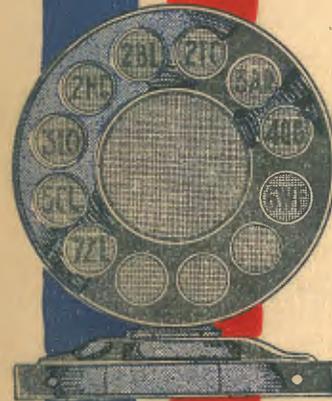


Canberra

THE AUSTRALIAN
BROADCASTING
COMPANY LIMITED

YEAR 
 **BOOK**
1930



2ND EDITION

Issued by THE AUSTRALIAN
BROADCASTING COMPANY
LTD., Supplying the NATIONAL
BROADCASTING SERVICE FOR
COMMONWEALTH GOVERNMENT
AUSTRALIA

Spanning the World

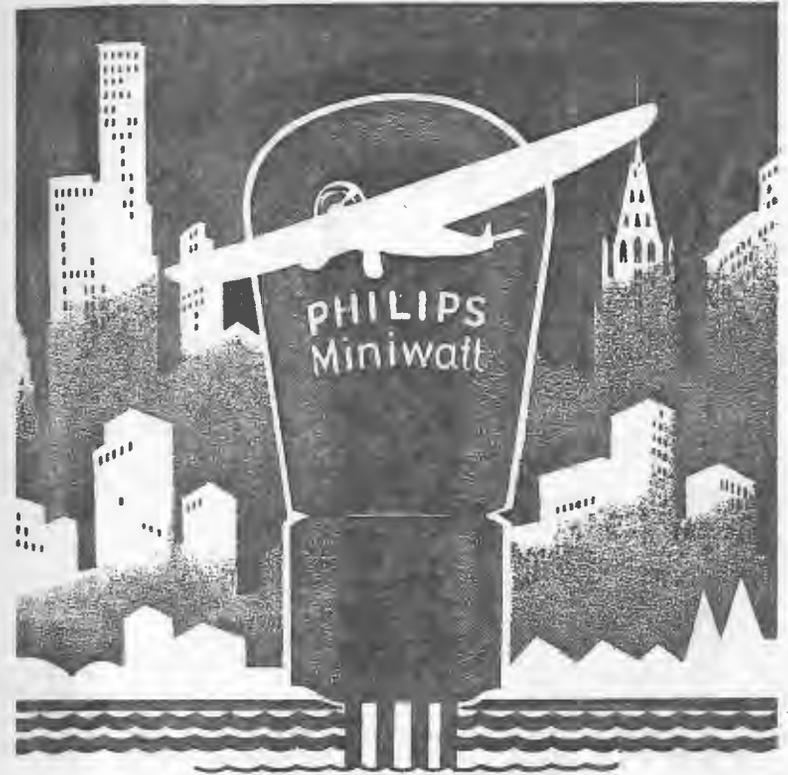


To-day, services of Wireless Communications enables you to Ring up from your own home or office, England, Scotland, Ireland, Wales, U.S.A., Canada, Mexico, Java and Cuba or twenty-two European Countries via A.W.A. Radiophone—You may Telegraph England, Scotland, Ireland, Wales, North and South America and all European Countries via Beam Wireless—while the Coastal Radio Service enables you to keep in touch with friends at Sea and in the Pacific Islands.

For full information regarding these services telephone A.W.A. offices, BW 2211, and ask for "Traffic," or apply at any Post Office, or at
AMALGAMATED WIRELESS (A/SIA) LTD.
 47 York Street, SYDNEY



AUSTRALIA'S NATIONAL WIRELESS ORGANISATION



PROGRESS!

The Philips Valve is symbolical of Progress, because the history of commercial radio has been the history of the valve and the history of the commercial valve, has been the history of Philips.

Always have Philips been ahead in valve design. The latest proof of this is the Penthode—greatest tube achievement of to-day and product of the brains of the scientists in Philips Laboratories.

PHILIPS

THE VALVES WITH A PAST AND A FUTURE

I.

BERKELOW
 BOOKDEALERS
 SYDNEY

DISTRIBUTORS FOR A.W.A RADIOLAS!

**Supreme in
Performance**

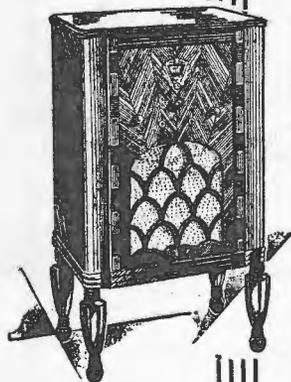
**Supreme in
Value.**

The New

RADIOLA

MODEL 45 E

With the New Tone Control



Completely equipped at the
amazing price of

£39/10/-

This Radiola Model is nothing short of a sensation. Mick Simmons' first extensive deliveries were sold almost immediately. To ensure prompt installation, early placement of order is advised.

The nearest SUBURBAN RADIO DEALER can arrange a home demonstration, and terms if required, through Mick Simmons Ltd.

If not in touch with a Radio Dealer, ring Mick Simmons' Radio Manager, M 6311.

NOTE :
A MAGNAVOX
Dynamic Speaker
can be supplied
with any Radiola
Model.

MICK SIMMONS LTD.

HEADQUARTERS : HAYMARKET, SYDNEY

" Wholesale and Retail Dealers in Radio "

II.

THE AUSTRALIAN
BROADCASTING COMPANY
LIMITED

YEAR BOOK

1930

Price 1/-

2ND EDITION

Issued by THE
AUSTRALIAN BROADCASTING COMPANY LIMITED
Supplying the National Broadcasting Service for
the Commonwealth Government of Australia.

SYDNEY :
Commonwealth Publications Ltd., 228 Pitt Street

1931

ACKNOWLEDGMENT

The Australian Broadcasting Company Limited wishes to make grateful acknowledgment to the Postmaster-General's Department for the supplying of articles which deal with the questions of technical detail and transmission also historical data in this publication. It commends to readers of the Year Book a careful perusal of this interesting matter contained in the Historical Statement on pages 7 to 12, License Figures, 30 to 31, Broadcasting Stations, 32 to 33, Review and Forecast, 48 to 54, How Broadcasting Stations are Maintained, 101 to 103, and Interference and Unlicensed Listeners, 114, in the belief that a better understanding of the subjects reviewed will mean a more intelligent appreciation of the great work which the Department is undertaking on the technical side of broadcasting.



1557-06
Jul 1936

STC

MAKES RADIO HISTORY

A REVELATION In Tone Selectivity and Volume

HERE is a new type of electric three-valve radio receiver which establishes a new conception of local radio reception. No whistling noises — no distracting howls — just beautifully clear tone. Here at any volume is the clearest, crispest, most natural tone you have ever heard on an electric three-valve set anywhere at any price. Here, too, is greater freedom from overlapping from nearby stations.

Here are such modern features as screen grid and penthode valves — power detection — single lift amplification — built in dynamic loud speaker and a separate volume control — each developed to a state of perfection never before equalled in the history of Australian-made radio.

The S.T.C. screen-grid electric three is made in Australia by Standard Telephones and Cables, who are supplying the whole of the equipment for the Commonwealth Government's High Power Relay Broadcasting services at Newcastle (2NC), Rockhampton, Corowa and Port Pirie.

Standard Telephones and Cables
(Australasia) Limited

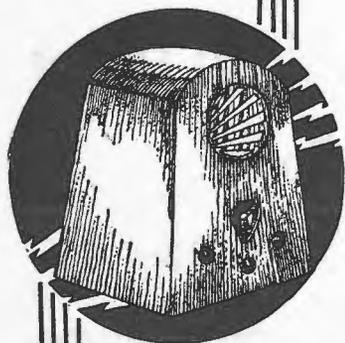
Registered Offices & Showrooms:

71 YORK STREET, SYDNEY, N.S.W.

Works—Chippendale, Sydney

Completely equipped
at the amazing
price of

£31/-/-



The
AIRZONE
AC FOUR

Screen - Grid, Loop
Receiver with built-in
Magnavox Dynamic
Speaker

The simplest and most compact receiver on the market to-day. No aerial . . . no earth is required. Simply plug into your electric light socket, and everything on the air is yours. Entirely self-contained, it can be moved from room to room . . . to the verandah . . . wherever there is current laid on. Fitted with the matchless Magnavox Dynamic Speaker, it has unsurpassable tonal beauty, and will give all that could be desired in volume without the slightest distortion. A quality receiver, indeed . . . and unquestionably representing the finest radio value offering to-day.

Home Demonstration and Terms,
if required, can be arranged by
Mick Simmons through the nearest
Radio Dealer.

MICK SIMMONS LTD.

HEADQUARTERS: HAYMARKET, SYDNEY

"Wholesale and Retail Dealers in Radio."

TABLE OF CONTENTS

	PAGE
EDITOR'S FOREWORD AND ACKNOWLEDGMENT	6
BROADCASTING IN AUSTRALIA	7
A STATEMENT OF POLICY	22
THE WIDESPREAD RAMIFICATIONS OF THE AUSTRALIAN BROADCASTING COMPANY LIMITED	24
LICENCES—A STORY OF PROGRESS	26
WIRELESS RECEIVING LICENCES PER 1,000 OF POPULATION	31
THE "B" CLASS STATIONS	32-42
AUSTRALIAN BROADCASTING STATIONS	34
WHAT BROADCASTING HAS DONE FOR MUSIC	37
IN THE REALM OF EDUCATIONAL WORK	43
A REVIEW AND A FORECAST	48
THE CHILDREN'S SESSIONS	55
S.O.S. CALLS	59
CHARITABLE ACTIVITIES OF THE YEAR	63
THE RADIO TRADE	70
CAN A PLEBISCITE BUILD A PROGRAMME	71
THE FIELD OF SPORT	79
BROADCASTING THE MELBOURNE CUP	83
A ROUND-THE-WORLD CHAT WITH THE AUSTRALIAN CRICKETERS	88
INTELLIGENT LISTENING	94
BROADCASTING OF RELIGIOUS SERVICES	96
BROADCASTING SERVICES	101
INTERFERENCE WITH RECEPTION	114
UNLICENSED LISTENERS	114
BROADCASTING AND THE PRESS	117
RADIO PLAYS	122
SOME OF THE PROMINENT SPEAKERS OF THE YEAR	127
PROMINENT MUSICIANS OF THE YEAR	130
SYMPHONY ORCHESTRAS HEARD DURING THE YEAR	131
DANCE BANDS	132
LIGHT MUSIC	132
CHAMBER MUSIC	132
CHORAL SOCIETIES, CLUBS, AND CHOIRS	132
BANDS HEARD THROUGH THE STUDIOS	133
SOME OF THE MAIN BROADCAST PRODUCTIONS HEARD DURING THE YEAR	133
OUTSTANDING ALL-AUSTRALIAN RELAYS	134
CHIEF SPORTING EVENTS OF THE YEAR	134
ADDENDA	138
INFLUENCE OF BROADCASTING IN A GREAT NATION-WIDE APPEAL	139
COMMONWEALTH LOAN APPEAL—STATION RESULTS IN EACH STATE	141
RADIO LICENCES FOR THE COMMONWEALTH FOR THE CALENDAR YEAR 1930	142
AUSTRALIAN BROADCASTING COMPANY'S ADDRESS IN EACH STATE	145
INDEX TO ARTICLES	146

LIST OF ILLUSTRATIONS

	PAGE
HON. J. A. LYONS, M.P., POSTMASTER-GENERAL OF THE COMMONWEALTH OF AUSTRALIA	9
H. P. BROWN, ESQ., DIRECTOR-GENERAL OF POSTS AND TELEGRAPHS ..	10
TRANSMITTING STATION OF 2FC, SYDNEY, AT PENNANT HILLS, NEW SOUTH WALES	15
THE AERIAL SYSTEM OF 3LO, MELBOURNE AT BRAYBROOK, VICTORIA ..	16
STUART F. DOYLE, ESQ., CHAIRMAN OF DIRECTORS OF THE AUSTRALIAN BROADCASTING COMPANY LIMITED	19
SIR BENJAMIN FULLER, VICE-CHAIRMAN OF THE AUSTRALIAN BROADCASTING COMPANY LIMITED	20
FRANK ALBERT, ESQ., DIRECTOR OF THE AUSTRALIAN BROADCASTING COMPANY LIMITED	27
C. F. MARDEN, SUPERINTENDING MANAGER FOR AUSTRALIA OF THE AUSTRALIAN BROADCASTING COMPANY LIMITED	28
PERSONALITIES OF THE STUDIOS—	
Administrative	35
Musical Direction	36
Men of Many Qualifications	39
Conductors and Accompanists	40
Announcers	45
Production	46
National Broadcasting Orchestra, Sydney	51
Australian Broadcasting Orchestra, Melbourne	52
Uncles and Aunts	57, 58, 61
THE MAIN STUDIO, 3LO, MELBOURNE, VICTORIA	62
COMMUNITY SINGING SESSION IN MELBOURNE TOWN HALL	67
COMMUNITY SINGING SESSION IN SYDNEY TOWN HALL	68
PERSONALITIES OF THE STUDIOS	73
The Collingwood Citizens' Band	73
Coburg City Band	73
Brunswick City Band	73
Malvern Tramway's Band	74
Metropolitan Fire Brigade Band	74
Ashfield District Band	74
Sporting Managers and Announcers	77
HEARING HER FIRST BROADCAST PROGRAMME IN HOSPITAL	78
LITTLE PATIENTS IN THE CHILDREN'S HOSPITAL ENJOY THE KIDDIES' SESSION	78
TRANSMISSION STATION AND AERIAL SYSTEM OF THE FIRST RELAY STATION 2NC, NEWCASTLE, BERESFIELD, N.S.W.	81
FLEMINGTON RACECOURSE ON MELBOURNE CUP DAY	82
PERSONALITIES OF THE STUDIOS	85
The A.B.C. Dance Band	85
The Melodians	85
The Collin's Band	86
The Pirate Band	86

	PAGE
THE FOYER OF 4QG STUDIOS, BRISBANE, QUEENSLAND	91
HOSPITAL PATIENTS JOIN IN COMMUNITY SINGING	92
ONE OF THE STUDIOS IN SYDNEY, NEW SOUTH WALES	97
MAIN STUDIO OF 3AR, MELBOURNE, VICTORIA	98
NO. 1 STUDIO, 6WF, PERTH, WESTERN AUSTRALIA	103
MAIN STUDIO, 5CL, ADELAIDE, SOUTH AUSTRALIA	104
THE AERIAL SYSTEM OF 3AR, MELBOURNE, VICTORIA	109
CONTROL ROOM, 2 BL STUDIOS, SYDNEY, NEW SOUTH WALES	110
CONTROL ROOM OF 3LO, MELBOURNE, VICTORIA	115
TRANSMITTERS AT PENNANT HILLS, SYDNEY	116
CONTROL ROOM, 6 WF, PERTH	119
CONTROL ROOM, 2FC, SYDNEY	120
CHAIRMAN OF THE A.B.C. PRESENTS CHEQUE TO ROYAL ALEXANDRA HOSPITAL FOR CHILDREN, SYDNEY	123
LORD MAYOR OF MELBOURNE HANDING OVER EQUIPMENT TO THE CHILDREN'S HOSPITAL, MELBOURNE	124
TRANSMITTING STATION OF 5CL, BROOKLYN, PORT ADELAIDE	135
PERSONALITIES OF THE STUDIOS	136
THE AUSTRALIAN AND WEST INDIAN CRICKET TEAMS.. .. .	143

INDEX TO ADVERTISEMENTS

AIRZONE LTD.	IV.
AMALGAMATED WIRELESS LTD.	Inside front cover and back cover.
CLYDE ENGINEERING Co. LTD.	VI.
COSSOR VALVES	V.
HECHT, H., & Co... .. .	VIII.
MAGNAVOX (AUS.) LTD.	IX.
MICK SIMMONS LTD.	II.
PHILIPS LAMPS (AUST.) LTD.	I.
STANDARD TELEPHONES & CABLES LTD.	III.
STROMBERG CARLSON (AUS.) LTD.	VII.

THE HISTORY OF BROADCASTING IN AUSTRALIA.

FOREWORD.

The issue of the Year Book is justified by the fact that Broadcasting has now taken an established and accepted position in the life of the community. The public marvelled greatly at the early progress of the wonders of wireless, but they have now reached the stage when they require some more definite compilation from the records of the Stations.

This Year Book is offered to the people of Australia in the hope that it will fill the want. It contains much information of value to the listener. It should prove useful in keeping the public properly informed as to the vast ramifications of Broadcasting in the Commonwealth, and at the same time establish an unbiassed respect for the medium, and, in general, a better listening disposition.

Broadcasting in Australia has been so successful—free from errors of judgment and from technical breakdowns—that the public has, up to the present, accepted the great work of those in charge as part of their every-day life.

In the future, however, an increasingly important part has to be played by the listening public, and the issue of this Year Book is another step by The Australian Broadcasting Company in seeking the co-operation of their large clientele in making Broadcasting in Australia a truly national service.

This book is therefore offered to listeners and the public at large in the hope that it will fulfil its mission.

THE EDITOR.

As in other countries, the broadcasting services in Australia had their beginnings in experiments—official, commercial and amateur. The first actual demonstration of transmission and reception of radiotelephony occurred in Melbourne at the Aircraft Exhibition held in June and July, 1920. The transmission was conducted at the headquarters of the Commonwealth Government Radio Service at Collins House, Melbourne, on equipment which had been loaned by the Air Force, and the reception was conducted in the Exhibition Building. In August, 1920, a public demonstration was given by Amalgamated Wireless (A/asia) Limited at the Royal Society in Sydney, and in October of the same year a further demonstration was carried out by the Company at Queen's Hall, Federal Parliament House, Melbourne. Early in 1921 a series of weekly experimental broadcasts were carried out by Amalgamated Wireless (A/asia) Limited, Melbourne. In August of that year a further successful experiment was carried out when the Commonwealth Government Radio Service conducted tests of two-way radiotelephony between Tasmania and the mainland. Experimental transmission by commercial and amateur interests developed gradually in the next two years, the reception being confined entirely to radio enthusiasts in the official, commercial and amateur fields. Notable amongst the amateur transmissions were those conducted by Mr. Maclurcan, of Sydney, 2CM, and Mr. Culliver, of Melbourne, 3DP.

The Sealed Set Scheme.

The first proposal for systematic broadcasting was made to the Prime Minister's Department by Amalgamated Wireless on 27/7/1922, when the Company indicated its desire to undertake a radio concert service in all States. On 1/11/1922 the Company formally applied for permission to establish the stations, but before any details for a comprehensive scheme were approved several other firms had intimated a desire to provide broadcasting services. Early in 1923 it was decided to consider the whole matter comprehensively, and on 24/5/1923 a conference of all interested parties was convened by the Postmaster-General in Melbourne. The conference unanimously decided upon a scheme which became known as the Sealed Set scheme, and as the Postmaster-General had promised the conference he would introduce any scheme put forward unanimously, the Department prepared regulations based on the conference proposals, but at the time the Department indicated a doubt as to the efficacy of the scheme. The regulations were issued on 1/8/1923, and among other things contained a provision that the station licensees could make their own charge for subscription by listeners who had sets tunable only to the wavelength of the particular station whose service was received.

Under this scheme the following stations supplied services :—

Station.	Company.	Service Commenced.	Listeners' Subscription.
2SB, Sydney (Subsequently 2BL)	Broadcasters (Sydney) Ltd.	13/11/1923	10/-
2FC, Sydney	Farmer & Company	5/12/1923	63/-
3AR, Melbourne	Associated Radio Company	26/1/1924	63/-
6WF, Perth	Westralian Farmers Ltd.	4/6/1924	84/-

In addition to the Company's subscription, the Postmaster-General required the Company to collect a licence fee from each licensee.

This Scaled Set scheme was not a success; between 1/8/1923 and 30/6/1924 only 1,400 listeners were licensed under the regulations. Considerable difficulty was experienced by the Department in dealing with applications for Experimental Licences. As many as 5,000 applications were received during that time from persons who could not be properly classified as experimenters, but who desired to listen to any station without restriction beyond a common licence fee.

"A" and "B" Stations.

Early in 1924 various suggestions for the amendment of the Regulations were made to the Department, mainly on the ground that it was desirable that any listener should be permitted to listen to any station without separate payment. The Postmaster-General received further representations from a conference which met in Sydney between 8/4/1924 and 14/4/1924, but it was found that the proposals were unacceptable, and the Department evolved a new plan and revised the Regulations which were issued on 17/7/1924.

The new regulations provided for the issue of two classes of broadcasting station licences—Class "A" and Class "B." Two Class "A" licences were authorised for New South Wales and two for Victoria, mainly owing to the fact that the stations were already in existence in those States. In all of the other capital cities only one Class "A" station was permitted, but the Regulations provided that the licensee of the Class "A" station or stations in the relative State should, if required, establish relaying stations for the purpose of serving distant country listeners.

The new system provided for Class "A" stations to be maintained by revenue received from licences issued to broadcast listeners, radio dealers and experimenters. The owners of Class "B" stations would not receive any such revenue and their services were to be maintained by revenue received from advertisements or from other sources. It was arranged that the licence fees would be collected by the Postmaster-General's Department—licences being obtainable at post offices. The method of distributing the revenue so collected is outlined on pages 17, 18.



Hon. J. A. Lyons, M.P., Postmaster-General of the Commonwealth of Australia.



H. P. Brown, Esq., Director-General of Posts and Telegraphs of the Commonwealth of Australia.

The Regulations required that the various broadcasting station licensees, Class "A" and Class "B," should make their own arrangements for the payment of any claims that might be made in respect of copyright or patents. The copyright payments by the Class "A" companies were practically standardised after a conference in 1925. It was agreed that the Companies should pay to the Australian Performing Rights Association ten per cent. of the amount distributed to them by the Post Office from its licence fee collections. Different arrangements were made with the Class "B" stations, no standard basis being adopted.

Patent Royalty Charges.

Patent royalty charges were payable to Amalgamated Wireless (A/asia) Limited, the basis being that the Company should charge the Class "A" companies not more than 5/- per licence per annum. Other arrangements were made in regard to Class "B" stations. In November, 1927, when the Commonwealth Government agreed to pay Amalgamated Wireless a proportion of the listeners' fees, a new basis was introduced covering the use of the Company's patents, both in the Class "A" and Class "B" stations, and also in wireless receivers. The agreement provided that Amalgamated Wireless (A/asia) Ltd. should be paid 3/- per licence fee per annum.

The Class "B" stations were permitted to broadcast advertisements or other paid publicity without restriction by the Department, but the extent of advertising by the Class "A" stations was limited in the Regulations to a total period not exceeding 60 minutes per day.

The licence period for a Class "A" or Class "B" station was five years from the date of issue.

The First "A" Licences.

The schedule hereunder shows particulars of the Class "A" licences issued under the 1924 Regulations:—

Call Sign.	Licensee.	Frequency KC.	Wave-length Metres	Power Watts (Anode)	Date of Expiry of Licence.
2BL	(a) New South Wales Broadcasting Co. Ltd.	855	*350	5,000	21/7/29
2FC	(b) New South Wales Broadcasting Co. Ltd.	665	*451	5,000	16/7/29
3AR	(c) Dominion Broadcasting Co. Ltd.	620	*484	5,000	7/8/29
3LO	(d) Dominion Broadcasting Co. Ltd.	808	*375	5,000	21/7/29
4QG	Queensland Radio Service	760	*394.5	5,000	29/1/30
5CL	Central Broadcasters Ltd.	730	*412	5,000	13/1/30
6WF	(e) Westralian Farmers Ltd.	690	*435	5,000	21/7/29
7ZL	(f) Tasmanian Broadcasters Pty. Ltd.	580	516	3,000	13/12/30

- (a) 2BL—Licence originally issued on 22/7/1924 in name of Broadcasters (Sydney) Ltd.
 (b) 2FC—Licence originally issued on 17/7/1924 in name of Farmer & Co. Transferred to 2FC Ltd. on 1/12/1927. Both stations amalgamated under ownership of New South Wales Broadcasting Co. on 14/8/1928.

- (c) 3AR—Licence originally issued on 8/8/1924 to Associated Radio Co.
 (d) 3LO—Licence originally issued on 22/7/1924 to Broadcasting Co. of Australia. Both stations amalgamated under ownership of Dominion Broadcasting Co. on 1/3/1928.
 (e) Service transferred to Postmaster-General's Department on 20/12/1928 at request of Company.
 (f) Originally issued to Associated Radio Co. on 14/12/1925. Transferred to Tasmanian Broadcasters Co. on 19/7/1927.
 * 2FC—Original licensed wavelength, 1,100 metres.
 Changed to 442 metres on 2/10/1926.
 Changed to 451 metres on 1/9/1929.
 2BL—Original licensed wavelength, 350 metres.
 Changed to 353 metres on 12/5/1925.
 Changed again to 350 metres in January, 1928.
 3AR—Original licensed wavelength, 480 metres.
 Changed to 484 metres on 12/5/1925.
 3LO—Original licensed wavelength, 1,720 metres.
 Changed to 371 metres on 1/7/1925.
 Changed to 375 metres in January, 1928.
 4QG—Original licensed wavelength, 385 metres.
 Changed to 395 metres in January, 1928.
 5CL—Original licensed wavelength, 395 metres.
 Changed to 412 metres on 13/1/1928.
 6WF—Original licensed wavelength, 1,250 metres.
 Changed to 435 metres on 1/9/1929.

The "B" Class Licences.

The following Class "B" licences were also issued:—

Station	Licensee.	Power (Anode)	Frequency (Wavelength)	Licensed	Service Commenced.
* 2BE	Burgin Electric Co.	100	949 (316)	7/11/24	7/11/24
2GB	Theosophical Broadcasting Station Ltd.	3,000	949 (316)	13/5/26	23/8/26
2KY	Trades & Labour Council	1,500	1,070 (280)	20/5/25	31/10/25
2UE	Electrical Utilities Supply Co.	250	1,024 (293)	7/11/24	26/1/25
(a) 2UW	Radio Broadcasting Ltd.	500	1,124 (267)	13/2/25	18/2/25
(b) 2HD	W. W. Johnston	600	1,415 (212)	1/12/24	27/1/25
2HK	Mockler Bros.	250	1,155 (260)	15/10/25	11/11/25
(c) 3DB	3DB Broadcasting Station Pty. Ltd.	500	1,179 (255)	18/10/26	21/2/27
3UZ	O. J. Nilsen & Co.	500	930 (322)	6/2/25	8/3/25
4GR	Gold Radio Service	150	1,019 (294)	5/6/25	9/8/25
(d) 5DN	5DN Pty. Ltd.	500	960 (313)	1/12/24	24/2/25
5KA	Sport Radio Broadcasting Co. Ltd.	1,000	1,199 (250)	26/8/26	25/3/27

* Licence not renewed. Station ceased operations on 6/11/1929.

