, and knows many of the principal European and American cities. His talks on Foreign Affairs and happenings overseas are enhanced by a personal knowledge of many of the places referred to.

**CHARLES LAWRENCE** includes among his many other activities, an association with Station 2UW in conducting the outside concert and other attractions including Community Singing, broadcast by this station. He is one of Australia's foremost broadcasting comedians, and has many years of experience with English and Australian comedy companies to his credit.

**ALFRED ANDREW.**—Producer-Announcer, was the first to arrange and broadcast in Australia, a complete musical comedy, "The Belle of New York." This was from Station 3LO, Melbourne, for which Mr. Andrew subsequently produced many musical and dramatic broadcasts. Mr. Andrew was for sixteen years with J. C. Williamson Ltd., as stage manager, singer, actor, and producer.

**C. J. ARNOLD,** who has occupied the position of Assistant Studio Director and Announcer at Station 2UW for four years, is a pianist of outstanding ability, as well as a composer of several numbers which have attained more than passing popularity. Mr. Arnold is responsible for the compilation and arrangement of the programme from Station 2UW.

C. N. BAYERTZ, who is well-known throughout Australia and New Zealand as the founder and editor of the "Triad," and in later years for his broadcasting activities on A and B class stations, has for the past three years been exclusively broadcasting through Station 2UW. Mr. Bayertz is a master of English Literature and correct diction, and his talks on the more serious subjects, including Philosophy, Literature, Drama and Music, are outstanding attractions to the more serious-minded. His judgment on these matters is sought for Eisteddfods throughout Australia and New Zealand, at which he has officiated as adjudicator on no fewer than 57 occasions, mainly at the major functions in the capital cities.

JAMES J. DONNELLY is a journalist who has almost forsaken the pen for the microphone, though he uses the former extensively in preparing the numerous comedy, dramatic and imaginative sketches which he writes for broadcasting stations, but mainly for Station 2UW, with which he has been associated for the past three years. He is also a frequent participator in concerted work before the microphone, and regularly broadcasts items of a novel character.

JACK WIN is possibly Australia's most popular radio humorist in his particular type of contribution, known throughout Australia as "Piebald Philosophy." Mr. Win has behind him many years of highly successful comedian character work in musical comedy and on the vaudeville stage in England, U.S.A. and Australia. His "Winisms," which are interspersed through the evening programme on Station 2UW add the lighter touch which assists in making the programmes from 2UW attractive.

NORMAN LYONS is well known in connection with his activities during the last three years with the National Service on external broadcasts and matters of particular interest to youthful listeners. He has joined the staff of Station 2UW as Studio Supervisor and special announcer in charge of outside relays and boy and girl sessions, including Young Citizens' Association, Radio Red Cross Service, Model Aeroplane Association, Boy Scouts' Association and hobbies. Mr. Lyons runs a Handy Man Session which is one of the features of the station.

V. UPTON BROWN, known to listeners as Australia's leading cricket commentator under the nom-de-radio of "The Captain." Mr. Brown has had a wide experience in sports matters and broadcasting management in both A and B class stations, and is still remembered for his masterly descriptions during 2UW's famous Ball-to-Ball Commentary on the English Tests in 1930. He is the author and producer of several dramatic plays and sketches which have proved successful stage presentations.

MRS. ALBERT LITTLEJOHN contributes extensively to newspapers and magazines here and overseas. She is President of the United Association of Women's Societies.

VERNON SELLARS, who is the possessor of one of the finest baritone voices heard on the air, inaugurated and conducts the Breakfast Club Session from Station 2UW. Mr. Sellars has appeared with considerable success on the concert platform in England and Australia, and was associated for some years with J. C. Williamson and Fuller attractions. His most recent public appearances were in association with Miss Gladys Moncrieff during the presentation in the capital cities of Australia in scenes from "Rio Rita."

MYRA DEMPSEY, a newcomer to Station 2UW, has established herself in the estimation of listeners as conductress of the Women's Homecraft Session at Station 2UW. Prior to joining Station 2UW, Miss Dempsey had experience along similar lines in another popular B class station.

MISS AMY OSTINGA is another newcomer to Station 2UW, though some years ago she was heard as a singer on this station, being one of Australia's most popular mezzo-sopranos. In former years she was heard from both 2FC and 2BL and for the past three years has been in the Production Department of the National Stations' service.

MISS SYBIL BARNCASTLE is far more widely known as "Pam," of Station 2UW Children's Session, and has had considerable association with young people in elocutionary and dancing circles. More recently she has been taking part in productions at the Independent Theatre in Sydney.

MISS MARJORIE SKILL is very well known in Sydney musical circles, particularly in connection with the Music Week movement and the Music Lovers' Club. She possesses a pleasing soprano voice, which is heard during the sessions she appears in at Station 2UW. During the time she is not on the air, her activities are concentrated in the Copy and Production Department.

MADAME JOAN HARVEY, whose talks on Psychology and whose psychological service are popular features in the Women's Session, has travelled further afield than many of her contemporaries. She is a deep reader.

F. R. THOMPSON, who has been associated with Station 2UW as Advertising Manager for the past four years, is an expert in radio advertising. Radio advertising calls for a knowledge entirely different from that applied in other media, and it is a technique impossible to acquire without actual experience. The results secured by advertisers on Station 2UW are due in no small measure to the special service provided under Mr. Thompson's direction based on an experience of advertising requirements and the best method of presenting the advertising story to listeners.

Directors of 2UW: Stuart F. Doyle, Frank Albert, Sir Benjamin Fuller, controlling and operating Station 2UW, Sydney (wavelength 267 metres, 1,125 kilocycles.

Head Office, Studio and Transmission: State Shopping Block, Market Street, Sydney.

Personal:—General Manager, Oswald Anderson; Producer, Alfred Andrew; Studio Supervisor, Norman Lyons; Children's Session, J. M. Prentice; Programmes, Clifford Arnold; Humour, Jack Win; Accompanist, C. J. Arnold; Community Singing, Charles Lawrence; Philosophy and Literature, C. N. Baeyertz; Art and Repertory, Enid Lorimer; Homecraft, Miss Myra Dempsey; Psychology, Madame Joan Harvey; Sporting Commissioner, Upton Brown ("The Captain"); Travel, Social and Economic, Mrs. Linda Littlejohn; Foreign Affairs, J. M. Prentice; News Commentary, J. M. Prentice; Children's Session, "Pam"; Arts and Crafts, Miss Hurst; Talks on Gardening, S. H. Hunt; Piano Radio Lessons, R. G. Arkins; Topical, Miss Marjorie Skill; Sale Manager, F. R. Thompson; Publicity, J. H. Finlayson; Features, James J. Donnelly; Auditions, Miss Amy Ostinga; Censorship, J. M. Prentice; Competitions, Miss Marjorie Skill; Sound Effects, Norman Lyons; Network Relays, J. H. Finlayson; Continuity and Copy, J. M. Prentice, James J. Donnelly, S. E. Baume; Engineering Staff: Supervising, H. A. Marshall; Operators, R. M. Buzzacott, R. Allen, R. N. Bonnington; Technical Consultant, H. A. Kauper; Juvenile and Social Club Activities: Model Aeroplane, Norman Lyons; Boy and Girl Clubs, Norman Lyons; Red Cross Younger Set, H. L. Pitt; Health Club, R. E. Figgis; Breakfast Club, Vernon Sellars; Young Citizens' League, Norman Lyons; Boy Scout Association, Norman Lyons; Short Wave Research, R. W. H. Power.



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LABORATORIES,**  
75 William Street, SYDNEY.

## 2GB—Theosophical Broadcasting Station

The Theosophical Broadcasting Station, 2GB, was incorporated under the Companies' Act of 1899 on May 26th, 1926. The first directors were: The Rt. Rev. G. S. Arundale (chairman), Mr. William Harding (deputy chairman), Senator Reid, Mr. John Mackay, Dr. van der Leeuw and Mr. A. E. Bennett (also general manager and secretary).

2GB was on the air for the first time on August 23, 1926, at 8 p.m. The official opening on full power took place on September 15, 1926. After an introductory address by Bishop Arundale, the Hon. T. D. Mutch (Minister for Education) declared the station open, other speakers being Dr. Arundel Orchard (director of the State Conservatorium of Music), the Hon. R. Sproule (Solicitor-General in a former Government), and Mr. A. E. Bennett.

The purpose of the station was summarised by Dr. Arundale in a phrase when he said it had been organised, "at considerable personal sacrifice on the part of individuals, in the service of brotherhood, and its promoters hope it will in due course become a potent force for good throughout the world."

Toward the end of 1932 the studio system was completely reconstructed and new control equipment installed. The change-over was signalled on February 12, 1933, by an official visit from the Postmaster-General (Hon. Archdale Parkhill). The new studios were solemnly dedicated by Mr. Bennett "To the glory of God and in the service of the King." 2GB is claimed to be the leading B Class station in Australia.

**TECHNICAL DETAILS:**—Studio, Adyar House, Bligh Street, Sydney; Station, Iluka Road, Mosman. Wavelength, 316 metres, 949 kc. Power, 3,000 watts. Type of transmission, low power modulated type. Studios, three in all, equipped with 78 and 33½ r.p.m. turntables, and complete audition facilities, with theatre for listening, audition system and theatre being available at any time whether on the air or not. Managing Director of Station, A. E. Bennett. Production Manager, Charles H. Cousens. Advertising Manager, C. A. Fletcher. Chief Engineer: L. N. Schultz, M.I.R.E. Staff: Managerial and advertising, 22; announcing staff, 14; programme department, 4; technical staff, 7. Total, 47.

A. E. BENNETT, Managing Director, pioneered 2GB into existence in 1926, and has since successfully guided its destinies. He is a dynamic worker, and his energy is reflected in the efficiency of his staff, in every department. He is by profession a Chartered Accountant (Australia) and he has a wide range also of cultural matters, and conducts a daily session at 10 a.m. applying psychology to life. Mr. Bennett's son and daughter are both graduates of Sydney University. Mr. Bennett is a director of Radio Interests Limited.

**STATION  
2GB  
SYDNEY**



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2



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6

Station 2GB (Sydney)—(1) Uncle Frank, (2) George Edwards (Radio Actor), (3) Charles Cousins, Production Manager, (4) A. E. Bennett, Managing Director, (5) (left) Jack Lumsdaine—"Funny Face," (centre) Uncle George, (right) Cyril James—"Squirrel;" (6) L. Shultz, Radio Engineer.

UNCLE GEORGE, otherwise George Ambrose Saunders, is perhaps the daddy of all Australian Radio uncles. Radio was an infant when he came into it in Sydney. He has called almost 1,000 birthdays a week, that means 50,000 a year, in addition to sick calls and presents for good kiddies. His record for a single day's mail is 1,102 letters. "Bedtime stories will never become monotonous to me, because they give a little happiness to the kiddies," he says. He believes in "a healthy grin and a tilted chin." He was born at Bourke, educated at Narrabri, ran vaudeville shows in America, served in the war with the First Battalion, and stumped New South Wales as recruiting officer. His first hobby is numismatics—he has a magnificent collection of 18,000 coins. His second hobby is a collection of staghorns which would arouse the envy of a Californian botanist.

CHARLES A. FLETCHER, advertising manager, 2GB, is proud of the fact that the only nickname ever suggested for him is "Service." Bringing advertising experience from England in 1912, he took charge of press publicity for David Jones Ltd., was advertising manager for Overland, Sydney, Limited, and director-manager for seven years with an interest in Motor Publications Ltd. His experience covers practically every phase of publicity.

CHARLES H. COUSENS, production manager, joined the station as the result of his efficient microphone work as advertising manager for the "World" newspaper. He had formerly been chief copywriter for the Country Press, and before that had run an advertising business of his own. With this varied experience he rapidly rose to chief advertising copywriter and chief announcer for 2GB, and to-day he synthesises these faculties in the post of production manager, which was created for him. Mr. Cousens has that rare gift, radio personality. Graduating from Sandhurst Military College, England (where he won a triple blue), he went on service to Constantinople, Alexandria and then the north-west frontier of Afghanistan. He is something of a sport, too, and during active service in India won golf and boxing championships.

L. N. SCHULTZ, chief engineer, began engineering as a small boy with a meccano set. He came into radio as a hobby at school, and after school served a time behind the counter in a radio shop. Then he joined United Distributors Ltd., went to America for experience and later was engaged in the construction and testing of the 2KY and the original 2GB plant. In 1933 he was responsible for the reconstruction of the 2GB studios and the installation of the new control equipment perfecting 2GB's transmission. Mr. Schultz is a member of the Council of the Institution of Radio Engineers.

GIL DECH, Director of Music.—Gil Dech was a boy wonder, and made his first public appearance at the age of ten in the Birmingham Town Hall, playing a Mendelssohn Concerto. The brilliant promise which he showed as a pupil of the famous Tobias Matthay has been fulfilled, for Mr. Dech brings to his interpretations of the great masters an admir-



Station 2GB (Sydney)—(1) Mrs. E. M. Stelzer, Announcer; (2) "Bimbo;" (3) Dorothy Jordan, Announcer; (4) Kathleen Jordan, Announcer; (5) Mr. Gil Dech, Director of Music; (6) Miss Muriel Valli—"Auntie Val."

able command of technique and fulness of rhythm. He is equally at home in classical music or vaudeville, and will play Sinding with the most virtuous interpretation and ragtimes as Mark Hambourg might do if he could be persuaded to try. As music director of 2GB his performances are brilliant, and he has the quality of being a sympathetic accompanist. It was when he began to make records in Sydney that he took the name of Gil Dech, which is short for Gilbert Dechelette.

GEORGE EDWARDS, 2GB's dramatic producer has been impersonating voices since he was a boy. He never plays less than three parts in a radio drama, and one Sunday night in August, 1933, he took no less than nineteen different parts. It was a veritable triumph of impersonation and a brilliant climax to 27 years of stage experience. He has a big following, ranging from Adelaide on the west to New Zealand and Fiji in the East. A quarter of a century ago he opened in London, playing opposite Marie Studholme in "Lady Madcap," and he has played his own comedy sketches with Layton and Johnstone in London, dago sketches with Edward Branscombe in the "Pink Dandies," and was seen as eccentric dancer in his own act for the late Harry Rickards. Varied experience like this in several continents has given Mr. Edwards amazing versatility.

GLADYS MONCRIEFF, Australia's favourite soprano, has become permanently associated with 2GB, and except when on tour sings exclusively for this Station.

MRS. DOROTHY JORDAN, Australia's pioneer woman announcer, has been broadcasting for eight years. She was on 2BL before joining 2GB. Her Women's Radio Service is one of the highlights of broadcasting. Mrs. Jordan knows the mind and the emotions, as well as the physical body, "inside out." That is the magical, mystical power she wields in "psychologising" her "cases" over the air, and bringing healing and comfort to thousands of women daily. She is expert in homecraft in every department, and is a good judge of cakes. Mrs. Jordan is of Scottish descent, and her father's father was in the Black Watch. "We were thrilled as kiddies with his stories of Corunna—he was one of those few who helped to bury Sir John Moore, 'buried him darkly, at dead of night, the sods with our bayonets turning'."

MRS. E. M. STELZER, President-Founder, 2GB Happiness Club.—In four years Mrs. Stelzer has built up the 2GB Happiness Club to a membership of 7500, belonging to forty branches. She is a radiating centre of energy and happiness, with a superabundance of organising ability. Years of experience on the concert platform gave her that flair for entertaining which is so useful to an announcer; it helps her to organise her Club over the air. Mrs. Stelzer works incessantly, with the result that her Happiness Club is gathering momentum like the rolling snowball, and she opens on an average one new branch and one new younger set every week.

KATHLEEN JORDAN was educated at "Redlands," Neutral Bay, and was later appointed to the teaching staff of "Willesden," and later Cremorne Church of England Grammar School. She was one of the first to broadcast through 2BL. Miss Jordan was a concert organiser in 1928-29, and publicity and newspaper advertising specialist. She made a successful sweets exhibit at the Radio Exhibition in 1929, and she features sweet talks.

JACK LUMSDAINE, the "Radio Rascal," took to broadcasting like the proverbial duck to water. He was on the air from 2FC in the first week of broadcasting in Australia, and he has been facing the "mike" ever since. He is the "funny man" of the 2GB staff, and cracks jokes with Uncle George in the sandman's hour, and in "Heel and Toe" and other doubles. "Jacko," as the children call him, is always inventing new songs; he has already published eighty, and some of his songs have been sung by Peter Dawson, Frank Titterton and Malcolm McEachern. As for stage experience, he is proud of holding the record for the Sydney Tivoli for a single act in vaudeville of nine consecutive weeks.

UNCLE FRANK, founder of the 2GB Radio Sunday School and the 2GB Cheer Up Society, has two other spots at the week-end which listeners everywhere appreciate. The Radio Sunday School is the only one of its kind in Australia, and is the source and origin of many Sunday School groups in the outback and, as the mailbag shows, even on the lonely lighthouses around our coast, reaching thousands of children. Uncle Frank visits schools and churches and other associations as the accredited ambassador of 2GB, carrying its gospel of happiness. His glowing patriotism and spiritual sanity make him a powerful factor in the influence for goodwill which 2GB exercises in the life of the people. It is he who organises Anzac Radio Service and other diggers' functions exclusive to 2GB.

"AUNTIE VAL."—Bringing to 2GB years of experience as entertainer in many countries, and a warm human-kindliness, Auntie Val at once found a work she was fitted for in organising the Bluebird Club, which has over 4,000 members. These are tiny tots and young people who endeavour to make others, especially old folk, happy. In the years before the war Muriel Valli toured the Far East, Canada and the U.S.A. with theatrical shows, but returned to Sydney on account of the illness of her mother. She also runs the David Jones' "Happy Hour" for children every Saturday morning.

ETTA FIELD.—One of the brightest personalities on 2GB is Etta Field, dramatic soprano. She began to sing as a child, and after training in New Zealand, where she was born, came to Sydney and studied under Madame Goosens, and had many performances with Henri Verbrugghen and his orchestra. She studied further in England, and has sung principal roles in "Aida" and "Cavalleria Rusticana" on tour.

"BIMBO" OF 2GB.—When Uncle George came over to 2GB (from 2BL) in 1927; Bimbo followed a week later, and he has written most of the songs which he and Uncle George broadcast. Bimbo's first public appearance was in gaol—he went to Long Bay to accompany a party of entertainers, and, one of the singers being indisposed, Bimbo sang to his own accompaniment and scored a great hit. From that he graduated into radio. One youngster asked his father to take him to the Zoo to see the Bimbos!

ERIC COLMAN has "made good" as a radio announcer on 2GB. There is faculty for entertaining in the blood of the Colmans, two of his ancestors named Colman having owned and run the Haymarket, London, over 150 years ago. Both Eric and his brother Ronald (the film star) went through the war, and Eric is a qualified air pilot. He is a keen student of the drama, has played in several leading amateur societies in London, and has been heard from 2GB in dramatic sketches.

CYRIL JAMES won his post as announcer on 2GB in open competition. He was already well known to listeners as one of "The Big Four," and long before that was a radio voice—in the early days of broadcasting in Sydney. He also spent some years with Fullers' Theatres in revue, touring N.S.W. and Maoriland.

RICHARD HUGHES came to the "mike" with a versatile record as journalist, gold-miner, salesman, musician, but his top note is in opera. He has sung in England in all the big works, and in oratorio; was on the air in Glasgow, appeared at the "Old Vic," London, and used to do a lot of work for the repertory companies in the provinces. From 1916 he was in the Flying Corps, and he finished the war. He came to Australia in 1924 for a change of climate, and now he is quite fit.

"DISCOBOLUS," who is heard once a week—on Sunday nights—in 2GB's music session, is none other than Robert McCall, music writer for the "Women's Weekly" and musical adviser to a firm of gramophone record manufacturers. "Discobolus" has a style of his own, and his annotations of new records are pleasing to a wide range of listeners and music lovers. He knows the history of music as well as its technique.

Carlton Fay,  
Sydney.Bert Howell,  
Perth.Edith Parnell,  
Melbourne.

## 2KY, the Labor Broadcasting Station

Power: 1,000 watts (aerial). Wavelength: 280 m. 1,070 K.C.  
 Studios: 424 George Street, Sydney. General Manager: E. R. Voigt.  
 Secretary: J. S. Garden. Studio Manager: H. E. Beaver. Assistant  
 Studio Manager: H. Garden. Engineer: J. Brown. Advertising Man-  
 ager: H. T. Hungerford. Announcers: H. E. Beaver, Harcourt Garden,  
 Mrs. Grey, John Harper, Donald Day, Len Maurice, John Farrelly, L. A.  
 Dempsey, Eric Walker, Ian Garden, Rion Voigt.

Special Sessions:—Horse Racing, Ringside Descriptions of Wrestling  
 and Boxing, Women's Session, Children's Hour, Community Concert,  
 R.K.O. Theatre Broadcasts, Dance Programmes, General Sporting Ses-  
 sions, Political and Economic Lectures.

The establishment of 2KY in 1925 broke new ground in Australia;  
 in fact, in world broadcasting. Its founders claim that 2KY was the  
 first B Class Broadcasting Station in Australia to break away from the  
 experimental ranks and provide the public with a daily programme on the  
 lines of the A Class Stations. This claim is not generally admitted, but  
 2KY was certainly the highest power B Class Station in Australia at the  
 time and was the first Labor Station in any country. The licensed  
 power was 1,500 watts input to the last high-frequency stage.