- (a) Licence originally issued to O. Sandell. Transferred to Radio Broadcasting Ltd. on 12/4/1928.
 (b) Licence originally issued to H. A. Douglas. Transferred to W. W. Johnston on 21/2/1928.
 (c) Licence originally issued to Druleigh Business and Technical College Pty. Ltd. Transferred to 3DB Pty. Ltd. on 1/6/1927. Acquired by the "Herald" on 14/6/1929.
 (d) Licence originally issued to E. J. Hume. Transferred to 5DN Pty. Ltd. on 31/7/1925.

A Proved Success.

The success of the new scheme may be gauged from the fact that the listeners' licences increased from 38,000 in June, 1925, to 310,000 in July, 1929.

Notwithstanding the general success of this scheme, however, there were certain features in it which favoured some States more than others. For instance in Victoria, a much greater revenue was available for the Companies owing to the fact that 140,000 licences were issued. It was largely a matter of distribution of population. The cost of providing a service for a small population

was almost as great as that for a much larger population, and the States of great extent of territory, such as Queensland and Western Australia, were more in need of relaying stations in the country districts than a small State like Victoria.

These and other factors relating to broadcasting led the Government to appoint in January, 1927, a Royal Commission to investigate broadcasting conditions throughout the States. The Commission made certain recommendations involving, among others, the pooling of a portion of the licence fees of all States, with the object of guaranteeing a minimum revenue to the companies in each State. The Commission's report was considered exhaustively by the Government, and finally in October, 1927, a conference of all the Class "A" companies was called by the Prime Minister. The representatives were unable to agree on any common scheme, but the Government asked the Companies to consider the matter exhaustively with the object of arranging for co-ordination between the companies, so that the larger States could help the smaller States in providing a satisfactory service throughout the Commonwealth. Negotiations along these lines continued during the ensuing seven months, but in July, 1928, the Government decided that it was desirable to introduce a new scheme.

National Broadcasting Service.

On 26/7/1928 the Government announced its intention to establish a National Broadcasting Service, whereby one organisation would cater for the National programmes for all States. The technical services of all States would be owned and operated by the Government, while the provision of programmes would be left to experienced entrepreneurs under contract. An advisory committee to assist the Postmaster-General in the matter was appointed, consisting of Mr. H. P. Brown (Chairman), Mr. J. H. Hammond, K.C., Professor J. P. V. Madsen, Hon. R. B. Orchard, and Mr. W. H. Swanton.

This Committee prepared a detailed scheme for the establishment of the National Service and the extension of the broadcasting service generally throughout the Commonwealth. The recommendation included:—

- (a) The establishment of a National Broadcasting Service in place of the Class "A" stations. The Postmaster-General's Department would undertake the provision and maintenance of the technical services of the stations, studios and the relaying circuits while the programme services would be let by tender to a programme company;
 (b) The continuance and extension of the existing system of Class "B" stations, the number, allocation and power of which would be decided by the Postmaster-General;
 (c) The establishment by the Postmaster-General's Department of a number of Class "C" stations. The pro-

gramme time of these stations would be made available for the transmission of publicity programmes or programmes sponsored by large advertisers.

- (d) The broadcast listeners' licence fees would continue at 24/- per annum, of which 12/- would be the maximum amount available to the Programme Contractor. Of the balance, 3/- would be paid to Amalgamated Wireless in accordance with the 1927 Agreement between the Commonwealth and the Company and the remainder would be retained by the Postmaster-General's Department to cover the cost of establishing and maintaining the additional stations, studios, relaying circuits, etc., and the cost of general administration in connection with licence records, etc.

In accordance with the Government's approval of the Advisory Committee's plan, action was taken concurrently by the Department :—

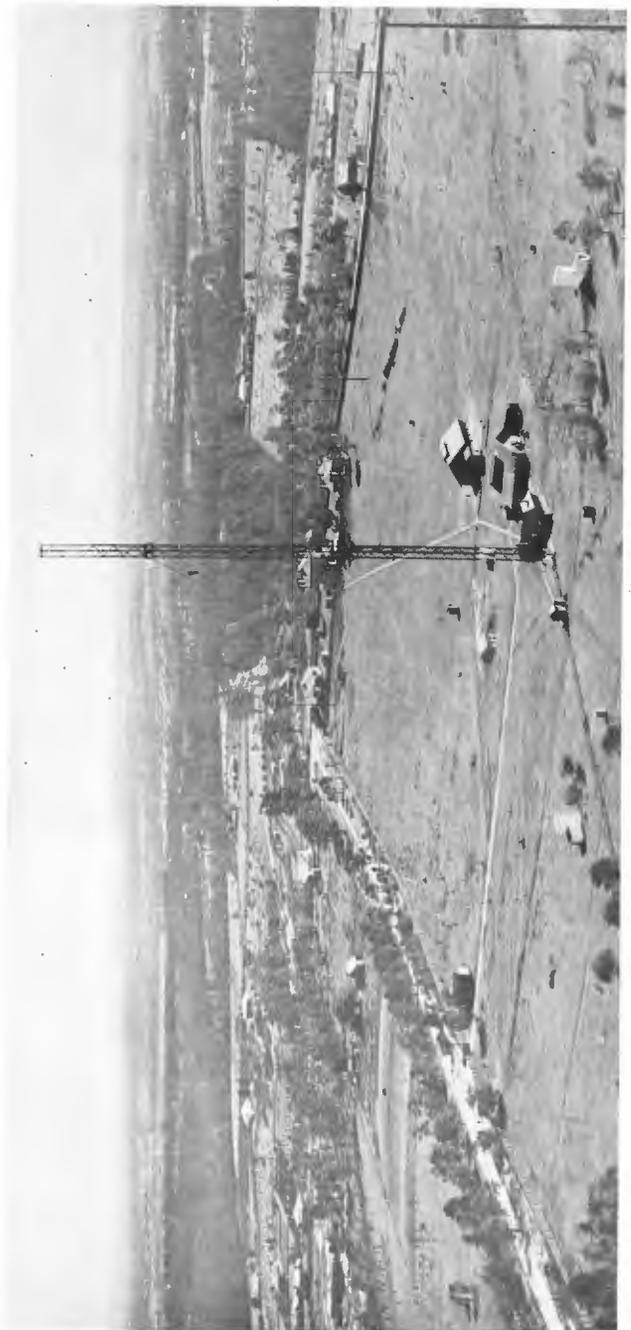
- (a) To acquire the plant of the existing Companies, so that the services would be continued without interruption.
(b) To arrange for a contract for the provision of the programmes of the National Service; and
(c) To arrange for the erection of additional subsidiary stations in country districts.

About this time the Company owning Station 6WF, Perth, informed the Department that they were unable to continue the service owing to the heavy losses that they had sustained, and were likely to sustain during the remainder of their licence period. They requested the Department to take over and continue the service. The Department purchased the plant and provided the service, including the programmes, from 20/12/1928 until the station was taken over under the National Broadcasting Scheme on 1/9/1929.

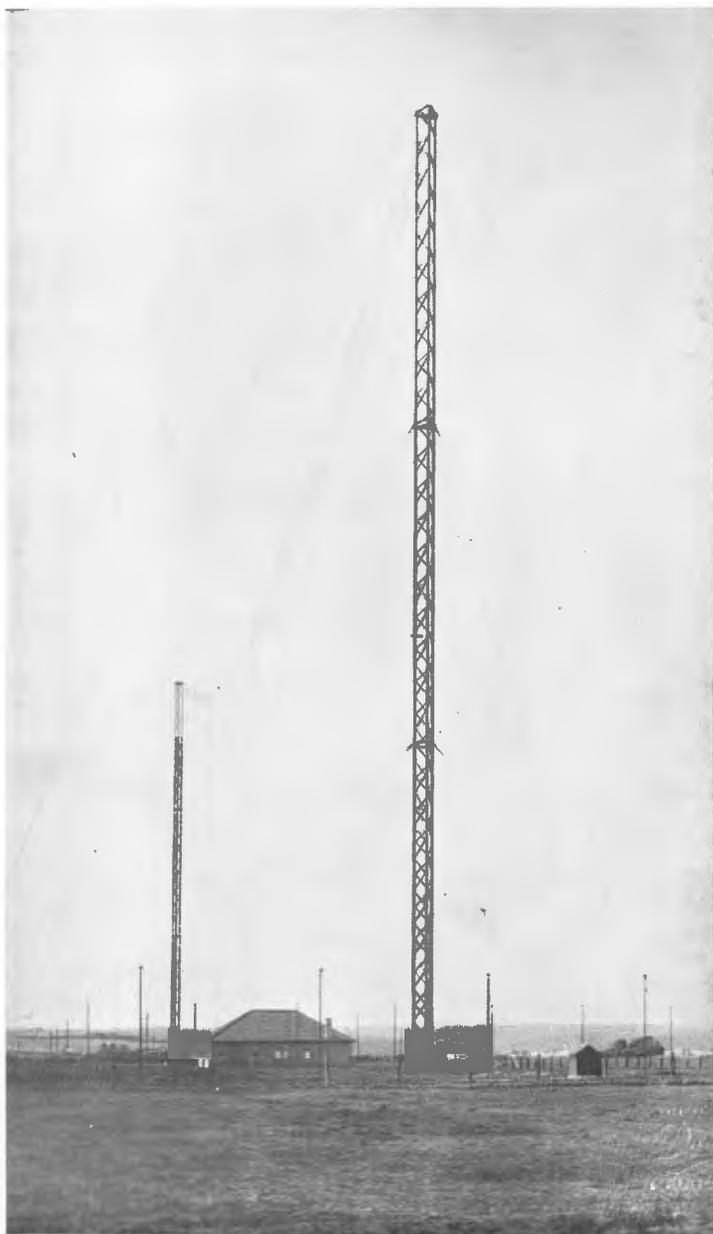
Stations Come Under the Government.

As the licences of the four main stations in Sydney and Melbourne were due to expire in July/August, 1929, and as the Government wished to assist the pioneer companies by taking over their assets, if they so desired, the plants of the existing stations were acquired. At the same time tenders were called for plant for additional stations in accordance with conditions specifying plant of the most modern type.

The assets of the Companies were acquired by the Postmaster-General's Department at the expiration of the various licences and utilised for the National Broadcasting Service. The Government had decided on this course, although it was recognised that considerable expenditure was needed in most of the stations to modernise the equipment and generally to improve the transmissions.



The Transmitting Station of 2FC, Sydney, at Pennant Hills, New South Wales.



The Aerial System of 3LO, Melbourne, at Braybrook, Victoria.

On 9/5/1929 tenders were invited for the provision of the programmes in accordance with specified conditions, and eight tenders were received. The combined tender of Union Theatres Limited, Fuller's Theatres Limited, and J. Albert & Son was accepted, and the tenderers formed the Australian Broadcasting Company, which Company entered into a contract with the Commonwealth for the provision of the programme services for a period of approximately three years ending in all States on 30/6/1932.

Listeners' Licence Fees.

The schedule hereunder shows the fees charged for broadcast listeners' licences from July, 1924, to the present time :—

Period.	Fee (a)	Paid to Broadcasting Company	Retained by Department for Administration.
17/7/24 to 31/7/25	35/-	30/-	5/-
1/8/25 to 31/12/27	27/6	25/-	2/6
1/1/28 to present time.. ..	24/-	20/- (b)	1/- (3/- to A.W.A.) (c)

- (a) These fees refer to listeners located in Zone 1, that is the territory within a radius of approximately 250 miles from Class "A" Station. Lower fees were charged for Zone 2 covering the territory between 250 and 400 miles radius, and lower still in Zone 3—outside the Zone 2 boundary. Since January, 1928, only two Zones are recognised; Zone 2 including all the territory outside 250 miles from a Class "A" station.
- (b) From the date of the inauguration of the National Broadcasting Service in the various States, as mentioned already, the Australian Broadcasting Company receives 12/- per licence.
- (c) An amount of 3/- is paid to Amalgamated Wireless (A/asia) Limited as patent royalty, under the Wireless Agreement Act of 1927. This payment commenced in November, 1927. Prior to that date the Company received patent royalty from the Class "A" Broadcasting Companies at the rate of 5/- per listener's licence.

From 1/8/1925 to 31/12/1927 the payment of the listeners' licence fees in two instalments of 15/- each was permitted; 2/6 being retained by the Department in respect of each instalment. Owing to difficulties which had arisen, the instalment system was discontinued on 31/12/1927.

Up till 31/12/1927, Dealer's Listening Licences, Special Licences and Temporary Licences were also issued, the fees charged and the departmental proportion being :—

	Fee.	Departmental Proportion.
Dealer's Listening Licence ..	£5	£1 5 0
Special Licence	£10	5 0
Temporary Licence	£1	5 0

These licences were abolished on the introduction of the uniform licence from 1/1/1928.

The apportionment of a listener's license fee (24/- for Zone 1 and 17/6 for Zone 2) from the date of the inauguration of the National Broadcasting Service in each State is as follows:—

Programme Contractor	Zone 1. (24/-)	Zone 2. (17/6)
(Australian Broadcasting Company)	12/-	12/-
P.M.G. Department (for administration and technical services) ..	9/-	2/6
Amalgamated Wireless (Patent Royalty) ..	3/-	3/-

NATIONAL BROADCASTING SERVICE. Hours of Transmission of Stations.

THE normal hours of transmission at each of the stations are as under:—

2FC, SYDNEY (85 HOURS WEEKLY).

Monday to Friday .. 7 a.m.—8.15 a.m. 10.30 a.m.—12.30 p.m.
1 p.m.—4.30 p.m. (Wed., close at 5 p.m.)
5.45 p.m.—11.30 p.m.
Saturday 7 a.m.—8.15 a.m. 10.30 a.m.—5 p.m.
5.45 p.m.—11.30 p.m.
Sunday 10 a.m.—12.30 p.m. 3 p.m.—4.30 p.m.
6 p.m.—10.30 p.m.

2BL, SYDNEY (87½ HOURS WEEKLY).

Monday to Friday .. 8.15 a.m.—11 a.m. 12 noon—5.45 p.m.
6.15 p.m.—10.30 p.m.
Saturday 8.15 a.m.—11 a.m. 12 noon—5.45 p.m.
6.15 p.m.—12 midnight.
Sunday 11 a.m.—3 p.m. 4.30 p.m.—10 p.m.

3LO, MELBOURNE (84½ HOURS WEEKLY).

Monday to Friday .. 7 a.m.—8.15 a.m. 10.30 a.m.—12.30 p.m.
1 p.m.—4.30 p.m. (Wed., close at 5 p.m.)
5.45 p.m.—11.30 p.m.
Saturday 7 a.m.—8.15 a.m. 10.30 a.m.—12.30 p.m.
1 p.m.—5 p.m. 5.45 p.m.—11.30 p.m.
Sunday 10 a.m.—12.30 p.m. 3 p.m.—4.30 p.m.
6 p.m.—10.30 p.m.

3AR MELBOURNE (Same hours as 2BL, Sydney).

4QG BRISBANE (71½ HOURS WEEKLY).

Monday to Friday .. 7.30 a.m.—8.30 a.m. 11 a.m.—2 p.m.
3 p.m.—4.30 p.m. 6 p.m.—11 p.m.
Saturday 7.30 a.m.—8.30 a.m. 11.30 a.m.—5 p.m.
6 p.m.—11.30 p.m.
Sunday 10.30 a.m.—12.15 p.m. 3 p.m.—4.30 p.m.
6 p.m.—10 p.m.



Stuart F. Doyle, Esq., Chairman of Directors Australian Broadcasting Co. Ltd.



Sir Benjamin Fuller, Vice-Chairman, Australian Broadcasting Co. Ltd.

5CL ADELAIDE (Same hours as 4QG Brisbane).

6WF PERTH.

Monday to Friday .. 7.30 a.m.—8.30 a.m., 11 a.m.—2 p.m.
 3 p.m.—4.30 p.m. 6 p.m.—11 p.m.
 Saturday 7.30 a.m.—8.30 a.m. 11.30 a.m.—5 p.m.
 6 p.m.—11 p.m.
 Sunday 10.30 a.m.—12.15 p.m. 3 p.m.—4.30 p.m.
 6 p.m.—10.30 p.m.

7ZL (after 13/12/30).

Monday to Friday .. 7.30 a.m.—8.30 a.m. 11 a.m.—2 p.m.
 3 p.m.—4.30 p.m. 6 p.m.—11 p.m.
 Saturday 7.30 a.m.—8.30 a.m. 11.30 a.m.—5 p.m.
 6 p.m.—11.30 p.m.
 Sunday 10.30 a.m.—12.15 p.m. 3 p.m.—4.30 p.m.
 6 p.m.—10 p.m.

The total number of schedule hours transmission from all stations for the year was 23,168, and stations were off the air through breakdowns for only 34 hours 13 minutes, or .001 of the total operating time. The aggregate of approved hours for a full year amounts to approximately 30,000.

Outside Broadcasts.

2. In accordance with the contract between the Commonwealth and the Australian Broadcasting Company the Postmaster-General's Department provides circuits for outside broadcasts as well as the service of the pick-up operators. The Company has made very liberal use of this means of broadcasting, and at the various stations has a total of nearly 200 telephone circuits into the studios. The number of broadcasts involving outside pick-ups in the various states for the year amounted to over 4,750.

Relaying Circuits.

3. The Postmaster-General's Department also provides, free of cost to the Company, telephone circuits for the relaying of programmes between inter-State Stations for the simultaneous broadcasting of programmes. During the first year 288 such relays were undertaken in New South Wales, Victoria and South Australia.

Studio Accommodation.

4. A condition of the National Broadcasting Service is the requirement that the Postmaster-General provides, free of cost to the programme Company, such studio accommodation as is necessary. It was decided to utilise the accommodation previously used by the Class "A" Companies, but in Perth and Sydney it was found desirable to make extensive changes for improvement in the methods of programme rendition.

THE POLICY OF THE AUSTRALIAN BROADCASTING COMPANY LIMITED

AFTER five years of Broadcasting with the various "A" Class Stations under various systems of control, the Commonwealth Government decided the future policy must be one of general consolidation.

The National Broadcasting Service was then brought into being, and the Australian Broadcasting Company Limited was given the task of providing the programmes in every State, upon the expiry of control held by the various contractors, under the old system.

First 2FC Sydney, then 3LO Melbourne, came under the new system, followed at short intervals by 2BL Sydney, 3AR Melbourne, 6WF Perth, 5CL Adelaide, and 4QG Brisbane, and, finally, 7ZL Hobart.

The establishment of Relay Stations in certain key centres is a gradual process for the future, and these will not be the subject of review in this Year Book.

Looking back over the first year of our stewardship, we feel that it has been one of organisation, expansion and development. The keynote of our activities has been service to the public. We have endeavoured to serve all interests, and while the complexities of administration spread over such a vast area as Australia, has made our task difficult, nevertheless we claim that our first year's work has been successful. This assertion is not made in a spirit of self-complacency. We have not been free from criticism—no successful Broadcasting system ever will be—but the fact that we have not only retained the large clientele that came over with the establishment of the National Service, but have increased the listeners in every State, is the best proof that our work has been approved by the listening public, who have appreciated the magnitude of our task of reorganisation.

First Year's Success.

The first twelve months of the Australian Broadcasting Company's contract was one of the most difficult in the history of the Commonwealth. We had to face a very definite hostility to the new method of centralised control of Broadcasting, the natural disturbance by our taking possession of the Stations, and, above all, the severe financial depression. Then it was necessary to organise what was to be done under the new allocation of percentages of licence fees. Under the old contracts our predecessors had the control of both programmes and mechanical operations, and this gave them a far larger revenue to cover their programmes. They also received advertising revenue. The National Service placed the programmes only under our control, and the mechanical operations under the Postmaster-General's Department. In the allotment of proportions of the licence fee, it was necessary for the

Government to cover the growth of its mechanical services together with the provision for the establishment of Relay Stations. This meant a lesser sum available for programmes. We believed, however, that with concentrated effort, success could attend our efforts with the amount available, and by carefully reorganising the work of each State the programme services gradually improved to a point where they can be said to be giving satisfaction.

Throughout the year, Mr. H. P. Brown, Director-General of Posts and Telegraphs, and his staff of officials, have given us every possible assistance and co-operation. Sceptics forecast constant friction under the system of dual control, but these critics have been confounded. The first year has been one of harmonious working, which should augur well for the future success of the National Broadcasting Service.

Our Objective—A Really National Organisation.

In undertaking the supply of Broadcasting programmes for the whole continent, it has been our objective to recognise that a National Service must know no State boundaries. We have met some criticism on this score, but those who make protest must realise that Broadcasting is to play a very big part in the future development of our empty spaces. By making available to our settlers in the back country some of the pleasures and services close to the doors of the more favoured dwellers in our cities and towns, we feel that we are making Broadcasting a truly National organisation.

From a financial point of view our first year has not been a profitable one, but this will not deter our policy of expansion in the future. It would have been possible for us to have created a surplus on the year's workings, but we decided to expend additional money in improved programmes instead. It should please listeners to know that although we have had to carry losing Stations in some of the smaller States, we have actually spent more money on programmes in every Station than the old controllers.

Confidence in the Future.

We look to the future with confidence. We enter upon the new year of our contract with renewed diligence and zeal. We thank those who have co-operated with us in the first year of our labours. We thank those who, while not seeing eye to eye with all that we have done, have still helped us with constructive criticism.

We ask listeners to remember that while individual items may not always please them, these are fulfilling the wants of someone else in the community.

If Broadcasting is accepted upon the generous basis that, like a newspaper, there are diversified interests to be served, then the second year of our activities will be even more pleasant than the first.

STUART F. DOYLE,
CHAIRMAN OF DIRECTORS.

THE WIDESPREAD RAMIFICATIONS OF THE A.B.C.

(By C. F. Marden.)

TAKE an eight by eight inch map of the Commonwealth of Australia, place your hand upon it with your thumb pointing towards Brisbane, your first finger to Sydney, the second finger to Melbourne, the third to Adelaide, and the fourth to Perth, and you have then covered an area of nearly three million square miles over which the operations of the Australian Broadcasting Company daily pulsate. During the year from July, 1929 to July, 1930, seven stations operated by the Australian Broadcasting Company Limited gave a daily service to several hundred thousand homes. The average man in the street has a very limited knowledge of the number of permanent and casual employees who gave service under this Company to prepare and present the programmes from week to week. Commencing with the Head Office and then passing through the branches in each State, you will find just on one hundred and twenty permanent employees who are engaged in administration and the preparation of the programmes. Then you must add to this another hundred who are permanently engaged in the musical operations of the various stations, in the orchestras and dance bands, and musical ensembles. But this is only a very small proportion of the personnel that has to be brought in to the Studios, and engaged in outside performances to make up each week's programme. Over one thousand actual units receive engagements each week, either as soloists or as component members of instrumental or vocal organisations.

Preparing the Programmes.

About six weeks before a programme reaches actual performance the Department controlling its preparation draws up a rough outline of a week's presentation. This is then placed before the programme committees, who in turn make suggestions or deletions. The hundreds of artists are then approached, and if available are duly booked. The talk rosters are prepared, the sporting bodies are approached, the churches and musical organisations who may be presenting programmes are also consulted, and when all the necessary permissions have been secured, a final draft is drawn up. When this is ultimately passed, the programmes of the week are then forwarded to the Postmaster-General's Department for approval. When these are received back they are rushed to the printers and copies are made available for the newspapers. One might be tempted to think that all the work necessary on that particular programme is then at an end. But this is not so, as arrangements have to be made for the mechanical side of the presentation. Applications have to be made for lines, jutting out to the various points for the outside shows, pick-up staffs have to be allotted, and presentation sheets

arranging for the distribution of artists to the various studios have also to be prepared. The responsibility does not even cease here, for dealing with the human equation to such a great degree, arrangements have to be made for where artists may drop out, or the happening of some event which must have a direct bearing on the life of the community, and in turn on the broadcasting programme.

The thought might strike you that this must really be all that is required of a broadcasting organisation. But such is not the case, the round of rehearsals have to begin, the censorship of matter that is to be offered has to be undertaken, the authors and composers' rights have to be looked into. Then when the programme week actually arrives the daily news has to be arranged, the weather reports secured, the quotations of the markets and the stock exchanges have to be prepared. The sporting results must be secured. Then finally, the actual presentation of the whole programme has to be carefully watched as it is offered to the public.

There is also another side that has to be seen through. This covers the weekly search for new material. Auditions are held, interviews are granted, samples of the work of all classes of artists have to be carefully reviewed.

A Story of Perpetual Effort.

At one time a daily newspaper office was looked upon as carrying the maximum amount of work that could be forced into twenty-four hours. The broadcasting station, however, has now secured the unenviable pride of place. The first lights flash on in the Studios before six o'clock in the morning, and the last light is turned off after midnight. Throughout those long, tedious hours on every day in the week, every week in the month, and every month in the year, the broadcasting organisation is presenting various forms of entertainment or utility service to the public. But while the listener is brought in touch with the final presentation as it comes across the air to him, he little thinks that another large staff is daily employed getting ready fresh matter to keep these continuous programmes in operation.

One of the greatest causes of heart-burning in broadcasting is the fact that those who are actively engaged in the preparation of programmes never have an opportunity of basking in the sunlight of the previous success. To-day's programme with whatever success it may carry is forgotten to-morrow. The life of everything in this business is twenty-four hours. When it is therefore considered that three hundred and sixty-five sets of programmes have to be prepared and offered from seven stations in every year, making the aggregate over two thousand five hundred individual programmes, covering five sessions in every day, some slight idea will dawn in the mind of the listener of what is being offered for his licence fee of 24s. per annum. Altogether the Stations supplying the National Service provide over 30,000 hours of programmes throughout each year.

LICENCES : A STORY OF PROGRESS.

July, 1929—302,539 ; July, 1930—322,403

It does not need anyone versed in complicated figures to subtract the totals of the year 1929 from those of 1930, which covered the first twelve months' operations of The Australian Broadcasting Company Ltd., to find that the increase of licences in that period aggregated just on twenty thousand. When the National Broadcasting Service was established, a section of the public had formed the opinion that the period of progressive increase in licences had about reached its zenith. Those people considered that The Australian Broadcasting Company would have its work cut out to even maintain the existing figures, and that it would need an outstanding improvement in programmes to build up the ranks of listeners. The increase of just on twenty thousand must therefore stand as a very definite proof that the National Service has shown a decided improvement in its programmes.

NEW SOUTH WALES.

The growth of licences in this State has shown a very marked increase during the twelve months under review. It opened with 102,575, and the total at July, 1930, had reached 115,154. The Mother State had been slow in taking to radio, and had been considerably outstripped by Victoria. The past twelve months, however, shows a record which, if continued, must ultimately place the ratio of licensed listeners to population in a more satisfactory light.

VICTORIA.

When The Australian Broadcasting Company took over the contract of supplying programmes for the National Service, the general impression was that the 142,079 licences held in this State was at about saturation point. Holding the remarkable ratio to one hundred of population of 8.08, a figure possibly not reached in a similar area anywhere in the world, certainly made it difficult to expect much growth. In fact those best versed in Broadcasting considered all that would be possible would be to retain the existing licences. It is pleasing, therefore, to note that the licences at the end of the first year of the Company have increased to 143,515.

QUEENSLAND.

Owing to climatic conditions the northern State presents a problem which will not be overcome until that enemy of Broadcasting, "static," has been removed. For many months prior to the Australian Broadcasting Company taking over the programmes,



Frank Albert, Esq., Director, The Australian Broadcasting Co. Ltd.



C. F. Marden, Superintending Manager for Australia of the Australian Broadcasting Company Limited.

STATIONS OF THE NATIONAL BROADCASTING SERVICE.

CALL SIGN.	LOCATION.	FREQUENCY K.C.	WAVE-LENGTH. M.	POWER. WATTS.
2BL ..	Sydney, N.S.W.	855	350	5000
2FC ..	Sydney, N.S.W.	665	451	5000
2NC ..	Newcastle, N.S.W. (Relay)	1245	241	2000
3AR ..	Melbourne, Vic.	620	484	5000
3LO ..	Melbourne, Vic.	800	375	5000
4QG ..	Brisbane, Q.	760	394.5	5000
5CL ..	Adelaide, S.A.	730	412	5000
6WF ..	Perth, W. Aust.	690	435	5000

† The power of all stations except 2NC is rated as that in the High Frequency Generator Circuit. In the case of 2NC, it is rated as unmodulated input to the aerial.

there had been a steady decrease in licence holders, due mainly to the very scattered areas which had to be served. With the advent of the National Service, however, the people of Queensland felt that with the ultimate promise of a relay station, it might reasonably expect better service. The result has been that the very rapid falling off in licences has been stopped, and although the 24,778 at which the State's total stood in July, 1929, has not been maintained, there has during the past six months been a steady increase, and the total at July, 1930, of 23,550 is considerably better than the lowest point reached during the twelve months. It is firmly believed that Queensland will continue to make progress and ultimately pass the highest figure previously recorded.

SOUTH AUSTRALIA.

This is a State which has responded with alacrity to the influence of the National Broadcasting Service. The figures in July, 1929, were 24,273 registered licences, and right throughout the year there has been a very satisfactory increase recorded, until at July, 1930, the total had reached 27,037. It is confidently expected that this rate of increase will be maintained.

WESTERN AUSTRALIA.

This State has also presented one of the great problems in regard to a satisfactory broadcast service. Owing to it being far removed from the Eastern States and the greater centres of population, it has been difficult to make Western Australia a self-supporting unit. The result was that the licence figures gradually declined until in July, 1929, they had fallen to 3,887. The advent of the National Service has shown that Western Australia has not lost its love for broadcasting, and, with the gradual improvement of the programmes, the figures have bounded ahead, until at July, 1930, the total had reached 6,585.

TASMANIA.

This State has just been linked up with the National Broadcasting Service, and there can be little doubt that the steady increase from 4,947 registered licence holders in July, 1929, to the 6,562 in July, 1930, has been largely due to the influence that The Australian Broadcasting Company has had upon the programmes in the States adjacent to Tasmania.

Prospects in all States.

The total increase throughout the whole Commonwealth is most satisfactory, when it is considered that for practically the whole of the twelve months under review most of the Australian States have been passing through an unprecedented financial depression. With the advent of the relay stations, and the further establishment of satisfactory relay connections between the States, it is hoped that the influence of Broadcasting will be extended to very many homes which, up to the present, have not shared in this great utility.

Licence Statistics.

The development of the broadcasting services in Australia can be gauged by an examination of the statistics of listeners' licences. This development is shown in graphical form in figures 1 and 2.

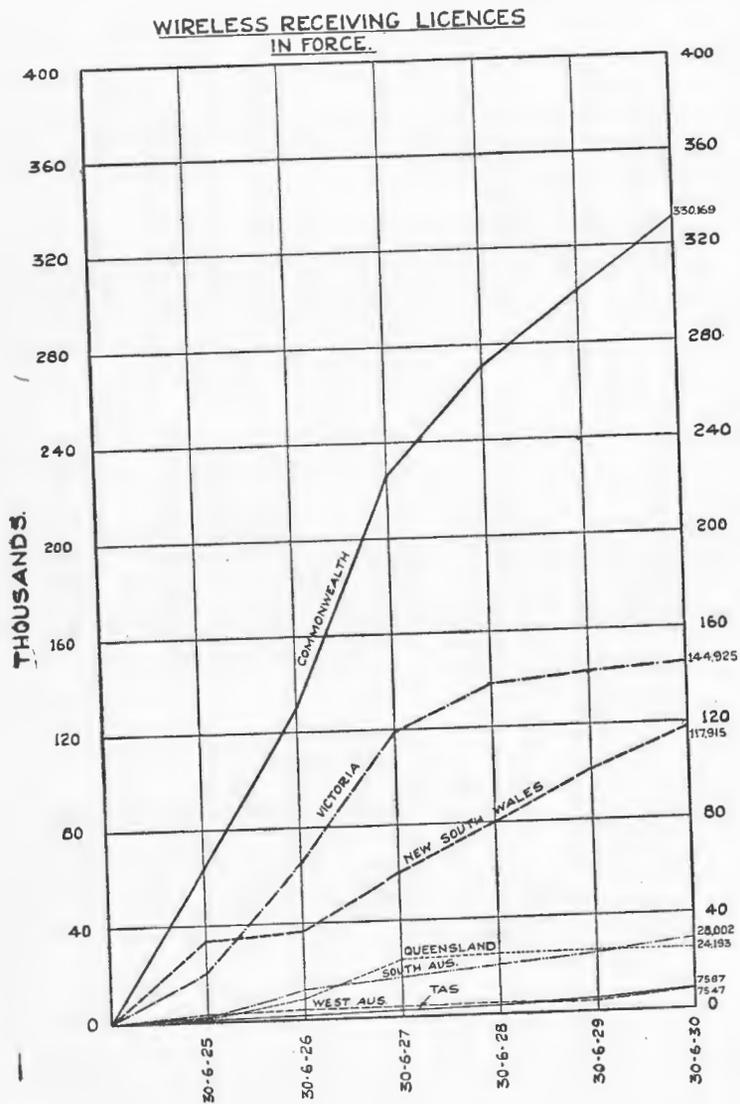


Fig. 1

WIRELESS RECEIVING LICENCES PER 1000 POPULATION

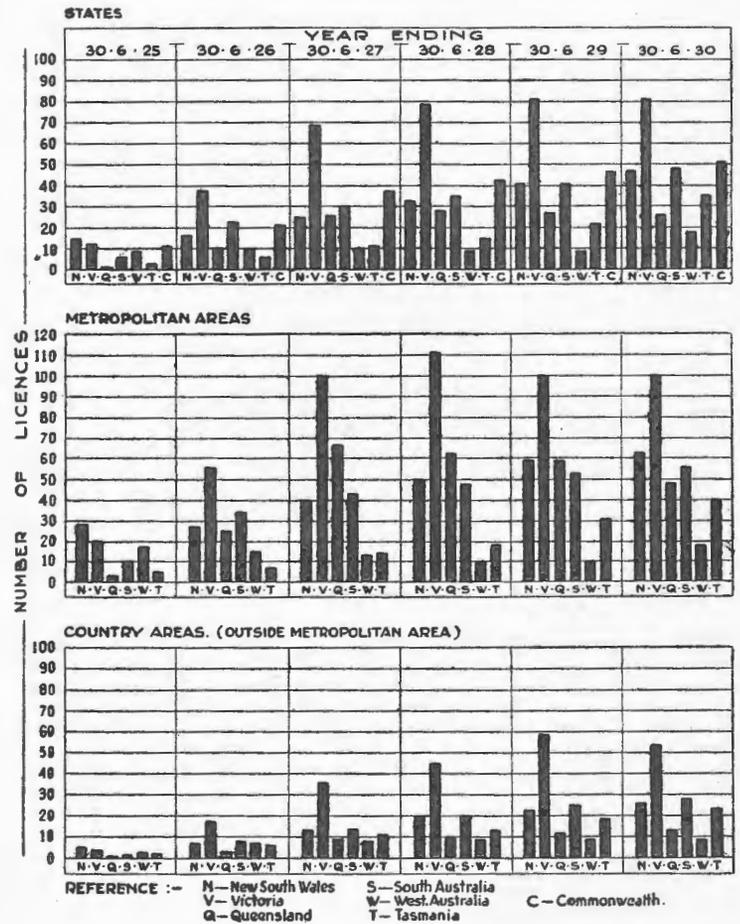


Fig. 2

LICENSED BROADCASTING STATIONS.

As already indicated the policy of the Government for an Australian Broadcasting System includes the services of Class "B" stations licensed by the Postmaster-General. These stations have provided services of growing popularity and of valuable aid to the broadcasting provided for listeners in different localities, particularly in districts where, owing to distance from the capital cities, the reception of the National Service is not of a high order. Many applications for additional stations were dealt with by the Department, from which several applicants were selected for new licences.

The licensed broadcasting stations, either operating or authorised, as at 1/10/1930, are as follows:—

CALL SIGN	LICENCEE	SERVICE COMMENCED.
NEW SOUTH WALES.		
2AY	Charles Rice, 610 Dean Street Albury	*
2GB	Theosophical Broadcasting Station Ltd., Adyar House, 29 Bligh Street, Sydney	23/8/1926
2GN	Goulburn Broadcasting Co. Ltd., Auburn Street, Goulburn (P.O. Box 88)	*
2HD	Airsales Broadcasting Co., Civic Centre, Newcastle	27/1/1925
2KY	Trades and Labor Council, Trades Hall, Goulburn Street, Sydney	31/10/1925
2MK	Mockler Bros., Howick Street, Bathurst	11/11/1925
2MO	M. J. Oliver, P.O. Box 78, Gunnedah	*
2MV	The Moss Vale Broadcasting Service Ltd., North Street, Moss Vale (P.O. Box 11)	*
2UE	Electrical Utilities Supply Co., 617 George Street, Sydney	26/1/1925
2UW	Radio Broadcasting Ltd., Paling's Buildings, Ash Street Sydney	13/2/1925
2WG	The Friendly Farmer Broadcasting Syndicate, Wagga (D. J. McConnell, 456 Marrickville Rd., Marrickville)	*
2XN	G. W. Exton, 173 Molesworth Street, Lismore (P.O. Box 138B)	1/5/1930
VICTORIA.		
3BA	Ballarat Broadcasters Pty. Ltd., cr. Armstrong and Dana Streets, Ballarat	31/7/30
3BO	Amalgamated Wireless (A/asia) Ltd., York Street Sydney (G.P.O. Box 2516 BB). Station located at Bendigo	*
3DB	Broadcasting Station Pty. Ltd., Flinders Street, Melbourne C.I. (G.P.O. Box 685)	21/2/1927
3GL	Geelong Broadcasters Pty. Ltd. (E. J. Haynes, Ritz Hotel St. Kilda S.2). Station located at Geelong	*
3KZ	Industrial Printing & Publicity Co., 24-30 Victoria Street, Carlton, N.3	*
3TR	Gippsland Broadcasting Service Trafalgar Ltd., Contingent Street, Trafalgar (P.O. Box 89)	*
3UZ	The Nilsen Broadcasting Services Pty. Ltd., 45 Bourke Street, Melbourne, C.I.	8/3/1925
3WR	Wangaratta Broadcasting Pty. Ltd., Reid Street, Wangaratta (P.O. Box 89)	*

QUEENSLAND.

4CH	R. W. Gaskin, Charleville	*
4BC	J. B. Chandler & Co., 43 Adelaide Street, Brisbane	16/8/1930
4BK	Brisbane Broadcasting Co. Ltd., 47 Charlotte Street, Brisbane	29/9/1930
4GR	Gold Radio Service, Ruthven Street, Toowoomba	9/8/1925
4MK	Williams Agencies Ltd., Shakespeare Street, Mackay	*
4TO	Amalgamated Wireless (A/asia) Ltd., 47 York Street, Sydney (Box 2516 BB, G.P.O.). Station located at Townsville	*

SOUTH AUSTRALIA.

5AD	Advertiser Newspapers Ltd., Waymouth Street, Adelaide	2/8/1930
5DN	Hume Broadcasters Ltd., Montpelier Street, Parkside	24/2/1925
5KA	Sport Radio Broadcasting Co. Ltd., 81 Flinders Street, Adelaide	25/3/1927

WESTERN AUSTRALIA.

6ML	Musgroves Ltd., Lyric House, Murray Street, Perth	19/3/1930
-----	---	-----------

TASMANIA.

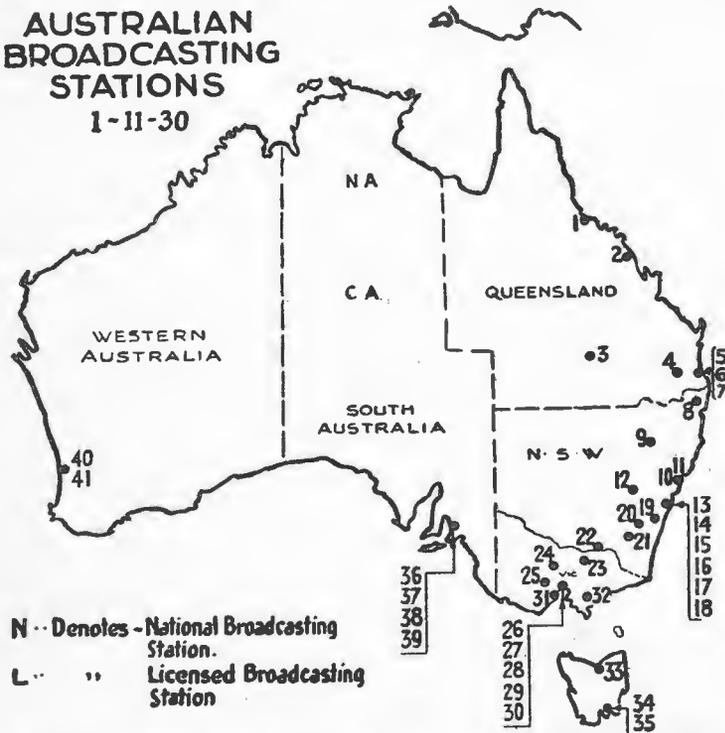
7HO	Commercial Broadcasters Pty. Ltd., 82 Elizabeth Street, Hobart	13/8/1930
7LA	Findlay & Wills Broadcasters Pty. Ltd., 25 Paterson Street, Launceston	*

FEDERAL CAPITAL TERRITORY.

2CA	A. J. Ryan, Kingston, Canberra, F.C.T.	*
-----	--	---

* Not yet commenced.

**AUSTRALIAN
BROADCASTING
STATIONS
1-11-30**



N .. Denotes - National Broadcasting Station.
L .. " Licensed Broadcasting Station

NO	CALL	LOCATION	NO	CALL	LOCATION
1	4T0	TOWNSVILLE QLD.	21	2CA	CANBERRA NSW.
2	4MK	" "	22	2AY	ALBURY "
3	4CH	CHARLEVILLE "	23	3WR	WANGARATTA, VIC.
4	4GR	TOOWOOMBA "	24	3B0	BENDIGO "
5	4QG	BRISBANE "	25	3BA	BALLARAT "
6	4BC	" "	26	3AR	MELBOURNE "
7	4BK	" "	27	3LO	" "
8	2XN	LISMORE NSW.	28	3DB	" "
9	2M0	GUNNEDAH "	29	3KZ	" "
10	2NC	NEWCASTLE "	30	3UZ	" "
11	2HD	" "	31	3GL	GEELONG "
12	2MK	BATHURST "	32	3TR	TRAFALGAR "
13	2BL	SYDNEY "	33	7LA	LAUNCESTON, TAS.
14	2FC	" "	34	7ZL	HOBART, TAS. (AFTER 14-12-30)
15	2GB	" "	35	7H0	" "
16	2KY	" "	36	5CL	ADELAIDE S.A.
17	2UE	" "	37	5AD	" "
18	2UW	" "	38	5DN	" "
19	2MV	MOSS VALE "	39	5KA	" "
20	2GN	GOULBURN "	40	6WF	PERTH W.A.
			41	6ML	" "

**Personalities of the Studios:
Administration**



T. W. Bearup,
Manager for Victoria.



C. M. Hosking,
Manager for South Australia.



J. W. Robinson,
Manager for Queensland.



B. W. Kirke,
Manager for West Australia.



H. G. Horner,
Secretary to the A. B. C.



F. E. Hansen,
Studio Supervisor, Sydney.

Personalities of the Studios:

Musical Direction



Ewart Chapple,
Sydney.



William G. James,
Melbourne.



Professor Bernard
Heinze, Director
General of Music
to the A. B. C.



Professor E. Harold
Davies, Adelaide.



George Sampson,
Brisbane.



Lindsay Biggins,
Melbourne.

WHAT BROADCASTING HAS DONE FOR MUSIC.

(By Bernard Heinze, Ormond Professor, University of Melbourne,
and Director General of Music for The Australian
Broadcasting Co. Ltd.).

"MUSIC FOR THE MASSES"—how often in the past has that phrase been used! And, strictly speaking, how unjustifiably! In its early history music was a luxury, a pastime of the wealthy. As time went on, concert halls were opened, and, for those who could afford the expense of attending, music was available. The advent of the process of musical reproduction made it still more acceptable to the public interested in its cultivation. But it may be safely said that it was not until the advent of broadcasting that music was made the private property of all who cared to have it. Radio has brought music to the remotest shrine—equally to the boundary rider's hut, as to the plutocrat's salon. In this it has far outstripped any other agency.

It is difficult to over-estimate the true value of broadcasting. Into numberless homes it is introducing the works of the master musicians. Its beneficial effect does not end there however. The fact that music of artistic value is being introduced into these homes is in itself important, but the effect is more far-reaching, inasmuch as many of these appreciative listeners, and lovers of music are unlikely to remain content with having their music provided through the channels of radio alone. They will surely seek the direct and personal contact with the artist and his music, which is, after all, the ideal we should strive to foster.

Desire to Foster Good Music.

The Australian Broadcasting Company has felt that the magical agent of broadcasting has a very definite place in fostering the presentation of music from the concert platform as well as from the Studio. It realises that the effect of broadcasting on the growth of the understanding of music must have already been profound, and it desired, by associating itself with public performances, to extend the work which it is already carrying on in its Studios. The attitude of the Company towards music is entirely one of encouragement. It is always agreeable to consider the performances of instrumental and choral societies, with a view of relaying them on condition that the performance given is of such a standard as to provide music of definite programme value. This attitude is shown by the happy relation existing between the Company and the various musical bodies in all the States, with whose interests and activities it is entirely in sympathy, and by its co-operation with community singing and any similar work.

Improved Standard of Performance.

It has to be recognised that the growth of discrimination among the listening masses has already tended to the discouragement to some extent of the production of poor quality, and to encourage better, healthier music. Broadcasting is aiming at the constant improvement of standard of performance, and this is all for the good of music itself. One sees with satisfaction that the accepted master-pieces in music are yet more firmly established by their increased performance and hearing over the air. Tens of thousands of people who had never previously heard these works are now conversant with them. It is also the desire of the broadcasting authorities to give performance to new and sincere work, and to give the public at large an opportunity to hear it. Broadcasting is the final step in the democratisation of music. The composer has an ally in broadcasting, for it swallows up an astounding quantity of music, and is always asking for more.

Opened a New Field of Work.

When broadcasting first came into public use, there were many who were anxious to explain how it spelt ruin to the musical profession. In actual fact the contrary has proved true. The amount of work, in the form of broadcasting engagements, given to artists every week by The Australian Broadcasting Company, is astounding. So far as singers and instrumentalists are concerned, excluding orchestral and similar players and choristers, there are probably on an average well over four hundred artists engaged to perform in its studios every week. There never was such a field of work open to the professional vocalist or instrumentalist before the advent of broadcasting. Altogether this Company gives engagements each week throughout the Commonwealth to over one thousand units.

The Artists' Friend.

It is becoming more than ever obvious that broadcasting is developing a new set of artists, who by their unique equipment for the new art establish themselves as efficient broadcasters, yet whose essentially intimate performance would not necessarily be successful on the concert platform. On the other hand there are many of our public performers who, while successful on the platform have failed in the Studio. In a similar degree this applies to many instrumentalists. In the hope of gradually making use of these factions, The Australian Broadcasting Company has always been sympathetic to the idea of taking a fair proportion of its work from outside the Studios. The Company has as its aim the desire to help the professional artist. It gives him work. It causes him the trouble to produce a first-rate performance—which his artistic nature in any case should demand, but it gives him at the same time tremendous publicity of a very real kind. It is his friend, if he realises how to adapt his art to suit its new condition.

Personalities of the Studios: *Men of Many Qualifications*



*Capt. C. H. Peters,
Melbourne.*



*Charles Lawrence,
Sydney.*



*J. Howlett-Ross,
Melbourne.*



*Dr. Batty,
Perth.*



*H. Kingsley Love,
Melbourne.*



*R. H. Spaven,
Melbourne.*



*Norman Lyons,
Sydney.*



*Capt. Donald MacLean,
Melbourne.*



*R. H. Owen,
Melbourne.*



*Frank Grose,
Sydney.*



*C. Danvers-Walker,
Sydney.*



*Cec. Morrison,
Sydney.*

Personalities of the Studios:

Conductors and Accompanists



Percy Code,
Melbourne.



E. J. Roberts,
Sydney.



Bert Howell,
Perth.



G. Vern Barnett,
Sydney.



Walter Hurst,
Adelaide.



Arthur Sharman,
Brisbane.



Hilda Woolmer,
Brisbane.



Cecil Fraser,
Melbourne.



Evelyn Grieg,
Sydney.



Mabel Nelson,
Melbourne.



Carlton Fay,
Sydney.



Edith Parnell,
Melbourne.

What Does the Public Want?

In furtherance of the public performance of good music, The Australian Broadcasting Company takes the greatest care in the preparation of its programmes. Many genuine efforts have been made to find an answer to the perplexing question, What does the public want? Certain facts have been obtained which have sealed the fates of minor items of various descriptions. But I am definitely of the opinion that, in the higher realm of education, including music, it is stupid to be continually asking the question—What does the public want? We are an intelligent and ambitious race of people. We, consequently, insult our own intelligence by raising any question at all as to the proud and unchallenged position that the best musical and literary entertainment should hold in the National Service of Broadcasting. When great masters like Kreisler, and Backhaus visit us, do they worry themselves with peevish questionings as to the likes and dislikes of the public? Not at all. They pay us the tribute of an unconcerned presentation of the best they have to give.

I am not for a moment suggesting that the musical portion of the programme should be devoted exclusively to the class that is branded with the unfortunate title of "highbrow." Good music includes non-classical as well as classical. Some music appeals to the emotions; other music to the intellect. Australians are a music-loving people; but we are not all musicians. As a musician, I recognise the undying beauty of "Annie Laurie," and will always help in fostering a love of such songs.

The Age of Jazz.

In view of the claims that I have made with regard to the benefits of broadcasting, and notwithstanding the difficulties referred to, we may go a step further and higher. The diffusion of music is a strengthening factor in the building of a nation, conducing to its solidity, its seriousness of interest, its idealisation of purpose. After all, the greatness of a nation is indicated by the quality of its culture, and not by the number of its motor cars, or the aggregate of its collected income tax. There is another aspect—one of which I have spoken and written on previous occasions and shall comment on again and again, whenever opportunity occurs, because it is one that makes strong appeal to my mind. We live in an age of jazz—not only in music, but jazz in pleasure, jazz in every mode of activity of life. It is an age of overstrung and overwrought nerves. And so we found Australia—before the steadying influence of "hardtimes" manifested itself—with the reputation of being rather badly afflicted with a violent form of the temperamental disease which urges people to seek their pleasure away from home. Post-war conditions may be blamed for the complete disappearance of the home-circle from social life. And what a disastrous outlook for this young nation if it does not restore that influence. The home-circle glows with many blessings—wise

parental direction, mutual sympathy and respect, moral support and understanding. On these foundations have older countries based their structure. If Australia is to establish its self-confidence, its poise, its dignity—it must return to a veneration of the home circle. And the loveliest form of it is one that is beautified by music.

Our Intellectual Heritage.

I will say that, *per capita*, Australians are amongst the greatest music-loving people of the earth. There has been continuous evidence of this in the past, and avowals of it from visiting celebrities too numerous to mention. We have given the world artists who rank with the highest it has known—Melba, Austral, Grainger, Hutchison, Crossley—and there are still more fighting their way to the top. With our handful of people we have recorded achievements of which any nation might be proud. But let us not forget our intellectual heritage, let us not fail to guard and develop it jealously. The culture of art, particularly in our homes, will help to make our citizenship more worthy. Let us therefore utilise the great modern scientific gift of radio to its fullest extent in helping us toward that objective.