After the license of 2KY had been issued by the P.M.G. and before  
 the Station had been constructed, the management informed the public  
 that, in addition to the provision of musical and sporting entertainment,  
 it was the intention of the Station to broadcast information and views  
 on all matters of general interest. The Postal Department at once inti-  
 mated to the press that the new Station 2KY would not be allowed to  
 broadcast news and views ("propaganda" was the term used) on any  
 industrial or political matters. The management of 2KY successfully  
 fought against this restriction of the B Class Stations to broadcasting any  
 comments which they deemed to be in the interests of the public or any  
 section thereof.

The successful fight by 2KY has made it possible for the B Class  
 Stations to be the centre and focus of interest in elections. 2KY claims  
 the right of free speech over the air. 2KY and the rest of the B Class  
 Stations regard this right as a heritage, which is no less important than  
 the privilege of entertaining the public with music.

The view that a broadcasting station is simply a means for enter-  
 taining the public is one that is not shared by most B Stations—2KY  
 especially. The viewpoint of the independent station is that the funda-  
 mental value of broadcasting lies in the fact that it is primarily a means  
 of communication. Radio broadcasting is the most economical, the  
 most effective, the most rapid and flexible means of communication yet  
 discovered. It is also rapidly becoming the world's most valuable publicity  
 medium.



Station 2KY: (1) E. R. Voigt, Manager and Technical Supervisor; (2) John Harper, An-  
 nouncer; (3) L. A. Dempsey, Announcer; (4) Captain Crisp, Announcer; (5) Harcourt  
 Garden, Assistant Manager and Musical Director.



Station 2KY: (1) Herbert E. Beaver, Studio Manager; (2) Len Maurice (Uncle Len); (3) Jack Farrelly (Uncle Jack); (4) A 2KY Trio with Uncle Bert, (H. E. Beaver) at the bottom; (5) Cyril Angles, Racing Announcer.

That is why the Independent Stations have always fought for the right of free speech on the air, a privilege which the Postal Department and the Government—so 2KY considers—have at times been apt to forget.

During the period of office in New South Wales of Mr. John Lang's Labor Government, 2KY provided a service unique in the history of the Commonwealth and then unprecedented so far as is known in any part of the world, i.e., 2KY broadcast the complete sessions of Parliament.

Four microphones graced the Legislative Assembly Chamber for the first time. Every speech and every interjection was broadcast to the listening public.

Politicians were not slow to take advantage of this new force and it was noticed that when a speech was made it was conducted with due regard to outside listeners. The broadcasting of Parliamentary sessions by 2KY greatly improved the tone of the House. It was a service also greatly appreciated by the general public.

The first ringside broadcast is claimed by 2KY. That was in 1926 when 2KY placed the first landline in the Sydney Stadium.

Since that time 2KY has provided regular weekly broadcasts of the boxing and wrestling bouts, described from the ringside of one or other of the Sydney stadiums.

At present 2KY describes the progress of the wrestling from the ringside of the Leichhardt Stadium each Saturday night. Every Wednesday, a ringside description of the boxing match is also broadcast.

This is a service which has an immense following, not only among sporting fans, but also among the general public. People of all ages listen to these broadcasts. Old men, young men, girls, boys, old ladies, all tune in. Broadcasting has immensely widened the following of both sports and has greatly assisted in raising the tone and surroundings of these contests.

### PERSONALITIES OF 2KY

E. R. VOIGT.—One of the founders of 2KY. The station's establishment was due to his advocacy on the Labor Council of N.S.W. Mr. Voigt was appointed Chairman of the Wireless Committee, a position he has held continuously ever since. Five years ago, Mr. Voigt was also appointed General Manager of 2KY. In 1926-28 Mr. Voigt was Manager of United Distributors Limited, one of the largest radio concerns in the Commonwealth. He was also responsible for the formation of the Radio and Telephone Manufacturers' Association, of which he was President for several years. Six years ago the Australian Federation of Broadcasting Stations was launched and Mr. Voigt

was its first President. He is an executive member of the Federation, which comprises 42 B Class Broadcasting Stations.

Mr. Voigt is well-known to sporting listeners-in, as the wrestling and boxing commentator of Station 2KY. He gives a vivid description of the wrestling match each Saturday night from the Leichhardt Stadium. This is the station's most popular feature.

ALDERMAN J. S. GARDEN, with Mr. Voigt, is one of the originators of Station 2KY, which is the world's first Labor broadcasting station. "Jock" is one of the best-known and most picturesque figures in the industrial and political life of the Commonwealth.

He takes the keenest interest in 2KY, of which he is the secretary. Every Monday evening Ald. Garden lectures over 2KY on Australian and international topics and his lectures have brought a great following of friends and opponents.

Ald. Garden is keen on preserving for Station 2KY and all B Class stations the right of free speech over the air. He aims at developing broadcasting as a means for the expression of public opinion on all matters of interest to the community.

MRS. GREY.—The Women's Session on 2KY is conducted by Mrs. Grey, who has been uninterruptedly in control since the inception of the station 3 years ago. Mrs. Grey is one of the most popular air personalities. A well-travelled lady, she can discourse on life in many foreign centres, but her travels have made her more attached than ever to her own kin and country, Australia.

Mrs. Grey is a rapid and fluent speaker. Her correspondence is extensive and includes a large number of the male sex, who apparently find her session as interesting as do the women-folk.

HERBERT E. BEAVER is well-known to listeners, having broadcast daily from Station 2KY since its inception. Mr. Beaver is the studio manager. He controls the community concerts at various suburban centres, which have been a feature of Station 2KY for many years.

Mr. Beaver is a professional artist—a juggler and magician, and has a fund of interesting and droll reminiscences. On the Children's Session, Mr. Beaver is known as "Uncle Bert." In that capacity he organised for several years the children's concerts and pantomimes at one of the large Sydney stores, with wonderful success.

Mr. Beaver is well-known to listeners as a ringside commentator of boxing at the various stadiums.

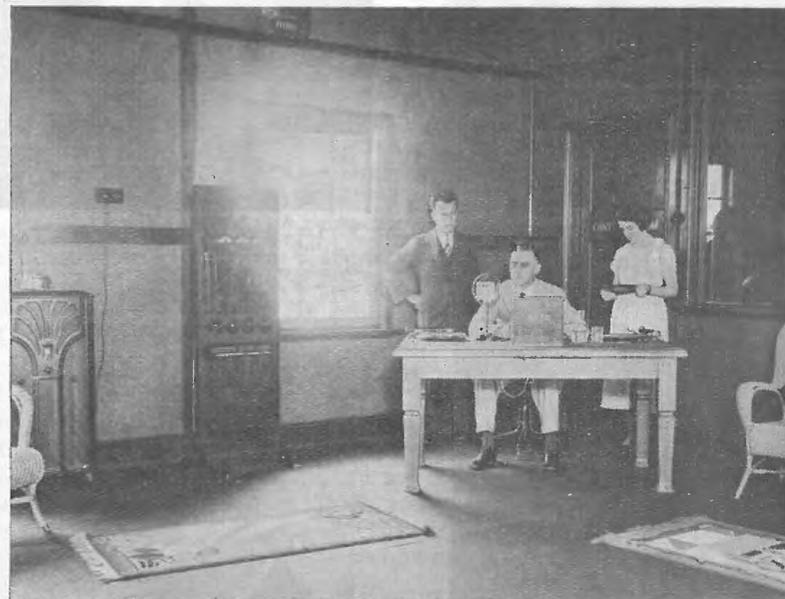
HARCOURT GARDEN.—A well-known figure on Station 2KY for several years has been Harcourt Garden son of the famous "Jock" Garden, Secretary of the Labor Council of New South Wales.

Mr. Harcourt Garden is an ever-present figure on all sessions of 2KY. He occupies the positions of Assistant Studio Manager and Musical Director; it is his duty to supervise the programme items and all auditions. Mr. Garden writes exceeding good copy for both advertising and for entertainment sessions. Most of the copy for the children's session, conducted by Uncle Jack and Rion, is written by Mr. Garden.

UNCLE JACK AND RION.—The Children's Session of 2KY is conducted by Uncle Jack (Jack Farelly and Rion Voigt), two of the Station's junior announcers. Jack Farelly also conducts the 2KY Children's Radio Club and the wrestling talk with Walter Browning (Canadian wrestler) every Saturday.

Rion gives an interesting travel talk every Thursday. He has travelled in many countries and has covered over 60,000 miles of sea travel. Each Wednesday Rion broadcasts a mock wrestling match from the Leichhardt Stadium, which greatly intrigues the youngsters, and also conducts the Friday evening sporting interviews.

IAN GARDEN.—After studying engineering for 5 years, gave it up and became a junior announcer at 2KY. He also conducts several special sessions.



Station 2GF: C. E. Coldwell-Smith, Manager (seated); W. Betteridge (Engineer) and Miss Molly Noonan (Assistant Announcer).

## Radio 2UE, Sydney, Limited

In reviewing the history of 2UE for the past year, a most outstanding date must be November 30th, 1933, when it was announced by Sir Hugh Denison, Chairman of the Board of Directors of Associated Newspapers Ltd., that his company had attained a half interest in the Station. This step will enable 2UE to open many new avenues of service to listeners, including the exclusive broadcasting of the Sun-Herald News Service, and many of the other overseas news channels controlled by Associated Newspapers. Mr. C. V. Stevenson, who remains as Managing Director, said in his broadcast address on the night of November 30th: "Since the inception of 2UE in 1924, it has been my ambition to make this the most outstanding radio station in the Commonwealth, and I assure you that this ambition is now nearer fulfilment than at any other time."

"The extent of the ramifications of any B Class Station is entirely governed by the amount of revenue from advertising, and I feel quite sure that, with the association of such an extremely powerful institution as Associated Newspapers, we will be in a position to give you, not only programmes of merit, but also news and entertainment that would not otherwise be possible.

"It never has been my contention that radio advertising would supplant that of the Press, but it is a definite fact that a newspaper campaign, linked in the right way with a radio campaign, can be of the utmost value to the 'advertiser,' and, incidentally, of extreme entertainment value to the listener."

2UE is the oldest of the existing B Class Stations in Sydney. It commenced with a power of 20 watts, which has been increased until to-day it has 1,000 watts in the aerial. The station was inaugurated for experimental purposes by Mr. C. V. Stevenson, and he was granted an amateur Transmitting License with the call sign 2IY, this being before the inception of B Class Stations. When the new wireless regulations were issued, Mr. Stevenson obtained the first "B" Class License in New South Wales. The name 2UE is derived from Electrical Utilities Supply Company. The licence was granted in October, 1924, and the station opened in the following January. No advertising was "put over," it being run as a service to listeners at the expense of the company. After four years 2UE obtained a contract with the administration of the Eucharistic Congress, by which arrangement time was made available by the station for the Congress for a definite number of sessions per week. This was in March, 1929, and the power of the station was then increased to 500 watts. The Catholic Church continued to broadcast through 2UE until it built its own station, 2SM.

2UE is the first station on the air each morning, opening at six o'clock with an early session conducted by Mr. Agassiz, who is followed by Mr. Honeyfield, 2UE's Agricultural Commissioner. Mr. Honeyfield,

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C. V. Stevenson, Managing Director.



Lionel Lunn, Manager.



C. Agassiz.



Norman Barnes.



"Ambrose" (Arthur Carr).



S. B. Gravenall.



*C. Honeyfield.*



*Si Meredith.*



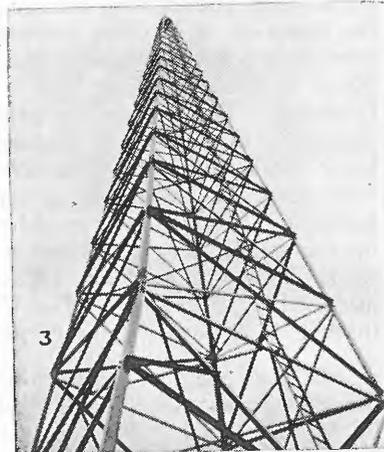
*Miss Dorothea Vautier.*



*Miss Grace Shaw.*



*Mrs. May Filmer.*



*2UE Aerial.*

working in conjunction with the Agricultural Department, discourses on pastoral matters.

The Women's Session each morning is conducted by Mrs. Filmer (Auntie May) and Miss Shaw (Auntie Grace), and in the afternoons Dorothea Vautier talks to listeners of the latest books, theatres and similar subjects.

The children are entertained every afternoon by Wendy from 4.45 to 5.15, Uncle Si from 5.15 to 5.45, and Uncle Lionel, Ambrose and Winkle from 5.45 to 6.15. Each Saturday morning also a Children's Party is held at the Empire Theatre, the entertainment featuring Uncle Si, Ambrose, Auntie Maud, Foolish Fred and Kath Hannabry's "Kutie Kids."

Cricket and other sporting sessions are conducted by such competent authorities as Don Bradman, Harry Solomons and S. B. Gravenall.

One of the biggest features of the week's programme is the Sunday Night Play, which is produced and directed by Lionel Lunn, 2UE's Manager and Chief Announcer. The plays selected range from tense drama to comedy, and each week a competition is conducted in connection with these productions.

Every alternate Monday 2UE holds an Old Time Dance at Hordern Bros. Florentine Ballroom, the tickets for which may be obtained at the offices of 2UE, 296 Pitt Street. These dances owe their success to the fact that they are genuinely old time, as well as to the popularity of Rex Shaw's Orchestra and of Uncle Si as M.C. It is also the versatile personality of Si Meredith which adds to the success of the Community Singing every Wednesday between 12 noon and 2 p.m. at the Australian Hall, 148 Elizabeth Street.

On alternate Monday nights to those on which the Old Time Dance is held, the 2UE Old Time Minstrel Show is featured at the Australian Hall, 148 Elizabeth Street, with Ambrose (Arthur Carr) as Director of the programme, and Mr. C. Agassiz as the Interlocutor, various artists being selected for each programme.

For the encouragement of Australian authors and playwrights, 2UE recently inaugurated a Radio Play Competition with £50 in prizes. The plays received were of a particularly high standard, the winning entry, "The Passing of K. of K." by Mr. William C. F. Hill being exceptionally good. This play was broadcast from 2UE at 8 o'clock on Sunday, December 31st.

2UE numbers amongst its listeners thousands of people throughout Australia, and quite a number in New Zealand, America and elsewhere overseas, who acknowledge that 2UE is a station for 100 per cent. entertainment. First on the air each day, 2UE from early morning to late at night gives its listeners service.

People of importance on 2UE's Announcing Staff are:—

AGGIE, whose cheery voice gets you up in the morning. He arises at half past four, so that by the time he commences his session at 6 o'clock, the day has well and truly begun for him. Aggie was Hike-master to the big hikes that were conducted last season. He recently accompanied Don Bradman and 200 schoolboys on a goodwill tour of the North Coast.

C. HONEYFIELD, 2UE's Agricultural Commissioner, who discourses each morning at 8.15 on pastoral matters, dogs, pigs, etc. Mr. Honeyfield works in conjunction with the Agricultural Department.

HARRY SOLOMONS, 2UE's racing commentator.

S. B. GRAVENALL, who is prominent among 2UE'S sporting men, and last season coached the N.S.W. Australian Rules team. Mr. Gravenall gives sporting talks each Saturday night.

### NOW FOR THE LADIES!

Each morning you hear the cheery voices of Mrs. Filmer (Auntie May) and Miss Shaw (Auntie Grace), and in the afternoons Dorothy Vautier tells listeners of the latest books, doings about the theatres and similar subjects. Mothercraft talks by Miss Truby King are of great interest to feminine listeners.

The small folk are entertained by an efficient band—Wendy and Uncle Si from 4.45 to 5.30 and Uncle Lionel, Ambrose and Winkle from 5.30 to 6.15. Each Saturday morning a big children's party is held at the Empire Theatre. The entertainment features Uncle Si, Ambrose, Auntie Maud, Foolish Fred and Kath. Hannabry's "Kutie Kids."

Cricket and other seasonable sports are dealt with by the following authorities:—Don Bradman, Harry Solomons and S. B. Gravenall.



H. W. Varna



Eric Welch  
Melbourne.



Hugh Huxham,  
Melbourne.

## 2CH, the Church Station

Early in 1932 negotiations were entered into with regard to the inauguration of 2CH, and the Council of Churches pursued investigations as to the feasibility of the project. Outstanding among the personalities who worked untiringly at this juncture, was the late Josiah T. Thomas, who spared no effort to bring the inception of 2CH to fruition. Arrangements for the broadcasting license were completed and then it was that Mr. F. H. Stewart displayed public spiritedness in financing the venture.

The opening presentation was broadcast from the Conservatorium on February 15, 1932, at which celebrities of the musical world of Sydney contributed. It was an auspicious beginning; the high standard set has always been maintained.

The board of directors of 2CH, whose offices are situated at 77 York Street, Sydney, comprises H. R. Stewart, J. T. Taylor, and T. A. E. McNeill. H. R. Stewart, who has extensive commercial training, has considerably increased his knowledge through travel, having spent over twelve months abroad studying modern business methods.

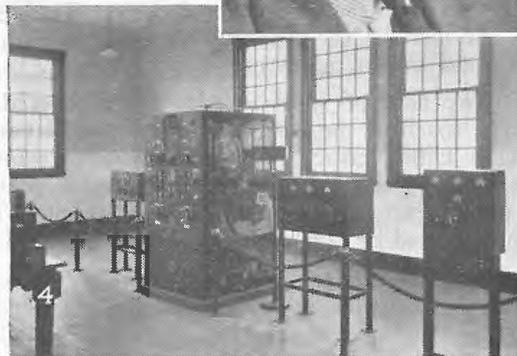
The spirit of service which actuates 2CH is evident in the many features the station presents; the News and Commentary for instance, by arrangement with Associated Newspapers, to which three sessions of fifteen minutes each are devoted daily. Then there is the special session for the men on the land, which includes market reports, weather forecast, and similar advices.

The field of sport is adequately covered. Mr. George Garnsey, official coach of the N.S.W. Cricket Association, and Mr. C. L. Brown, Rugby Union critic, give comprehensive resumes of the prospects of the principal matches which, during their respective seasons, are described in play. Each Saturday at 4 p.m. a complete sporting resume is given, supplemented by last minute results in the evening.

With regard to programmes, which are compiled by Gwen. Gibson, 2CH devotes certain nights to a specific type of entertainment. For instance, an orchestral concert, each Saturday night, meets with the approval of the music lover; there is a night devoted to popular music and those listeners who make no bid for other than surface enjoyment are well pleased. A band concert—a night of musical comedy—a presentation of the lighter classics—these are balanced to guarantee a general appeal.

Station 2CH operates on a wave-length of 248 metres; frequency 1210 K.C. The Transmitting Station is at Dundas, 10 miles W.N.W. of G.P.O. The power is 1000 watts unmodulated in the aerial. The aerial is of the "T" type, 280 feet high, with 100 feet top, supported by two guyed steel masts, each 310 feet high, and 600 feet apart. The aerial system is claimed to be the finest in the Commonwealth, and it stands in a commanding position in open country away from all inter-

**STATION  
2CH  
SYDNEY**



Station 2CH (Sydney)—  
(1) View of No. 1  
Studio; (2) No. 2 Studio  
with Mr. A. S. Cochrane  
at the Announcers'  
Table; (3) Mr. John  
Taylor, Manager; (4)  
Transmitting Plant; (5)  
Transmitter Building,  
Dundas.

fering objects. The transmitter employed is Telefunken, using Schaeffer grid DC method of modulation. This exclusive modulation method, together with the very efficiently engineered aerial system, assures 2CH an enormous coverage area. Letters have been received reporting DAY-LIGHT reception from all parts of New South Wales and many parts of Victoria, Queensland and New Zealand. An enormous amount of work has been put into 2CH to ensure realistic reproduction of all musical frequencies and the result over the air is a very pleasing quality.

The control room is centrally situated so that alternating broadcasts may be handled with equal ease. The large studio, owing to its proximity to a natural echo-chamber, is provided with that valuable broadcasting asset, "controllable echo." By skilful blending of suitably placed microphones, justice can be done to the rendition by any combination of voices or musical instruments.

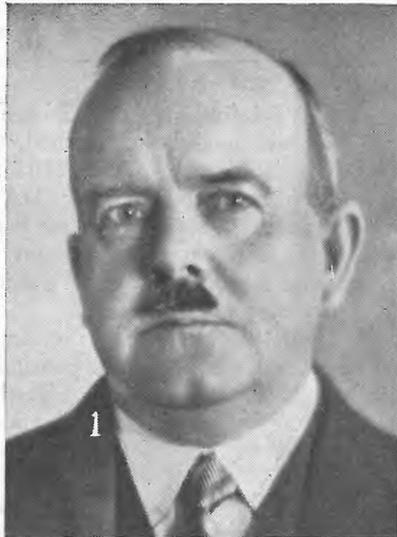
The smaller studio is intended for the speaker. Both studios have every facility for the transmission of recorded and "flesh and blood" artists, and, in addition, are dually controlled to permit of rehearsals and auditions, while the normal programme is being transmitted. Special broadcasts to other states, which are not required to radiate locally can be conducted from 2CH studios without interfering with the regular programme. Interstate and inter-station relays can also be effected with ease through a separate relay amplifier.