“B” CLASS STATIONS

The “B” Class Stations have a very definite part in the broadcasting services of Australia. They are dependent upon advertising for their revenue. As the “A” Class Stations are no longer permitted to receive income from this source, the “B” Stations have been given a great impetus, holding, as they do, a monopoly on a source of revenue which is very much sought after. The “B” Stations fill a section of the daily programmes, which the National Broadcasting Service cannot always be expected to cover. Their offerings are mainly made up of gramophone music, which is very acceptable to a large percentage of listeners. Several of the Stations have recently engaged a percentage of local artists, and have also covered sporting events with success.

The sponsored programme, in which some firm wishing to push its goods, makes itself responsible for the supply of a performance, has also begun to find favour with the “B” Stations, and appears to have become a permanent feature in their daily offerings.

Propaganda—religious, political and commercial—takes another large proportion of the time of these Stations, and has proved a profitable avenue for securing revenue.

The Australian Broadcasting Company fully recognises the good work of its smaller brethren, and wishes them every success in their efforts to make broadcasting more than ever acceptable to listeners throughout the Commonwealth.

IN THE REALM OF EDUCATIONAL WORK

IN every country when broadcasting first established itself, the conservative element in educational circles looked upon the suggestion of using wireless as an accessory to their activities as nothing short of heresy.

The first country to relent was the United States of America, then Great Britain, then Germany, and after a considerable lapse of time, Australia. Even yet there is not a full realization of the advantages of wireless in education in this country, but at no late date it is hoped that the broadcasting services will be as freely used in the schools here as in some of the overseas countries. It stands to the credit of the Scottish educational authorities that they have seen the great advantages which accrue from the use of broadcasting, and they have now linked up practically every school under their control, in a system of regular broadcast lessons.

The Universities Co-operate.

The Australian Broadcasting Company has played its full part in the past twelve months in seeking to establish every reasonable avenue of educational work available to its services. After considerable negotiation the co-operation of the Department of Education and the University of Sydney has been secured in New South Wales. A full service of talks to the schools by experts supplied from the Education Department has been transmitted, and the professors of the University are now delivering lectures under the aegis of the University Extension Board. The Universities of Melbourne and Perth have also co-operated with series of lectures by their professorial staffs.

In Victoria the support of the University authorities has also been co-opted through the University Conservatorium of Music, while in several other States examinations under the various musical boards have been illustrated by transmission over the air. In all these cases the subjects upon which the papers for future examinations are based were used in the lectures. The Company has received reports from many country centres stating that this work has been of particular advantage to those students who are so far removed from the larger centres of settlement that they are unable to attend in person for the lectures.

Help in Home Studies.

Still another direction in which the Company has taken full advantage of its facilities for assisting educational work, has been in arranging numberless talks based upon various subjects to be

taken in the Intermediate and Leaving Certificate Examinations. Suitable lecturers have been chosen, mostly men holding degrees, and considerable proof has been given of the advantage that has accrued to students in their home study. A series dealing with languages has been transmitted in various States, while commercial education has also received a fitting place in the programmes.

In the compiling of the talk rosters in the various States the educational value of these features has always been paramount. Every endeavour has been made to make stories of travel of the greatest use from a geographical point of view, and for this reason in the choice of speakers, men of education have been sought. Nature studies have been prominent, literature and art have not been overlooked, and the controlling authorities in the museums, public libraries and art galleries have been interested in the preparation of the discourses.

The Household Session.

Some little time ago at a valedictory to the Director of Education in New South Wales that gentleman stated that he believed that the educational authorities in Australia had failed to realise the true value of domestic science. He said that this subject should be brought prominently into the curriculum of all schools, as the girl students should be prepared for the duties of home life, and these should be made as attractive as possible. The Australian Broadcasting Company cordially endorses those sentiments, and has made a special feature of its Women's Sessions in all States. Interesting lecturettes are given regularly on subjects applying to the home, including Hygiene, Dress, Decoration, Gardening and Cooking. The educational side of gardening has been given very special attention, and experts in all branches of horticulture and floriculture have been given regular positions in the programme. In New South Wales one of the most popular features in the day-time programmes has been the Household Session, which covers recipes and kitchen hints. So popular has this side of broadcasting become that space is found every morning on six days in the week for a fifteen minutes talk, and the mail received proves that in every part of the State there are housewives now in constant touch with the lecturer for daily guidance in the preparation of the meals in their homes.

There is still another side of the educational work of The Australian Broadcasting Company which is bound up in the selection of prominent speakers from the ecclesiastical, financial, commercial and political leaders of the community, as regular features in the daily programmes. Not only have these been chosen from people resident in Australia, but whenever a prominent overseas visitor reaches these shores the Company has at once sought his services for the benefit of listeners.

Personalities of the Studios: *Announcers*



*A. C. C. Stevens,
Sydney.*



*Maurice Dudley,
Melbourne.*



*H. Humphreys,
Brisbane.*



*A. S. Cochrane,
Sydney.*



*Frank Hatherley,
Melbourne.*



*John L. Norris,
Adelaide.*



*Conrad Charlton,
Sydney.*



*Cliff Bradshaw,
Melbourne.*



*N. M. Sheppard,
Melbourne.*



*Heath Burdock,
Sydney.*



*Bert Wooley,
Adelaide.*



*D. Felsman,
Brisbane.*

Personalities of the Studios:

Production



Frank D. Clewlow,
Melbourne.



Hugh Huzham,
Melbourne.



Norman M. Sheppard,
Melbourne.



Laurence Halbert,
Sydney.



H. W. Varna,
Sydney.



Frank Perrin,
Brisbane.



James Anderson,
Adelaide.



Harry Graham,
Perth.

Musical Field of Education.

A review of the educational work that has been carried out during the past year would not be complete without some special mention of the assistance that has been given by those who control the large musical organisations in each State. At first there was some diffidence on their part, largely based upon the belief that broadcasting would interfere with the sources from which their revenue was forthcoming. After conferences had taken place, however, these musical bodies were convinced that it was safe to work in harmony with the Broadcasting Company. The result has been that the influence of broadcasting the best in music has created a desire on the part of the community to gradually improve its knowledge of the great works. This is applied in equal degree to orchestral, choral and band music, and looking back over the year it can be said without fear of contradiction, that what has proved true in this regard in Europe and America, now applies with equal force in Australia.

The Australian Broadcasting Company realises that there is still a tremendous field to be tapped in regard to educational work, and it is proud to feel that during the past twelve months it has been able to gradually interest both the educational authorities, and its listeners, in the belief that it is to their mutual advantage that this utilitarian side of broadcasting shall be fostered.

“ SOME DON'TS FOR LISTENERS ”

- DON'T run your aerial parallel to other aerials near by.
- DON'T connect your earth to the same point as that used by your neighbour.
- DON'T try and communicate with your neighbours by making your receiver howl.
- DON'T use a longer aerial than necessary if you have strength to spare.
- DON'T vary your strength of reception by distuning your receiver. It spoils the quality and is liable to increase interference in your own set.
- DON'T try to work a loud-speaker from a plain single-valve set.
- DON'T fiddle with your set if the results are satisfactory.
- DON'T forget that it is impossible practically to get true reproduction when receiving in the “ silent point.”
- DON'T forget that when you oscillate you are running the risk of having your licence cancelled.
- DON'T use a super-heterodyne receiver on an ordinary aerial. A frame aerial is essential.
- DON'T compensate for the running down of your batteries (both high and low tension) by increasing reaction. If you do this your set may oscillate when switched on after standing idle for a few hours.

A REVIEW AND A FORECAST.

(By H. P. Brown, Director-General of Posts and Telegraphs.)

WHAT are the immediate prospects which lie before the Australian broadcasting listener? They are certainly of a substantial character, and in this brief article an outline of the progress which may be anticipated in certain directions will be sketched.

As an introductory it may be worth while directing attention to the difference between the Australian broadcasting problem and that of other countries.

The wide areas of Australia inhabited by such a meagre population present a condition not in evidence elsewhere, and furnish an explanation of the disparity one may find in the proportions of expenditure devoted to technical and programme services respectively, when comparison is being made with the distribution of costs of broadcasting services in other countries.

The number of potential listeners per square mile of territory to be served is much less here than in other countries, and the possible revenue per unit area is, consequently, less.

The cost of coverage of effective signal strength over an extensive area is clearly greater than the establishment of the same conditions over a small area, and is independent of the number of people residing in the area who may wish to listen.

It has to be recognised that there is a limit to the fees which the individual is prepared to pay for service. Hence, there is no option in our case but to devote a larger proportion of the total expenditure to the technical side than is needed elsewhere.

Unique Economic Considerations.

The economic considerations of Australian broadcasting present a problem almost unique, and it is reasonable to ask that the relevant factors be not overlooked by those venturing on comparisons and possible criticisms.

The plans which are being developed for the National Service contemplate a satisfactory signal strength coverage to approximately 95 per cent. of the population. The remaining 5 per cent. will not be denied service, but, necessarily, it will be of a less reliable character in the remote and isolated areas.

Now there are eight stations operated in conjunction with the National Broadcasting system. One additional is in process of erection, and will be completed in the near future. Three others are in course of manufacture.

There also exist eighteen Class "B" stations, and fourteen additional services of this class are in course of establishment.

The capital invested in the receiving apparatus of some 320,000 listeners is a large sum. If the average were set at £15, the total would amount to £4,800,000, and this figure is clearly a very conservative estimate. The matter is, consequently, of serious economic concern, and warrants the greatest care and diligence being applied by those responsible for providing the transmissions.

It will be appreciated that the cost of providing independent programmes for each of the subsidiary stations would be prohibitive, even if, from other standpoints, such a course were desirable. Consequently, recourse must be had to a system of interconnecting the stations for simultaneous transmission of programmes within each group which is to operate as a unit. These facilities must also be flexible so that any required grouping of stations may be arranged, even to the extent of providing for any particular item being broadcast simultaneously from all stations in the Commonwealth.

Landline connection is essential for the interconnecting medium because of the instability of radio links. Suitable cables which afford reasonable immunity from interruption are the most satisfactory means of connecting broadcasting stations for simultaneous transmission, but in this regard Australia is at a disadvantage compared with most other countries. Its degree of settlement is such that justification for an extensive network of long distance telephone cables does not exist, and in the absence of cables we must be content with aerial lines.

Australian Network of Landlines.

Fortunately, the telephone system of the Commonwealth is of a comprehensive character; in the near future it will extend as a unified network between points as far separated as Geraldton and Cairns. The means will be thus available for associating all the broadcasting stations throughout the Commonwealth.

Telephone lines are normally designed for the transmission of speech, which need, for good quality reproduction, electrical characteristics permitting the transmission of frequencies between 300 and 2,500 cycles per second without distortion. Musical sounds embrace a much wider range of frequencies, and to maintain their quality within the range of detection by the human ear frequencies from 30 to 5,000 per second must be preserved in any scheme of transmission. This requirement has necessitated adjustments of the telephone plant and its associated amplifying equipment over the whole distances separating the existing and prospective broadcasting stations.

Removal of Line Noises.

There is another factor to which much attention has to be given. All telephone circuits have a liability to interference from adjacent telephone and telegraph circuits, and from power transmission lines. The degree to which such disturbance can be tolerated without actually interfering with commercial telephone conversation is much greater than that which may be accepted on circuits used for broadcasting purposes. Broadcast transmissions must be amplified to a considerably higher power level than is necessary for telephone speech, and within limits the disturbing or parasitic noises are similarly augmented.

Nothing could be more irritating or disappointing than to have a good rebroadcasted item marred by foreign noises. Their elimination necessitates a special and very exacting design of line plant, together with a high-grade of day-to-day maintenance. It would be a lengthy process to explain the means which must be adopted to attain this objective, but it will suffice to say the problem is being attended to, and a substantial measure of success is assured.

Unfortunately, no human agency can guarantee the invariability of the electrical characteristics of aerial line circuits. A fallen branch of a tree at any point on a 600-mile route will spoil the quality of a transmission even if it does not actually stop it; and so, without wishing to excuse failures, it is not too much to expect that a knowledge of the conditions to be encountered will ensure reasonable toleration from a public which is invariably considerate. We are not wishing to disarm criticism. We often deserve it, but it is much more valuable and effective when it is well informed.

It will be recollected that the channels in the ether available for broadcasting have been fixed by international accord, and it is not permissible for any of the contracting parties to the Convention to approve services outside the stipulated limitations. The approved band of frequencies is from 550 kilocycles to 1500 kilocycles, equivalent to 545 metres to 200 metres. Within this range, therefore, all stations operate. Every listener knows from experience that if he is using a set within the zone of two stations he may encounter difficulty in eliminating the interference of one station when he is endeavouring to tune in to the other if the wavelengths of the two stations are not widely dissimilar.

The Value of Selective Sets.

The selectivity of the receiving installation is obviously a vital factor, and the question of design of the apparatus is, consequently, of first importance. Nevertheless, it must be the business of the controlling authority to regulate matters in a manner which will afford the greatest safeguards. Failure to do so would soon lead to a hopeless and chaotic condition developing which would have a disastrous effect on every phase of the broadcasting business. Necessarily, therefore, to provide for the existing conditions and for the future, in which many additional stations may be visualised, the whole width of the broadcasting spectrum must be utilised, and if listeners are to take full advantage of the services their apparatus must be capable of reception over the full range.

Although in many of the earlier forms of apparatus the width of tuning was considerably less than the broadcasting spectrum, there is no difficulty in remedying this state of affairs and in ensuring that the range of the apparatus is adequate to cover the international limitations.



National Broadcasting Orchestra, Sydney. (Conductor, E. J. Roberts).



Australian Broadcasting Orchestra, Melbourne. (Percy Code, Conductor).

Excellent reception is possible from stations operating at either end of the spectrum, and throughout the world there are powerful stations transmitting near both limitations.

Frequencies and Wavelengths not Guesswork.

It may not be inappropriate to state that the determination of the frequencies or wavelengths for broadcasting stations does not resolve itself into a guessing competition. The question entails most exhaustive study in which consideration must be given to such questions as the number of listeners to be served by each station, the areas in which the stations are to be situated, the power which is to be radiated, and the "cross-talk" standard which must not be exceeded. Fortunately for the community a scientific investigation is all that concerns the Department in reaching its conclusions, and it must, therefore, remain indifferent to the wishes of interested parties. Its sole concern is to serve the whole body of listeners in the most effective and satisfactory manner possible without favour and without fear.

Throughout Australia and in every other country reception is often marred from local disturbing agencies, such as power transmission lines, running electrical machinery, X-ray apparatus, etc. A great deal of investigatory work has been done to find the best means of minimising, if not eliminating, these objectionable influences, and it is gratifying to record that most of those responsible for the disturbing plant and apparatus in Australia have shown a keen appreciation of their responsibility, and have endeavoured to meet the Department's wishes by introducing the remedies suggested to them. Much work of this character remains to be done, but it is being pursued vigorously.

Fading Out Distortion.

There are, unfortunately, certain features of transmission which cannot be fully controlled in the present state of knowledge of radio transmission, such, for instance, as fading and distortion of the radiated signals. A great deal of research work is being undertaken in these matters, however, and Australia is doing her share. The Radio Research Board has a number of highly skilled scientists pursuing definite lines of investigation, and the Post Office Research Branch is co-operating.

On the question of fading, valuable contributions have been made towards mitigating the effects of the variable strength of received signals. As a result receiving equipment may now have embodied in it automatic volume control devices which function according to the strength of received signals, increasing the output energy when the signal is weak and reducing it when the incoming signal is strong.

The broadcasting of pictures from certain Class "B" stations in Melbourne and Sydney has been commenced, and in this connection the Television and Radio Laboratories Proprietary Limited have shown much enterprise in striving to develop and make available to radio enthusiasts this further interesting service.

Television Still of the Future.

Television for broadcasting purposes is still a matter for the future. Technically, it is practicable to-day within limitations, but further development is needed before it can be introduced as a commercial service of value to the community.

Broadcasting has not yet reached its zenith. There are many directions in which progress is feasible, and there are many active minds engaged on the numerous problems awaiting solution. Most of us have reached the stage when the novelty has worn off, many of us cease to marvel and take things as a matter of course; nevertheless, the future still has wonders in store for us, and it will be evident to all that the scientist, the engineer, and that very necessary body which commercialises the product, are intent on bringing to our service the best that study, ingenuity, and enterprise is capable of.

Broadcasting is a co-operative affair, and to be successful each must take a share of the responsibility. The technician who attends to the plant from the microphone to the transmitting aerial; the programme authority, who has such a difficult and often thankless task; the studio managers, the producers and announcers, the artists, performers, lecturers, and others who render the programme items; the radio manufacturers, traders, and dealers whose business it is to supply receiving equipment which will fulfil the necessary functions well at the lowest practicable cost, and who will see to it that their clients understand the best method of installing, maintaining, and operating the apparatus, being ever ready to assist with their expert knowledge. Last, but equally important with the rest, is the listener.

May a few words be added specially relating to the listener? Use an efficient set capable of good quality reproduction. Do not operate it in a room of your home with a volume of sound sufficient to fill the town hall. Do not turn it on to get every item broadcasted, for it is inconceivable that your tastes could be so wide and diversified that every class of item would please. Select from the programme what you wish to hear, and give it your attention. Then you may expect to be more satisfied. You would consult your inclinations before paying to go into a theatre, to witness a football match, a race, a wrestling match; or to listen to a speech. You may not be inclined to discriminate to the same extent and take such care in the case of broadcasting, mainly because it is of no consequence to your pocket whether you listen for half an hour or ten hours.

It is amazing, but nevertheless true, that listeners will turn on their sets and almost shout to carry on a conversation simultaneously. Is it any wonder that at the end of an evening of such "entertainment" they will feel it has not been altogether enjoyable.

THE CHILDREN'S SESSIONS

FROM the very outset in the development of broadcasting the custom of regularly devoting a small portion of each day's programme to items specially suited to children, became popular. At the commencement there was no fixed policy, but every member of the staff of a broadcasting station who felt that he or she could contribute something acceptable for the entertainment of the kiddies became an "Uncle" or an "Aunt." In this service the more official side of broadcasting was taboo, and when it is realised that it was not any one person's main job to plan and supervise the Children's Hour, it is wonderful to think that it gradually became systematically organised. The task of finding exactly what the child's point of view was in broadcasting carried peculiar difficulties. It was recognised that there was a wide gulf between what would interest a boy or girl of say five to ten years, and the child running from the latter age up to about fifteen. The mental attainment of some children added to the problem, while their personal tastes were so diversified according to the home environment, that it was found to lay down any particular line of programme would have meant in the early stages nothing short of disaster. It had therefore to be left with the various "Uncles" and "Aunts" to tell stories and tales about fairies, school life, adventure, animals, legends, folk tales and read excerpts from books and tell of the great achievements of men and women who had written their name prominently upon the life of the various nations. Then the question also arose as to what type of music the child mind could assimilate. The greatest licence was granted to the "Uncles" and "Aunts" in this direction, and they gradually included little part songs, nursery rhymes, and the simpler type of ballad and chorus, which the youngsters could quickly memorise. Then came verse, old and new, little playlets, concert parties, ventriloquial acts, and little features of variety, which could be included without being harmful or subversive of the training which the child received both in the school and the home. Gradually, by a state of evolution, a fixed type of programme was brought into use, and this now has been extended to all the Stations.

The Kiddies' Friends.

In New South Wales the Children's Session has during the past year continued under the guidance of the "Hello Man." Although he has the privilege of claiming the longest term of any "Uncle" on the air, his daily talks and reasonings with the children have never lost their hold. He has kept in the very forefront of all his work the idea of influencing the child life to a better understanding of the little problems that they daily meet. On the entertainment side the "Hello Man" has had the assistance of "Aunt Eily," "Uncle Ted" and "Sandy," and variety is lent to the session from time to time by invitations being issued to

Personalities of the Studios : Uncles and Aunts

many of his little "nieces" and "nephews" to join in the programmes.

On Sunday nights a further feature is added to the Children's Hour when a session is conducted by "Uncle Steve" with the help of a number of choristers in rendering a little service which is specially dedicated to the children in the hospitals.

In Victoria the Children's Sessions are sectionalised. "Billy Bunny" tells his stories in inimitable style, and seems to have no limitation to the directions in which he can turn his hand for the entertainment of the young. A very popular "Uncle" indeed is the said "Billy Bunny." Then "Bobbie Bluegum" and "Clever Clarice" take their full share of the entertainment. This "Uncle" also teaches the youngsters to join in their community singing, and has made a great success of his Name Club. The third section falls to the lot of "Miss Kookaburra," who in her session has gained great popularity with her bird calls and stories. Another day falls to "Plain Peter" and "Rollicking Rita" —who also have a large band of followers ever prepared to hear their programme of fun. The Sunday Session for the children is directed by "Brother Bill," who gives a bright little talk suitable to the day, and brings to his aid a clever little party of choristers.

The Children's Session in Queensland has at all times been a feature of the programmes. First comes "The Sandman" with his very popular entertainment, and then "Uncle Ben" and "Uncle Jim," who in turn take their full share of the work. Then another section of entertainment falls to "Little Miss Brisbane," and "Bebe and Bunty," a group of bedtime story-tellers. They are all very popular, and claim a great following of the youngsters.

In South Australia the Children's Session also has a loyal little band of "Uncles" and "Aunts." A night's session falls to the control of "The Big Brother," "Auntie Peggy," "The Bird Lady," "The Wattle Lady" and "Periwinkle," who are all very popular in their little songs and stories, which appeal to their many listeners.

Western Australia is fortunate in having "Uncle Bas" to conduct his Children's Sessions. Before going to that State this "Uncle" had already made his mark at 2BL. In "Aunty Maxine" "Uncle Bas" has an excellent assistant, and together they carry out a very varied and interesting programme of bedtime stories, with delightful little novelties.

Birthday Clubs.

A great feature in connection with the Children's Session right throughout every State of the Commonwealth is the Birthday Club. This has fully retained its popularity during the past twelve months, and many thousands of calls are made when the birthdays of the youngsters come round. This forms a very definite link between the homes and the broadcasting studio, and The Australian Broadcasting Company looks upon the work done by its "Uncles" and "Aunts" as one of the most valuable features in the National Broadcasting Service.



"Billy Bunny," Melbourne.



"Brother Bill," Melbourne.



"Bobby Bluegum,"
Melbourne.



"Plain Peter" and "Rollicking Rita,"
Melbourne.



"Aunty Maxine," Perth.



"Little Miss Kookaburra,"
Melbourne.

Personalities of the Studios: Uncles and Aunts



"The Hello Man," Sydney.



"Uncle Ted" and "Sandy," Sydney.



"Uncle Steve," Sydney.



"Aunt Eily," Sydney.



"Bunty," "Bebe,"
and "Little Miss
Brisbane,"
Brisbane.



"Uncle Ben" and "Uncle Jim,"
Brisbane.



"The Sandman," Brisbane.

THE S.O.S. CALLS.

THE value of the utility services rendered to the community by the Broadcasting Stations is incalculable, and high in the list of these items must stand the S.O.S. calls which are broadcast so frequently during the transmission of the daily programmes. The propensity for humans to hide themselves away from their friends and relations is somewhat astounding, if the number of "S.O.S." messages sent to the Broadcasting Station is any guide, for there is seldom a day passes upon which at least two or more messages are handed in commencing with the familiar words: "Any listener knowing the whereabouts of so-and-so." The hallmark, or guarantee of good faith, are the Announcer's words which preceded the message: "The Police have requested us to broadcast the following message." Before being handed to the Broadcasting Station for transmission such a message must be visé-d by the police authorities, who verify the contents of the message. There are occasions upon which people who have "Lost" relatives or friends ring the Broadcasting Station to have their description transmitted, but the Station will not accept anything of this nature without it is verified first of all by the Police, and so the enquirer is politely referred to that department.

But do these broadcast enquiries bring results? Most certainly they do, frequently without delay—perhaps even within the hour. A good example of the efficacy of the broadcast method of tracing missing people is here given. A letter was received at 3LO from a Mrs. S——, of Hove, Sussex, England, in June of this year. She enquired after her only son who had come to Australia in 1922, but who after corresponding with his mother for some time, had ceased to do so, and she had completely lost touch with him. She wrote also to the Victorian Police, who verified her statements, and 3LO and 3AR broadcast his description. The result was a letter from the boy to the Broadcasting Station, and communication was re-established between him and his mother. This was in July, just six weeks after the mother had written from the Old Country. Other instances are legion. Straying children have been restored to their distracted parents, long-lost sons and daughters have been recalled to the bosoms of their respective families, and even erring husbands have been returned to the arms of their lonely spouses.

Another aspect, and a very fine one, of this method of getting into touch with thousands of people all at the one instant is its success when an accident has occurred. Someone is injured in a street accident—is rushed off to the hospital unconscious, and he may or may not have any marks of identification about him. If he has, the procedure is simple, for a message is broadcast giving his name, and asking his relatives to get into touch with the Police, or perhaps, in cases of urgency, direct with the Hospital. Incidentally, care is always taken, in preparing the broadcast message, to couch it in such terms, that, while its urgency is apparent, it does not unduly upset the recipient when passed on by a listener.

Should the injured person have no marks of identification, then a complete description is broadcast, so that listeners may check up on any of their friends or relatives who may not return home, or reach their destinations at an expected time.

Finally, great work has been done, once more for the hospitals in the matter of broadcast appeals for the supply of blood for transfusion in extreme cases of injury or sickness. Such an appeal recently procured no less than 25 persons who were willing, and were found suitable to give of their blood to save the life of a fellow man. Many applicants who called at the hospital in response to the appeal were found unsuitable, but the incident goes to show the exceedingly high value of the broadcast appeal to the community at large. Since the days of the great disaster to the "Titanic" in 1912, when wireless was in its comparative infancy, the list of lives saved through its agency must have reached many thousands. The advent of broadcasting increased the sphere of its life-saving possibilities, until now it is difficult to understand how our forefathers managed in the days when radio was unheard of.