**PERSONALITIES OF 2CH**

JOHN T. TAYLOR, General Manager, was born at Melbourne, July, 1904, and was educated at Melbourne Grammar School. He joined D. & W. Murray Ltd., resigned in 1925 to join the American Food Products firm of H. J. Heinze Company. Mr. Taylor represented them in Melbourne until December, 1928; then transferred to Sydney. After the H. J. Heinze Company disbanded, he joined the staff of the Kraft Walker Cheese Company, in August, 1931. In December, 1931, he was appointed Advertising Manager of 2CH and was appointed General Manager in August, 1932.

A. S. COCHRANE ("The Hello Man") Senior Announcer at 2CH, Sydney, was born at Violet Town (Vic.) and was educated at the local school. He always excelled at reading. The greater part of his life was spent in Melbourne. He came to Sydney in 1914 and was appointed to Farmer & Company Limited. When the firm obtained the first "A" Class Broadcasting License, applications were called for an announcer. 240 replies were received, and Mr. Cochrane was used as a stop gap, while these were being sifted. The position was subsequently offered to him. He is keenly interested in all sport, although he does not actively participate. His recreation is reading and his favourite author is Dickens.

ERNEST WALSH, the "Good-Morning" Man at 2CH, was born at Potts Point, Sydney. He excelled at swimming. Mr. Walsh commenced his business career at the Town Hall, Sydney. In 1919 he took up



Station 2CH (Sydney)—(1) Mr. A. S. Cochrane, Senior Announcer, and "The Hello Man;" (2) Miss Gwen Gibson, Programme Compiler; (3) Mr. Don. Scott, Sporting Announcer (4) Mr. Warren Penny, Flying Announcer.

wool classing but decided that greater opportunity lay in advertising. He was a successful business broker in 1924, and later Sales Manager of the Aerial Motor Cycle Company. He joined the staff of 2CH in June, 1932.

DONALD SCOTT, Sporting Announcer at 2CH, was born at Sydney in July, 1907 and was educated in England, and at the Sydney Church of England Grammar School. He left Australia in 1925 for a tour of England and the Continent, and spent over twelve months abroad, gaining commercial experience. He joined Sargood Bros. in 1927 and resigned to specialise in advertising. In 1931 he joined a publicity firm. Mr. Scott was appointed to 2CH shortly after its inception. He takes part in golf, running, football, cricket and tennis; sailed his own skiff and now sails in the crew of the "Sea Rover."

WARREN PENNY, Assistant Announcer at 2CH is a native of Perth, W.A., where he was born in 1910. He was educated at Geelong and Sydney Grammar Schools and concentrated on aviation. In 1928 Mr. Penny obtained his "B" Class Commercial License (Aero Club of N.S.W.). He competed in the East-West Air Race. He obtained flying appointment at Los Angeles, gained film and broadcasting experience there and spoke over Station KNX. He returned to Australia in 1931, to an appointment as announcer. He joined the staff of 2CH in July, 1931. Mr. Penny made a specialty of broadcast talks on aviation. His sports are yachting, swimming, rowing, golf, tennis and running.

C. L. BROWN, Rugby Union critic at 2CH, is recognised as one of the leading authorities of Rugby Union football in New South Wales. He was born at Mudgee and educated at Forbes High School. For years he was captain of the school football team. In 1922, while a member of headquarters' Management Committee, Mr. Brown was appointed N.S.W. Manager of the Maori team's tour of New England and the North West. He was responsible for the introduction to 2CH of such notable personalities as F. D. Kilby (N.Z.), G. Bennett, Lyn Wood (Qld.), Dr. G. S. Sturtridge, L. C. Gee (Vic.), S. J. Malcolm, Dr. A. W. Ross and J. M. McShane (N.S.W.). Mr. Brown is engaged in press work and broadcasting and is a member of the Australian Journalists' Association.

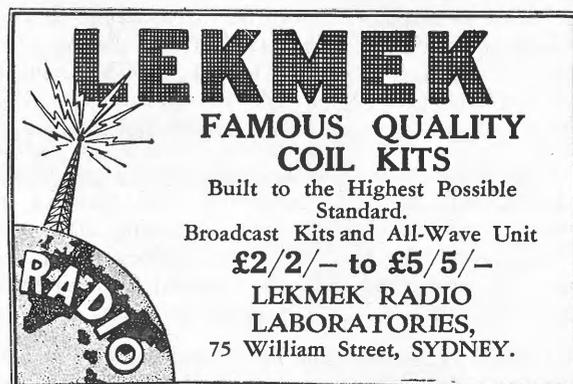
FRED. J. BERRY, motoring expert at 2CH, was for many years a successful racing and competition driver, winning many open events. He held the Brisbane-Sydney and Melbourne-Sydney motor cycle records for some years. He is a member of the General Committee, and Roads and Tours Committee of the Royal Automobile Club.

MARGUERITE HERD.—"The Fairy Godmother," at Station 2CH, Sydney, was appointed at the inception of the Station. She was born in Cumberland, England, educated at Mostyn Hall, England. Miss Herd has been thoroughly trained in child psychology, story telling and kindergarten work, and she writes original stories and serials for the session. She is also a professional singer from the studio of Roland Foster. She

broadcast from the first studio of 2BL, in Phillip Street. She broadcast for the B.B.C. while on holiday in England. Miss Herd was a member of the Royal Melba Opera Company.

CATHERINE STREETER conducts the Women's Afternoon Session at 2CH. She was born in Queensland in 1910 and was educated at the Methodist and Presbyterian High School, Brisbane. Miss Streeter studied first year nursing at Brisbane, and was then assistant to her father, Dr. J. E. Streeter. She relinquished medicine for commerce, and was appointed to Edwards Butler & Son, Brisbane, as head of sportswear and travel goods department. In 1930 she patented a beach chair known as the "Siteasy," which is being sold throughout Australia. She came to Sydney in 1932, joined the publicity staff of Buckingham's Ltd., and edited the "Oxford Street Shopping News." She was appointed to her present position in June, 1933.

GWEN GIBSON, compiler of programmes at 2CH, was born at Paddington, and educated at Elmswood College. She underwent a course of commercial training, and later received a secretarial appointment. Miss Gibson joined 2FC as secretary to Oswald Anderson in 1926. In 1928 she was appointed head of the Programme Department of 2FC and 2BL. In 1930/31 she conducted the Sunday night children's session at 2BL. Miss Gibson was appointed to 2CH at its inception, and conducted the women's morning session. She took over the programmes in October, 1932.



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**FAMOUS QUALITY**  
**COIL KITS**  
 Built to the Highest Possible  
 Standard.  
 Broadcast Kits and All-Wave Unit  
**£2/2/- to £5/5/-**  
**LEKMEK RADIO**  
**LABORATORIES,**  
 75 William Street, SYDNEY.

## 2SM, The Catholic Station

Station 2SM, Sydney, takes its call letters from St. Mary's Cathedral, because Australia's great Catholic Basilica provided the inspiration which gave birth to 2SM.

The Catholic church did not rush precipitately into broadcasting. Indeed, in the early days, some listeners were of opinion that the Catholic authorities were not taking full advantage of the opportunities offered. At the time of the Eucharistic Congress in 1928, however, the church used broadcasting to the fullest. Under the guidance of Monsignor Meany, who organised the Congress, broadcasting played an enormous part in bringing to the public the proceedings of the great congress. From that time there was no longer any doubt as to the value of radio as an adjunct to religion. After careful planning, the Church secured its own broadcasting licence and 2SM gave its first programme on Christmas Eve, 1931. From that time the Catholic station has made steady progress. Although controlled by the church the religious element of the broadcasts is not obtruded to the prejudice of entertainment, the station's activities being of a general and widely diversified character.

It was 2SM which, on June 18th, 1932, introduced a new technique into broadcasting from a theatre. In co-operation with 2SM, Amalgamated Wireless carried out experiments with special apparatus, as the result of which, for a performance of "Lucia di Lammermoor," at Her Majesty's Theatre, a new parabolic reflector was used in conjunction with the microphone placed in front of the dress circle. Sound originating on any part of the stage, which was about forty feet wide, was focussed with equal intensity into the microphone by the lens effect of the reflector. In other words, with this system the movement of an artist across the stage from one spot to another only varied on the microphone by about one inch—a variation which was negligible. Another important feature of the arrangement was the elimination of extraneous sounds, especially those from wall reflections and the audience. A theatre is constructed so that sounds created on the stage reach the audience to the best advantage, and the parabolic reflector was designed to pick up the performance from the same position as the best place in the audience. In other broadcasts a number of microphones have been placed at various points to compensate for the movement of artists. Usually an engineer has been engaged in fading in or out, one or other of these movements in order to maintain the volume of sound picked up according to his idea of proper mixing or blending of musical sounds. Artists have not always been satisfied that an engineer is quite equal to this difficult task. On the other hand, musicians do not always understand the manipulation of the devices used for the purpose. Again, frequently in these circumstances it has been difficult to place the microphones in such a position as to collect the performance for the orchestra with equal fidelity to that of the artists, or vice versa. The method of pick-up by means of the parabolic reflector was from a single position and interference with the quality and blending

of the actual performance was eliminated. It was considered that this was a long step in the direction of better and more faithful broadcasting and was entirely new to Australia.

This broadcast was relayed from 2SM to 3AW Melbourne, 4BC Brisbane and a chain of fifteen stations in Australia and New Zealand. Reports afterwards received from Melbourne, Brisbane, Toowoomba, Bendigo, Sale, Geelong, Wellington (N.Z.) and other parts of Australasia, unanimously acclaimed the complete success of the broadcast. Artists of the Grand Opera Company who were not taking part in the performance of Lucia, listened to the reception and were astounded at the fidelity of reproduction. Signorina Cesarina Valobra, prima donna of the Williamson Imperial Grand Opera Company said: "The broadcast was so true and life-like that I felt my flat had been tuned into a theatre. I am sure I heard the opera as perfectly as if I had been actually present."

The outstanding excellence of the new system introduced by 2SM was evidenced in the clear reproduction and the preservation of perfect balance between the orchestra and singers, affording results previously unattainable in the broadcasting of stage representations.

One of the great attractions of 2SM is the children's session. It is a children's session in the sense that the youngsters conduct it themselves. They sing, recite, and call their own friends over the air in their own amusing and original ways. Uncle Tom (who is Mr. John Dunne) has charge of them, but all the while it is the children who carry out the programme. With 150 youngsters, besides adults in the studio, quite an extensive concert party is available and, as Mr. Dunne remarks: "They just muck up and do as they like." It happens also that what the children of 2SM like, is also what listeners, young and old, appear to like, and everyone is happy accordingly.

Another feature of 2SM is the "Theatre of the air." This has proved a very popular broadcast indeed, and for the benefit of readers of the Broadcast Year Book, let it be stated that the whole programme is done by means of gramophone records, although most listeners imagine the programme comes straight from a theatre. The orchestra is heard tuning up, the talking of patrons of the theatre is heard, the curtain goes up, and the performance starts, the radio audience having been invited to pull up their chairs and take a front seat. For all the world the programme resembles that of an actual flesh and blood performance. Listeners ring up and ask what theatre is being used, yet it is all done by means of cleverly manipulated gramophone records.

Lately 2SM has inaugurated a new broadcast. Listeners are introduced to living personalities who assemble at 8.30 in the back parlour of a small country store known as Jan's Corner. There is Jack Clancy, the publican; Mrs. Harris, who keeps the boarding house; George Ohlsen, the mayor; the local postman, the station master and all the celebrities who make up the community of this tiny hamlet. They gather round Jan's wireless set through which listeners hear all the gossip of the place and an excellent programme as well.

2SM caters faithfully for the sporting community. On Tuesday and Friday evenings at 7 o'clock, Eric Gordon conducts a racing session covering in detail the form of prospective starters in the next day's meeting and discussing possibilities with the knowledge of a trained observer. 2SM also runs a session for Old Boys of the Great Public Schools every Friday at 6.30, dealing with every branch of sport in which they are likely to be interested. Stan. McCabe, the well-known international cricketer, is the 2SM cricket commentator. During the last test matches, wherever the play was taking place, Mr. McCabe reviewed each day's proceedings at night over 2SM. When the matches were in Adelaide, Brisbane or Melbourne, the Postmaster General's telephone lines conveyed the talks to the 2SM studio in Sydney.

## 2SM PERSONALITIES

**MONSIGNOR MEANY.**—As General Manager of the Station, Monsignor Meany exercises full control of 2SM and guides the policy of the station. Monsignor Meany first became associated prominently with broadcasting at the time of the Eucharistic Congress and it was largely to his influence that the interest of the church in broadcasting was aroused. Monsignor Meany does not figure on the programme as a regular station personality, but he is always on hand to give a talk whenever occasion requires, and to step into the breach in the event of an unexpected gap in programme. The supreme authorities of the Catholic Church in Australia place a high estimate on the work of Monsignor Meany.

**JOHN DUNNE.**—Mr. Dunne is chief announcer and studio manager of 2SM. For 12 years he was on the stake with the J. C. Williamson Co., and after passing the drudgery of apprenticeship he played leads with Gladys Moncrieff, Rene Kelly, Josie Melville, Maurice Moscovitch and other stars. Mr. Dunne gained his experience over a wide field which made him equally at home in musical comedy, straight comedy shows and drama. Before joining 2SM, he had broadcast from all the A stations in Australia and New Zealand. Returning from a 10,000 miles tour in all the Australian States, Mr. Dunne was feeling somewhat weary of travelling when he read that station 2SM would shortly be on the air and that a chief announcer was required. More than two thousand others heard the same news and applied for the job, which, however, fell to Mr. Dunne. That was in December, 1931, and he has been working for 2SM ever since and is quite happy. As Uncle Tom, Mr. John Dunne is among the most likeable of all the radio uncles in Australia.

**NORA McMANUS.**—Mr. Dunne's assistant announcer, Miss Nora McManus, has travelled extensively. She appeared in London with the great Richard Tauber and also played lead in the West End engaged by the British Broadcasting Corporation to sing in musical

in the "Chocolate Soldier." Just before sailing for Australia, she was comedy duets. Shortly before 2SM had started, Miss McManus was playing in the same company as Mr. Dunne in Melbourne in "Follow Through." Miss McManus is Mr. Dunne's partner in the 2SM "Husband and Wife" sketches. They never work from copy and it is the spontaneity of this turn, largely, which makes it so popular. Miss McManus is a New Zealander by birth, and while she was in her native country, her flair for comedy work first manifested itself.

**GOODIE REEVE.**—Miss Goodie Reeve, daughter of the distinguished Ada Reeve is one of the most experienced broadcasters in Australia. She has pioneered children's sessions of distinctive character at 2BL and 2GB and her versatility as singer and pianist and monologue artist places her in the very front rank. Miss Reeve is a great favourite with the children. At the moment of writing, she is suffering from a severe illness but is expected to resume her sessions at 2SM in the near future.

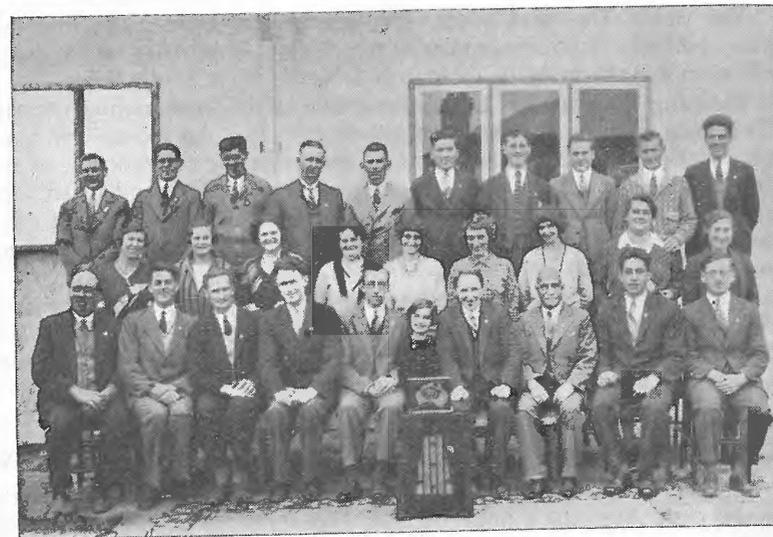
**JOHN TUTTEL.**—When broadcasting was started in Australia, Mr. Tuttel was quite a youth. He grew up in the business at station 2FC and had opportunity of studying it from every angle. In course of time he became attached to the technical staff, upon which side of the business he received a sound training. Later Mr. Tuttel became an announcer at 2FC but crossed over to 2SM at its inception. He is a very versatile man in the studio and has a good clear voice. Mr. Tuttel has made a special study of musical composers and whenever there is any doubt as to the pronunciation of a foreign name, he can always be relied upon to clear up the difficulty.

**ARTHUR DAVIS.**—Mr. Davis is one of the foremost authorities on classical music in Australia. At 4 o'clock each Sunday afternoon he conducts a celebrity recital which has attracted a very considerable following. Mr. Davis pays particular attention to the selection of his records which he orders from abroad especially, so that listeners can usually be assured of hearing something new to their experience.

**REV. DR. RUMBLE.**—From a religious point of view, the Sunday night "question box" of Dr. L. Rumble, M.S.C., S.T.D., is an outstanding feature of Australian broadcasting. For an hour, Father Rumble answers questions on theological, moral and ethical problems. He receives letters from all over Australia and New Zealand, and his replies are not only interesting to Catholics as an accurate interpretation of the authoritative viewpoint of their church but to Christians of any faith and indeed to persons outside the Christian religion. Father Rumble was originally a member of the Church of England (though not a cleric). After conversion to catholicism he studied in Rome for four years. He is a member of the teaching staff of the Sacred Heart Monastery, Kensington.

## Forward 2HD—'A Tale of Triumph'

Station 2HD Newcastle may claim to be a pioneer of Radio Broadcasting in Australia. Back in the days when the National Commission of Inquiry laid down lines for the organisation of broadcasting in the Commonwealth, 2HD had its birth. Its infancy was hard and cruel. For a long time it was not seen much nor heard often, yet fate had better things in store and a merciful Providence kept it alive. The big change came about two years ago when Airsales Broadcasting Company re-organised and placed Mr. E. A. Wood, late of Sydney and Adelaide, in command as manager of the station.



Staff of 2HD, Newcastle.

Mr. Wood called to his aid an old colleague, Mr. T. Kitto, Radio Engineer, and a graduate of the Launceston Technical School. Then things began to happen. The old gear that had heretofore served to give feeble expression to the life of 2HD was unceremoniously scrapped, and an entirely new equipment on up to date lines was installed. A comfortable studio replaced the ramshackle building that had hitherto served the purpose and 2HD began to sing 'as it were a new song' that was heard with admiration and astonishment all over New South Wales and beyond.

Having found the Station's voice the manager next turned attention to its repertory. Programmes were arranged embodying the latest song hits and other up-to-date music. Humorous sketches, travelogues and lectures on all topics of human interest bore testimony that 2HD had leapt into the front rank of broadcasting in Australia and had come to stay.

Realising that success in radio depends largely on securing the approval of "Mum and the Kids" Mr. Wood enlisted the services of 'Cousin Joy' whose winning personality and hearty enthusiasm captured the hearts of the listeners. The Joy Club was instituted for the youngsters and the response of the children was immediate. In steady procession they have been marching into the Club until now it has over 4,000 members—and they are still coming. The Joyster Club, organised for adult listeners enjoys an equal measure of popular favour, its membership roll mounting steadily towards the 2,000 mark. Cousin Joy's services to the lady listeners and others are ably seconded by Auntie Betty and Auntie Maud, and this trio of lady announcers contribute largely to the success of the 2HD programmes.

The 2HD Topical Chorus, for which Les. Daley, the inimitable Muffin & Crumpet fame is responsible, is nearly as well-known as the National Anthem in Newcastle and North New South Wales.

Realising that there is no standing still in the broadcasting industry, 2HD is once again in the throes of reconstruction. An increase of power has led to the renewal of equipment necessitating the construction of new buildings, and the stately pile now going up on the Maitland Road forms a landmark on the way to Brisbane. In addition to a new suite of offices a second building houses three studios, the largest of which will accommodate a full orchestra.

The management spares no pains to keep the station in the front rank of broadcasting in New South Wales and the popularity of 2HD with the listening public justifies the efforts. 2HD broadcasts on a wave length of 270 metres; their power is now 500 watts.

### 2KO Newcastle, Which K.O.'s Bad Business

From practically nothing two years ago, 2KO has grown until to-day it ranks with Australia's finest B class broadcasters. Commencing with a staff of two and a temporary power of 25 watts, 2KO now has a staff of 12 and uses 500 watts.

A few days after commencing the service on 1st August, 1931, 2KO was able to secure the relay from 2UW of the memorable Dawson-Hambourg concert. This proved to be the foundation of programmes of 100 per cent. entertainment value including practically every worth-while radio feature from the opening of Sydney Harbour Bridge to "Jacko" the broadcasting kookaburra, and from the broadcast of Cavalleria Rusticana and Pagliacci in their entirety from the Theatre Royal, Melbourne, to an address by Captain P. P. Eckersley, formerly Chief Engineer of the B.B.C.

To-day the programmes cater for every taste with musical programmes specially chosen and well balanced between classical and lighter grades, travel talks, talks on child welfare and child psychology, dance music, sporting broadcasts of which boxing and wrestling take pride of place and so on down the list of really entertaining radio features.

The studios located in the Civic Centre of Newcastle are equipped

to handle any type of radio presentation in conjunction with efficient control room design and practice.

Here the plant is equipped with every modern feature. Temperature-crystal control of frequency, and 100 per cent. modulation produce a transmission that has been favourably commented on from Perth to New York, which is steadily building a reputation for dependability.

The studio management and programme production side of the station is in the hands of Mr. Harold Pickhover, better known to the radio audience as "Uncle Peter." Mr. Pickover was born in England. He entered radio in 1931 with 2KO and new ideas, a gift for presentation, and a pleasing personality have won him a large following and well deserved popularity.

Mr. Allan Webber, a newcomer to the station has already made his presence felt and is rapidly earning the appreciation of 2KO's audience for a clear, concise announcing style and a pleasing manner of address.

The feminine side of the station audience is under the care of Miss Elma Gibbs, well-known among the stage fraternity through her long association with J. C. Williamson Ltd., where she gathered a solid background of experience in both musical comedy and drama. She is remembered as "The Patsy" and for her fine work in "The Calender" with Frank Harvey "A Warm Corner," "My Lady's Dress" and other leading J.C.W. productions. A cheerful personality, Miss Gibbs is always sympathetic and understanding of the requirements of her followers. Particular worthy of note are her "Musical Moments," songs at the piano, sketches and snappy dialogue with Uncle Peter.

### Grafton's Station—2GF

A wireless station has been established at Grafton by the Grafton Broadcasting Company, and it was officially opened on December 15, 1933, by Archdale Parkhill, Postmaster-General, speaking from Sydney. Others who took part in the opening ceremony were Dr. Earle Page, M.P., the Mayors of Grafton and South Grafton (Ald. Eggins and Schwinghammer) and V. M. Brooker, manager of the Broadcasting Department of Amalgamated Wireless. The nearest station to Grafton at present is at Lismore, 90 miles away, so that the new station serves a very large district including the most populous part of the North Coast of New South Wales.

The transmitting equipment consists of a standard station designed and constructed by Amalgamated Wireless with a power of 50 watts unmodulated in the aerial. This is precisely similar to the stations erected by Amalgamated Wireless at Albury, Goulburn and Wagga. The studio and transmitter are housed in the same building on a site between Alice and Turf Streets, facing Arthur Street, Grafton. The aerial is suspended from a pair of masts 160 ft. in height. The call sign of the new station is 2GF, its wave length is 246 metres and its frequency 1,220 kilocycles. C. E. Coldwell-Smith is the manager and chief announcer, Miss Molly Noonan, assistant announcer and W. Betteridge, engineer.

## Station 2AY Albury

2AY Albury, is owned and operated by Amalgamated Wireless (A/asia) Ltd., and has the distinction of being the first country broadcasting station to receive a "B" class licence. This was issued on December 17th, 1930, and since that date the station has set a lead to all other N.S.W. country stations.

From its inception the station has proved highly popular, perfect quality reception being available over a wide area which previous to 2AY's formation was very poorly served.



2AY (Albury)—(Left) A. E. Lawrence, Manager and Chief Announcer; (centre) F. Pearce, Technician and Assistant Announcer; (right) Miss E. McGladery—"Auntie Judy."

The opening of the station during December 1930 was a notable occasion, the programme included vocal, instrumental, comedy numbers, and bright dance music supplied by the leading musical talent of Albury and district. The response from the listening public was most gratifying and showed that 2AY would be supplying a long-felt want by making available to a large country area, a programme free from static and fading.

The installation of the Albury station was immediately reflected in increased listeners' licences and a boom in the radio trade which has continued steadily ever since.

2AY can now be considered one of the best radio centres in the country, and its listeners are very radio-minded and keen critics.

The equipment of 2AY is of the most modern type, consisting of an A.W.A. crystal controlled transmitter delivering 50 watts into the aerial—which is of the T type—supported by two 75 ft. tubular steel masts.

The studio and station building are one and a half miles from the town on an elevated site on Pool's Hill overlooking the city. 2AY gives remarkable radiation and is heard comfortably within a radius of 100 miles. The station is regularly listened to in New Zealand and in all States of the Commonwealth, the most distant verified reports came from Vancouver, Canada, San Francisco and San Diego, California, the wave length of 2AY is 202.7 metres and the frequency, 1480 kilocycles.

2AY studio is of the most modern and scientific construction, lined with sound-proof celotex and artistically furnished. Facilities for outside broadcasts are catered for by a switchboard and lines to the main points in the city. A studio amplifier of the very latest design complete with mixing panel and tone control, together with splitting arrangements, makes it easy to relay the programme to other states. A feature of 2AY is the fact that the station is under dual control. There is a control panel complete with instruments on the announcer's desk, making it possible to control the station from the announcer's table with as much ease as if the control work were being done from the engineering room.

On the first Anzac Day after the opening of the Albury Monument, 2AY carried out one of its earliest achievements. There being no land-line to the monument, a short wave transmitter was used to broadcast the ceremony. This was picked up by 2AY and then relayed. Other notable broadcasts include the opening of the Sydney Harbour Bridge, the Peter Dawson-Backhaus concert from the Town Hall, Sydney, the grand opera "Lucia di Lammermoor" from Her Majesty's Theatre, Sydney, the Round Australia "B" class broadcast to the Postmaster-General, and a relay from Sydney of the opening speech of the King at the opening of the Economic Conference in London.

2AY broadcasts a dance programme every Friday night, the music being given by Albury's leading dance band—Morrelle Master Musicians, and is relayed from the Ritz ball-room.

Recently a children's session was commenced and is proving very popular. The session is conducted by Miss Edna McGladery, known to the children as Auntie Judy.

2AY caters for one of the wealthiest districts in Australia, viz., the rich upper Murray and Riverina, unsurpassed for richness and fertility of the soil. The Riverina produces more wool, cattle and wheat than any other centre in the Commonwealth. More cattle pass through the famous Wodonga Yards, three miles from Albury, than any other cattle yards in the world. The population within a radius of 50 miles of 2AY, is approximately 120,000.

Mr. A. E. Lawrence, manager and chief announcer of 2AY is a man of experience and personality. He entered the radio field in 1919 in the Marine Service of Amalgamated Wireless. He is a holder of the Washington Convention Certificate, First Class Radio Telegraphy and Telephony. His sea service included service on 20 different vessels trading to every corner of the globe during which time he crossed the equator 26 times. He joined the A.W.A. Engineering Department in

June, 1925, and was subsequently appointed to the studio of 3LO, Melbourne. Later he was stationed at Braybrook, the transmitting centre, and assisted in many short wave experimental transmissions conducted over VK3ME, the A.W.A. short wave station. Subsequently he served a short period on relieving duties as manager of station 3BO, Bendigo, and on June 1st, 1932, was appointed manager and chief announcer of station 2AY.

Another personality is Mr. F. Pearce, advertising representative, technician and assistant announcer. Mr. Pearce was one of the first technical men appointed to station 2FC, Sydney and 2BL, Sydney.

2AY possesses in Miss Edna McGladery another popular personality. Miss McGladery—or Auntie Judy—conducts the children's session. She was for two years at station 7LA, Launceston, where she arranged the recorded programme and conducted a light musical programme during the evening.

## Station 2WG, Wagga

2WG, one of the youngest B Class Stations, commenced broadcasting on 29th June, 1932. With station, studio and offices situated in spacious, modern premises at Wagga, it is already one of the show places of the Riverina.

The Managing Director of the Riverina Radio Broadcasting Company Ltd. is E. Roberts, B.Ss., whose rapid advancement in the radio world is indicative of the opportunities available to the right man. Commencing business in Narrandera six years ago, he quickly realised the need for a Riverina broadcasting station. Wagga was promptly selected as the desirable site, and plans materialised when, on 29th June, 1932, the Station was officially opened by Senator Charles Hardy.

The transmitter used is an A.W.A. 100 watt plant, transmissions from which have brought favourable reports from many overseas countries and from every corner of Australia and New Zealand. That 2WG is popular in a district where static, fading and similar troubles mar reception from city stations throughout a great portion of the year, goes without saying. If a census were taken, the most popular personalities would be Auntie Nan and Uncle Happy, who conduct a children's session dear to the heart of every youngster in the Riverina. They are in the possession of a magic bicycle built for two. With this they career through the clouds on birthday trips and visits, ringing the magic bell, using the magic pump and Magic oil-can as occasion demands, and accompanied by the magic music of "Daisy Bell," which the magic bicycle plays to them. They are accompanied in these excursions by Siegfried;

the magic swan, who perches on the handle bars and directs operations, to the delight of both juveniles and adult listeners throughout the countryside.

Both Manager and an enthusiastic staff are keen in efforts for the development and improvement of the Station, which serves an area as large as Victoria, and which is aptly known as "THE VOICE OF THE RIVERINA."

## 2WL—Voice of Illawarra

Station 2WL—"The Voice of Illawarra"—is owned and operated by "Wollongong Broadcasting Co.—2WL," and was officially opened on July 18th, 1931. After 10 months' operation the rapid growth of the business rendered necessary the erection of a new studio and transmitting station, the new building being occupied on 20th March, 1932. The Manager and Chief Announcer is Mr. Russell A. Yeldon, and his assistant Miss May Gibson, a well-known contralto.

Listeners in all Australian States have reported reception of 2WL's transmission; over a dozen letters have been received reporting reception in the United States of America, and over 1,000 have been received from New Zealand. 2WL has relayed from stations in Victoria, South Australia and Queensland, and on many occasions from Sydney stations. The principal public buildings and churches are connected to the studios by land-lines. The station conducts sporting sessions every Saturday, and scouting sessions weekly, whilst those interested in exploring the beauties of the glorious district of Illawarra are catered for in a motoring session which is held fortnightly.

The station is situated on a hill overlooking the sea and three-quarters of a mile from the main business centre of Wollongong. Within a few miles radius there are over 5,000 licenses and within a radius of 50 miles from the station with over 1,000,000 population the license figures exceed 100,000. Station 2WL covers the whole district of Illawarra and such places on the Southern Tablelands as Bowral, Bundanoon, Mittagong and Robertson.

### LICENCES ON DECEMBER 31, 1933.

During 1933 the number of wireless licences in Australia increased by 99,448, making the total number on December 31 of 518,628. N.S.W. stands at 197,869, Victoria 184,861, Queensland 40,918, South Australia 55,762, West Australia 25,325, Tasmania 13,893.

### CAPT. STEVENS FOR 2UE.

As this book is in the press it is learned that Captain A. C. C. Stevens, popular announcer of the A.B.C. has transferred to 2UE.

## 3DB Melbourne

On Saturday, August 5th, 1933, 3DB, Melbourne, "The Herald" Station, turned a well-thumbed leaf of broadcasting and commenced a new chapter of radio transmission. For the fourth time in four years of "Herald" ownership, the transmitter had been remodelled. Tests from the new plant indicated splendid quality. The technical gear was moved from Ashburton and re-assembled in Flinders Street next to its parent building. Normal transmission from the studio was maintained throughout. The effect of this removal of the transmitting plant was to assist listeners in the northern industrial suburbs of Melbourne and country to obtain clearer reception.

3DB's new station employs low modulation which means that the plant may be divided into two groups. One is the audio amplifier modulation, crystal oscillation, etc., comprising a complete transmitter of comparatively low power. The second unit is a large radio frequency amplifier, which takes the output of the transmitter and boosts it to the desired power before feeding it into the aerial. The valves in this stage are so much bigger than the 210 type crystal oscillation that they have to be cooled with water in much the same way as a motor car engine is cooled.

Under the new arrangements the transmitter is located about 100 yards from the aerial and a specially designed and constructed transmission line carries the power from the transmitter to the aerial without radiating any of it on the way.

This line terminates in a small tuning calm located midway between the masts and directly under the aerial. It is in this calm that the change takes place which causes the transmitter output to be radiated from the aerial. Experience has proved the efficiency of the flat T type top aerial and 3DB has installed it. It is 70ft. long by 12ft. wide, the total distance between towers being about 200ft.

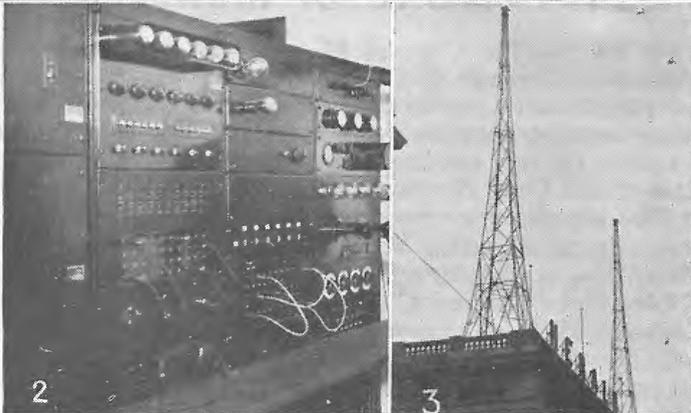
One of 3DB's brilliant efforts to keep Australian broadcasting clean and bright is the "Smile Away Club." During each of its 3 years' existence, the membership has topped the 20,000 mark and 55,844 double tickets for leading theatres have been distributed among appreciative "Smile Aways."

Another venture which appeals to thousands of listeners is the community singing at the Auditorium conducted by Charlie Vaude.

The Sandy McNab concerts on Sunday evening have established themselves in the hearts of folk who find enjoyment in the delightful and very real doings of the folk of Jonesport. This particular broadcasting has a strong religious atmosphere and the singing of old time hymns is balm to many a weary soul.

Technicians claim that the new 125ft. steel towers erected on "The Herald" Building give 3DB the most effective aerial system of any B class station in Victoria. Any equipment that could be modernised has supplanted earlier apparatus.

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(1) Staff of 3DB; (2) New Control Panel at 3DB; (3) 3DB Towers on the "Herald" Building, 208 feet above ground; (4) The Prime Minister (Mr. J. A. Lyons) opening the new 3DB Station, August 5th, 1933.



(1) The Sandy McNab Group have been entertaining from 3DB every Sunday night for over two years; (2) Comedy turn by Daybreak Dan and Tilly; (3) Charlie Vaude and Lenn Millar crack a joke; (4) 3DB Staff entertainers sing an opening chorus.

The record library, after importations of judicious choice, is said to be as extensive as that of any broadcasting station in the world.

Other new items include the romantic life story of Victor Herbert, the Irish-American composer and "Eb and Zeb," two elderly humourists whose every-day discussions and dry wit demand instant friendship.

"The Mirth Quakers" are radio entertainers who make a happy combination of jollity and song.

Every Sunday morning, 3DB "fishes" round the world for short wave reception.

### 3DB BROADCASTING CO. PTY LTD.

Chairman of Directors, Thorold Fink; Manager, David Worrall; Programme Director, Charles Taylor; Musical Director, Hugh Huxham; Sales Manager, L. G. Mather; Advertising Service Manager, McCowan Russell; Chief Announcer, Renn Millar; Day Announcer, Geoff. Palmer; Comedian, Charlie Vaude; Early Morning Announcer, "Daybreak Dan" (John Stuart); Children's Entertainer, "Midshipman Bob Breezy" (John Stuart); Lady Announcers, Miss Iris Turnbull (Women's Radio Service); Miss Millicent Osmond (Sally Ann); Miss Isobel Ann Shead (Isobel Ann); Miss Marjorie Troy (Tilly); Station Engineer, E. Ashwin; Pianist, Reg. Brown

The history of 3DB is a record of an unassuming start, gradual progress, and finally the development of the station into a powerful instrument of entertainment and publicity.

When the station opened early in 1927, soon after the arrival of the electric pick-up for the reproduction of recorded music, there was a staff of five. At that time 3DB was housed in two large rooms at Capitol House. The staff had grown to eight when the "Herald" purchased the station outright in May-June, 1929.

Steady progress was made in the first year of the new ownership. The old plant which had cost nearly £2000 was scrapped completely, being replaced by up-to-date apparatus and a new studio was built next the "Herald" office.

Just a year later—in June, 1930—this studio was the scene of Australia's most spectacular wireless stunt in the Test cricket broadcasts which kept Australia up till the early hours of the morning and resulted in the sale of nearly £2,000,000 worth of radio sets.

Following the Test broadcast 3DB's next substantial expansion came after a fire which destroyed completely the studios and studio equipment. The National Broadcasting Co. of America kindly made available the result of years of research by their experts on studio construction and 3DB's present beautiful studios are the result.

Early in 1933 the company's latest major development was made when the plant of the station was removed from Ashburton to the ground floor of 3DB. The opportunity presented by the change-over was taken to incorporate in the plant the very last word in amplifiers and other equipment, giving a definite refinement in the quality of the transmission.

Above the building the present huge towers were erected. Towering 208 ft. above the street level the aerial system is of the flat top T-type, 70 ft. long and 12 ft. wide. The total distance between the towers is about 200 ft.

The new station employs low modulation, which means that the plant may be divided into two groups; one, the audio amplifier, modulator, crystal oscillation, etc., comprise a complete transmitter of comparatively low power; and two, a large radio frequency amplifier, which takes the output of the transmitter and boosts it to the desired power before feeding it into the aerial. Under the new arrangement the transmitter is located about 100 yards from the aerial.

In the march of radio progress 3DB has been prominent. It is a far cry from the modest equipment and programmes of the station when it commenced and the modern scientific apparatus now employed, which puts on the air not only a series of programmes of remarkable merit and variety, but a number of clubs, leagues and so on, which, by reason of the philanthropic work thus carried out, may justly be termed social services.

No station can perform such jobs efficiently unless its signals can be readily received over a large area. In this connection, 3DB has had reports from the north and even from the "difficult" parts of Gippsland extolling the quality of the reception; and, coming nearer home, in some of the industrial suburbs where reception was formerly weak, 3DB is heard consistently well.

#### HOURS OF TRANSMISSION.

Monday to Friday: 7 a.m. to 9 a.m.; 10.30 a.m. to 1.45 p.m.; 2 p.m. to 11.30 p.m.

Saturday: 7.30 a.m. to 9.15 p.m.; 2 p.m. to midnight.

Sunday: 10 a.m. to 12.15 p.m.; 2.30 to 4.30 p.m.; 6 p.m. to 10.15 p.m.

No reference to the "club" activities of the station would be complete without reference to the "Smile Away Club," whose phenomenal success this year may be gauged from the fact that 25,000 members were enrolled. Theatre parties, trips down the Bay, dances, entertainments of all kinds—these constitute the main activities of the popular club. Already several thousands of enrolments for 1934 have been made.

Charles Vaude, of the former well-known "patter duo," Vaude and Verne, is in charge of 3DB's community singing sessions, which are held every Monday at the Auditorium, the proceeds going to the Lord Mayor's Fund, which as a result has received some thousands of pounds. On occasions 2000 people have packed the Auditorium to attend these sessions.

Programme features are being constantly added to. Comic serials such as "Eb and Zeb" have proved very popular and the public demand is for more. Potted dramas, especially mystery thrillers, which have also been a feature of 3DB will be put on the air frequently in the future.

Technique in broadcast entertainment is ever-changing. In keeping to the forefront in radio presentations the station endeavours to make each session an entertainment unit, not merely a series of advertisement announcements interspersed with gramophone records. Two popular units are "Down Lovers' Lane" and "Jewels from Opera's Treasure House."

Another of the station's special features is the Women's Radio Service on Tuesday, Wednesday and Thursday morning at 11 o'clock. Connected with the session is the "Woollies" Fund Appeal for comforts for children and poor parents, and such is the phenomenal success of the appeal that nearly 10,000 garments have been distributed by 3DB to various charitable organisations. Quite a number of these garments were contributed by members of the Friendship Club.



R. Lincoln, Manager, 5KA, Adelaide.

And, of course, the Children's Session. Every day, except Sunday, from 5 to 5.30 p.m. "Midshipman Bob Breezy" and "Sally Ann" entertain in their inimitable way the thousands of youngsters who have come to regard them as grown-up friends. Associated with the Children's Session is the popular "Junior Smile Away Club."

On the more serious side, the talks every Friday night by "The Doctor" are listened to by thousands of people. Common complaints and methods of combating them are referred to by the speaker.

The station has probably the largest and best library of records in the world. As a fact, it could broadcast from 7 a.m. till 11 p.m. daily for six months without repeating a record.

### 3UZ's Nine Years

As a B class station, 3UZ has been on the air regularly for nearly nine years. It is one of the few stations whose ownership has remained unchanged. The license in respect of 2UZ was issued to O. J. Nilsen and Co. on February 6, 1925, and the service was commenced a month later. The power (anode) was 500 watts and the wave length 322 metres.

It is a far cry from the primitive apparatus used in those days to the up-to-date equipment which has played its part on the mechanical side in making 3UZ one of the leading Australian broadcasting stations.