Perhaps it would be fitting to make some reference under the title of "S.O.S." to the great value of wireless in connection with the foundering of the "Tahiti." Although this steamer was some thousands of miles away from Australia when she met with disaster, the public was kept in close touch with the ill-fated vessel right up till the time when she made her final plunge. The relatives of all on board, who resided in Australia, were in constant communication with the broadcasting stations, and the message of the "Divine Spark of Radio" enabled them to know that their friends were safe. A still more interesting phase of broadcasting was the fact that while the "Tahiti" was steadily settling down, those on board were able to hear the messages from the land stations describing what was actually taking place on the ship itself.

"Radio on the 'Tahiti' showed itself as a two-fisted fighter for the sailor on the night after the accident," said Mr. W. J. Cole, ship's shopkeeper and hairdresser, in a newspaper interview. "The second radio operator and I went down and got my six-tube set, and took it up on deck to amuse the crew as they came off watch. Though most of them were very tired, and inclined for little more than a bite to eat and a lie down, the love of music and sport brought them to the set. Station 2YA, Wellington, came through with sporting events, while 2FC, Sydney, was picked up for the cricket results. Los Angeles gave us music, and, funny, indeed, it sounded on the dark and sinking ship to hear 'Painting the Clouds with Sunshine.'

"The second night we got a message over the air from 2FC saying that the Captain proposed abandoning the ship. Up till then the stewards had not stopped to consider the real gravity of the situation, and we began to realise the splendid command the Captain and his officers had retained of the situation. We had half-a-dozen children on board and some of them were brightened by listening-in to the Children's Hour."

Long may the S.O.S. calls continue to do their great work.

Personalities of the Studios: Uncles and Aunts



"Periwinkle," Adelaide.



"Miss Wireless," Adelaide.



"Big Brother" and "Boy Blue," Adelaide.

"The Twinkler," Adelaide.



"Auntie Peggy," Adelaide.



"The Wattle Lady," Adelaide.



The main studio, 3LO Melbourne, Victoria.

THE CHARITABLE ACTIVITIES OF THE YEAR.

To Victoria fell the honour of being the first State in which the Australian Broadcasting Company inaugurated its active campaign for charities. The Lord Mayor's 3LO Hospital Radio Fund was inaugurated for the purpose of equipping and maintaining Victorian hospitals with wireless receiving apparatus, and it is administered in conjunction with the Lord Mayor's Fund for Charities. The necessary funds are derived from collections taken at the Community Singing Sessions conducted by the Company. The Fund was officially launched at a Community Singing Session at the Melbourne Town Hall on the 18th August, 1929, when the Lord Mayor (Cr. H. D. Luxton), explained the objects of the Fund, and appealed to all those present and listeners generally to support the movement. Collections are made by the staff of the Lord Mayor's Fund for Charities, under the direction of the secretary, Mr. E. Glanville Hicks.

The Mechanics' Work of Love.

In order to keep the installation costs at a minimum, the work of equipping the various hospitals is done by volunteers from the mechanics attached to the Postmaster-General's Department. These gentlemen are always ready and willing to give their services in this great work, and without their aid, it would, of course, have been impossible to carry out such a comprehensive scheme.

It was decided very early that maintenance costs must be kept at a minimum, and with this object in view, "All Electric" sets have been installed wherever possible. So satisfactory has the result been that calls for maintenance have been practically negligible.

Some very extensive installations have been made—some hospitals requiring over 100 pairs of headphones, besides numerous loud speakers—and it is no uncommon sight to see—on a Saturday afternoon—charabancs and cars with over 60 mechanics and their kits arriving at an institution ready for work. Very quickly they are split into gangs of half a dozen each with its foreman, and each knowing exactly what part of the job it has to undertake—one erects the aerial, another instals the set, still another does the outside wiring, and then others arrange the connections for each ward. And so—in four hours—everything is ready for the patients to listen-in. Who can say what joy and pleasure it brings to these unfortunate people? Medical men generally are unanimous that wireless broadcasting in keeping the patients' minds occupied has a most important curative effect, and the fact that they are kept up-to-date with the world's affairs is a most important factor in banishing any sense of isolation and loneliness, and thus keeps the inmates in a state of cheerfulness and contentment.

The following list gives details of the wireless equipment and apparatus which has been supplied to hospitals under the aegis of this Fund :—

1. The Sutherland Homes, Greensborough.—An "All Electric" set was supplied.
2. The Sutherland Homes, Carlton.—An "All Electric" set with three loud speakers, in various parts of the building.
3. Children's Hospital, Carlton.—A specially powerful set was installed to supply the whole building. To this set 16 loud speakers are connected, the wiring being done by voluntary labour by the Telephone Mechanics from the Postmaster-General's Department.
4. Children's Hospital, Frankston.—An "All Electric" set with 18 loud speakers located at various points right throughout the Hospital buildings. This installation was also carried out by volunteers from the Postmaster-General's Department.
5. Berry Street Foundling Home.—An "All Electric" set with two loud speakers.
6. Talbot Colony for Epileptics, Clayton.—The original receiver, which had been out of operation for some months was replaced by an "All Electric" set.
7. Convalescent Home for Women, at Clayton.—The original receiver, which had been out of operation for some time, was replaced by an "All Electric" set.
8. Convalescent Home for Men at Cheltenham.—The original receiver, which had been out of operation for some months, was replaced by an "All Electric" set.
9. Melbourne Hospital.—100 pairs of head 'phones were supplies in order to bring their installation up to full strength.
10. Austin Hospital, Heidelberg.—Head phones and other equipment were supplied to put the installation in order.
11. Echuca Hospital.—15 pairs of headphones, a loud speaker, and the necessary wiring and fittings for extending the installation were supplied. These additions were carried out by telephone mechanics at Echuca.
12. Berry Street Foundling Hospital (Beaconsfield Branch).—An "All Electric" set has been installed.
13. Wycheproof Hospital.—Headphones and loud speakers, together with the necessary wiring, have been supplied, and tests are now being made to determine a suitable type of receiver.
14. Kedesh Home.—A complete three valve "All Electric" set and loud speaker has been installed.
15. Royal Park Home for Aged and Infirm.—This installation consists of three "All Electric" receiving sets, supplying fifty-two pairs of headphones and five loud speakers.
16. Eye and Ear Hospital.—Mechanics from the Postmaster General's Department have completely wired the new building, and a special receiving set and amplifier with 100 pairs of headphones, and four loud speakers, ensure that all patients and the staff have access to the broadcast programmes. A further set and loud speakers have been provided for the Nurses' quarters, which are removed from the main building.
17. Thirty-four sets of headphones have been supplied to the Homœopathic Hospital.
18. "Fairhaven" Home for Women, Fairfield.—The installation at this Home consists of a three valve "All Electric" set and three loud speakers situated in various parts of the building.
19. Creswick District Hospital.—Six pairs of headphones supplied for the six tubercular patients on the verandah of the Hospital.

20. Queen Victoria Hospital.—An "All Electric" receiver has been installed and the loud speakers and telephone head sets overhauled, and the complete installation put in working order. It is anticipated in the course of a few weeks to equip the new Lady Forster wing at this Hospital.
21. Melbourne Benevolent Asylum, Cheltenham.—An amplifier and dynamic loud speaker have been provided so that the programmes may be heard in the hall attached to the building.
22. Greenvale Sanatorium.—A complete installation consisting of 115 pairs of headphones and six loud speakers, was provided, and the receiving set remodelled to supply this extensive installation.
23. Minton Boys' Home.—The receiver already installed there was converted into an "All Electric" set, and extra loud speakers and headphones supplied.
24. Maldon Hospital.—Headphones and other equipment were supplied to bring the installation up to full strength.

Statement of Receipts and Expenditure from 26th July, 1929, to 30th June, 1930.

RECEIPTS.		£	s.	d.
Donations	169	13	3
Collections at Community Singing	997	0	8
Sale of Song and Music Books	430	19	10
Hall Hire (donated by A.B.C.)	300	0	0
		£1,897 13 9		
EXPENDITURE.		£	s.	d.
Radio Installations and Equipment as per list	946	5	4
Donations to Special Appeals (as per list)	80	2	9
Purchases, Song and Music Books	251	7	10
Hall Hire, etc.	573	12	2
Balance at credit of Fund	46	5	8
		£1,897 13 9		

List of Institutions to which Community Singing Collections have been Donated.

	£	s.	d.
Central Council Ladies' Benevolent Society	9	8 0
Victorian Benevolent Homes	18	19 2
Austin Hospital	30	12 9
Melbourne District Nursing Society	21	2 10
		£80 2 9	

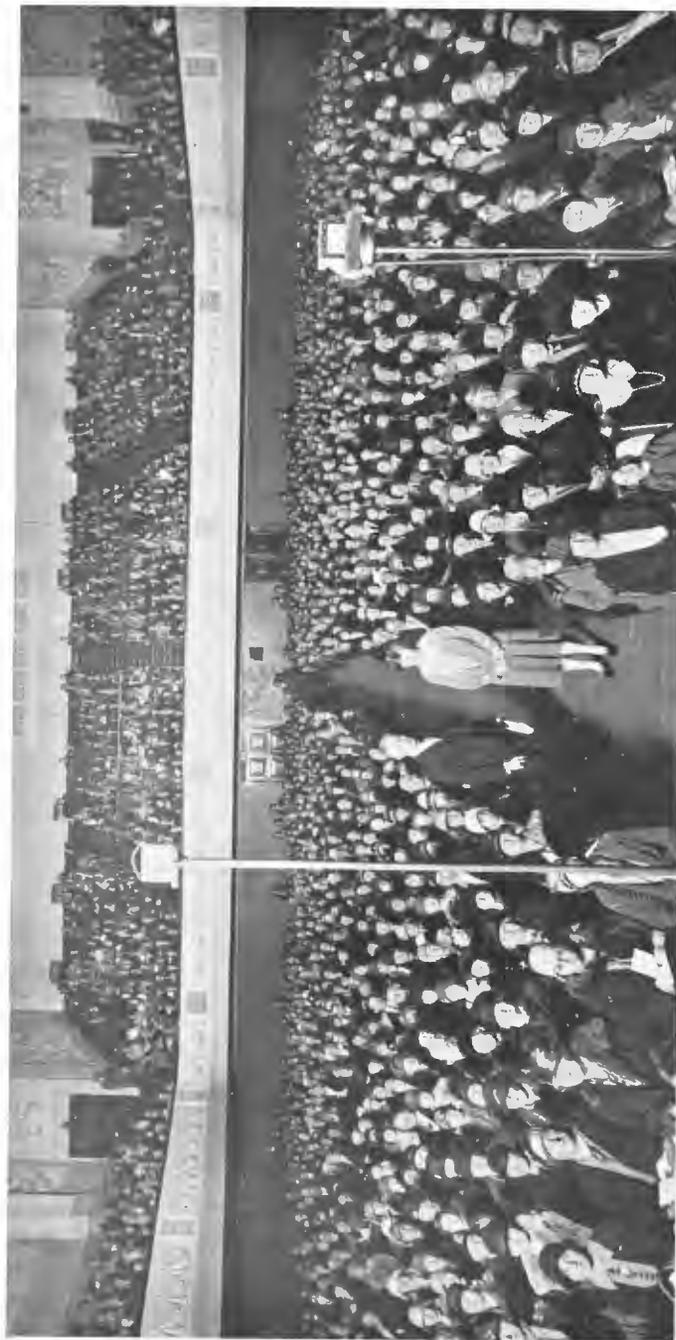
List of Radio Installations and Equipment Referred to in Statement of Account.

	£	s.	d.
Children's Hospital	204	3	2
Victorian Eye and Ear Hospital	133	10	11
Victorian Benevolent Home and Hospital	113	17	1
Melbourne Hospital	75	0	0
Foundling Hospital and Infants' Home	50	19	4
Sutherland Homes (Carlton and Greensborough)	39	14	0
Melbourne Benevolent Asylum	34	14	7
Greenvale Sanatorium	105	19	6
Kedesh Home	24	0	3
Fairhaven Home	27	11	3
Convalescent Home for Women	19	1	10
Convalescent Home for Men	16	19	1
Talbot Colony for Epileptics	16	19	1
Austin Hospital	17	8	0
Queen Victoria Hospital	9	18	6
Echuca Hospital	6	5	6
Wycheproof Hospital	27	5	7
Equipment unallocated	22	17	8
	£946	5	4

Other Victorian Efforts.

Another important charitable work carried on in Victoria is that of the Birthday League, which is run in conjunction with the Melbourne Hospital. Children are invited, when sending in their birthday dates to the Children's Session, to forward a sum of 2s. 6d. This amount is credited to the Melbourne Hospital Birthday League, and makes the child concerned a member of the League for one year. This half-a-crown maintains the Hospital for one minute, and little listeners now have the pleasure of knowing that they are keeping this vast institution going for a considerable number of minutes each day. From the inception of the National Broadcasting Service at 3LO, up to the 31st of July of this year, the amount collected for the Melbourne Hospital was just on £800. It was felt that inviting the children to make the small contribution on each birthday to those less fortunate than themselves, it would instil in their minds a feeling of sympathy and thoughtfulness that they could carry on into later life, and thus set up the ground work for some greater charitable effort when they reached manhood and womanhood.

Another direct appeal which attracted much attention and received widespread support was made on behalf of the Berry Street Foundling Home. There are 115 tiny children in this Institution, 25 adult inmates, and a staff of 40. In the jam-making season an appeal went forth for a supply of that commodity to help carry the Institution through until the next season. Every pound of jam donated meant one pound less to be bought, and the total



"House Full." A regular occurrence at Melbourne Town Hall, at the A.B.C. Community Singing Session on Thursday of each week.



Sydney Town Hall cannot carry all who want to join in the A.B.C. Community Singing Session on Friday each week.

quantity represented a very substantial saving to the institution. It was pointed out that a bank overdraft was the dreadful ogre threatening all hospitals, and listeners were asked to take the part of Jack the Giant killer in helping to slay the overdraft for this institution by sending donations of jam, or the wherewithal to buy jam. So great was the response that 2,300 jars of jam—some of these containing as much as 14 pounds—and £30 2s. in money were received.

A still further appeal was made on behalf of the Sutherland Homes. On this occasion the call was for slippers, and as the result of only one appeal made during the Children's Hour, 80 pairs of slippers, and cash to the extent of £4 10s. was the response.

South Australia Lends its Aid.

The State of South Australia has also been extremely active in assisting charitable enterprises. A Children's Hospital Birthday League with over 4,000 members was brought into operation on the 14th of January, 1930, and up till the 31st of July of this year over £200 had been collected. This Fund has been of rapid growth and now averages about £14 per week.

Another activity is the Bluebird Club, conducted by the "Bird Lady," Mrs. Lindsay Sowton, who devotes practically the whole of her time to this cause. The Club has about 3,000 members scattered all over South Australia, and their primary object is to make others happy. They devote their efforts principally to the sick and poor, preparing complete outfits of woollies for babies, visit hospitals, distribute fruit and flowers, provide invalid chairs and other comforts for those in need. This Club meets every Wednesday night at the Studio to have a sing-song, whilst on Sunday nights the Bluebird choristers provide a programme of sacred music.

A still further effort that is made in South Australia covers the work of the "Twinkler Club" for boys, conducted by "The Twinkler," Mr. F. J. Mills. The boys work along similar lines to the "Bluebird Club," but pay particular attention to the Blind Institutions and Boys' Homes.

N.S.W. Comes into Line.

Encouraged by the success which had attended the establishment of the Hospital Birthday Leagues in Victoria and South Australia, it was decided to bring a similar league into being in New South Wales. On January 21st, 1930, the Royal Alexandra Hospital for Children was chosen as the institution which should benefit from the activities of the Children's Session, through the Sydney stations. An announcement was made that in future a donation of 2s. 6d. for each birthday call would be invited, the money to be paid without any deduction, as in the other States, to establish cots at the Children's Hospital. The sum needed to endow each cot was £60, and up till the 31st July the sum of £360 had been raised, and six cots endowed. The aim of the Birthday League in New

South Wales is embodied in the slogan "A Cot a Month," and the way in which the youngsters are responding to the call should not make it difficult to keep up this average.

In a less direct way the Company has also taken a very active part during its first twelve months' operations in keeping before the public in every State of the Commonwealth the interests of the large charitable organisations which regularly appeal for public support. These have been granted at suitable periods, the right to bring before the community at large the aims and objects for which they have been established, and to make known their needs for financial support.

THE RADIO TRADE.

THE year under review has been one of particular interest to those engaged in the Radio Trade. During the whole time the Commonwealth was passing through abnormal trading conditions, and yet taken on the whole it must be claimed that those operating both in the wholesale and retail branches of the industry have made very considerable progress.

Early in the year the electric set began to displace those operated by batteries. Quite a number of listeners were at first sceptical as to whether this innovation was not of too experimental a nature, but once they were convinced that it was a practical proposition conversion commenced in real earnest. This gave the trade a remarkably busy period. It also tempted many listeners to go in for much larger types of receivers. The Short Wave set has also claimed many devotees, and where at one time it was very rare to hear accounts of reception of overseas stations, the past year has proved that this form of listening has become extremely popular.

Economic conditions during the latter section of the year under review forced the prohibition against the importation of wireless sets. This came just at the moment when a remarkable boom was occurring due to the successful descriptions that were being transmitted of the Australian Cricketers' tour in England. The outcome was that manufacturers of receiving sets were forced to work additional shifts in their factories to cope with the demand of the public. It is generally felt that broadcasting has not suffered as the result of the embargo placed upon sets made outside of Australia, and that those who are engaged manufacturing here can fill the demands of the market both in regard to quality and quantity.

Every State in Australia has had its radio exhibition during the year, while one or two of the States have had events of this sort in some of the provincial towns as well as the capital cities. These exhibitions have been controlled by the traders themselves, and the Australian Broadcasting Company has given its fullest co-operation in arranging special programmes to make the Exhibitions attractive to the public. Definite evidence is available that the Trade has

received enhanced business as the outcome of staging these annual efforts, and the community has been educated to look to these displays for a presentation of the most up-to-date methods in radio transmission and reception.

It is felt that the Radio Trade here in Australia has now become a very solidly established industry, and that it is destined to continue to employ greater numbers in its ranks each year. The advent of relay stations will open up new fields for the sale of receivers, and as broadcasting becomes more popular the class of set installed in the homes improves both in receptive power and in appearance.

The Australian Broadcasting Company congratulates the traders in every State upon the continued improvement in their industry, and trusts that the co-operation which has previously been such a satisfactory factor between the broadcasting stations and the purveyors of sets will continue.

CAN A PLEBISCITE BUILD A PROGRAMME ?

DURING the past twelve months several newspapers in various Australian States have taken plebiscites among listeners, asking them to express their likes and dislikes in programmes supplied by the Australian Broadcasting Company Limited. These cannot be set down as having been successful, as in an aggregate possible vote of nearly three-quarters of a million listeners, less than 5,000 have taken the trouble to express an opinion.

The same lack of success has attended plebiscites in almost every country in which they have been taken. This leads us to ask three questions:—(1) Does the public know what it wants? (2) Is there a sufficient body of public opinion of the same mind to enforce its ideas on the somnolent majority? (3) Would those controlling broadcasting programmes be justified in allowing small minorities to abrogate their powers to the degree of altering programmes?

Quite recently Sir John Reith, the Director-General of the British Broadcasting Corporation, expressed an opinion on these questions, which immediately raised a storm of criticism.

Sir John's sin of commission was that he expressed a warning of the danger of setting out to give the public what it wants. That the Director-General of the British Broadcasting Corporation should speak in this fashion, alarmed thousands of wireless enthusiasts who felt themselves threatened with the dictatorship of a Mussolini of highbrowism and uplift. If the British Broadcasting Corporation began to give the public, not what the public wanted, but what the British Broadcasting Corporation wanted (so they argued), who is to protect the public from having Thucydides read out to it in the original Greek when it longs for dance music, and who is to prevent it from being bored by chats about Stone-age economics when it

would rather have a comic song? The attack on Sir John, it seems, was due not to what he actually said, but to the fact that he said it deliberately in a form in which it could be easily misunderstood. He spoke, as many wise men have spoken in paradoxes, and perhaps, if he had not chosen to make himself interesting in this fashion, no one would have paid any attention to the point that he wished to emphasise.

Can the Public Judge What it Wants?

The sentence that caused the trouble was this:—

“I am as certain as anything,” he said, “that to set out to give the public what it wants is a dangerous and fallacious policy, involving almost always an under-estimation of the public’s intelligence, and a continual lowering of standards.”

Carefully read, that sentence will be seen to contain no such anti-popular challenge as it first seems to contain. Sir John protests, not against giving the public what it wants, *but against setting out to give the public what it wants*—an entirely different thing. He even declares that if you set out to give the public what it wants, you will probably end by giving less and worse than it wants. For the man whose sole purpose is to give the public what it wants seldom knows what the public wants. And the public itself does not know, because what it wants for the most part, is what a number of interesting and powerful personalities can persuade it to want.

There is, of course, no such thing as the public, in the sense of a vast united body of men and women, all demanding the same thing. It is constantly said, for example, that the public is interested in sport; yet there are thousands of people in Australia who could not name the winner of last year’s Melbourne Cup, and who could not tell you whether a certain team plays Rugby League, Soccer, or Australian Rules football. Most people have never seen a dog race. Many of them do not know the meaning of an “each-way” bet. Thus, though it is possible to say that a huge public is interested in sport, it is clear that there is also an enormous public which is indifferent to it. And it is the same with most other subjects that are dealt with in the press . . .—politics, finance, literature, and the theatre. Each of these things has its own public, and each of them in the modern phrase—leaves various other publics cold. One, for example, is indifferent to finance, and lists of stock exchange prices might as well be written in Hebrew for all that he can make out of them. One does not doubt that there is an immense public of more intelligent and fortunate men who can understand these things and make money by understanding them. It looks, then, as if it were the task of a great organisation, such as the British Broadcasting Corporation, or the Australian Broadcasting Company, or a great newspaper, *not to give the public what it wants, but rather to give twenty different and conflicting publics what they want*. If we think of the public as one public, we shall be in danger of ignoring half, or more, of the population. For there are very few things that more than half of the population can be said positively to want.



The Collingwood Citizens' Band (Conductor, F. C. Johnstone).



Coburg City Band. (Conductor, T. B. Davidson).



The Brunswick City Band. (Conductor, Hugh Niven).

Personalities of the Studios:



The Malvern Tramways Band. (Conductor, Harry Shugg).



Melbourne Metropolitan Fire Brigade Band. (Conductor, F. C. Johnston).



Ashfield District Band. (Conductor, J. M. Herron).

The Public Wants to be Taught What to Want.

There is always this other difficulty, *that what the public wants and has always wanted is to be taught what to want.*

The public has a wavering mind which responds readily to those who have stronger minds than its own. A public that at one time did not want a certain member as a private member of Parliament, wanted him a few years later as Prime Minister. A public that once wanted Mr. Bernard Shaw so little that the mere mention of his name was exasperating, now wants him to such an extent that he has made a large fortune out of his plays. Yet Mr. Shaw did not set out to give the public the plays it wanted, he set out to compel it to want his plays. There is a phrase for attempting to give the public what it wants—pot boiling—and it is a remarkable fact that the plays which the public most permanently wants to-day are not the "pot boilers" written exclusively to satisfy the public taste, but are works of art, such as the plays of Sir James Barrie and Mr. Shaw.

How these principles can be applied by the British Broadcasting Corporation or the Australian Broadcasting Company is difficult to tell. Neither of these is in the position of a man of genius who passionately longs to unburden his soul. As organisations, presumably, both the British Broadcasting Corporation and the Australian Broadcasting Company have no souls to unburden. The chief object of their existence is to interest the various publics that take out licences for wireless sets. It is not for a lofty moral or artistic purpose that they broadcast running commentaries on racing, football and cricket matches, and, if all their publics unanimously demanded that no more Bach or Beethoven should be broadcast, one supposes it would be the duty of controlling bodies to give us no more Bach or Beethoven. On the other hand, the broadcasting services can be run successfully, only if run by enthusiasts—men who, in their different departments, long to make the public want what they want themselves. One can imagine what would happen if these institutions were run on a purely commercial basis, and were staffed exclusively by hard-headed business men, who cared nothing for music, books, plays, or the things that interest the human mind, except in so far as the public called for them. Obviously, such a staff would not produce an interesting programme because it would not itself be interested. It might begin by cutting out all the high-brow turns and giving more dance music and revues in their place. But in a short time a satiated public would be crying out against the monotony of the programmes, and the committee in a panic would rush to the other extreme and give excessive doses of heavy music and readings from Dante till one hundred thousand letters of protest alarmed them into another change of policy. The public would soon become extremely impatient of any organisation that tried in this helpless fashion to give it what it wanted, and any contractor that allowed itself to be continually distracted by the clamour of

the many mouths of the many-headed and many-minded public, is bound to find itself helpless in this fashion. The broadcasting stations are not shops in which a large number of customers can have their wants satisfied at immediately the same time one with a red-white-and-blue tie, one with a bowler hat, one with a toy horse and cart, and another with a Dutch cheese. They are more like shops at which only one thing can be sold at a time, and at which for a quarter of an hour you can buy red-white-and-blue ties only. This may be very irritating if you want a Dutch cheese, but on the whole it works well so long as every quarter of an hour is of interest to some public or other. But who can measure the intelligence of the various publics or guess what they will find most interesting?

Cater for All Tastes.

One man will tell you that *the* public has hardly the brains to understand a "Penny Dreadful." Another will point to the fame and sales of the greatest living novelists as a proof that the public is hungry for the works of the men of genius. All that Sir John Reith proposed is that in this matter, so far as possible, the public should be given the benefit of the doubt, and if an occasional turn should appear in consequence too obtrusively educational, we should remember what the pessimistic poet said of life, is also true of wireless—"Lo, you may always end it when you will."

Therefore, while the plebiscite may appear to please those whose vote coincided with the items that come top, or near the top, if the Australian Broadcasting Company was to neglect those whose favourites were low down on the list, it would wound as many as it pleased.

The duty of the Australian Broadcasting Company is to all sections, and programmes built on these lines must ultimately please the greater section of the listeners most of the time.