To celebrate the fourth anniversary of their Radio Club parties, members of 3UZ's Radio Club packed the Central Hall, Melbourne, on July 8, 1933. It was a dramatic tribute to the popularity of the club. Established in July, 1929, these parties have been held almost without a break on alternate Saturdays throughout the past four years. The programmes include community singing, items by the members, competition and special items by professional artists. Among the features which are regularly presented by 3UZ it is difficult to say that this or that is more important; but no reference to features would be adequate without placing on record the Digger Session, conducted by Major W. S. Scrivenor. To many a lonely digger out-back, to many a weary but cheerful "cot-case" still in hospital, to thousands of soldiers Major Scrivenor's Friday evening talks stir memories of days now half-forgotten, of the triumphs and tragedies, the joy and the pain of the spacious A.I.F. days. Allied to the Digger session, descriptions, also given by Major Scrivenor, of various military events are regularly broadcast. Although recognised as the official radio news medium for Victorian ex-Service men, the scope of the Diggers' session extends throughout the Commonwealth.



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Station 3UZ: (1) 3UZ Studio; (2) Ernest Trotman, Studio Manager; (3) J. Lloyd Jones, Announcer; (4) John Rose, Announcer.

## 3AW, Melbourne

Power of 400 watts in the aerial, wave-length 210.5 (1425 K.C.). His Majesty's Theatre, Exhibition Street, Melbourne, C.1. Owned and operated by J. C. Williamson Ltd., David Syme and Co. (The Age), Allan and Co. Pty. Ltd.

Early in 1932 three powerful interests in Victoria formed an alliance to operate a Broadcasting Station, to be known as The Vogue Broadcasting Co. Pty. Ltd.

An application was immediately made to the Postmaster-General's Department for a broadcasting licence, and with the enterprising force of Mr. George Sutherland as Managing Director, the foundations of the Station to be known as 3AW, Melbourne, were laid.

On February 28, 1932, 3AW, Melbourne, was on the air for the first time with a most ambitious programme, including a relay of the inaugural speeches from the Victoria Palace Hotel, which was immediately followed by a relay from the Theatre Royal of Gladys Moncrieff's last production of "The Merry Widow." The Williamson Imperial Grand Opera Chorus provided brilliant items from the Studio. Through the tie-up with J. C. Williamson, 3AW secured the rights of all their Musical Comedies, Operas, Comedies and Dramas, and through the same association it secured the exclusive rights to the vocal gems from every Musical Comedy controlled by J. C. Williamson in Australia.

3AW set out to specialise in studio productions and made a feature of special plays adapted for Radio and played by the Station Staff, augmented by J. C. Williamson artists. One of the first Station features established was the Children's Session, from 5 to 6 every evening, under the title of the "Chums' Chatterbox Corner." Definite characters were established until at the present time "Mary Elizabeth," "Nicky," "Wooz" and "Horrors" are known and loved by 14,000 boys and girls who are members of the ever-increasing "population" at the "Chatterbox Corner." Shortly after 3AW was on the air, Fred Tupper, the well-known sporting commentator, and Clifford Nicholls, who had been with J. C. Williamson touring companies, established the "Nicky and Tuppy" Breakfast Time Session, which has proved perhaps the most popular breakfast time session on the air.

Another remarkable broadcast arranged by 3AW in co-operation with Amalgamated Wireless (Australasia) Ltd., was when Miss Gladys Moncrieff sang special numbers in the 3AW Studio. These numbers were broadcast in the usual way, but they were picked up in one of the suburbs on a Fish Radiola Receiver, which was in turn hooked up by landline with another station and then re-broadcast. This feature was an unqualified success and demonstrated the excellent quality of 3AW's transmission, which is elected by experts as the best modulated "A" or "B" Class Station in Victoria. Mr. George Sutherland also saw the immense possibilities in outdoor broadcasts and arrangements were made whereby

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Station 3UZ: (1) Jack Gurry, Sporting Announcer; (2) Frank Jenkin, Announcer; (3) Anne Harvey, Programmes and Announcer; (4) Marie Landon, Announcer.



Station 3AW, Melbourne: (1) Stuart Bridgman, Manager; (2) E. Mason Wood, Studio Manager; (3) Clifford Nicholls, "Nicky"; (4) Fred Tupper, "Tuppy."

3AW became the only "B" Class Station in Victoria to broadcast running descriptions of all Metropolitan horse races. Events of international importance such as the Caulfield and Melbourne Cups and the Grand National Hurdle and Steeple have all been relayed to Interstate Stations, and on one historic occasion eighteen stations were included in the hook-up.

3AW's latest triumph was the construction by its engineers of a short-wave portable transmitter, operating on a 5 meter wave-length. With this portable equipment 3AW recently carried out for the first time in Australia, a stroke by stroke description of the Australian Golf Championships at Royal Melbourne Golf Links. During this broadcast two-way communication was established and kept in operation the whole of the time the field transmitter was away from the base, and it was proved conclusively that the transmission was perfect even when the microphone and transmitter were two miles from the base station. 3AW executives believe that the possession of the only portable transmitter in Victoria has immense possibilities which will be exploited to the fullest.

3AW recently created what is believed to be a record for any Broadcasting Station in Australia. On two consecutive days in one week every second of its broadcasting days (6.30 a.m. to 11 p.m.) was sold to advertisers.

### 3AW PERSONALITIES

The personnel of 3AW is headed by GEORGE SUTHERLAND as Managing Director. As General Manager of Allan and Co. Pty. Ltd. and a Director of the Australasian Performing Rights Association, Mr. Sutherland is one of the best informed men on every angle of entertainment and his wealth of experience is readily given to any problem that crops up in the daily routine of a Broadcasting Station.

The Station is managed by STUART BRIDGMAN, a newspaper man of wide and varied experience, who has very successfully brought news-gathering ideas and newspaper methods to bear on Radio.

E. MASON WOOD, Studio Manager, is a pioneer of the microphone in Victoria. He first came to Australia to play leading roles with Oscar Asche, and when broadcasting was first made commercially possible, he joined 3LO after being Manager of 3BA, Ballarat, and Studio Manager of 3UZ. He was one of the first members of the staff of 3AW.

MISS MARGARET MANNING, counsellor and friend to a very wide circle of women listeners, who receive much valuable information during the "Happy Circle" Session from 3 to 5 every afternoon. Miss Manning is a graduate of the Melbourne University with an M.A. degree, and her talks on all subjects of interest to women, particularly child welfare, are extremely popular. Every last Thursday in each month Miss Manning is hostess at the monthly meeting of the Happy Circle Club

and it is no unusual thing for 500 women to "get together," meet some of the J. C. Williamson stars, and, in short, chatter about those things which appeal to all home-loving women.

FRED TUPPER, 3AW's Sporting Commentator, and "Tuppy" of the "Nicky and Tuppy" breakfast time team. Mr. Tupper was at one time a very successful jockey, with great victories in India and America. He was with 2FC as sporting announcer and then joined 3AW shortly after its establishment. Mr. Tupper holds something of a broadcasting record in that a year or so ago he was describing the Melbourne Cup and 22 stations scattered over the Commonwealth were included in the hook-up. This particular race was also picked up by A.W.A.'s station VK3ME on short wave and broadcast world-wide. With Mr. Clifford Nicholls, Mr. Tupper established the "Nicky and Tuppy" Breakfast Time Session from 6.30 to 9.45 a.m., and their amusing foolery has made the session the most popular in Victoria.

CLIFFORD NICHOLLS, "Nicky" of the famous "Nicky and Tuppy" breakfast time team. Mr. Nicholls was with the J. C. Williamson touring companies and on vaudeville circuits before he entered the Radio field, and he has proved himself a very versatile and popular Radio artist. As "Nicky" in the Chums Chatterbox Corner, his fan mail attains remarkable proportions. His pleasing voice and guitar accompaniment goes over well with the kiddies.

LLOYD LAMBLE, regular Night Announcer, a good salesman at the microphone, was juvenile lead in several notable amateur theatrical productions, and was day announcer at 3KZ before he joined 3AW. His clear diction and good characterisation in studio presentations makes him a valuable member of 3AW's announcing staff.

MISS EDITH THOMPSON is another of 3AW's staff who acts in studio presentations and acts as Night Announcer. Miss Thompson has had wide stage experience, first appearing on the boards at the age of eight, when she played a small part in a professional show at Kuala Liempur, Malay States.

GEORGE BILLS-THOMPSON, Record Librarian and Announcer. Before joining 3AW was Studio Manager and Announcer at 7LA, Launceston. Another 3AW salesman at the microphone and whose excellent singing voice is often heard during the Children's Session on Sundays.

## 3KZ, the Brighter Broadcaster

EXECUTIVE.—Syd. Morgan, Managing Director; W. V. Morgan, Advertising Director; M. G. Sloman, Director; A. Isacson, Assistant Manager; M. B. Duffy, Secretary.

ANNOUNCERS.—Norman Banks, Chief Announcer and Studio Manager, known to the Radio audience as "Norm."; Miss Melwit, who with Mr. Banks completes the popular combination known as "Norm. and Joan." This lady has a big following when conducting the Children's Session. N. Balmer, Early Morning and Sunday Announcer, also handles the Programme Department. Miss Dorothy Bush has charge of the Women's Sessions, and is a very successful partner to Mr. Balmer in the team known as "Eddie and Betty." Alec Dear, Day Programme Announcer, also combines with Miss Bush.

CONTINUITY DEPARTMENT.—F. J. B. Allen, assisted by Miss Ella Wilson.

ENGINEERS.—A. Grace, Chief; S. Thurling, E. Barwick.

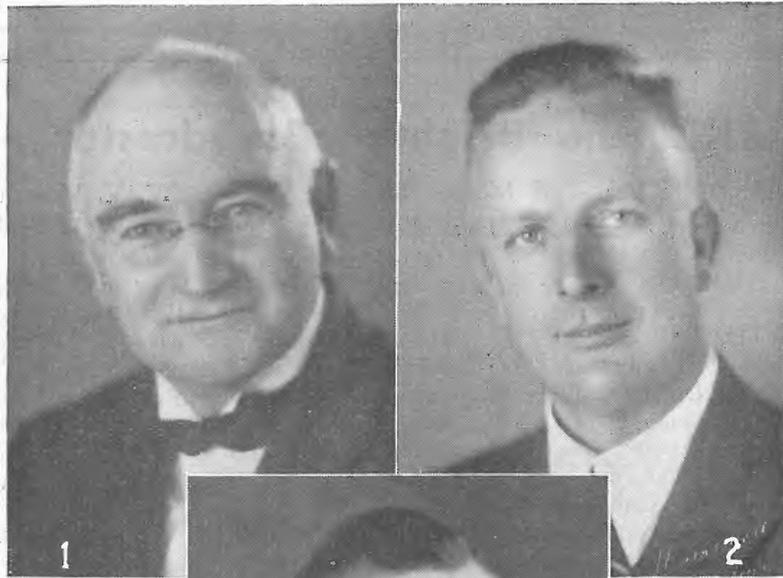
LOCATION.—Business Offices, 64 Elizabeth Street, Melbourne. Studio and Transmitter, Victoria Street, Carlton.

TECHNICAL.—Wave-length 222 metres, 1,350 kilocycles. Input power 480 watts.

FEATURES.—Bright programmes with crisp and interesting advertising copy. Descriptions every Saturday of Victorian League Football matches from leading grounds. Prominent Football personalities speak every Friday night. The comic strip of the air, "Cecil and Sally" nightly. Plays of a consistently high standard every Sunday evening by the well-known George Edwards and his company. Special goodwill dance session each Saturday night until 1 a.m. Leading Theatrical Artists rendering special items. Broadcasts direct from the film of outstanding film successes, and the presentation of leading Theatre Orchestras over the air. Children's Session each evening and women's interests specially catered for. Overseas programmes re-broadcast per medium of short wave.

SYD. MORGAN, Managing Director, although in his early thirties, has had considerable commercial experience. He commenced his career in the advertising field eighteen years ago. He is also a Director of the well-known firm of Val Morgan and Sons Pty. Ltd., who were established in 1894. He was appointed Managing Director of 3KZ in December, 1932, and prior to this was a member of the Directorate.

W. V. MORGAN, Director, is in charge of the Advertising Department of 3KZ. He is also a Director of Val Morgan and Sons Pty. Ltd. His long experience in the advertising world, plus the fact that he is a qualified accountant, is of great strength to the Directorate of this station.



Station

3KZ

Melbourne

(VIC.)

(1) M. B. Duffy, Secretary and President A.F.B.S.; (2) W. V. Morgan, Director; (3) S. Morgan, Managing Director; (4) A. Isaacson, Assistant Manager; (5) M. G. Sloman, Director.

M. G. SLOMAN, Director. He is also General Manager and a Director of Hoyt's Theatres Ltd. His reputation as a business man and his wide experience on the entertainment side is of invaluable assistance in directing the activities of 3KZ. Although a young man, he has risen to one of the highest positions in the biggest entertainment organisation in this country.

M. B. DUFFY, Secretary, has had a career which has enabled him to obtain the right perspective on modern business. He is President of the Australian Federation of Broadcasting Stations and is a member of the Commonwealth Bank Board. He was also one of Australia's representatives at the 1932 Ottawa Conference.

A. ISAACSON, Assistant Manager, one of Melbourne's best known Theatrical identities. His long association in this direction is of great value on the entertainment side of broadcasting.

NORMAN BANKS, Chief Announcer and Studio Manager, has had experience in both England and America. "Norm." has a genial Radio personality, and possesses a style which is unique. He has also earned the reputation of being a star sporting commentator. On several occasions he capably organised some very successful charity appeals through 3KZ. Possessing youth, a promising career is ahead of him.

MISS N. MELWIT, known as "Joan" to the Radio audience.—Miss Melwit is Mr. Banks' assistant at the microphone. These two are the popular combination known to evening audiences as "Norm. and Joan." Possessing a charming personality, Miss Melwit is just as nice in person as she sounds over the air. She also conducts the Children's Hour during the winter months.

N. BALMER, Early Morning Announcer, also conducts the Sunday evening programmes. He has had extensive experience with the Cairns Memorial Players, and has taken leading parts when that company have been presenting Radio plays. In addition to being a popular announcer, he is responsible for the arranging of programmes.

MISS D. BUSH.—Miss Bush plays a very important part in the day time programmes. In addition to her ordinary duties at the microphone, she discusses matters of general interest to women. Hers is also a very well-known name in Melbourne Amateur Theatrical Circles. She co-operates very successfully with Mr. Balmer in the early morning sessions, and they are known as the "Eddie and Betty" combination.

ALEX. DEAR, Day Time Announcer.—3KZ's most youthful announcer is showing promise of developing into one of Melbourne's most popular announcers. He possesses a fine baritone singing voice, which is a further asset in his favour.

The Continuity Department is in the able hands of Mr. FRANK J. B. ALLEN, who in his extensive travels has accumulated a fund of know-



1

2



3

Station

3KZ

Melbourne

(VIC.)



4

5

(1) N. Banks ("Norm"), night announcer; (2) N. E. Balmer ("Eddie"), morning announcer; (3) Miss N. Melwit ("Joan"), night announcer; (4) A. Dear ("Terry"), day announcer; (5) Miss Dorothy Bush ("Betty"), day announcer.

ledge which has equipped him beyond the average to take charge of this department. The versatility of Mr. Allen extends to the composing of words and music of some 50 songs, and the publishing of numerous poems and articles.

MISS ELLA WILSON is Mr. Allen's lieutenant. Her travelling took her through 16 various parts of the globe, thus giving her an unusually wide and useful knowledge of the fashions and customs of the world.

### 3KZ MAKES RECORDS.

In infancy 3KZ undertook a task which at first appeared fantastic—that of breaking the world's continuous broadcast record, which stood at 100 hours. Not only did 3KZ succeed, but set new figures at 197 hours. It may be here added that some American stations are never off the air, but they work with dual transmitting sets, and change over every 24 hours from one to the other. 3KZ's record was established with only one transmitting set.

One of the smartest pieces of work put up by 3KZ's engineers occurred early in 1933, when a rain catchment in one of the aerial towers burst during a storm, completely inundating the transmitting equipment. This accident, in normal circumstances, would have meant 3KZ's absence from the air for practically two days, had it not been for an inspiration on the part of a member of the staff, who commissioned a hair-drying apparatus from a well-known hair-dressing establishment. The drying properties of this equipment were the means of 3KZ being back on the air within fifty minutes.

### SEVEN NEW NATIONAL STATIONS

A contract for the erection of seven new regional broadcasting stations has been let by the Commonwealth Government to Standard Telephones & Cables Ltd., the total cost, including masts, land, and buildings, being £200,000. These will all be high-powered stations, and will be situated in the following districts:—Townsville (Q.), Grafton (N.S.W.), Sale (V.), Launceston (T.), Nhill (V.), Katanning (W.A.) and Dubbo (N.S.W.).

The Launceston station is expected to be on the air in May, 1934, Grafton and Sale in October, 1934, and Townsville in November, 1934. The remaining three will be operating by the end of 1935. The power of the Sale, Nhill, Katanning, Dubbo and Launceston stations will be 10 kilowatts in the aerial, and of Grafton and Townsville, 20 kilowatts. All will be capable of increased power up to 60 kilowatts in the aerial.

## 3AK—The Night Owl Station

Wavelength, 200 meters. Frequency, 1,500 kc. Aerial power, 50 watts. Range of transmission, 200 miles. Longest distance verified report, San Francisco, U.S.A. Longest Australian verified report, Perth, Western Australia. Aerial, umbrella type, 100 feet high. Type of transmitter, three-stage crystal controlled high-power plate modulation. Distance of studio from transmitter, same building.

Managing Director: G. F. Palmer. Announcers: F. C. Bibby, G. F. Palmer. Operator: F. C. Bibby.

Usual type of programme: Record music and short-wave rebroadcasts. Station opened 29th November, 1931.

In the closing days of 1931 some amusement was expressed at the extraordinary broadcasting schedule of Station 3AK Melbourne. As almost everyone knows, these are from 11.30 p.m. to 2 a.m. and from 5 to 7 a.m., with extra hours on Saturdays and Sundays. But the once amusing innovation, with the effluxion of time, has become a necessity to thousands of Victorian listeners. This station has filled a gap in broadcasting in Australia, and provides a service that has been long called for. Music suitable for supper parties and late dances are supplied at night; the man on the land and early morning workers are later given weather information and the doings of the day. At week-ends selected programmes are broadcast during midday on Saturday and Sundays.

Among the numerous short-wave stunts in which 3AK has been interested in was the recent broadcast of the King's speech from the Empire Station. 3AK received this transmission on its own short-wave receiver and was able to broadcast the speech from beginning to end without fading—a very fine feat.

On another occasion the Rugby match between England and Wales was rebroadcast, and it was possible through 3AK to listen to the vivid description of the match straight from the ground.

This station secured the Prime Minister's permission to rebroadcast Mrs. Lyons' speech from Tasmania to the women of Australia on last New Year's night. Amalgamated Wireless lent valuable assistance on this occasion.

Even at these late and early hours of broadcasting 3AK conducts a Theatre Ticket Club, and distributes free theatre tickets to its listeners after midnight and before seven in the morning.

Numerous letters of appreciation have been received by 3AK from all over Victoria. By reason of its late hours of broadcasting this station is heard all over Australia when atmospheric conditions are favourable and reports have even been received from as far away as San Francisco.

GEORGE F. PALMER was born in Melbourne in 1909 and is probably the youngest man to own and control a City "B" Class station. Two years ago he inaugurated a late night and early morning broadcasting service in Melbourne, the only one of its kind in Australia. In 1931 the Postmaster General granted him, in conjunction with a commercial firm a "B" Class licence to operate an all-night service and to broadcast at hours disengaged by other stations. Mr. Palmer has since acquired the commercial firm's interest in this unique service, and is now in complete control of his station, which is known throughout Australia by its call-sign "3AK Melbourne." Apart from owning and managing the station, Mr. Palmer's voice is to be heard regularly over the air from 3AK. His library of records seems to satisfy the most critical demands. Mr. Palmer is a live-wire in radio and has been responsible for many important exclusive broadcasts and relays. He claims to be the first person in Australia to relay the Empire Station successfully. Possessing an up-to-date motor-car radio, he is able continually to test the local and country reception of his station.

## Station 3BO, Bendigo

3BO, Bendigo, is owned and operated by Amalgamated Wireless (A'asia.) Ltd. Outstanding programmes of a highly entertaining nature have been responsible for 3BO winning public favour. The station has a great audience in Central and Northern Victoria, and reaches to all States of the Commonwealth and New Zealand. Its power, perfect modulation, and high-class programmes quickly brought 3BO to the forefront, and in an amazingly short period the station firmly established itself in Victoria's wealthy midland and northern districts.

Talented artists, the finest recorded music, press and market reports are featured, and receiving sets in thousands of homes are constantly tuned to 3BO. The equipment at 3BO is of the most modern type, consisting of an A.W.A. crystal controlled 2 kilowatt transmitter. In the

Studio of 3BO, Bendigo.



M. A. L. Shepherd, manager-engineer; Miss Ship, assistant announcer.

design of the transmitter particular attention has been given to the following points:—

- Great constancy of wave-length, independently of the regulation of the supply mains.
- Complete freedom from any frequency change of the carrier wave due to modulation.
- Deep modulation without distortion and the ability to use 100 per cent. modulation when required.
- A straight line frequency characteristic throughout the useful audio range.
- Freedom from harmonic radiation. The transmitter delivers a carrier wave to the aerial with a power of 200 watts, capable of being modulated 100 per cent.

An A.W.A. double turntable is installed in the studio for the broad-

casting of recorded music. Each turntable is driven by a noiseless, induction type electric motor, and separate speed controls permit an even variation within desired limits. A fader control is also provided which enables a smooth change to be made from one record to the other. The Marconiphone pick-up employed for broadcasting from records has a remarkably flat responsive curve over the whole range of the audio frequencies.

The city of Bendigo has a population of 26,000, and is situated 101 miles from Melbourne. Bendigo is the centre of the great wheat-growing, agricultural, pastoral and dairying districts of Northern Victoria. The spending power of Bendigo is estimated at £42,000,000 annually.

3BO possesses in Mr. L. Shepherd, Manager and Chief Announcer, a man of experience and personality. He is a holder of the Washington Convention Certificate 1st Class Radio Telegraphy and Telephony. As the result of years of experience in the broadcast field, Mr. Shepherd ranks amongst the foremost announcers in Australia.

## 3BA, Ballarat: Voice of the Garden City

Opened 31st July, 1930, by Mr. J. Malone, Chief Inspector Wireless, 3BA was first Victorian Provincial Station on the air permanently. It serves Ballarat City's population of 44,000, and many small towns in the surrounding districts. As Ballarat is a renowned musical centre, no difficulty is encountered in securing excellent talent for inclusion in programmes. Outside broadcasts, such as concerts, church services, dances and sporting features are carried out frequently, and 3BA participates in all the important relays originating from capital city stations.

### STATION PERSONALITIES

J. H. DAVEY, Managing Director, has had wide experience in musical and theatrical circles, and is well known for his general and organising ability. He is a Past President of the South Street Society, President of the Ballarat Choral Union, Musical Director of Ballarat Male Harmonists, and a director of Ballarat Theatres Ltd.

WARNE A. WILSON, Manager and Station Engineer, is well known in Australia for his activity in radio and electrical engineering matters for many years past. He has been a licensed amateur since 1921, under the call sign of A3RY, and in later years as VK3WA. Mr. Wilson received the first radio pictures broadcast over a long distance in Australia from 3UZ and 3DB in 1930. He is a Director of 3BA and has held his present position since its inception.

STEPHEN McDONALD, Announcer and Publicity Officer, has been Announcer and Radio Uncle for many years. He was at 3AR and 7ZL in the early days, later at 3DB and for the last two years at 3BA, where he is a firm favourite with all listeners. The Children's Session at

7 p.m. each evening which Uncle Mac conducts with the help of Barney, Red and Lara, the cockatoo, is very popular and the Club has a membership of 2,500 "bluebirds," who wear their own badge of a distinctive design. Mr. McDonald will be remembered by many for his fine vocal efforts and stage appearances of the past.

MISS LELA LAKE, L.C.M., L.L.C.M., Elocutionist and Dramatist, is also an announcer. She has had a great deal of success in South Street



James A. Davey, Managing Director, 3BA.

Competitions and also in many other centres, and has been engaged for many years in the successful instruction and preparation of pupils. Miss Lake is a partner to Mr. McDonald in advertising dialogues and numerous studio plays. She announces for the Ladies' Club, which has a member-

ship of 1,500. Lounge tickets for the Regent Theatre are awarded each evening.

ALFRED D. KERR, Engineer, has been well known for many years past as Amateur Radio VK3AL. He has radio friends in all parts of the world. The outstanding success of the reception and relay of the King's speech and Empire programme on Christmas Day, 1932, as well as other similar features was due to Mr. Kerr's reception of the broadcast at his amateur station, not an item being missed through 3BA in the re-broadcast. Mr. Kerr is also a Director of 3BA.

MISS LUCY JOHNSTON.—Entertaining and holding the interest of children is the hobby of Aunt Lucy, who, two and a half years ago, founded the first Radio Bluebird Club in Australia, the membership of which is now 2,500. The children's mail has risen to huge proportions. On Sunday evenings at 6.30 Miss Johnston conducts a studio programme of excellent artists which is popular with grown-ups as well as Bluebirds.

The licensed power unmodulated of 3BA is 50 watts in the aerial. The wave-length is 230.8 metres (1,300 K.C.). Studio and transmitting equipment is under the same roof, being situated above the Commonwealth Bank, Sturt Street.

## 3HS, The Voice of the Wimmera

Station 3HS was officially opened on September 11th, 1933, by the Postmaster-General, Mr. Archdale Parkhill. It has steadily increased in popularity, until now it is one of the most popular Victorian country stations. The staff is experienced and enterprising. Nothing is too much trouble if it means adding to the enjoyment of the programme.

The Studios of 3HS are large and comfortably furnished, and are equipped to cope with any type of broadcast desired by an advertiser or selected by the management as an entertainment feature. The Station is under the management of Mr. Donovan Joyce, and is known to Victorian and interstate listeners as "The Voice of the Wimmera." Reports have been received from New Zealand. Letters addressed to "The Voice of the Wimmera," Australia, have been safely delivered to Station 3HS. The programmes are of high standard. A stock of over 1,000 new recordings has been obtained, so that listeners are assured of getting the best.

The Station is going out after features and outside broadcasts, and has already installed six relay points in various halls and other vantage points in Horsham, and has obtained equipment suitable to cope with these broadcasts.

Station 3HS is owned and operated by Wimmera Broadcasting Co. Pty. Ltd., Horsham, and is on the air from 6.30 to 10.30 p.m. week nights, 6.30 p.m. to 11 p.m. Saturdays, and from 3 p.m. to 4.30 Sunday afternoons, 6.30 to 10 p.m. Sunday evenings.

Miss Nell Orloff is assistant announcer and Company Secretary.

## 3YB, The Travelling Broadcaster

The Mobile Broadcasting Station, 3YB, can be likened to a busy bee, constantly on the move from town to town, distributing the pollen of entertainment and publicity that the "Sales Crop" may be garnered, and purchaser, retailer and manufacturer alike be made happy. Whence came the idea from which grew the Mobile Station?

Two big motor caravans and one trailer, all painted a brilliant scarlet, with call sign and title lettered in gold, housed the equipment, which left Melbourne on October 11th, 1931, for its initial tour. The first broadcast was from Clunes, on October 12th. The station crew comprised Dinneny, manager and announcer, Aldridge, engineer and operator, and Rennie, business representative and copy-writer. Those titles are the official ones, these others are unofficial and applied to all:—Housemaid, cook, motor driver, mechanic, circus hand and general labourer. 3YB's aerial was supported by two 40 ft. steel masts, spaced 120 ft. apart. The business of erecting the station was all very simple—after about the twentieth time—but that first time, the crew thought they would never find a place for all the guy ropes, cables and plugs, counterpoise extensions and what not. Everything was finally fixed, but the transmitter refused to function. All the small boys from within a ten-mile radius foregathered and proffered gratuitous advice. At length 3YB commenced its first broadcast.

Was it a success? In less than no time messengers, on foot, cycle, horse and car came to congratulate the broadcasters on their quality and the general excellence of the programme.

It is believed that 3YB was the first complete broadcasting station on wheels in the world, and its practicability was largely due to Mr. Bert Aldridge, who designed and built the transmitter.

Winter was not very comfortable for the travelling station, and in October, 1932, the question arose: "Why not a broadcasting station on rails?" Many were the interviews with officers of the Railway Department, many the obstacles to overcome. Thanks to courteous help, a coach was made available and the change-over arranged. On October 17th, 1932, 3YB, now a Broadcasting Station on Rails, the first of its kind in the world, set out for a tour of the "Orchard of Victoria," the Goulburn Valley. This coach was built thirty odd years ago for the present King and Queen, when they visited Australia as Duke and Duchess of York, in which they travelled to various centres in Victoria. It is a beautiful piece of workmanship, and is in splendid order. Structural alterations were unnecessary. At one end, in a room 21 ft. by 10 ft. 6 in. is the Studio, comfortably furnished with settee, which is convertible to a bed, table, chairs, easy chair, record cabinet, with a library of over a thousand selections, and operator's desk with double electric turntables and microphone pendant from above. A corridor leads to the far end of the coach, where, in a room 14 feet by 10 ft. 6 ins., is housed the transmitter, cupboards and lockers for spares, tools, etc., another convertible settee and operator's desk.

JAMES JOYCE, manager and announcer, is well-known in the theatrical world as an actor and stage manager. Mr. Joyce has played in many roles with such outstanding artists as John O'Hara, Muriel Starr, Frank Harvey, Leon Gordon and Alan Wilkie. Immediately before joining 3YB he was studio manager of the Decca Recording Studios, where he produced many short plays and revues which have been heard over the air through the medium of gramophone records.

The technical equipment of the station is in the hands of A. J. G. Glover, Assoc. M.I.R.E., who has been actively engaged since 1920 in experimental, research and commercial radio work. He is a graduate of the Marconi School of Wireless, Sydney, and received his First Class Commercial Operator's Ticket in 1927. His active association with the Wireless Institute of Australia and the operation of his experimental station under the call sign of 3AG, have made him well known to the amateurs of the Radio fraternity. He is an experienced lecturer, instructor and technical journalist. Prior to Mr. Glover's association with 3YB he was engaged in research work for many well-known manufacturers of receivers.

V. M. DINNENY is responsible for the management of the company. His years of experience as sales executive and knowledge of sales promotion are responsible for 3YB being a strong link in a selling organisation, rather than just another advertising medium.

## 3TR—The Gippsland Station

The broadcasting station at Sale is ambitious to be the spearpoint of a publicity scheme for all Gippsland, and will before long increase its aerial power from 50 to 500 watts. Like most provincial "B" Class stations, it gives much community service for which there is no commercial return, such as the relaying of Church services and public functions and providing space for talks on Red Cross, books, international affairs, sport, Boy Scouts and suchlike. There are frequent studio concerts, mouth organ band programmes, and relays of dance music. Private lines have been installed from churches and halls in Sale, Maffra, Bairnsdale and Traralgon, in most cases at the cost of the committees concerned. The Sale town council has installed a line from the town clock. This clock was heard striking throughout Australia when 2UW had its link up of 42 "B" Class stations on December 31, 1932.

The biggest achievement of 3TR was the link-up of provincial stations on July 27, 1933, when a great U.C.P. rally at Maffra, attended by 1,000 people, was relayed to 3TR and thence to 3GL, 3BO, 3HA, 3MA, 3SH and 3WR. This is probably the largest link-up of provincial stations in Australia, independent of metropolitan help and participation.

The station is controlled by Mr. Archibald Gilchrist (Gippsland Publicity Co. Ltd.) who is the principal announcer. Miss Gilchrist is "second voice." Mr. S. R. McLaren, the publicity and advertising organiser, is "Uncle Fred" of the 3TR Brighteyes' Club. The engineers are young Gippslanders, Ron Schmidt and Ken Dalziel, both keen amateur experimenters. Regular sessions on various subjects are conducted by voluntary broadcasters.

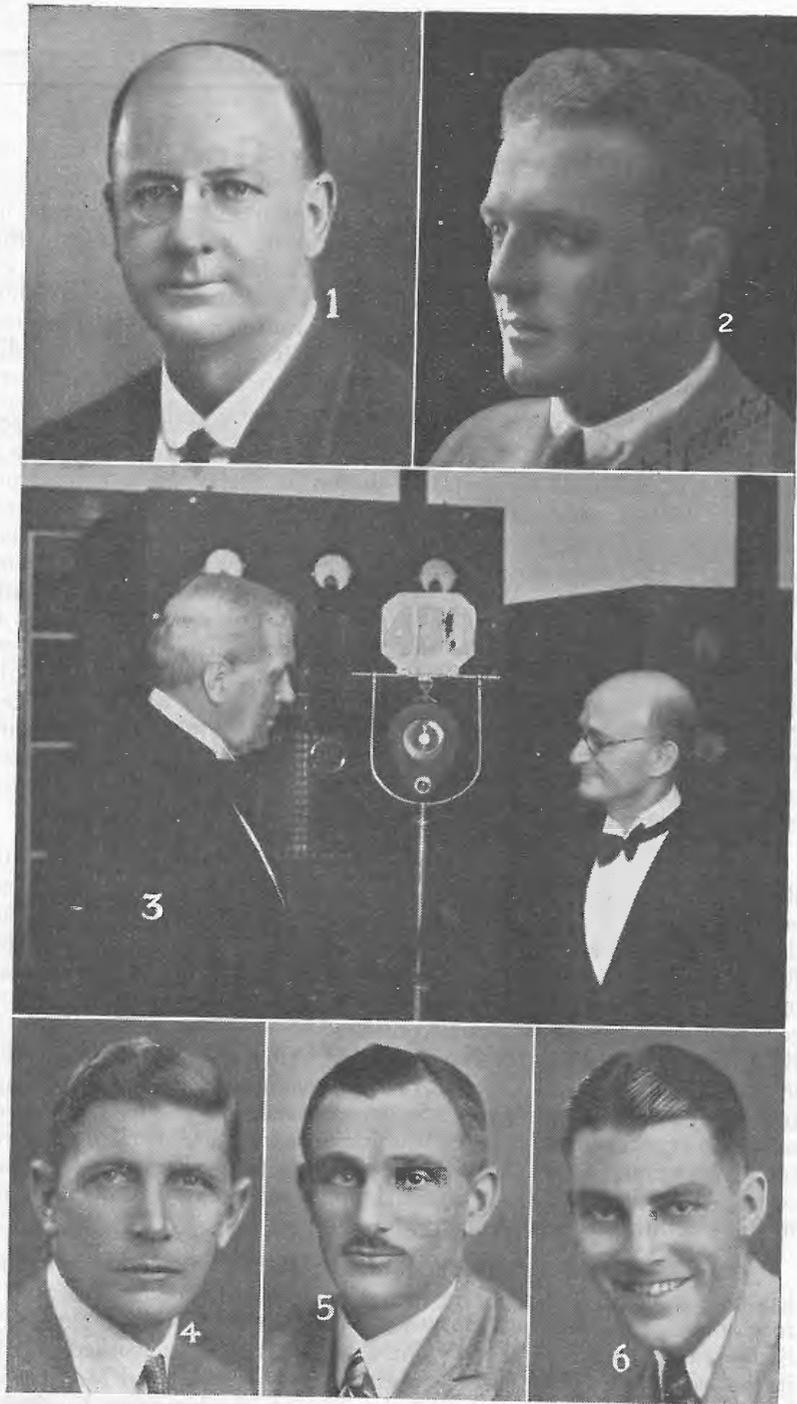
## How 4BC Made Good

It was on August 16th, 1930, that Station 4BC made history in Queensland, by receiving the first B class licence to be granted in the State. In the past three years, the station's record has been one of remarkable progress and development and it is claimed that no other B class station in Australia can show more rapid expansion. When the station opened, the staff numbered five, now it stands at 33, and as the work expands, the number is being added to.

Originally, 4BC transmitted from the same building that housed the studio, at 45 Adelaide Street, Brisbane, but now the Station has a modern, well-equipped transmitting station at Oxley, nine miles from the city. When transmission first began, 4BC was on the air a few hours daily, now it is on the air 96 hours each week. From the commencement, 4BC has enjoyed remarkable popularity not only in Queensland, but in Australia. When the station opened the sporting world was agog with the feats of Don Bradman in England, and interest in the tests matches was at fever heat. 4BC remained on the air every morning till 3 a.m., to give the latest scores each day during play in the various tests. Before the station closed, stump scores were announced. This service proved tremendously popular and won 4BC great popularity. The station has maintained that popularity ever since, and has always taken care to see that its programmes combined the most entertainment possible, presented in the best possible manner.

4BC was extremely fortunate in the men who have guided the station's policy since the earliest days. Mr. Russell F. Roberts has been general manager ever since the station opened, and it is in no small measure due to his judgment that 4BC has advanced so far and so well. Mr. Roberts combines a wide experience of all that is required for broadcasting with a deep knowledge of music. Mr. Roberts left Australia at an early age, and for many years, continued his musical studies abroad in Europe. When he returned to Australia, he became intensely interested in radio work, but that was before broadcasting became recognised as a form of public entertainment. So enthusiastic was Mr. Roberts in the new science, that he was one of the first amateurs in Australia to operate his own station. It was inevitable therefore, that when wireless broadcasting took its place as an essential public service, Mr. Roberts threw in his lot with the new industry.

Associated with Mr. Roberts from the day the station opened, has been Mr. A. Radford, the advertising manager. Mr. Radford, before linking his fortunes with 4BC, had been associated with 2GB, Sydney, in a similar capacity. These two friends have worked together in the closest harmony for the progress of the station, and Mr. Radford has had the satisfaction of seeing the amount of advertising handled by the station show a steady upward trend each year.



Station 4BC: (1) Russell F. Roberts, General Manager; (2) Mr. Rodway Gainford, Chief Announcer; (3) (left) Mr. A. E. Moore, M.L.A., (right) Mr. J. B. Chandler, Managing Director, Chandler Network of Commercial Stations; (4) F. Elliott, Studio Engineer; (5) J. R. Radford, Advertising Manager; (6) E. Bessemer, "Sunrise."

When 4BC commenced its activities, it was the only B class station operating in Queensland. But it was not long before 4BC became the principal unit in what is now known as "Chandler's chain." This chain of commercial radio stations, comprises 4BC, 4GR Toowoomba, 4MB Maryborough, 4RO Rockhampton. The development of this chain of stations within the short space of three years, is a remarkable feat of business enterprise and organisation, and is a monument to the foresight and acumen of the man who was responsible for calling it into being. Mr. J. B. Chandler, head of the firm of J. B. Chandler & Co., 43 Adelaide Street, Brisbane. Mr. Chandler has not only built up one of the finest electrical businesses in Australia, but has developed a great and powerful chain of commercial radio stations, which cover Queensland with a network of excellent stations. Mr. Chandler was interested in radio from the moment that it first began to show signs of development. He saw the untold possibilities ahead of this form of entertainment, and the passing years have justified his hopes and vindicated his judgment. Mr. Chandler showed his practical interest in wireless by selling some of the earliest receivers made, and now is the Queensland distributor for one of the finest receivers made in Australia, the Radiola.

One of the outstanding features of 4BC's activities has been the presenting of as many aspects of public questions as possible. To this end, addresses from many public men, prominent in business, political or professional circles in Australia, have been arranged, and interesting talks on many diverse topics have always figured largely on 4BC's programmes. Men of differing political outlooks and of different parties, have spoken from the studio. During recent weeks, addresses by Mr. Lyons, Prime Minister of Australia, Mr. Scullin, Leader of the Federal Opposition, Mr. Paterson, Deputy leader of the Federal Country Party, Mr. F. Coates, Leader of the Federal Labor Party in N.S.W., and Mr. Stevens, Premier of N.S.W., have been given from the 4BC studio. Distinguished artists as Mr. Cecil Parkes, Dante the Magician and Mr. P. Cahill, have spoken from 4BC, and studio receptions have been tended to world famed theatrical stars as Louis Casson, Sybil Thorndyke and Carrie Moore.

In the sporting world, 4BC had offered all sections of the community a service which has developed with the years until every sporting activity is now adequately covered by the station. As already stated, 4BC gave broadcast descriptions of play in the last series of test matches in England when it first came on the air. During the recent test matches in Australia, 4BC arranged for a rapid service of progress scores, and at the end of every over, scores were given. The fourth test match of the series, played at Brisbane was broadcast in its entirety, a ball to ball description being given by 4BC. When Crawford was playing Vines for the Tennis Singles Championship of the world, 4BC remained on the air till 2 a.m., and arranged for a rapid service of special cable and beam wireless messages from England to be given from the studio.



4BC: (1) Miss Ruth Rutherford; (2) F. Stevens, Engineer; (3) The Masts of 4BC; (4) Miss Tone Seymour; (5) Miss Mervyn Jones.

4BC has been associated with some notable broadcasting events. Among these may be numbered the broadcasting of a corroboree at Cherbourg (formerly Barambah) Aboriginal Settlement in Queensland on December 17, 1932. For this broadcast, the blacks at the settlement donned all the panoply of their tribal costumes. Arrayed in war paint they performed the age old tribal dances which have been handed down from time immemorial. In the weird light cast by blazing bonfires, they danced as their forefathers had for countless generations. A full and vivid description of this interesting event was broadcast by 4BC, making radio history in Australia. The broadcast was relayed throughout the Eastern States of Australia, and by means of a special short wave broadcast from Sydney, was sent round the world. The aborigines during the corroboree sent greetings to His Majesty King George V.

#### EXECUTIVES AND ANNOUNCERS OF 4BC.

**J. B. CHANDLER.** Director of "CHANDLER'S CHAIN" of broadcasting stations, comprising, 4BC Brisbane, 4GR Toowoomba, 4MB Maryborough, 4RO Rockhampton. Also director of J. B. Chandler & Co., 43 Adelaide Street, Brisbane. Distributing agent for Queensland of "Radiolas."

**RUSSELL F. ROBERTS.** Has acted as General Manager since 4BC opened. Born in Queensland. Continued musical studies abroad in England, Germany and France. Has acted as conductor of leading theatrical orchestras throughout Australia. Always interested in wireless. Was one of first amateurs to broadcast from his own station in Australia.

**JOHN A. RADFORD.** Has been advertising manager since 4BC opened. Before that, was associated in similar capacity with Station 2GB, Sydney. Has been connected with radio for last nine years. Born in England in 1898. Had banking and business experience in England and China.

**RODWAY GAINFORD,** chief announcer (Uncle Rod). Before joining 4BC, had wide and varied theatrical career. Played lead in "Abie's Irish Rose" throughout Australia and New Zealand.