**Personalities of the Studios:
*Sporting Managers and Announcers***



*Mel. Morris,
Melbourne.*



*Eric Welch,
Melbourne.*



*Rod. McGregor,
Melbourne.*



*G. R. Lamprell,
Adelaide.*



*M. A. Ferry,
Sydney.*



*Len. Ford,
Adelaide.*



*Arnold Treloar,
Adelaide.*



*R. Wight,
Brisbane.*



*Russell Sandeman,
Perth.*

THE FIELD OF SPORT.

It has often been remarked by overseas visitors that Australians are the greatest sport loving people in the world. The fact that this comparatively small community of less than six and a half million people can hold its own in the realm of sport against Nations of greater population, far greater national resource, and on convincing grounds many thousands of miles from their own country, lends colour to these assertions.

With the realisation of this great love of sport, the Australian Broadcasting Company has made special endeavours to keep its listeners posted with the doings of the contestants in all types of games. Experts in all branches are retained, and they are responsible to sporting managers in each capital city for the programming of any particular fixtures which it is felt will interest listeners. It is claimed that there is no feature of the broadcasting programmes that catches the imagination so quickly as the dramatic picturisation of some intensely exciting sporting event. Judging by the correspondence received this claim is substantiated, for hundreds of letters are handled weekly by the Company's various sporting staffs answering questions regarding records and performances of different idols of the public.

During the first year of the Company's activities a most comprehensive series of sporting transmissions were covered in all the States. These related to horse-racing, cricket, football, boxing, wrestling, rowing, tennis, cycling, and athletic events.

"The Sport of Kings."

Horsereading plays such a prominent part all the year round in Australian sport that it is only natural broadcasting activities should give it much consideration. Listeners hear racing transmissions regularly in Melbourne, Sydney, Brisbane, Adelaide and Perth, all the meetings of outstanding importance being broadcast each week. This service is particularly appreciated by people resident at great distances from the capital cities, and the racing observers are very popular announcers.

Ranking with racing in public interest are the kindred sports of football and cricket, which hold their sway in winter and summer respectively. Great preparations are made to keep listeners posted with the results of all sections of the competitions in these sports. Naturally, the most important fixtures are selected to be broadcast with an eye-witnesses' account, and to this end the pennant championships in the various States are given special attention. Matches in which teams with the best chance of winning the premiership are competing are usually selected for the purposes of giving a full broadcast description. Every branch of football receives its quota of attention. In Victoria, South Australia and West Australia the Australian game claims pre-eminence, while in New South Wales and Queensland Rugby Union, Rugby League, Association and Australian Rules are catered for.



Hearing her first Broadcast Programme in Hospital.



Little patients in the Children's Hospital enjoy the "Kiddies" Session.

The National game of Cricket lends itself very fittingly to the work of broadcasting. Descriptions of Interstate matches are looked forward to, and the ball for ball transmissions are now amongst the most important sporting events of the year. During the past season every match in the Sheffield Shield series was described, and in this way particular interest was focussed upon the players who were striving to be included in the team for England. The subsequent tour of the Australian Cricketers in England was given the utmost prominence in the programmes, and the doings of the team from the time they landed until the completion of the last match were chronicled in detail.

Cricket Booms through Radio.

This activity had a very direct effect upon the issue of radio licences, and people who had previously taken little or no interest in broadcasting acquired sets. The rapidity with which the scores were made available to the public in Australia almost immediately after the events were staged in England seemed to catch the imagination of the sporting public here, and the result was that right in the middle of a winter season, cricket material was brought into use, and practice began. Probably no previous individual effort in broadcasting has ever had such an effect on the community as a whole, as people remained seated round their loud speakers until the very latest news was transmitted up till the drawing of stumps in each day's play of the Test Matches.

Another branch of sport which claims a very large following as the result of broadcasting is wrestling. In Melbourne it is claimed that broadcasting actually made wrestling in Australia. Men and women alike made themselves conversant with all types of holds and falls, and a wave of enthusiasm swept over the Southern capital until most people in the community talked wrestling.

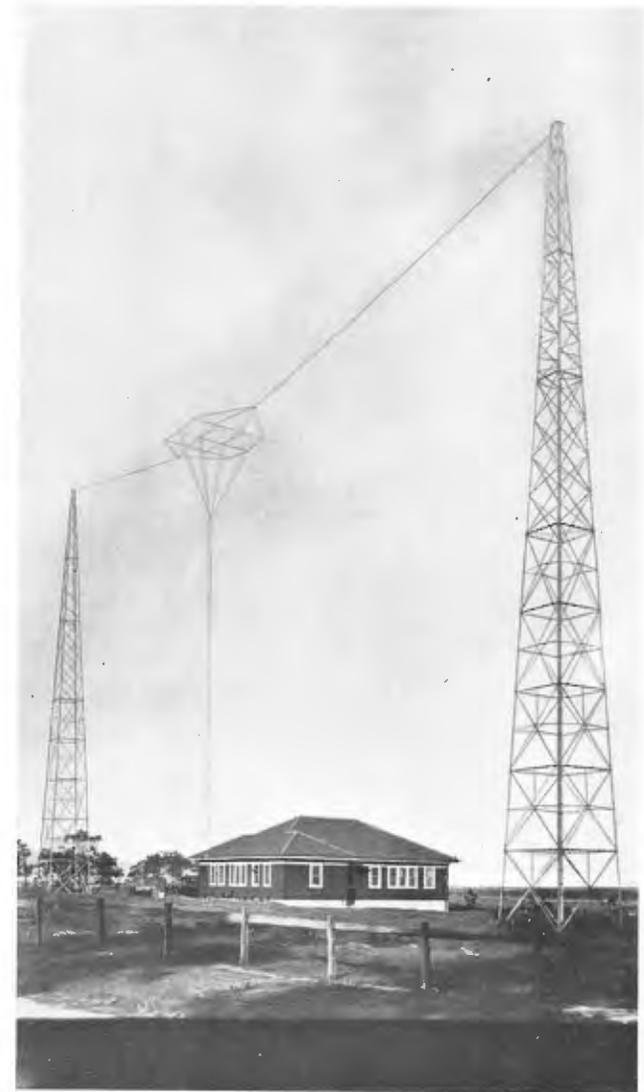
During the past year boxing has also received a considerable fillip as the result of the broadcast descriptions. Like wrestling, this sport is greatly appreciated by listeners, and the game has undoubtedly benefited through it being brought under the notice of people who until the advent of wireless looked upon boxing as quite foreign to them.

In the realm of tennis most of the big Interstate championships have been described and very considerable interest has been aroused through the relay of these games to listeners in the States which were directly represented in the events.

"Head of the River."

Rowing events have also had their due share of publicity on the air. The Great Public Schools, "Head of the River" regattas, carrying as they do a following in each State which runs into many tens of thousands, and the great Interstate and University Championships have thrilled listeners as they have been described through the various stations. Here, too, a new following has been created.

(Concluded on page 95).



Transmission Station and Aerial System of the first relay station, 2NC, Newcastle, situated at Beresfield, N.S.W.



Flemington Racecourse on Melbourne Cup Day.

BROADCASTING THE MELBOURNE CUP

(By Eric Welch.)

EVEN in these days of swift communication it seems almost incredible that listeners in the far outback of Western Australia and Queensland, in New Zealand and the Islands of the Pacific are told the result of the Melbourne Cup before twenty-five per cent. of the great crowd at the Flemington Racecourse are aware of who has won. Strange as this may seem, it is nevertheless a fact, and wireless is the medium through which this phenomenon is established.

Of the crowd of more than 100,000 people who gather at the Flemington Racecourse on a Melbourne Cup Day, it has to be admitted that quite half are not sufficiently well enough placed to be able to tell the result of the race accurately. There is the large crowd gathered in the new members' stand, which is more than a furlong down the straight from the finishing post, and also the vast gathering in the flat which has its view obscured by those in front. Of the fifty per cent. who can see the finish, and tell accurately which horse has won, only about half are conversant enough with racing to identify the winner as it flashes past the post. The reason for this is that so many people crowd into the positions of advantage long before the first race is run for the afternoon. These people who occupy the best positions early are generally those who are not regular racegoers, and are therefore not expected to be conversant with the horses. From this it will be seen that only about 25 per cent. of the people at Flemington on Melbourne Cup day are able to tell who has won the Cup until the judge has placed the number of the winner in the frame over his box.

Usually it takes the judge a minute to hoist the number, and in that minute, in fact at the identical moment that the placed horses pass the post, the information is broadcast to millions of listeners. That minute is sufficient for listeners in many States and countries to learn of the result before the many thousands at Flemington who either by force of circumstances, or by lack of knowledge, have to wait for the judge to hoist his numbers.

Elaborate Network of Lines.

I must confess that the knowledge of such a position makes me greatly apprehensive when the time comes for this great race. I remember well about five years ago, when I was working on the sporting staff of a Melbourne daily paper, having explained to me the elaborate preparations that were made by the Postmaster-General's Department for the telegraphing of the result of the Melbourne Cup to all parts of Australia, and to overseas countries with the least possible delay. It seemed almost incredible that such an elaborate organisation could be set up to make the news available. On ordinary race days at Flemington telegraph lines are put through from the main lines to the racecourse, and all press messages and other telegraphic work is sent direct to such centres as Sydney, Brisbane, Ballarat, Bendigo, Geelong, and Adelaide. But on Cup day a special staff of telegraphists is sent

to the racecourse, and all business is suspended for some minutes before the great race. This is to ensure that there will not be any interruption to the all-important news of the result. Within a few seconds of the numbers of the placed horses being hoisted over the judge's box, the news is flashed all over the Commonwealth. Similar precautions are taken by the cable companies, so that there will be equally expeditious transmission to distant countries.

At the time all this was explained to me, I wondered at the attraction this race held, but since I have received letters from as far as Burma, saying that the description of a Melbourne Cup was received clearly there, and that the receivers were thankful to the broadcasting stations for keeping them in touch with the happenings at home in Australia, I quite realise what the Cup means to Australians at home and abroad.

"Why should all this preparation be made to make known the result of a horse race?" I asked myself, and the answer was simply, "It is the Melbourne Cup."

There can be no doubt that for months before a Melbourne Cup is run interest in the possible result is taken by people who, ordinarily regard racing with disfavour. Throughout these months the one topic of burning importance from Cape York to Wilson's Promontory, and from Cape Leeuwin to Cape Howe is, "Who will win the Cup?" and it is only natural that when the race is run that everybody wants to know at the earliest moment who did win.

Two Thousand Miles of Telephone Lines.

It seems so short a time ago that all the telegraph and cable preparations were so wonderful to me, that I can hardly credit the remarkable change that has taken place. The telegraph and the cable have been superseded, at least in cases such as this, and now the wireless brings the Melbourne Cup to the home wherever it be. Naturally it is not possible to reach the whole of Australia with the broadcast description of the race from the local Stations, so to make it available for everybody to hear the transmission, whether they are in Western Australia, Queensland, the Northern Territory, or even neighbouring countries of Australia, the most comprehensive system of relays is necessary. It is here that the organisation of the Postmaster-General's Department is called to the aid of the Broadcasting Company in a much different capacity from that of organiser of the telegraph services mentioned.

The Department is called upon to make available more than 2,000 miles of telephone lines, so that the broadcast story may be flashed from the racecourse to Sydney, and from there to Brisbane, and also from Melbourne to Adelaide. For weeks before the race telephone mechanics must closely survey the telephone lines it is proposed to use, to ensure that they will be in the best possible working condition. Special attention is paid to the intermediate points of amplification between Melbourne and Sydney, Melbourne and Adelaide and Sydney and Brisbane. The responsibility of these trunk lines is great. They have to carry the whole of the speech during the broadcast description.

Personalities of the Studios:



Cec. Morrison discusses rhythm with the members of the A.B.O. Dance Band.



Mark Makeham and his Melodians.

Personalities of the Studios:



Clarrie Collins and his Band.



Paul Jeacle and his "Pirate" Band.

Nine Stations Employed

For the benefit of listeners in Western Australia a more complicated task is undertaken. As it would not be possible to set aside a telephone line from Adelaide to Perth for the exclusive use of the Australian Broadcasting Company, it is necessary to make other arrangements. It is here that another wonder of wireless telephony is called to the service of the listeners. The story of the Melbourne Cup is broadcast on a short wave, which makes it possible for the engineers in Perth to pick up and re-broadcast it on the normal wave length of the Perth Station.

In addition to the useful purpose served by the short wave station for Western Australia, it also makes the story available to listeners in New Zealand. Another transmission is also made from the short wave station in Sydney, and the broadcasting from this station makes the story available to Fiji, Solomon Islands, New Guinea and Straits Settlements. This Station has even brought reports of reception in India, and on the Western Coast of the United States of America.

In all, nine stations handle the work in Australia. In Melbourne 3LO, 3AR and 3ME broadcast the story, and it is also sent out from 2FC, 2BL and 2ME Sydney, 4QG Brisbane, 5CL Adelaide, and 6WF Perth. It is an occasion in the year that listeners willingly agree to the same matter being broadcast from the "A" Class Stations in all States.

To make sure that the broadcast will be carried through satisfactorily the strictest co-operation is necessary between the Australian Broadcasting Company and the Postmaster-General's Department. It is necessary for preliminary tests to be made so that the clocks in all of the broadcasting studios, in all capital cities are synchronous, and also to ensure that items will finish in every studio at the same time, so that there will be no interruption in transmission when the time comes for the story to be put on the air. I pointed out previously that when the time comes for the broadcasting of the Melbourne Cup I usually become somewhat apprehensive of the job, not because of any feeling that mistakes will occur in the naming of the horses, but because of all the fuss that is going on around me, to ensure that there will be no failure in the mechanical arrangements for the transmission.

The actual task of broadcasting a story of the race from the press box on the top of the old grandstand at Flemington is one of the simplest parts of this remarkable transmission. A clear and uninterrupted view of the whole of the racecourse is all that is necessary, for the horses are so indelibly impressed on the mind, that one would find it very difficult to fail to indentify any one of the runners. After seeing the horses running in races for some weeks before the race, in preparation for the great test, one recognises them as easily as one would recognise friends in the street.

This great sporting description is a fascinating event alike to the public and the broadcasting stations.

A ROUND-THE-WORLD CHAT WITH THE AUSTRALIAN CRICKETERS.

If the man in the street needed any further evidence of the wonderful advancement made in wireless communication, it was presented to him in the early hours of the Saturday morning on which the Fifth Test Match finished at the Oval. The Australian Broadcasting Company Limited linked up 2BL, Sydney, 3AR, Melbourne, 5CL, Adelaide, and 4QG, Brisbane, with the Midland Hotel, in London, by wireless telephone, and a two-way conversation was carried on between the members of the Australian Cricket Team in England and the A.B.C. Sporting Editor in Australia. The fascination of this particular conversation lay in the fact that the Australian cricketers had only a little while before won the Ashes, and this was their first communication with their Homeland after the Fifth Test had finished.

The conversation opened by Mr. H. P. Williams conveying to Mr. W. M. Woodfull, the Captain of the Australian Team, the congratulations of the Australian Board of Control of Cricket, and also congratulations from the Team's many radio friends in all parts of Australia. He also wished Mr. Woodfull many happy returns of the day.

The King's Congratulations.

Mr. Woodfull then replied, saying how delighted the Team was to get these congratulatory messages from Australia. He went on to say how well the Team had pulled together right throughout the tour, and although they had not been considered strong enough when they first landed in England to win a majority of the Tests, they had now secured the coveted Ashes. He then went on to remark that a telegram had just been handed to him, and that he would like to read it. It turned out to be a message from His Majesty, the King, sent through Sir Clive Wigram, his Equerry, and ran as follows:—

"I am desired by His Majesty to convey to Mr. Woodfull and his Team His Majesty's heartiest congratulations on their success, and on their remarkable exhibition of cricket in the Test Matches. It was a great pleasure to meet them, to see them play, and to watch Mr. Bradman bat. His Majesty hopes they enjoyed the Tour, and will carry back the happiest recollections of the visit."

Mr. Woodfull then thanked all the enthusiasts in Australia and other lands who had sent messages to the Team throughout the tour, and asked for a special message to be given to the Board of Control. He concluded by saying: "You all ought to be in bed at this hour."

Mr. Williams then informed Mr. Woodfull that the Team could look for a wonderful reception on its return to Australia.

"Hullo, Bertie."

The next speaker to come to the telephone was Mr. W. A. Oldfield. Mr. Williams called out to him, "Hullo, Bertie," and at once flashed back a reply, "Why! I can recognise your voice, Mr. Williams." Mr. Oldfield then said, "Am I really talking to you direct? It seems too marvellous." Mr. Williams conveyed congratulations to Mr. Oldfield, and told him that Australians were very proud of his great work behind the stumps during the Fifth Test. Mr. Oldfield said that he hoped his wife and friends were listening in, and that he sent his love to them and his best wishes to all his friends in the various States. He continued: "We are naturally wonderfully excited over here, and are glad to have this opportunity of telling you all at home how proud we are to have won the Ashes." We have had a wonderful captain in Woodfull, and the Team has pulled together right throughout the Tour. The Fifth Test Match was a great game, and I think it is fair to say the best team has won. I would like to thank all those friends who have sent letters and cablegrams during the time we have been in England."

Mr. Oldfield then asked Mr. Williams to convey a message to his wife sending his love and kisses to her and the baby, and to say that nothing had yet been finalised in regard to the trip to Colombo.

"Hullo, Don."

The next speaker to come to the telephone was Mr. Bradman. Mr. Williams addressed him as "Hullo, Don!" and the famous batsman at once said: "It is lovely to hear you speaking from home, Mr. Williams." Congratulations were conveyed to Mr. Bradman on his wonderful play right throughout the English Tour, and he was told that when he arrived back in Australia the girls here would kiss him to death. Mr. Bradman replied: "I'll forget all about them, don't you think?" He then went on to say that he hoped his mother and father and all his relatives were listening. He said, "I would like to tell them that I have not forgotten them in the hour of my success over here. We feel that our mission has now been accomplished, as the winning of the Ashes was naturally what we set out after on the Tour. I am sorry I could not reply to all the cablegrams and letters I have received, and I would like to take this chance of thanking and sending kind regards to all the friends who have sent me congratulations."

Mr. Williams then wished Mr. Bradman many happy returns of his birthday when it came along in the following week, and said that Australia was very proud of all the great deeds that he had executed on the cricket field.

Mr. Bradman: "Thank you ever so much for your kind messages; I would like to go on chatting to you for a long time, but I must not take more than my share of the time. Who would you like next?"

Mr. Williams: "Percy Hornibrook, please."

Percy Hornibrook Speaks.

When Mr. Hornibrook came to the 'phone he exchanged greetings with Mr. Williams, who congratulated him specially on his great performance with the ball during that day.

Mr. Hornibrook: "Well, I know that everybody is naturally pleased that we are bringing back the Ashes, and I am very pleased, too, that I was able to come to the help of the side to-day in the Fifth Test Match. I hope my wife is listening in Brisbane, and I would like to tell her that I am looking forward to meeting her fit and well at Colombo." Mr. Hornibrook went on to speak of the good fellowship that existed among the members of the Team right throughout the Tour, and he paid a special word of praise to the great captaincy of Mr. Woodfull.

"I would like to take this opportunity of thanking all my friends who have been so kind in sending congratulations."

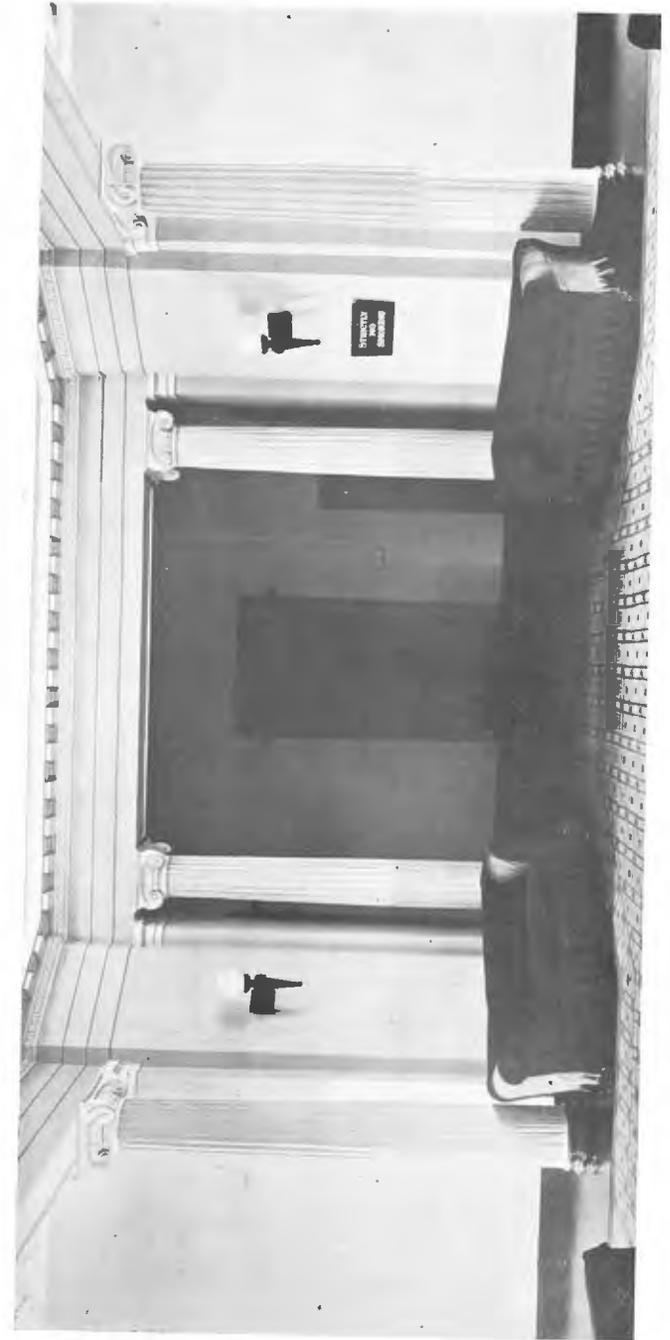
The Bosie Bowler Sends Greetings.

Mr. Williams then asked for Mr. Clarrie Grimmett, and when the great slow bowler came to the 'phone he was given congratulations from his friends in Australia on his wonderful deeds with the ball while in England.

Mr. Grimmett replied, "I can understand how delighted you all are, and we are equally pleased over on this side. Everybody in the Team played well in all the Tests, and some of us have been a little more lucky than others. I send my love to my wife and regards to all my friends in Australia. We hope to be sailing for home in a few weeks, and I cannot say how pleased we will be to again see our friends. Some of the Team are thinking of going on the spree for the rest of the Tour, now they have won the Ashes. Please thank everybody for all their kindness to me."

"Hullo, Allan."

The next member of the Team to come to the 'phone was Mr. Allan Fairfax, who at once called out "Hello, Mr. Williams, it seems wonderful to be talking to you." The reply went back, "Hullo, Allan! we wish to congratulate you on your great success in helping to win the Ashes." Mr. Fairfax then said: "I hope my people are listening to-night. I send my love to them, and hope that all my friends in Australia are as excited as we are after winning this glorious game. We have been a very happy Team, and we have had a wonderful captain in Mr. Woodfull. I want to thank all those in Australia who have sent good wishes to me. We will be glad to get back to see them all again."



The Foyer of A.Q.G. Studios, Brisbane, Queensland.



Hospital patients join in the A.B.C. Community Singing Sessions.

The Baby of the Team.

Stanley McCabe's contribution was brief, but very much to the point. After he had been congratulated on his performance while in England, he sent his love to all the girls at Grenfell, and as an aftermath said: "I think, Mr. Williams, you had better say that I also send my love to their fathers and mothers. This might be safer." He also wished to send his thanks to the many friends who had forwarded messages of congratulation. He would be glad to meet them all again on his return.

The Manager Sums Up.

The last speaker was Mr. Kelly, the Manager of the Team. After exchanging greetings with Mr. Williams, the latter conveyed to Mr. Kelly the message from Mr. Oxlade, the Chairman of the Board of Control, in which congratulations were sent to the Team. Mr. Kelly promised to convey them officially to the members of the Team as soon as he had finished speaking. Mr. Kelly went on to say, "I suppose you will not find it difficult to imagine that we are very excited. We are just home after a wonderful ovation given to us at the close of the game at the Oval. Might I read to you a message that has just been handed to me from Lord Forster, whom you will remember as Governor-General of Australia. It says, "Heartiest congratulations on the wonderful performance of your Team; the best side has won." Mr. Kelly then said that he had also just received messages of congratulation from Mr. Leveson-Gower, the Chairman of the English Selection Committee, and Mr. Archie Maclaren. He went on and explained in detail each day's play throughout the Fifth Test Match. He touched upon all the high lights of the game, and praised each member of the Team for the part he played in winning the Ashes. He ended up by sending on behalf of Mr. Bill Johnson, who had travelled with the Team all through, messages to Mrs. Johnson and all the boys at North Melbourne.

Thus ended perhaps one of the most fascinating and longest conversations which had passed between Australia and England since the inception of the wireless telephone. Altogether 42 minutes were occupied, and the two-way conversation throughout had been clear and distinctly heard in Queensland, Victoria, South Australia, New South Wales, Tasmania, Western Australia, and in New Zealand.

INTELLIGENT LISTENING :

The Listener's Part in Broadcasting.

WHILE it is the duty of a broadcasting organisation to give the best of everything that can be truthfully, usefully or agreeably transmitted, at the same time it is the business of the individual listener to discriminate and choose between what he or she should listen to, and what should be left alone. This can fairly be called intelligent listening.

There are, however, people who have their wireless sets switched on practically the whole morning, afternoon and night. They take what comes, and become greatly peeved if what they hear is not exactly to their taste. There would be something quite wrong with broadcasting if any individual listener found enjoyment in every item programmed from early morn till late at night. Such a state of affairs would indicate that the Broadcasting organisation was far too narrow in its outlook, and that it was not providing anything like broadly enough for the many and varied needs of its many and varied listeners.

The Abuse of Over-listening.