**J. C. ANDERSON.** 4BC's special sporting commissioner. Before joining 4BC had wide experience as sporting journalist. Broadcasts descriptions of races from all Brisbane courses. Is official handicapper for Tattersall's Racing Club, Brisbane.

**ARTHUR MORLEY.** Well known as a theatrical artist before joining 4BC. Conducts "Midshipman Bob Breezy" session. Established favourite with juvenile listeners throughout Queensland.

**C. BINKS (Uncle Colin).** Lately with 3AW, Melbourne.

**B. COOK,** Cricket Specialist.

TONE SEYMOUR enjoyed remarkable success in her radio work in the South, where she was associated with station 3AW, Melbourne. The members of the "Chums" organisation which she founded numbered no fewer than 15,000.

Miss Seymour had a varied stage career with the J.C.W. organisation. She was a member of "The Ghost Train" and "Patsy" companies that played at Brisbane theatres a few years ago. Her theatrical training proved a wonderful asset when she turned her attention to radio. Her remarkable flair for character portrayals won her success in her new sphere of activities. Another department in which she specialised was with travelogues, and her bright, entertaining manner of presenting these talks made them very popular.

Miss Seymour has charge of 4BC's children's activities.

ERIC BESSEMER (Sunrise Sam). Conducts early morning sessions from 4BC, also Children's Session. Has been associated with 4BC for 2½ years. Is experienced radio engineer. Was first to broadcast human heartbeats in Australia.

MRS. R. REID. "Miss Ruth Rutherford." Conducts special women's sessions in morning and afternoon from 4BC. Has been associated with broadcasting work for nine years. Is expert in restoring antiques. Member of Lyceum Club and Arts and Craft's Guild.

N. CARTER (Uncle Norm.). MISS M. JONES (Social Announcer.)

#### GENERAL PARTICULARS OF 4BC.

Studio. Situated at 45 Adelaide Street, Brisbane. Transmitting Station. At Oxley, about nine miles from Brisbane. Wave length, 262 metres; frequency, 1145 kilocycles; associate Stations: "Chandler's Chain," comprising 4BC Brisbane, 4GR Toowoomba, 4MB Maryborough, 4RO Rockhampton.

4BC is the official broadcasting body for the following organisations: Queensland Turf Club; Brisbane Amateur Turf Club; Tattersall's Racing Club; Brisbane Repertory Theatre; Queensland Amateur Swimming Association; Boy Scouts' Association and Girl Guides' Association; "The Telegraph" newspaper; the Social Service League; Regent Theatre, Brisbane; Fox Movietone Club; Trocadero Dansant; Night Owls' Club. The Station received its broadcasting licence on August 16th, 1930.

## 4BK Forges Ahead

"Good enough" is not good enough for the management of 4BK. Ever since its appearance in October, 1930, this station has steadily forged ahead. The station motto is "4BK Leads All The Way," and a resume of a few of the principal milestones in its progress prove the fidelity with which management and staff, a highly organised band of talented individuals, have adhered to its high standard.

4BK was the first commercial station in Queensland to use a lady announcer at night, the first to use dialogue advertisements, the first to broadcast a full advertising session direct from the advertising house, the first to engage its own orchestra, the first to entertain its listeners until midnight on Saturday, the first to feature a three-hour programme by studio artists, the first to carry out regular broadcasts to New Zealand, the first to arrange a State-wide hook-up employing every "B" Class Station, the first to broadcast a Masonic ceremony, an authentic reading of the Koran in Hindustani, the complete Kol Nidri service, the first to broadcast from an aeroplane, the first to broadcast a full play on four consecutive nights, the first station in Australia to give its listeners a free full dressmaking course, averaging 130 pupils a week for 15 months, and still going, the first station in Australia to conduct a monster vocal competition (nearly 200 entrants) with Roland Foster, F.G.S.M., N.S.W. Conservatorium, as adjudicator, the only commercial station in Queensland employing grid bias modulation, the first to give its engineers complete control of broadcast programmes, studio, records and outside broadcasts.

4BK claims to have the largest staff of announcers in Queensland. At any rate this station's increasing favour is due not only to its attractive sessions, but also to something more subtle and powerful, the concerted personality behind each presentation. This efficiency of organisation under Fred. Hoe, senr., Managing Director, has been attained by fitting the best people in the best places. It is the outcome of the constructive policy of Arthur L. Dixon, the Managing Engineer, who possesses the power not only to formulate big schemes but to carry them out, who believes with Victor Hugo, that "An idea whose time has come is stronger than an army." Mr. Dixon's search for fresh ideas never wearies, and it is significant of his policy that the most modern developments in both advertising and engineering are at his fingertips, these developments in some instances being anticipated by him before their advent on the other side of the world. Besides controlling the engineering and advertising activities, he is the founder and head of the popular Dixie Radio Club for Children. Mr. Dixon meets the ceaseless demands upon his time with skilled preparation, coupled with economy of effort, and directed enthusiasm, and in his progressive policy he has the whole-hearted cooperation of staff and the directors, Fred Hoe, Senr., and Edgar V. Hudson, both of whose names have been well-known in the Radio world for many years. 4BK's array of studio artists compares most favourably with National programmes. The station personnel includes:—

ISABEL HOE, Secretary to the Manager. Accounts, contracts and confidential work. Clever advertisement compiler.

WINIFRED HASLAM.—Announcer, Programme Department. Gifted contralto. First artist to broadcast through 4BK. Wide experience in concert and eisteddfodau. Conducts "Musical Rambles."

LORRAINE CROW.—Programme Department. Accomplished solo pianiste, romantic and classical schools. Heard exclusively through 4BK. Assistant studio accompanist.

"SALLY."—Announcer. Attractive personality. Ladies' and main evening session. Features dressmaking service, beauty culture and philosophy. Secretary Dixie Radio Club. President of 4BK Women's Club.

BETTY HOSKING, L.A.B.—Solo pianiste. Official studio accompanist. Extensive repertoire, classical, romantic and modern. Chosen as accompaniste by 80 per cent. of vocalists at 4BK Musical Festival.

"PAULINE."—Announcer, evening session. Social editress. Gifted elocutioniste.

MARY GRAY.—Announcer. Clever business woman. Good house-keeping authority. Conducts Tiny Tots' Session.

LAURA LUDGATE, L.A.B., Piano, L.T.C.L., Elocution, specialising in character studies. 4BK Bridge exponent. Lecturer for Workers' Educational Association.

ERNEST BRIGGS.—Announcer, Publicity Department. Continuity writer. Special sessions. Favours music and emotional arts. Entertainer. Creator of "Hi, Skinny" series.

MIKE O'RYAN.—"The Haunting Voice of Radioland," late of WIBI, New York City, and KMTR, Hollywood. Specialises light popular ballads. Exclusive Australian appearances with 4BK Advertising Salesman.

HERBERT BROWN.—Announcer. Bright personality. Versatile. Talkie actor in "On Our Selection."

ROYSTON MARCUS.—Morning announcer. Actor. Producer of radio plays since 1924. Advertising salesman. Bass-baritone.

FRED. MONUMENT.—Announcer. With 4BK since inception. Recording artist. Theatrical experience, England, South Africa, Australia and the East, also Edward Branscombe's "Dandies."

HERBERT PERRY.—Announcer. Talented amateur pianist. Musical Dixie. Interested in sport. Prominent in Smithkins-Hixco broadcasts.

JACK WITTUP.—4BK tennis commentator. Relieving announcer. advertising salesman.

WILLIAM HARLAND.—Certificated assistant engineer. Two and a half years with 4BK. Radio experimentalist for seven years. Pupil of A. L. Dixon. Prior to broadcasting interested in constructional work.

FRED HOE, junr.—Certificated assistant engineer. Radio amateur. Pupil of A. L. Dixon. Three years at 4BK. Yachtsman.

HECTOR GREEN.—Senior permanent monitor. First Radio uni-formed page boy in Australia.



Station 4BK, Brisbane: (1) P. O'Bryen Hoare; (2) M. O'Ryan; (3) J. Hayes Hammond; (4) "Hector"; (5) F. Monument; (6) Betty Hosking; (7) "Sally."

HUGH PERRY.—Permanent monitor.

ARTHUR EARLE.—Assistant monitor.

NEVILLE KLINGER.—Assistant monitor.

FRANK A. SYMES.—Cheerio announcer. Well known Brisbane journalist. Conducts the "Passing Show" series every Tuesday evening.

J. HAYES-HAMMOND.—Station musical authority. Sunday Sessions. Lectured at N.S.W. Conservatorium, Schubert Centenary, 1928. Large collection of rare gramophone recordings.

PHILIP O'BRYEN HOARE, M.B.I.M. Sc.—International lecturer, poet, philosopher, psychologist. Member of British Institute of Mental Science. Teacher of Public Speaking. Official 4BK lecturer.

REV. WILFRED MAGOR.—"Reverend Dixie," 4BK Dixie Club. Superintendent of Brisbane City Mission.

"CLARION."—Sporting Commissioner. Brisbane's oldest established turf authority. Sporting sessions nightly.

## 4BH Broadcasters Australia Limited

Broadcasters Australia Limited commenced operations on January 2nd, 1932. The studios are at 90-92 Queen Street, Brisbane, while the transmitter is situated at Bald Hills, eleven miles away. The power of the transmitter is 600 watts and is crystal controlled.

It is the policy of the manager, W. Hickson Adams, to keep listeners entertained for the whole period of the day's broadcasting of ten hours. Specialty presentations, mystery thrillers, comedy farces, sporting broadcasts, dance programmes, classical hours and many smaller specialties are provided.

In sporting 4BH has been particularly active and has been appointed the official broadcasting station of the Queensland Hockey Association, The Queensland Amateur Athletic Association, Queensland Amateur Cyclists Union. It is the official station to the controllers of professional wrestling and boxing in the state, Brisbane Stadium Ltd. These bodies have contributed much to the entertainment of the public through 4BH. The All-Australian Hockey Carnival held in Brisbane during August, 1933, was broadcast in its entirety by the station. Cycling talks and matter of interest to athletes are delivered from the studio each Friday evening between 6.30 p.m. and 7 p.m., while the results of the main events are brought to listeners by commentators on the following evening. Turf talks are conducted on a large scale, novelty has been introduced into the station's racing talks and these "anticipations" have become known as the Friday night races. Uncle George conducts the session in the manner of an actual race programme and describes the race as he imagines it. Following this there is the bi-weekly special turf talk by a well-known racing expert.

The entertainment of women is in the hands of Dorothy Dawson, who conducts her daily sessions from eleven to one each midday.

GEORGE C. HARDMAN is the chief announcer and is a most popular microphone personality. Before his acceptance of a position in Queensland, he was attached to 2FC. An excellent entertainer and versatile artist "Uncle George" is also a fine commentator. He has handled many functions both sporting and social and his word pictures have received much favourable comment.

JOHN CHRISTOPHER, who greets his public in the early hours of the day when conducting his breakfast session from 7 a.m. to 9 a.m., has met with a goodly amount of success and his bright morning sessions enjoy a wide public. As a bedtime entertainer he has taken much trouble in giving his young listeners interesting programmes and feature sketches. He handles continuities, and publicity and is the author of the "Crime Game" series of radio thrillers. It is in this direction, play writing, that he has scored his big successes and under his real name have appeared numerous fine stories and plays. Like George C. Hardman he is of the younger school of radio men.

Besides these regular men there is JOHN COX, whose acting over the air wins good comment and whose travel talks "Capital Cities I have Visited and Impressions" are a feature of the Sunday evening programmes. W. McPhee is hocky commentator—Joe Rivers boxing commentator—Theo Albiex wrestling commentator—B. Babbidge, cycling—Mr. White, amateur athletics—Mr. Keogh, Australian Football—S. P. England, tennis—and of course, Uncle George, racing.

The manager of 4BH is W. HICKSON ADAMS, who is well-known both in southern states and especially in Brisbane. Mr. Adams has his finger ever on the pulse of public opinion. 4BH owes its present position to his efforts.

N. CRUICKSHANK has charge of the equipment at Bald Hills and the efficiency of the station's transmission is evidence of his ability. His connection with radio dates back to pre-war days and he has kept abreast of developments. C. Moran is monitor, and N. McCormack the pick-up operator.

The programme department comprises Misses T. Wilson and M. Dwyer with N. McCormack in charge of the records and music catalogues.

## 4TO Townsville—Most Northerly Station

Broadcasting in North Queensland was not fully appreciated until the advent of 4TO Townsville. There were, of course, a number of sets in this part of Australia, but the nearest station was situated many

hundreds of miles away and for at least half the year atmospheric conditions prevented good reception from distant points.

4TO is owned and operated by Amalgamated Wireless (A/asia) Ltd., and the service rendered is very highly appreciated in North Queensland. This is evidenced by the fact that since the inception of 4TO on October 5th, 1931, the wireless licences have increased from about thirty to well over 1,000. On its opening night, 4TO presented the biggest concert that Townsville has witnessed, when some 200 artists were heard in the Theatre Royal.



Studio of 4TO, Townsville.

The programme of 4TO consists primarily of the finest electrical recordings of the world's most famous artists, together with Townsville's foremost artists. In spite of the fact that 4TO is the most northerly station in Australia, it has kept pace with the broadcasting activities, and owing to the splendid support received from local and national advertisers, it has been able to broadcast to the benefit of the public such events as the opening of Sydney Harbour Bridge, the actual relay of the Melbourne Cup from Flemington, Test cricket results throughout the whole season, and descriptions of the races from Brisbane as a weekly feature.

Every opportunity is taken of putting celebrated persons on the air so that North Queensland may have the same service as Southern States. During the last few weeks, 4TO has had the pleasure of carrying out broadcasts by Sir Leslie Orme Wilson, Governor of Queensland, the Hon. J. A. Lyons, Prime Minister of Australia, the Hon. J. H. Scullin, Leader of the Opposition, and Miss Ella Shields, world-famous impersonator.

A map was recently compiled showing the normal daylight reception of the station, based on reports from listeners. The area covered extends as far south as Brisbane (about 400 miles), west to Cloncurry, Winton, Longreach and Charleville, and north to Cooktown—practically the whole of the inhabited portion of Queensland. The map does not show it, but 4TO is regularly received by the wireless operators who are the sole inhabitants of Willis Island, 300 miles eastward.

A correspondent at Port Moresby says that until 4TO came on the air listeners in Papua closed down their sets for six months of the year because of the terrific static. Now, however, with very little "throttle," they can hear Townsville quite distinctly and static does not annoy them to the same extent as when one tries to drag in the Brisbane or even the Rockhampton stations. This listener says that even the advertising talks of 4TO are welcome.

The visit of the Prime Minister of the Commonwealth to Townsville recently was the occasion of speedy work on the part of 4TO. Six years had elapsed since a Prime Minister had visited that part of Australia, and the manager of 4TO was naturally anxious to secure a broadcast. No arrangements had been made, however, for the Prime Minister to deliver an address. The Manager of 4TO held a conversation with leading persons in the district, and the Mayor was persuaded to arrange a meeting in the School of Arts, the only available hall. Doubts were expressed on all sides as to the possibility of success of the proposed meeting in view of the fact that no advertisement had been published.

Station 4TO undertook to secure an audience, and in the space of seven hours, permission was obtained from the nearest telephone subscriber to use his telephone, the necessary wiring was placed in the School of Arts, the broadcasting equipment was tested and notification of the Prime Minister's meeting was given over the air in the lunch hour session, the afternoon tea session, the children's session, and in the early part of the evening session. The result was that the hall was overcrowded and the broadcast, which covered the major part of Queensland, was voted a great success.

In Mr. H. E. Cox, Manager and Chief Announcer, the station possesses a man of great experience and personality. He is a holder of the Washington Convention Certificate First Class Radio Telegraphy and Telephony. For many years he served as officer in charge of various coastal radio stations controlled by Amalgamated Wireless (A'asia.) Ltd. Before proceeding to take up duties at 4TO Mr. Cox served a short period as relieving manager at Station 3BO, Bendigo, and on October 5th, 1931, he took charge of 4TO.

Another personality is Mr. A. O. North, Assistant Announcer. Mr. North is a widely travelled man, having served as an officer in the British Army in many of the Empire's outposts. After retiring from the Army, he came to Australia and was appointed Wurtlitzer Organist at the Wintergarden Theatre, Brisbane. Subsequently he joined the staff of Amalgamated Wireless (A'asia.) Ltd., and was appointed to 4TO.

## 4GR—A Queensland Pioneer

4GR, the "Voice of the Darling Downs," had its beginnings in the early amateur days of 1922, when the present director, Mr. E. E. Gold, obtained his first license to transmit. After a number of years of experimenting he concluded that there was a great future for radio as a medium of entertainment. Experimental Station 4EG (operated by Mr. Gold) broadcast, early in 1925, a complete Eisteddfod held in Toowoomba. So great was the interest displayed in this broadcast that regular programmes were arranged and transmitted by 4EG on Sundays.

When the Commonwealth Government commenced issuing "B" Class Station licences Mr. Gold applied and one was issued with the call sign 4GR. The station was officially opened on the 16th August, 1925. For five years 4GR was the only "B" Class station in Queensland.

Since its inception 4GR has taken part in many noteworthy broadcasts—such as the relay of the arrival of the Duke and Duchess of York, and the arrival of Miss Amy Johnson. Many well-known personalities have appeared before the microphone.

The station is situated in Toowoomba, 2,000 feet above sea level. Toowoomba is a city of 27,000 inhabitants, capital of the Darling Downs, and Australia's largest inland city.

The Director of 4GR, Mr. E. E. Gold, is a leading radio and electrical expert.

In Mr. C. V. Woodland the station has an announcer who has been right through the radio mill, having been the pioneer "A" Class announcer in Queensland—at 4QG, then under the control of the Queensland Government. "Uncle Val" was also the pioneer announcer at 4BC—early in 1932 he came to 4GR.

Other announcers heard over this station as E. E. Gold and C. H. Gold ("Uncle Cliff"), who is also in charge of the controls and station. Then there is that mystic young fellow "Willie Evergrow," who takes a delight in making the lives of Uncle Val and Uncle Cliff very miserable with his questions, criticisms and mischievous "back-slack." For all this he is loved by both kiddies and grown-ups.



James Anderson,  
Adelaide.



Frank Perrin,  
Brisbane.



Norman M. Sheppard,  
Melbourne.

## How 4MK Grew Up

Some eleven years ago a lad of twelve was presented with a book on wireless, which claimed his attention. When old enough to qualify for his experimental licence, he sat for his examination and was allotted the letters VK4JH. An application for a "B" licence having been granted, he assembled the necessary gear, and on January 12th, 1931, 4MK went on the air.

The care of the apparatus has been in his hands ever since. Every new idea is incorporated into the machine, but soon after its start, Jack Williams, Junr., had his hands full, so Dad came into the picture. Revenue was small, and ostensibly to allow for adjustment, Thursday was reserved for a silent night. Actually Jack was working his way through the various offices in the local branch of the M.U.I.O.O.F. Next, sister Dorothy was appointed to the staff. To her was allotted the arduous task of Secretary. She also acted as an announcer. As the station grew, a younger brother, Lloyd, was called in to attend to the installation of the mike for outside work. Then followed the appointment of an enthusiastic band of honorary workers, and now 4MK is staffed by—

J. H. Williams, Senr., Manager and Chief Announcer.

J. H. Williams, Junr., Engineer and Announcer.

Miss Dorothy Williams, Secretary, and Miss Mackay (Bedtime Stories).

Lloyd Williams, Outside Assistant.

Hector C. Jeffcoat, Sporting Announcer (General).

W. Larking, Sporting Announcer (General).

A. J. Darby, Aquatic Announcer.

The station broadcasts nightly a news session of one hour's duration, followed by two hours of musical items. Thursday afternoons are devoted to a ladies' session, including talks on fashions, cookery, gardening.

Sunday mornings are reserved for Church services from the Church of England and Presbyterian Church alternatively. On Sunday evenings bedtime stories and sporting sessions cover the hours of 6 p.m. to 7.30 p.m., and about three-quarters of an hour after the evening Church service is devoted to music. 4MK broadcasts every public reception, every inter-city football match, proceedings and events at annual Show, and each year a complete and comprehensive broadcast of Anzac Day proceedings from 9 a.m. to 11 p.m., also a detailed description from many vantage points of the 50-mile Cycling Road Championship ridden at Mackay yearly.



Miss Chandra Parkes.



Bert Le Blanc.



Eric Masters.

## 5AD and its Satellite 5PI

Advertiser Newspapers Ltd., of Adelaide, in establishing 5AD, Adelaide, and 5PI, Port Pirie, has followed the modern trend of newspaper development. On August 2, 1930, 5AD first came on the air, the only commercial station in Australia which has established a regular relay unit. All the programmes originating at 5AD are relayed each night to 5PI at Port Pirie, the largest provincial town in South Australia, 144 miles north of Adelaide.

To provide a complete change of programme each day, 5AD has established what is claimed to be the largest collection of records in Australia—more than 11,000 discs. More than 4,000 records were imported direct from London and Europe. Eighty per cent. of these are exclusive to 5AD. Care is taken to ensure that each record is included in the programme only once in three months, unless it is called for earlier by some sponsor. A record library of more than 300 different "effects" is also a feature.