No one, however leisured his or her life, ought to listen all the time. There would be something excessive and intemperate about such a person. Yet, like so many other things, listening to wireless transmissions may become a habit, and a bad habit. Fear that one may be missing something by not listening is one cause ; but a more insidious one is the feeling that something is going on somewhere, and that rather than take the trouble to do anything else for oneself, one might as well listen to it. That, of course, is as great an injustice to the art of broadcasting as it is to the listener himself. It is a misuse of what, properly used, can be a very real boon and addition to the life of any household. Listeners should cultivate the art of using their wireless receivers intelligently and artistically, so that the immense care and trouble that are taken in compiling and presenting the programmes shall achieve their true direction and effect.

Listen with Discrimination.

The first advice that can be given to the listener, after the first enthusiasm and wonder at the miraculous part of the business have quieted down into familiarity, is that as much restraint should be exercised in the use of broadcasting as is exercised in the enjoyment of any other of the good things of life. To this end the Australian Broadcasting Company contributes by sending out in advance its weekly programmes to the Press, so that the listeners can make an intelligent study of what is being offered on the air. Too many people simply switch on their receivers at a certain habitual hour, and then praise or blame broadcasting according to the measure of their personal appreciation, or otherwise, of the

items that they happen to be listening to. Listeners should look at the programmes beforehand, decide what one wishes to listen to, and listen only to that. It is inevitable, if the programmes are rightly compiled that there will be many items to which any given listener will have no inclination to listen ; and he will be very well advised not to listen at all at such times. But if one listens with discrimination, prepared for what is coming and anxious to hear it, one will enjoy it very much more than if it is simply heard haphazard and by accident.

Be an Epicure, Not a Glutton.

Our enjoyment of anything is to some extent dependent on what we bring to it ourselves. You cannot love or enjoy anything without giving a part of yourself to it ; and the listener to the wireless transmission of music or speech must play his part if the purpose and effect of the transmission are to be fully enjoyed. It is not at every moment of one's life that one wishes to listen to music. It is not always that one desires to hear a talk or a lecture. It is not always that one desires to hear a play, not always that one wants to be instructed ; but at some time or other we desire all these things. The listener, in other words, should be an epicure and not a glutton ; he should choose his broadcast fare with discrimination, and when the time comes give himself deliberately to the enjoyment of it.

There is such a thing as listening carefully, and there is such a thing as listening carelessly. If listeners would cultivate the art of listening by discriminating in what they listen to, always listening with their minds as well as their ears, in that way they will not only increase their pleasure, but actually contribute their part to the improvement and the perfection of an art which is destined to play the most important part in the life of the whole community.

The Field of Sport. (Continued from page 80.)

To enable descriptions of these races to be faithfully broadcast a considerable amount of preparation had to be carried out. The commentator spoke in a number of instances from boats following the contestants, small transmitting sets carrying the description to the shore, where it was again relayed for re-transmission from the stations.

Different branches of athletic events have been transmitted during series of contests which have been held in every State. Foot-running and cycling both on the tracks and on the roads have been described, and no event of any outstanding importance has missed the magic of the microphone.

Broadcasting can claim in Australia that it has created greater interest in sporting events than any other agency. Interest has been worked up in various games which had previously been languishing, and the graphic description of events in progress has ultimately meant considerably enlarged gate takings for the various branches of sport.

THE BROADCASTING OF RELIGIOUS SERVICES.

IN the early days of broadcasting considerable diffidence was shown by the churches of all denominations to allowing their Sunday services to be transmitted. They held the belief that it would be difficult to retain in a broadcast transmission the solemnity and sacred character of a service as presented within the House of God. Gradually, however, the various denominations began to realise that the broadcasting stations offered a new field in which they had a full part. Ultimately every denomination who was approached gladly joined forces with the broadcasting stations.

With the introduction of the National Broadcasting Service, it was felt that a still wider field should be covered from the point of view of religious teaching, and space was allotted in the daily programmes for an extension of the work which had previously been restricted to Sunday services.

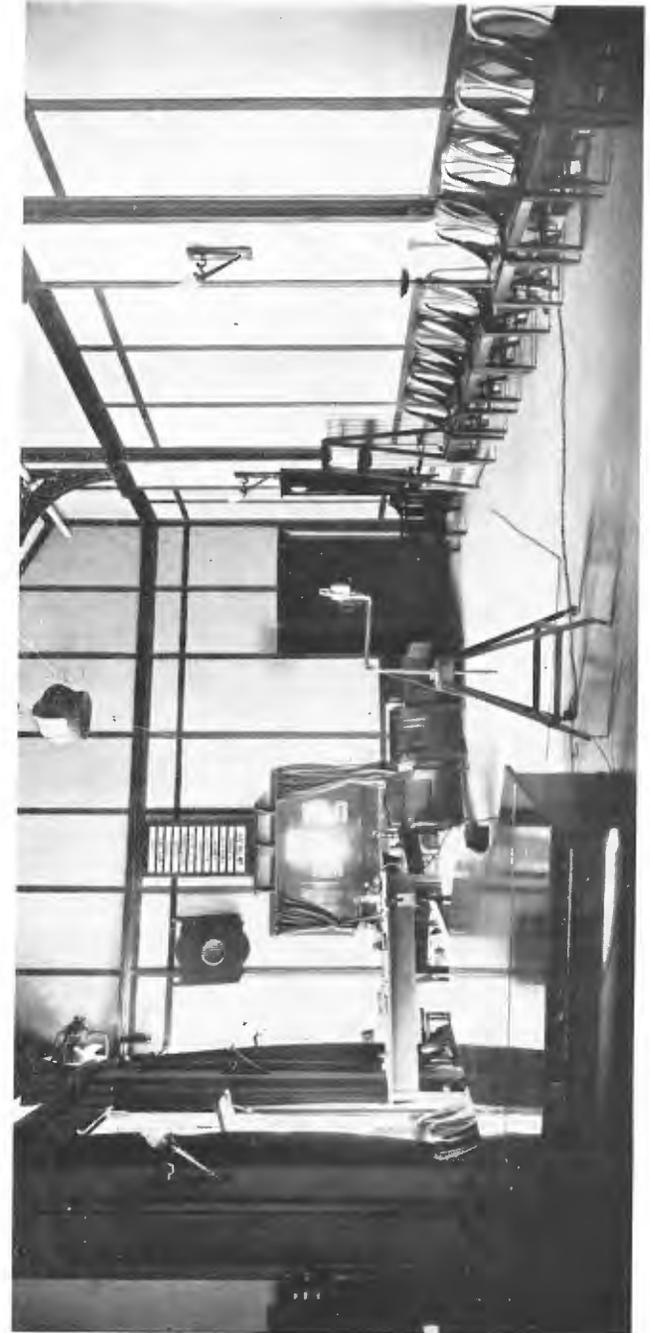
The States did not feel bound to operate along exactly the same lines. In Victoria, for example, the Daily Broadcast Service is conducted by an individual member of the clergy who visits the Studio of 3AR and delivers a message which has been approved of by the Council of Churches. In South Australia, Western Australia, Queensland and New South Wales, the Council of Churches when approached to co-operate immediately offered to arrange for daily visitations from clergymen in the various denominations. A short, bright service in which each item is strictly limited to a given time has been arranged, and the correspondence received in all the States establishes the wonderful popularity of this innovation. An effort is being made to make these services helpful to those who are inmates in the public hospitals and institutions, and also to give a message of cheer to the aged and infirm who are confined to their homes.

The Daily Resolve, as read in Melbourne, is as follows :—

That I will this day endeavour, by God's help, to live a simple, sincere, and active Christian life; repelling promptly every thought of discontent, discouragement, impurity, and self-seeking; cultivating cheerfulness, magnanimity, charity, and the habit of holy silence; exercising economy in expenditure, carefulness in conversation, diligence in appointed service, fidelity to every trust, and a child-like faith in God.

It will also be of interest to reproduce one of the Daily Messages :—

Creator of life and light,
We bless thee this day for the beauty of thy world,
For sunshine and flowers, storm-cloud and starry night,
For the first radiance of dawn and the last smouldering
glow of sunset.
Let us thank God for physical joy,



A glimpse of one of the studios in Sydney, New South Wales.



The main Studio of 3AR, Melbourne, Victoria.

For the ecstasy of swift motion,
 For deep water to swim in,
 For the goodly smell of rain on the ground after rain,
 For hills to climb and hard work to do,
 For all skill of hand and eye,
 For music that lifts our hearts toward heaven,
 For the hand-grasp of a friend,
 For the gracious loveliness of children.
 Let us thank God, above all, for spiritual beauty and joy,
 For home-love, for mother-love, for child-love,
 For the instant assent of our hearts
 To the truth that is spoken by prophet or poet ;
 For the exceeding bliss of the touch of God's hand,
 Awakening suddenly our drowsy souls
 Into blessed awareness of the Divine presence with us
 and in us—

For all these thy sacraments of beauty and joy,
 We thank thee, our Lord and our God.

Prayer.—Our Father, thou has given us the morning light so welcome to our eyes ; give us also, we pray thee, the morning blessing which shall fill the whole day with its sweetness and beauty.

May all the duties of the day, however distasteful in themselves, become a delight as we hear thy voice calling us to go forward fearlessly into the heart of them, in the assurance that we shall find thee waiting for us there, ready to give us the strength we need.

May all our relationships within and without our homes be consecrated by the touch of thy hand, by which all that is base, belittling and untrue shall be removed and destroyed.

When the night comes, may we be able to look back upon a day in which the burdens of others have been lightened, and in which hearts that have lost hope have been filled with new faith in God and his controlling love. In Christ's name we ask it. Amen.

Here is an example of the Sydney roster for a fortnight :—

Monday	Church of England
Tuesday	Presbyterian
Wednesday .. .	Methodist
Thursday	Congregational
Friday	Salvation Army
Monday	Church of Christ
Tuesday	Baptist
Wednesday .. .	Church of England
Thursday	Presbyterian
Friday	Methodist

These clergy carry out a short service on the following lines :—

Invocation to worship.

Thanksgiving.

Prayer.

Short Passage from the Scriptures.

Tonic Talk.

Hymn.

Closing Talk and Benediction.

That the inauguration of these daily religious offerings has been acceptable to so many listeners, stands as the best form of thanks to those who have so kindly co-operated with the Australian Broadcasting Company in carrying out this new branch of its operations.

Sunday and National Services.

Throughout the first year of the operation of the National Broadcasting Service, the Churches have supplied morning and evening services in every State of the Commonwealth. The clergy have without exception delivered a series of messages which have been worthy of acceptance, and the music rendered has been fitting to each occasion. Commemorative services have been programmed at various periods, and the Churches have at all times considered these worth some special effort. Listeners have not been slow in expressing their appreciation of the work of the Churches in making available to them the transmissions from Sunday to Sunday.

It is particularly in the areas far removed from the capital cities that the great benefits have been received from broadcast church services. Abundant evidence has reached the Company to prove that many people are now hearing the word of God in their homes who had previously not attended any place of worship for many years. One striking instance of this was the case of a settler who had previously been on the staff of Cambridge University. Coming to Australia after the war he settled in the far South West of the State of Queensland. He wrote to the Australian Broadcasting Company stating that although his children had all reached the age of understanding they had never heard a preacher's voice, nor the singing of a hymn until the blessings of radio brought them to his home. Now his family reverently join in worship each Sunday. From the hospitals and the homes where the aged and infirm are imprisoned through their afflictions, wonderful testimonies are regularly received expressing thankfulness for the blessings of wireless, which enables them to again take active part in the church services.

BROADCASTING SERVICES. How They Are Maintained.

COMFORTABLY seated in an armchair at home you have listened to a full orchestral rendition of a musical masterpiece; or the actual voice of a man-of-the-hour describing the exploit for which that day he has been acclaimed; or perhaps you have enjoyed a good laugh at the quips of a humorist. At the end of an evening of such broadcast entertainment no doubt you have turned your thoughts to the means by which it is all accomplished and possibly found some difficulty in getting a clear view of the processes of radio telephone broadcasting.

It is the object of this article to describe them. First let us obtain a general picture as it were; then we can keep in proper perspective the details which follow.

Process of Telephony.

A person speaks in a room or studio or a piano is played in a hall. The sounds so generated are picked up by a device called a telephone transmitter or "microphone," that has the ability to vary an electric current in such a manner that the electric waves are produced, which are copies of sound waves impinging on the microphone. Many things can be done with these electric copies of speech and music that cannot be done with the sound waves themselves; spanning long distances is one of them. If we put in a room at some distant place a receiving device that can reconvert the electric waves back into sound waves we will have a reproduction of the human voice or musical instrument. The receiving device may be a hand receiver held to the ear, as in the domestic telephone, a pair of receivers placed on the head ("head-phones") or a loud speaking telephone receiver—"loud speaker" as it is commonly known.

The process outlined is telephony. Irrespective of whether wires are used to guide the electric waves along fixed paths all the way or whether most of the distance is covered by projecting the waves into space at one end and picking them up again at the receiving point—they are still electric waves, and the whole process is still telephony.

"Radio Telephony."

When we wish to conduct telephony in a broadcast manner so that any one with a receiving apparatus can pick it up at any point, the waves are projected into space. Thus we have radio-telephone broadcasting.

The term "radio-telephony," by the way, is the appellation internationally agreed upon—by Britain and all other nations—to replace the old negative term "wireless." Some nations have been quicker than others to adopt the positive term "radio," and

no doubt the negative term "wireless" will, in course of time, disappear like "horseless carriage" has done. We do not hear a motorist refer to his car as a "horseless."

We now proceed to a more detailed explanation beginning with the sound waves themselves. When any sound producing element is vibrating, for example, a piano string, the air immediately adjacent is alternately compressed and released as the string vibrates back and forth. The compressions and rarefactions constitute a wave motion which proceeds outwards in all directions from the vibrating string as do water waves in a pond when a stone is dropped in. The number of vibrations executed by the string in one second is the "pitch" or frequency of vibration of the sound. The string of the lowest note of a piano vibrates about 30 times a second—that is, its frequency is 30 cycles per second. The frequency of the highest piano note is approximately 4,100 cycles per second. Hence any electrical system that is used to reproduce the music of a piano must be capable of responding accurately to all frequencies between 30 cycles per second and 5,000 cycles per second. The concert organ and symphonic orchestras also must have this range for their proper reproduction. The human voice and individual musical instruments (violin, flute, etc.) do not cover such an extensive range.

Higher Frequencies.

It has been found advantageous to transmit frequencies even higher than 5,000 cycles per second. By so doing improved crispness and clarity is given to the higher soprano notes, and the upper notes of the flute and piccolo. The new relay stations being erected by the Postmaster-General's Department are designed to transmit all frequencies from 30 cycles per second to 10,000 cycles per second; consequently, the quality of their transmissions will be of the very highest order.

The sound waves of all the various frequencies having been generated in the studio by the piano, voice or whatever may be performing, proceed to the microphone which picks them up and converts them into their electrical counterparts. As previously mentioned the microphone is a telephone transmitter, as in the domestic telephone; but in order that it shall be uniformly responsive to the wide range of frequencies necessary in music the sensitivity of a broadcasting microphone is very much less than that of a telephone transmitter. This is a sacrifice that can well be made since its weak output is readily enlarged by means of valve-amplifiers. Amplifiers with their necessary batteries are practicable in a broadcasting studio whereas they would be out of the question for subscribers' telephones.

From Studio to Station.

Having now obtained an electrical image of the sound waves amplified to the necessary degree, these are sent over a telephone line from the studio to the radio broadcasting station,



The No. 1 Studio of 6WF, Perth, Western Australia.



The Main Studio of 5CL, Adelaide, South Australia.

usually situated outside the city proper. Such a station is really a form of power house, where electrical energy obtained from the public electric supply mains is raised in frequency from the normal 50 cycles per second to many hundreds of thousands of cycles per second. This process is necessary because the low frequency power from the mains will not radiate appreciably, whereas the very high frequencies will radiate freely into space when passed into a radio aerial which is simply an elevated wire. The conversion is effected by the use of valves arranged in suitable circuits. The radiated energy, however, is of little use in itself, for it is vibrating at a rate far too high for the human ear to respond. If, however, the amplitude of the radiation be varied in strict accordance with the speech and music electric waves coming from the studio, then the radio waves passing out into space from the aerial can be used as a "carrier." The process of so moulding the radio currents by the voice and music currents is called "modulation," and is effected within the station by the action of valves. Some of the valves in a radio station are very large. One type widely used in the National Broadcasting System is capable of handling the electrical equivalent of 15 horse power.

The radio carrier waves pass out in all directions from the sending aerial, and are picked up by the receiving aerials now so familiar everywhere. This process of picking up means that the passage of the radio wave causes minute currents to flow in that aerial, which vary in exactly the same manner as the waves in space. The function of the radio receiving set is to extract the voice and music currents from the carrier and to deliver them to some device such as headphones or a loud speaker which is capable of changing those currents back into sound waves in air. The essential feature of the radio set, therefore, is that part which separates the voice and music currents from the radio carrier currents. This process is technically known as demodulation—the reverse of the original modulation process which took place at the radio station. The part of a set which does this is the detector and it may be either a valve or a crystal. The reproduced sounds are increased in loudness by the addition of a valve amplifier ("audio-amplifier") after the detector; the distance at which a set can be used from a broadcasting station is increased by the use of a valve amplifier ("radio amplifier") before the detector. In radio sets containing more than three valves it is usual to find both types of amplification.

Broadcasting being essentially telephony, if the service is to be of high quality it is necessary to make use of the discoveries and most modern developments in telephonic transmission. The Postmaster-General's Department has considerable resources in all branches of electrical communication, and utilises them to the full in the National Broadcasting Service.

National Broadcasting Service.

It may be of interest to indicate the differences between broadcasting problems of Australia and those of other countries.

The extensive areas of our own country inhabited, but sparsely, present a condition not common elsewhere. The number of potential listeners per square mile of territory to be served is much less here than in other countries. The cost of providing an effective signal strength over an extensive area is high and the expense of such a service must be borne by a relatively small number of listeners. Unless the listener's licence fee were to be raised to a prohibitive figure it is impracticable in Australia to provide a sufficient level of signal strength all over the continent so that everyone could have a certain service free from fading. Nevertheless, it has been found possible to develop plans for the National Broadcasting Service whereby a satisfactory level of signal strength will be given to approximately 95 per cent. of the population when the system is completed.

At present there are eight stations operating in the National Broadcasting System; one additional station will be ready for service shortly, and three others are in course of installation. Every one of these new stations will be of equal or greater power than any existing station.

The new stations will be connected by programme lines with the National studios in each capital city. The programme line system is flexible and any required grouping of stations can be arranged, even to the extent of providing for any particular item being broadcast simultaneously from all stations in the Commonwealth. Each of the subsidiary stations will be provided with emergency microphones, phonographs and other apparatus so, that it can maintain touch with listeners should storms cause temporary interruption to the lines.

Telephone lines are normally arranged for the transmission of commercial speech wherein a high grade of intelligibility can be secured by the transmission of frequencies between 300 and 2,500 cycles per second. When the lines are used for the transmission of music for broadcasting, special arrangements are made to widen the frequency band to the full range required for this class of transmission—see page 102.

Transmission Properties.

The intensity of electro-magnetic waves radiated from a broadcasting transmitting aerial is proportional to the radio current in the aerial, the effective height of the aerial and the frequency of the current oscillating in it. The intensity is measured in volts per metre or more conveniently in millivolts per metre. This field intensity—initially at a very high value—decreases as one proceeds radially from the aerial due, firstly, to the spreading effect and, secondly, to losses in the earth, since the surface of the earth is not a perfect conductor. The following example illustrates the manner in which field intensity falls off with distance, the power in the aerial being assumed as one kilowatt and the frequency 830

kilocycles per second (corresponding to a wave length of approximately 360 metres)—

Distance from Transmitting Aerial	Field Intensity.
1 mile	128 millivolts per metre
4 miles	30 " " "
20 miles	5 " " "
50 miles	1 " " "

It will be observed that at short distances from the aerial an increase of four times the distance reduces the field intensity approximately to one-quarter; but at 50 times the distance the field intensity is 1/128ths of the initial value.

A broadcasting aerial not only radiates over the horizontal plane, but also sends waves upwards at all angles. The upward projected waves during daylight hours are absorbed largely in the ionised upper layers of the atmosphere and only the ground waves are effective in providing reception. At night time the ionised layer (the Heaviside layer) becomes tenuous and withdraws to a height of from 60 to 200 miles from the earth's surface. The ionised layer no longer wholly absorbs the sky wave and refraction takes place, so that the sky wave returns to earth again. For this reason a broadcasting station at night time can be heard at considerably greater distances than in the day time.

Fading.

A Heaviside layer is not uniform in density; indeed there is evidence that it consists of at least two strata each of varying density. So far as is known the whole layer consists of gases in a state of great rarefaction ionised (or "electrified") by collision between electrons shot out from the sun and the molecules of the gases. There is a very rough analogy between these clouds of extremely tenuous gas and the ordinary clouds of vapour and ice normally visible to us from the earth's surface. Rarely do these visible clouds appear even approximately uniform; usually they are the very opposite to that. It is reasonable to suppose therefore that similar irregularities exist in the Heaviside layer and on this assumption it is easy to imagine how a radio wave encountering this layer is refracted back to earth in a more or less irregular fashion. That accounts for the fading so commonly observed in long distance reception.

Although the sky wave is irregular in its behaviour so far as observations from the earth is concerned yet it can travel very considerable distances. It is probable that successive refraction and reflection take place between the Heaviside layer and the surface of the earth during the propagation of a wave over many thousands of miles. Because the sky wave has the ability thus to travel over long distances stations in countries even so remote as Japan can cause interference to reception in Australia.

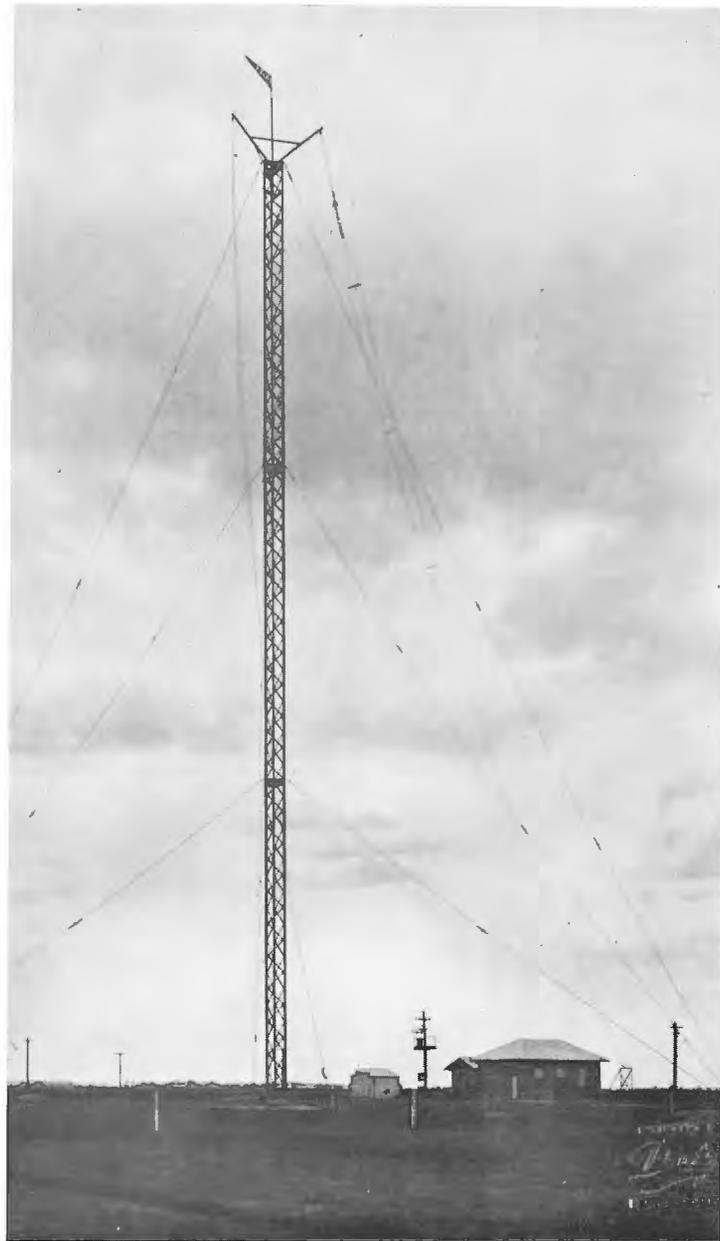
Once a broadcasting station has generated the sky wave, what happens thereafter to that wave is entirely in the hands of Nature so to speak. What a distant listener hears through the agency of the sky wave can hardly be laid to the credit or discredit of a transmitting station. Quite small stations can and do emit strong sky waves. A distant listener—say, three or four hundred miles from the transmitting centre—may easily hear the transmission of a small station at that centre while at the same time he may have difficulty in getting good reception from a more powerful station much nearer.

It is common experience to hear listeners express opinions of the transmissions from distant stations, comparing one station with another, perhaps to the disadvantage of the station which is known to be the more powerful. Since such a listener is depending for his reception wholly upon the sky wave, it is not difficult to understand how natural phenomena are conspiring as it were to deceive him.

Distortion Fading.

One other peculiarity of the down-coming sky wave needs to be mentioned. At certain distances from a transmitting station—of the order of 80 to 150 miles—the down-coming sky wave is of approximately the same intensity at the earth's surface as the ground wave that has come directly from the transmitting station. The sky wave has had much further to travel than the ground wave and as previously mentioned its pathway while in the Heaviside layer is beset with irregularity. When it finally reaches the earth's surface it will not necessarily be in phase with the ground ray already there. At one instant the phases of the two waves will be coincident and they will add; at another instant they will subtract, the result being zero. The resultant intensity in this area, therefore, is subject to violent fluctuations, and the listener experiences a very annoying combination of fading and distortion.

These considerations show that in any serious attempt to plan a comprehensive system of broadcasting on a truly national basis, the design and location of stations must be such as to reasonably cover the territory to be served on the basis of the daylight or ground wave service area. It follows also that the stations must be designed in a way that will permit their aerials to radiate the greatest proportion of the power as a ground wave and to reduce the sky wave radiation to the minimum practical amount. The Postmaster-General's Department has taken the limit of this reliable ground wave service area as being a figure—approximately a circle—along the boundaries of which the field intensity is not less than 1.0 millivolt per metre. The length of the radius at the extremities of which this limiting value occurs varies, of course, with the power of the station and its carrier frequency.