For the past three years in succession 5AD has been granted exclusive broadcasting facilities by the Royal Agricultural and Horticultural Society of South Australia. During the past three years, 5AD has been the official broadcasting station of the Country Carnival Cricket Association, which conducts a series of matches in Adelaide between teams from various country districts. 5AD is the official station of the South Australian Soccer Association.

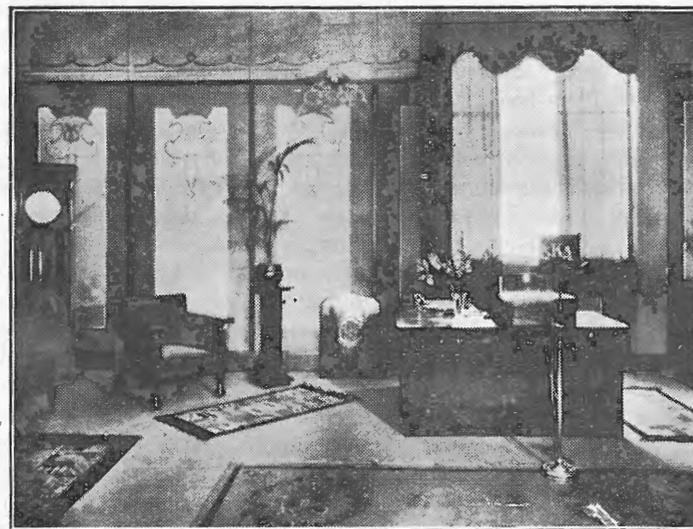
In conjunction with the Council of Churches and the Council of Religious Education, 5AD broadcasts children's choral services and a studio church on the air each Sunday. Among other features, 5AD holds exclusive "B" class broadcasting rights for South Australia of the J. C. Williamson musical comedies and plays, the Gilbert and Sullivan operas, and other copyright plays and operas. In conjunction with the Education Department of South Australia, 5AD inaugurated nearly two years ago the first experimental school of the air broadcasts in South Australia. 5AD is the only commercial station in South Australia authorised by the Newspaper Proprietors' Association to broadcast a news service.

The latest reproducing and transmitting equipment has been installed in both 5AD and 5PI. The 5AD studio can seat 200 persons in comfort. The carrier waves of both 5AD and 5PI are crystal controlled; the power amplified at 5AD has an output of 1,000 watts, the maximum allowed for commercial stations in South Australia.

## 5KA—Adelaide's Fine Station

On the top floor of Richard's Buildings, Currie Street, Adelaide, are the offices, studios and transmitting plant of Radio Station 5KA, Adelaide, "The Voice of South Australia." This up-to-date and well equipped station is enjoyed by many thousands of wireless enthusiasts, mostly in South Australia. The station is rated at 1,000 watts, and broadcasts on a wave-length of 250 metres.

5KA has made rapid progress during the past two or three years. Originally operating from a small building in Flinders Street, the station was transferred two years ago to its present position. As the popularity of the station has increased, it has been necessary continually to expand. After addition to the staff and increases in the floor space, the station is now splendidly equipped and well able to cope with the increasing



Interior of Studio, 5KA.

activities which each passing month brings forth. At considerable expense extensive alterations and improvements were effected, about the middle of 1933. A second studio was built and the transmitting room placed between it and No. 1 Studio; large plate-glass windows giving the engineers at the controls a full view of the interior of both studios.

The transmitting room is large and provides every comfort and convenience for the engineers. The transmitter has a rated input of 1000 watts to the final amplifier, and consists of four stages, namely, crystal oscillator, buffer, modulated amplifier and final amplifier. Keising system low level modulation is used. The gain amplifier is a 3 stage resistance and choke couple, while this in turn is choke coupled to the

modulators. Provision is made for quick change over to A.C. supply in the event of breakdown. The Adelaide Observatory time is always available, the supply being controlled from the control desk by means of relays and local oscillator.

The staff numbers 13 regular members, in addition to which announcers and others are engaged by the station in the execution of its many activities. The manager of the station, Mr. R. Lincoln, was originally from Melbourne, and has been interested in radio for a number of years. The station runs three clubs; the Merrymaker's Club being for adults, the Cheerio Club for Children and a Talkie Club for all listeners, old or young. At the Merrymaker's Club annual ball in 1933 over 1300 happy Merrymakers enjoyed an evening at the Adelaide Palais Royal. This Club, which was formed early in 1933 has now a membership numbering about 2,000. The Cheerio Club, which is very popular with the children has a membership of between 2,000 and 3,000 and the kiddies thoroughly enjoy the frolics and parties which are frequently organised. The Talkie Club has a membership of 4,000 who listen eagerly every morning during the early session to hear if their name is called for a free ticket to a local talkie theatre.

Under the heading of "Achievements" station 5KA successfully organised and arranged an interstate link-up of 23 stations about two years' ago which simultaneously relayed a lecture by the well-known author, Judge J. F. Rutherford, with 5KA as the key station. The relay included 5,000 miles of landline as the link-up was extended to Perth in West Australia and to Rockhampton in Queensland. During the test cricket matches at the beginning of 1933, this station linked up with two interstate stations and successfully broadcast M. A. Noble's comments each night during the entire series of the International Test Matches.

Arthur Thorn, known as "Thornie" and Reg. Sparkes, known as "Sparkie" are the two popular evening announcers of 5KA. C. Freeman, sometimes called "Sunrise Cyril" is popular on the early morning session. Mr. Thorn and Mr. Sparkes had considerable announcing experience in New South Wales.



Miss Dora Lindsay.



Paul Kain.

## 6PR—Nicholson's Station

Coming on the air in October, 1931, Nicholson's Broadcast Station, 6PR, Perth, at once took a prominent part in Western Australia's broadcasting activities, and by the quality of its transmission and the excellence of its programmes, rapidly won popularity.

The aerial output of the Station was increased from 200 to 500 watts within the first few months.

The entertainment side of 6PR programmes has always been the primary consideration. Matters of public interest broadcast cover a wide range and include addresses by the Prime Minister, other political speeches during election time and election results; matters of interest to pastoralists and farmers, such as wool and stock sales; sporting talks and results, dances and other social events.

To thousands the name of 6PR means Uncle Peter and "Pongo." For the first six months a more or less stereotyped form of Children's Session was broadcast, but on May 1, 1932, "Uncle Peter" and "Pongo" started on their now famous career. Their Birthday Club has nearly 6,000 members, which is responsible for a voluminous mail of surprising interest. 6PR is now established as a firm favourite with the public.

6PR's transmitting plant was designed and erected by Amalgamated Wireless, by whom it is operated. In charge of the plant are Mr. S. Trimm, who installed it, and Mr. F. Dawes, who came to Perth from a Queensland station.

H. S. SIBARY, Station Manager and Chief Announcer at 6PR, was educated in England, and originally adopted the Army as his profession. After serving with his regiment in England, he transferred to the Indian Army. He was with the Indian Forces throughout the war, and also saw considerable service on the North-West Frontier. He later decided to visit Australia, where he became interested in broadcasting, and in 1928 was appointed to the management of 3EX, the station specially installed at the "all-Australian Exhibition held in Melbourne. Since the inception of 6PR in October, 1931, he has been in charge of Nicholson's Broadcasting Department, and has become a well-established identity over the air.

W. RODDA, who belongs to Claremont, spent some of his early years in Kalgoorlie, where he went to Christian Brothers' College, later going to New Norcia. He has been interested in radio since 1924, and owns and operates the experimental station VK6WR. He has been with Nicholson's Limited for three years and a half, first on the Radio Service Staff, and later as Studio Control Operator for 6PR.

E. JAGO has been associated with broadcasting for a considerable period, and before coming to W.A. was a member of the staff of Station 4BK, Brisbane, and 2KY, Sydney.

HAROLD LALOR was educated at Christian Brothers' College. While there he held more than one athletic championship. He is also interested in theatrical work, and is a prominent member of both the Shakespeare and Repertory Clubs. As Uncle Peter, he conducted the Children's Session alone for some time, but some fifteen months ago he was joined by "Pongo," and since then these two have been responsible for a most popular Children's Session.

MISS GLADYS MILLAR, a versatile young lady, who has been with 6PR since the station first came on the air, is a native of Perth. She conducts the Women's Session.

MISS ISLA HAYES is known as Auntie Isla. The greater part of her time is taken up attending to Uncle Peter's and "Pongo's" mail, the Birthday Club and its five thousand members, and other matters connected with the Children's Session. She also conducts a band.

MISS PEGGY NUNN, L.A.S.A., is a prominent member of the Repertory Club. For some time she was with 6WF, where as Auntie Peggy, she conducted the Children's Session, and also took part in plays and revues. She now conducts the Radio Matinee from 6PR.

JAMES GRANT was born in London. He started his professional career as a concert singer, later appearing in various English Musical Comedy and Revue Companies, and in legitimate drama. He has appeared with many leading English managements, and has toured South Africa and Rhodesia four times. He visited Australia from 1923 to 1925, and under J. C. Williamson's management, played leading roles with American actors, Guy Bates Post and John D. O'Hara. In 1928 and 1929 he was chief announcer for the African Broadcasting Company at their Johannesburg Station (J.B.). He has been connected with 6PR since just after the station opened.

## Stations 6ML and 6IX

W.A. Broadcasters Ltd., of Lyric House, Murray Street, Perth, are the proprietors of 6ML and 6IX., whose station personalities are well-known throughout the West. Among them are:—

F. C. KINGSTON.—Mr. Kingston is the Station Director, and is one of the founders of Musgrove's Limited. He has been actively associated with the music trade of the State since 1911. Besides being Director of the Broadcasting Station, Mr. Kingston is in control of the Radio, Record and Phonograph Departments of Musgrove's Limited.

MR. BRYN SAMUEL.—The Station Manager is Mr. Bryn Samuel, L.A.B., who has been a member of Musgrove's Limited staff for the past eight years. He is well known in musical circles as an artist of no mean ability, possessing a most pleasing baritone voice. His descriptions from the ringside of the Unity Stadium each Friday indicate his complete knowledge of the boxing game, and his vivid commentary never fails to carry his audience of listeners with him through all the excitement of the ringside.

MR. PAUL DALY.—Paul Daly, known throughout the State as Uncle Paul, has recently rejoined the staff of W.A. Broadcasters Ltd. after an absence from the State, during which period he was associated with 4BC, Brisbane, as programme director and announcer. Previously he was associated with 6WF, Perth, as announcer-producer, during the Australian Broadcasting Co.'s regime. He now comes back to Perth as Producer for both 6ML and 6IX, and occupies the position of chief announcer for the latter.

MR. HARRY SIMMONS.—Harry Simmons is 6ML's chief engineer. He was born in Perth and Radio has for many years absorbed his attention. In 1929 he gained his first-class London commercial operator's certificate, and shortly afterwards roamed the seven seas as ship's wireless operator. He joined Musgrove's Limited in 1930 and was appointed engineer-in-charge of 6ML plant, to which he has brought many improvements.

MR. ERIC L. DONALD.—Eric L. Donald is 6ML's chief announcer. Born at Busselton, W.A., he has since had a successful association with stage and broadcasting. A keen student of Shakespeare, a producer of many plays, and still a bachelor, Mr. Donald is popularly known as Uncle Eric.

MR. EDISON C. CHURCHWARD.—Prior to linking up with Station 6ML in July, 1931, Mr. Edison C. Churchward, the Advertising Manager, was associated with Station 5AD, Adelaide. Mr. Churchward also had extensive experience in other fields of advertising, both at service agency work and with General Motors.

MISS JUNE AUSTIN.—June Austin, known as "Junette," gives daily to the housewife of her wide fund of information on all subjects under the sun. The children get their share, and Miss Austin can always rely on an extensive audience.

MISS LAUREL BERRYMAN.—The same may be said of Laurel Berryman, popularly known as Auntie Laurel. She has a lot to do with the children and always gives them a good time. The women's morning session is one of her strong features. Miss Berryman is a good West Australian, is an accomplished elocutionist, and secretary of the Shakespeare Club.

MR. NED TAYLOR.—Many people have signed above the dotted line instead of below it on arrival at the office in the morning as a result of being shaken up by Ned Taylor—"The Early Bird." A good tonic for those who "get out the wrong side of the bed" is to tune to 6ML while dressing, and pay attention to what this young Australian has to say.

MR. B. F. SAUNDERS.—B. F. Saunders, in addition to being Assistant Announcer, is Secretary of the Cheerio Club. The success of this Club's activities is very largely due to the solid efforts of its secretary.

Station 6IX, a sister to 6ML, came on the air at the end of November, 1933, and is being used to give listeners direct contrast programmes to those of 6ML.

## Station 6KG, Kalgoorlie

6KG was the first Country Broadcasting Station established in Western Australia, coming on the air early in 1932. The company is now known as Goldfields Broadcasters (1933) Limited, the controlling factor being Mr. F. Beach Hicks as managing director.

Mr. Hicks is possessed of an energetic personality. Although comparatively a newcomer to broadcasting, he is well versed in the needs of listeners. The success which has attended his efforts has already justified an application for an increase in power to 500 watts, which it is expected will be approved before this publication goes to press. Kalgoorlie is situated almost in the centre of Western Australia, and boasts of the largest population outside the capital city. The fact that Kalgoorlie is 1240 feet above sea level, and is not surrounded by any heavy timber country or hills, supplies the reason why the effective range of the Station is considerable, actually serving Geraldton (435 miles north-west) and Esperance (350 miles south) in daylight.

The importance of the gold-mining industry to-day has focussed considerable attention to 6KG, which has responded with three mining sessions daily, thereby keeping listeners informed of the latest developments, share quotations, price of gold, and mining news. Educational talks, covering many industries, coupled with sporting features, religious addresses and a varied musical programme largely supplied by talented artists (of whom there is no dearth on the Goldfields), combine to make 6KG programmes the subject of much favourable comment. With increased power this station is destined to become one of the principal broadcasting stations in the Commonwealth, as practically none of the programme is lost over the sea.

The Station Manager and Chief Engineer at 6KG is Norman W. Simmons. His first thrill in radio was in the early days before war broke out; he then saw active service with the Australian Flying Corps. He was connected with the construction of broadcasting transmitters at the commencement of broadcasting in Australia. After being connected with the National Station 7ZL Hobart for a number of years in the roles of engineer, announcer, Uncle Cuthbert, etc., he was brought to Western Australia to take over his present position. 6KG's high standard of efficiency is due to his untiring ability.

C. J. Cross is one of the station's announcers. He has had a varied career, and at one time was engaged in theatrical work in the Eastern States. He is known to the children as Uncle Jim.

The station's musical programme is under the direction of Mr. Haydn Freeman, a well-known identity in musical circles, who inherits his talent from accomplished parents. He is a musician of exceptional ability, being a capable organist, 'cellist, conductor, etc.

Miss Winnie Kerr (Auntie Amelia) conducts a children's session, assisted by her six Golden Mile Grasshoppers (juveniles).

The studio pianist is Miss Grace Stinson, A.L.C.M., who is also an accomplished organist.

Catering for sport, 6KG has the services of J. J. Baker, well-known Australian cyclist, who is the commentator on cycling, boxing, wrestling, racing, etc. Mr. Baker has had experience in all parts of Australia, and has broadcast from National Stations.

## 7LA Which Covers North Tasmania

7LA Station is owned by Messrs. Findlay & Willis Broadcasters Pty. Ltd., and the studio is located in Findlay's Buildings, Brisbane Street, Launceston. The whole of the work in connection with the station—designing, manufacturing and erecting—was carried out by Amalgamated Wireless.



V. Sydes, Engineer-in-Charge, 7LA.

J. T. Gough, Manager, 7LA.

The transmitter is situated on a four-acre block of land about three miles from the Launceston G.P.O., and is about 680 feet above the Tamar River. A clear view is obtained in all directions, resulting in very little absorption of transmitted waves. The two masts supporting the aerial are 160 feet high. The transmitter is designed to deliver a carrier wave to the aerial with a power of 300 watts, capable of being modulated 100 per cent.

7LA gives a fine coverage over the whole of Northern Tasmania, and is well heard in the mainland States and New Zealand. Its service was used to broadcast the ball to ball description of the English v. Australia test cricket, and worked in conjunction with the National Station. The pick-up was erected five miles out of the city and brought by land line to the studio. The site selected by the Australian Broadcasting Commission's engineer proved an ideal one, and resulted in Tasmanian listeners receiving a service that was much appreciated.

The theatres, public halls, churches, sports grounds and racecourse are linked up with 50 special lines, and broadcasts from these places to provide a big feature.

JOHN T. GOUGH, Manager, copywriter and chief announcer of 7LA, is one of Launceston's best-known residents. A Victorian by birth, he claims Tasmania as his land of adoption. Before accepting the position of advertising manager Mr. Gough represented a hardware house, and as an ex-commercial traveller has a wide circle of friends throughout the State. Many storekeepers tune in to the familiar voice, and are probably pleased for the change that the voice is to tell rather than to sell.

Early training in dramatic art and elocution proved an excellent grounding for radio work, and Mr. Gough has had considerable success as an amateur actor. Launceston residents are familiar with his competition successes, he having won the grand champion prize for elocution on five

occasions. In dramatic work his two outstanding performances are "The Spider" in "The Silver King" and the Earl of Dunhill in "The Squaw Man." Now on the air, his close-down monologues and good-night thoughts are quite a pleasing feature of a good night's entertainment.

EDWARD DAVIES is a Launceston whose early successes in amateur theatricals led to serious vocal and elocutionary training, and a theatrical



E. Davies, Announcer, 7LA.

Miss L. Nicholls, Lady Announcer, 7LA.

career with J. C. Williamson Ltd. and other musical companies. Mr. Davies, who has been heard in song and sketch from most Australian "A" stations, is now the popular "Uncle Ted" of 7LA.

MISS LOUISE NICHOLS, lady announcer of 7LA, was educated at the Launceston Ladies' College. Her full course of commercial subjects at the Metropolitan Business College gave her an excellent grounding. Miss Nichols is proficient with both piano and organ; her hobby is growing flowers, and her field sport tennis. Miss Nichols' clear enunciation and pleasing voice indicate a charming personality.

## 7HO is Popular

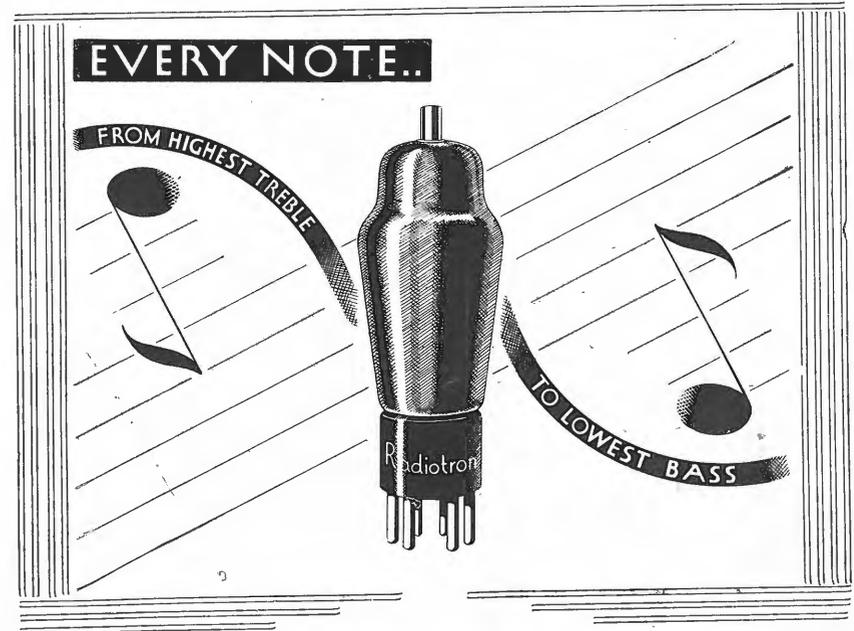
Hobart is fortunate in possessing a broadcasting station of such merit and providing such good entertainment as that supplied by 7HO. The studio and equipment are situated at Findlay's Buildings in Elizabeth St., and every evening a popular programme of music is heard. The studio and offices are of the latest. The station has been in existence four years, having been designed by a young Hobart mechanic, Mr. R. S. Hope, who now acts as chief engineer.

Four announcers are attached to the station:—J. Broadbent (Uncle David), Tas. Ward, Miss K. Major (Auntie Kath), and Miss B. Broughton.

Mr. Broadbent has had nearly 10 years' experience in broadcasting, having been attached to Stations 3LO, 3AR, 7ZL and 7HO during this term. His popularity as an announcer is well known, and as Uncle David among the children he is extremely popular.

The programme consists of early-morning session, housewives' session, children's hour, and selected recordings from a range of over 25,000 records.

The station is controlled by Findlays Pty. Ltd. under the management of Mr. S. H. Findlay.



Clarity of reproduction is one of the most desirable features of modern radio. By using Radiotrons you are assured of the finest possible reproduction. Radiotrons have been accepted as the world's standard for over a decade, and to-day are the choice of leading radio manufacturers.

Dependable in performance — faultless in tone quality.

# RADIOTRONS

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167/9 Queen Street, Melbourne.

Associated General Electric Supplies Co. Ltd.,

93-5 Clarence Street, Sydney.

Cnr. Queen and Little Collins Street, Melbourne, C.I.

Advertisement of the Amalgamated Wireless Valve' Coy. Ltd.