The aerial system of 3AR, Melbourne, Victoria.



The Control Room of 2BL Studios, Sydney, New South Wales.

Service to the Local Listener.

The listeners within the service area so defined may for purposes of brevity be termed local listeners. It will be clear that the foundation of a successful national broadcasting plan must be that of providing the local listener with a satisfactory service. It is impracticable to make special provision for the listener who desires to reach out far beyond his own service area. This does not mean that he cannot do so if he wishes; he can do so if he provides himself with a sufficiently selective and sensitive receiving set, but he will now be exposed to the effects of fading, distortion and atmospheric.

The ideal which the Postmaster-General's Department seeks to approach is that of making every listener a local listener. But this is impracticable in a country of the size and density of population of Australia. Nevertheless, when the construction programme for the National Broadcasting Service is complete, approximately 95 per cent. of the population of the Commonwealth will be within one millivolt per metre service area.

Power Rating of Broadcasting Stations.

There is a variety of different ratings at present in use by makers of radio telephone transmitters, which give rise to a certain amount of confusion. This is due to the practice of attempting to describe the performance of a transmitter completely by means of one factor indicating the power measured at some fixed point, viz., input, output, or some intermediate point, different manufacturers choosing different points. The power rating of a broadcasting station has usually been intended as a measure of radiation. The ideal method of rating a broadcasting station would therefore be the power radiated, but this method would necessitate complicated field intensity measurements, and the application of certain formula to enable the radiated power to be calculated. Such a system of rating is not convenient. The next best method of rating a broadcasting station is by the power of the radio carrier delivered into the aerial. The Postmaster-General's Department has adopted this rating and discarded the use of older methods of rating such as the so-called "input" rating, which is the power consumed by the final oscillator valve. A broadcasting station, therefore, with a rating of "2 kilowatts of carrier power in the aerial" will be equivalent to the power of existing national stations which under the old system of rating are referred to as 5 kilowatt stations.

Service Areas.

The limit of the service area of a station in the National Broadcasting Service has been defined as an area approximately a circle along the boundaries of which the field intensity is not less than 1.0 millivolt per metre. The radius of a circle forming

such an area expresses the distance from the transmitting station at which a field intensity of 1.0 millivolt per metre is obtained during daylight transmission, *i.e.*, having respect to the propagation of the ground ray only. On this basis the following table shows roughly the extent of service areas for broadcasting stations of different power rating.

Rating (Carrier Power in the Aerial). Kilowatts.	Distance—Miles from Station. Miles.
1	50
2	62
5	77
12	100
50	120

The new Newcastle, 2NC, and Rockhampton, 4RK, National Stations, since they are located comparatively near to populous centres, are of 2 kilowatts power. The new National Stations to be erected near Corowa, New South Wales, 2CD, and Port Pirie, South Australia, 5CK, must serve comparatively large areas, and the power of each has been made 7.5 kilowatts.

Depth of Modulation.

The power rating of stations discussed so far refers to the unmodulated carrier power in the aerial. The actual peak aerial power of a modulated carrier depends upon the depth of modulation. There are limits to the depth of modulation which if exceeded will result in distorted transmission. Modern developments in radio transmitter design have made it possible to secure depths of modulation up to the maximum possible, namely, 100 per cent. The peak power at various depths of modulation is shown in the following table, which applies to a station such as Corowa with a rating of 7.5 kilowatts in the aerial.

PERCENTAGE MODULATION.
PEAK POWER IN THE AERIAL.

0%	25%	50%	75%	100%
7.5 kW.	11.7 kW.	16.9 kW.	22.9 kW.	30 kW.

The new broadcasting stations being erected for the Department will have a depth of modulation not less than 80 per cent. without distortion, and up to 100 per cent. with an amount of distortion so slight that precise measurements are required to detect it—the ear would not notice it. The actual peak power of one of the new 2kW Stations at 100 per cent. modulation will be 8kW., which is greater than any of the existing stations in the Commonwealth. A word of warning is given regarding receiving

equipment. When receiving transmissions from stations of large aerial power and possessing a high percentage of modulation, distortion may be experienced in a receiver due to the overloading of the detector valve and last stage audio valve. This overloading can be avoided to a certain extent by using an aerial of smaller dimensions for local reception and by equipping the receiver with a smoothly operating volume control.

Modern Broadcasting Equipment.

The following technical particulars may be of interest concerning the new stations now being erected for the National Broadcasting Service.

System.—The type of transmitter is that in which modulation takes place at a low power level, which is raised by radio frequency power amplification to the final output level. The radio frequency carrier wave is generated at a low power level by a crystal-controlled master-oscillator which provides the primary drive for the transmitter. The output of the oscillator is amplified to a slightly higher level, after which modulation takes place. This arrangement ensures that carrier frequency ("wave-length") of the station remains absolutely constant even during the moments of deepest modulation.

Modulation is performed by the choke control or Heising method. In this system the audio frequency voltages are applied at a suitable level to the grid of the modulator, and the carrier is applied to the grid of another valve, the modulated amplifier. The anodes of these two valves have a common feed through a high impedance choke coil. The anode voltage modulator valve varies in accordance with the audio frequency voltage impressed on its grid, and because of the common choke coil these voltages are impressed on the anode of the modulated amplifier, causing the radio frequency output of the latter to vary likewise.

The energy delivered by the modulated amplifier is further amplified without change of wave form by two or more stages of power amplifier. In the last stage the valves are of larger capacity (10 kilowatts rated output), and their anodes are water cooled. A special form of coupling is used between all stages, to suppress the generation and radiation of harmonics of the carrier frequency.

All the parts of the transmitter carrying very high voltages are completely enclosed with metal screens. Safety switches are fitted on the gates of all the enclosures so arranged as to cut off all high voltages if the gates be opened. It is impossible for the operators inadvertently to come into contact with any dangerous voltage.

Aerials.—The aerial system of each of the stations under construction will be strung between self-supporting steel towers. The aerials of the 2kW. stations are of the flat-topped T type. The aerials of the 7.5 kilowatt stations will be multiple-tuned, having three down leads each equipped with a tuning coil.

INTERFERENCE WITH RECEPTION

AUSTRALIAN listeners have to contend with various forms of interference with their reception, including that caused by atmospherics, fading, and radio inductive interference. The importance of improving those conditions and reducing the interference is constantly recognised by the Department. The establishment of additional subsidiary stations in selected country districts is regarded as the only effective means of providing adequate improvement, but necessarily the installation of the additional stations will occupy a period of years. In the meantime, constant attention is being paid to interference which is capable of removal or reduction by other means. The problem of radio inductive interference caused by electric supply mains or electric machinery has been investigated in many centres of the different States. The Department's technical officers investigate the conditions where a general complaint is made regarding such interference, and in the large majority of cases it has been found practicable to suggest effective remedies. The co-operation of the authorities or persons responsible for the maintenance of electric systems and machinery is necessary in such investigations, and the Department gladly records its appreciation of the co-operation that has been forthcoming.

This problem of radio inductive interference, with the increasing use of electrical devices throughout the Commonwealth, is becoming serious, and the Department has arranged for an extension of its activities in the interests of listeners. In the near future all electric authorities in cities, towns and villages will be invited to co-operate with the Department in tackling the problem in the interests of local listeners' broadcasting service, and it is confidently hoped that improved conditions will follow.

UNLICENSED LISTENERS

THE Department has found it necessary to maintain a service of inspection for the purpose of ensuring that all broadcast listeners are in possession of the requisite licence. The legal obligations in this regard and, more particularly what might be called the community obligation whereby listeners assist each other by paying their licence fees, have been brought under the notice of listeners frequently. The National Broadcasting Service is maintained entirely by means of listeners' licence fees, and any slackening in the revenue derived from that source must necessarily be reflected in the quality of service that can be provided. The Department has been compelled to take proceedings in the police courts against persons who have not recognised these obligations, and up to 1/10/1930, over 450 convictions have been obtained against offenders.



The control room at 3LO, Melbourne, Victoria.



A view of the Transmitters at Pennant Hills, Sydney, New South Wales.

BROADCASTING AND THE PRESS

No Year Book would be complete without some acknowledgment of the courtesy of the Press of Australia for its co-operation during the first year of the National Broadcasting Service. In every State of the Commonwealth the newspapers have, to a greater or lesser degree, permitted résumés of their news to be broadcast, with due acknowledgment.

In some quarters, however, efforts have been made to restrict the use of news, and these limitations have made it necessary for the Australian Broadcasting Company Limited to add items of current information from its own services.

In the field of sport considerable advancement has been made, but it is hoped the friendly relations that have so far existed will prevent the need of the establishment of anything that will be looked upon as a competitive effort in general news gathering.

Advantages to Both Sides.

The Company feels that the newspaper proprietors have no ground for any further restrictive action, and while the present relations exist, advantages can accrue to both sides. The National Broadcasting Service must give its listeners a brief résumé of current events, and the acknowledgment of the sources from which this is derived must, in turn, create a goodwill between the papers mentioned and the enormous listening public.

While the criticism of the Company's efforts in the Press has, on the whole, been constructive, there have been times when it has been both destructive and unfair from certain limited quarters.

This contention is best proved by the general advancement of broadcasting throughout the year in every State.

The listening public has not been slow to resent the unfair critic, and in turn it has raised complaint that some journals have not treated them quite fairly in the abbreviated presentation of programme information.

The Position in the United Kingdom.

The relationship of the Press to Broadcasting has presented a most interesting study in every country. In the United Kingdom in the early days the newspapers were tolerantly friendly, but as licences grew the papers formed a united front to protect their interests against the expected depredations of this unknown new instrument of distribution. They permitted the Broadcasting Company to distribute news only at their sufferance. As time went on an attempt was then made to set up a general boycott, but the broadcasting authorities held their hand and allowed events to determine the issue. Programme space was refused until an enterprising advertiser was induced to insert the B.B.C. programmes in the space he bought in a London evening paper, whose circulation

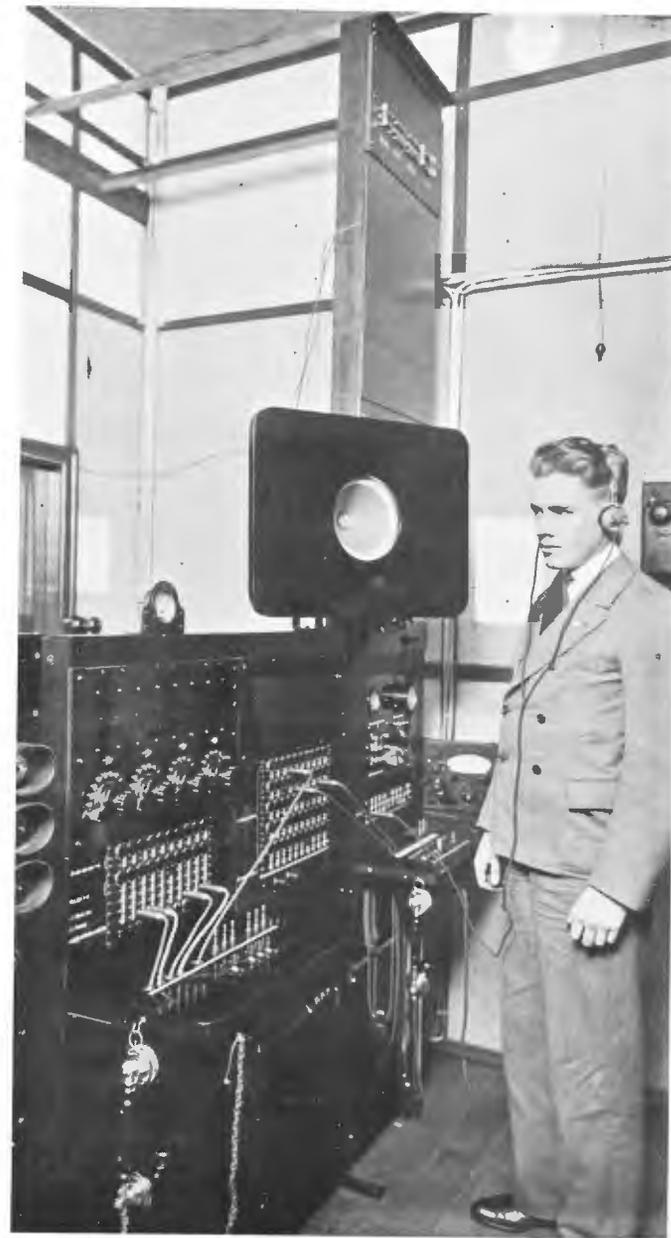
rapidly expanded as a result. The boycott collapsed after a few days, and thenceforward the newspapers anxiously sought and published all the programme information they could get. It had been demonstrated that programmes were "Big News." Hostilities then began in another direction, and attacks were launched at fixed periods against the alleged bad programmes. Licences began to grow, however, and as Broadcasting became the greatest publicity force in the United Kingdom, the newspapers gradually saw the wisdom of regarding it as an ally rather than as an enemy. To-day the British Broadcasting Corporation and the newspaper proprietaries are working harmoniously. A reasonable news service is supplied by the newspapers and the balance is secured by the Company through its own sources.

Newspapers Own Stations in the U.S.A.

In the United States of America the position is different, and Broadcasting has been incorporated into the machinery of competitive journalism. Many of the big newspapers have their own stations, and are exploiting the air against each other. Side by side with this there are chains of stations which give sponsored programmes provided by the newspaper companies, and in which news of the day is made a feature. Many of the papers even go so far as to embody in their contracts so many appearances of an advertisement in the printed sheet, together with so many announcements on the air. There is a growing feeling in the U.S.A. that this sort of thing is gradually injuring and destroying the fascination of radio.

The Reverse Position Obtains in Australia.

In contra-distinction to the attitude of the Press in the United Kingdom, the newspapers in Australia in the early days of Broadcasting, in some States particularly, made available a very extensive news service. Then some of the newspaper proprietaries became directly interested as shareholders in certain stations, and this caused the papers not so advantaged, to gradually restrict their services. Then a new condition of things arose. The "A" class stations were all brought under the National Broadcasting Service, and the newspapers at once decided that the service rendered by them should be very considerably withdrawn. This restriction became intensified at a little later date, when some of the newspaper proprietaries again became interested as shareholders in "B" class stations. The position to-day then is the reverse to what has happened in Great Britain, where the papers are gradually extending their services to the British Broadcasting Corporation, as we find here in Australia that they are gradually lessening the news made available to the broadcasting stations within the National Service. The Australian Broadcasting Company has met this position in a friendly spirit. It felt that if some of the newspapers were realising what a great publicity agent the "A" Broadcasting stations had become, it was impossible to do anything else but take the same



The Control Room of 6WF, Perth.



Control Room of 2FC, Sydney.

attitude as the British Broadcasting Corporation, and live in the hope that before very long the Press in Australia would, like the newspapers in the United Kingdom, realise that we were allies and not enemies. In the meantime right throughout the Commonwealth the Australian Broadcasting Company has gradually built up its own sporting service, which is generally admitted by visitors from overseas, is absolutely unique in broadcasting in any part of the world. The Company feels that the restrictions placed upon it in some quarters are tending to make the service too limited, but, still nurturing the spirit of alliance, it is refraining from establishing what might be termed a serious competitive organisation in news gathering. Gradually, however, the ramifications of a concern with stations and relay stations spread throughout the whole Commonwealth, is adding State and inter-State news items which come to it in the ordinary course of business, and it is hoped that with these added to what the papers are still permitting to be broadcast, it will be able to satisfy listeners until the day arrives when, as in Great Britain, the Press and the Broadcasting stations will move side by side as agents of publicity.

Beneficial Reaction on the Press.

While broadcasting owes, and gladly admits, a debt to its numerous friends of the Press, there are not wanting those who foresee an interesting and beneficial reaction on the Press itself as the result of this new contact. The journalism of serious comment, of imaginative detailed description, and of thoughtful presentation generally, will become increasingly important. The editorial and literary mind, as distinct from the news mind, will tend to increase its influence over both the tone and content of the newspaper and periodical. This provides a new field for speculation as interesting as it is controversial. The Australian Broadcasting Company holds that whatever temporary adjustments are necessary, the advent of Broadcasting will serve not only in the provision of programmes, but also in the exercise of its influence and example at all the points at which it impinges upon other agencies whose task it is to inform, amuse, or instruct the public mind.

RADIO PLAYS

SINCE the advent of the Australian Broadcasting Company there is probably no form of wireless entertainment which has made greater strides than the presentation of Radio Plays.

Careful study has been made of all the detail necessary to turn this phase of broadcasting from an experimental feature of irregular appearance into a vital and definite part of the programmes, holding its full proportion of time in relation to even music itself. Several hundred productions have been presented, and in the casting of these every care has been taken to secure both actors and actresses, who from the vocal standpoint, could give a desirable interpretation. These experiences in the broadcasting of studio productions have resulted in some very definite conclusions. They have proved that the play specially written for the microphone, can be made interesting and acceptable to all classes of listeners. In the early stages of broadcasting in Australia many listeners were too impatient to wait until the plot of a play had sufficiently unfolded itself to make the presentation interesting. This led to an editing of production which brought at the earliest possible moment a quickening of interest to the listener who had to be held by the spoken word as against the stage presentation. The selecting of plays was then given the most careful consideration, and an endeavour was made to diversify the offerings with the objective of proving that intelligent listening was not confined to one class alone. The research in this direction during the year has been most successful, for as the various types of plays were broadcast, public support became so general that repeat performances were often programmed.

The Adapting of Stage Plays to Radio.

The earlier experiments were confined to attempts at adapting plays which had been seen upon the stage, to studio conditions, but while the result satisfied the percentage of the public who had some knowledge of the works, the presentations generally were not considered outstanding successes. There were exceptions, such as the broadcasts of Shakespeare, of Greek Drama, and of plays of a similar type, whose success confirmed the theories held by many, that the opportunity for the spoken word in its beautiful form of verse drama to come into its own was offered through the medium of the microphone. Attention was then turned to the class of work in which the introduction of effects assisted in the successful production of the play, and while the tendency at first might have been in the direction of allowing the effects rather than the dialogue to predominate, this was soon overcome, and by careful study harmonious relationship was established which blended the reduced atmosphere consistent with a successful hearing of the spoken word.



The Chairman of Directors of the A.B.C. presents a cheque for the endowment of 2FC and 2FL Cots in the Royal Alexandra Hospital for Children from the Children's Birthday Funds in N. S. Wales.



The Lord Mayor of Melbourne handing over a wireless instalment to the President of The Children's Hospital, Melbourne, equipped from the Lord Mayor's 3LO Hospital Fund.

Lack of Local Material

One of the greatest difficulties which has faced the Australian Broadcasting Company in the task of selecting plays suitable for transmission and for reception by listeners of all ages and types, is the lack of material. Copyright conditions are difficult to overcome at a distance so far removed from the centres where the works are actually written, as the rights for production are so often held by theatrical interests—who, while not using the scripts themselves, decline even at what was thought in many cases to be a satisfactory fee, to allow their presentation on the air. Writers in Australia have not yet turned their efforts in the direction of producing the type of work which is suitable for microphone technique to any great degree, but some day it is hoped that the field which presents itself will be availed of.

Conventions of Broadcast Stage.

The Australian public has been very quick to absorb something of what we might term the conventions of the broadcast stage. Where in the early days it was necessary to give a considerable amount of detail in regard to what was actually going on in the Studio, the position has now been arrived at where the very briefest introduction and explanation is necessary. Perhaps the most striking case of this was shown in the presentation of "The Green Goddess," which although occupying the whole of a night's programme, was broken by the absolute minimum of explanation.

Freedom of Interpretation.

It has been interesting during the past year to hear the expressions of opinion in relation to the differing interpretations placed upon plays by the listening public. This has proved that a freedom which does not exist in the stage presentation, has been given to the broadcast listener to place his, or her, own construction upon the different features in plays, thus making an appeal which is certainly seriously limited when viewing the stage production. Visiting artists from overseas have always stated that Australian audiences are super-critical, and that plays which have met with considerable success in many of the world's capital cities, are not appreciated by them. It is quite possible that this phase has been developed as the result of the established fear in the minds of entrepreneurs, that the purchase of performing rights and subsequent presentation in this country was too costly to be able to court failure. The bringing of artists such a long distance, and the high rates of remuneration demanded by them to cover the period of travel, all added to the necessity of presenting plays upon such a standard of excellence that the possibility of non-success was reduced to a minimum.

Deletion of Unacceptable Features.

It was into this atmosphere that the Broadcasting Stations had to project their first attempts in the presentation of radio plays. That the Australian Broadcasting Company has so quickly made a popular feature of its plays under these conditions speaks well for the application of its producers. While every care is taken to try to delete any feature that may be unacceptable to some section of listeners, at the same time it is quite impossible to alter the interpretation of some plays to please everyone. It is a fact, however, that while occasional criticism has been received, there has never been a claim made that offence has been given even to the most partisan mind.

Radio Plays and Talking Films.

An interesting study arises in connection with radio plays and their relationship to the talking film. In some quarters it is claimed that the talking film has educated the listening public to a realisation of the value of plays on the air, while there is a second school which says the reverse has occurred, and it is largely to the educational value of presentations on the air that the public has become so attached to the talking film. Quite irrespective of which line of thought is correct, there is little doubt that the production of both of these popular forms of entertainment have been mutually advantaged by the radio and film producers having an opportunity of studying the respective work of the other.

What of Future Development ?

It has to be admitted that radio production of drama, or even comedy or farce, is yet in its cradle. The problem is, Will it ever be weaned, nursed, disciplined, experimented on until television arrives in a night, as did the talking film. Looking who knows how far ahead, is it possible to picture the radio set with an attachment whereby one is able to see and hear the actual performance of a play with that elusive third dimension, which makes the characters stand out in relief, and yet a little further ahead when scenery, dresses, and appurtenances will be in their natural colors, all portrayed by wireless. The thought is staggering, but expert opinion believes that within a very short period of time these things will become established facts.

All the difficulties which stand in the way of Australia owing to its geographical position, in regard to the costliness of presentation out here of the world's great artists, makes this Commonwealth perhaps the most receptive ground in the world for the rapid advance of all that is possible in the development of the various phases of radio stage presentation.

SOME OF THE MOST PROMINENT SPEAKERS OF THE YEAR

DURING a period of twelve months so many speakers of prominence are heard through the various stations in the National Broadcasting Service that it is felt a record would be of interest if their names were compiled in this publication.

Overseas.

His Majesty The King.
Right Honorable Ramsay MacDonald.
The Aga Khan.
Maharajah of Patiala.
A. C. McLaren.
P. F. Warner.
Air-Commodore Kingsford Smith.
Sir Hubert Wilkins.

Vice-Regal.

Lord Stonehaven.
Lord Somers.
Sir Philip Game.
Sir John Goodwin.
Sir Alexander Hore-Ruthven.
Sir William Campion.
Sir James O'Grady.

Prime Ministers and

Premiers.

Right Hon. J. H. Scullin, M.P.
Right Hon. S. M. Bruce, M.P.
Hon. T. R. Bavin, M.L.A.
Hon. J. T. Lang, M.L.A.
Sir William McPherson, M.L.A.
Hon. E. J. Hogan, M.L.A.
Hon. A. E. Moore, M.L.A.
Hon. L. L. Hill, M.L.A.
Sir James Mitchell, M.L.A.
Hon. J. C. McPhee, M.L.A.

Ministers of the Crown.

Hon. J. A. Lyons, M. P.
Hon. W. G. Gibson, M. P.
Hon. J. E. Fenton, M.P.
Hon. Parker Moloney, M.P.
Right Hon. Earle Page, M.P.
Hon. E. G. Theodore, M.P.
Hon. J. G. Latham, M.P.
Hon. Frank Brennan, M.P.
Hon. W. H. Barnes, M.L.A.
Hon. T. H. Tunnecliffe, M.L.A.
Hon. Neil McGroarty, M.L.A.
Hon. J. Concannon, M.L.C.
Hon. H. E. Sizer, M.L.A.
Hon. F. S. Boyce, M.L.C.
Hon. F. W. Eggleston, M.L.A.

Hon. F. Chaffey, M.L.A.
Hon. R. G. Menzies, M.L.A.
Hon. D. H. Drummond, M.L.A.
Hon. V. C. Thorby, M.L.A.
Hon. E. A. Buttenshaw, M.L.A.
Hon. M. F. Buxner, M.L.A.
Hon. H. E. Farrar, M.L.C.
Hon. F. J. Ryan, M.L.C.

Lord Mayors.

Lord Mayor of Sydney (Councillor E. S. Marks).
Lord Mayor of Melbourne (Councillor H. D. Luxton, M.L.A.).
Lord Mayor of Brisbane (Alderman W.A. Jolly).
Lord Mayor of Adelaide (Councillor J. Lavington-Boynthon).
Lord Mayor of Perth (Councillor J. T. Frankin).

The Churches.

Primate of Australia, His Grace, Archbishop Wright
His Grace, Archbishop Kelly (Sydney)
His Grace, Archbishop Head (Melbourne).
His Grace, Archbishop Mannix (Melbourne).
His Grace, Archbishop Sharpe (Brisbane).
His Grace, Archbishop Duhig (Brisbane).
His Grace, Archbishop Thomas (Adelaide).
His Grace, Archbishop Le Fanu (Perth).
His Grace, Archbishop Clune (Perth).
Bishop of Newcastle (Dr. Long).
Bishop of Bathurst (Dr. Crotty).
Rabbi Cohen.

The Judiciary.

His Honor, Sir Phillip Street.
His Honor, Sir William Irvine.
His Honor, Mr. Justice Evatt.
His Honor, Mr. Justice Angus Parsons.
His Honor, Mr. Justice Jamieson.
His Honor, Sir George Murray.

**The Universities and
Educational.**

Sir Mungo MacCallum.
Sir John MacFarland
Sir William Harrison Moore.
Sir Douglas Mawson.
Sir George Julius.
Sir James Barrett.
Sir Truby King.
Professor W. A. Osborne.
H. W. Jepp
Dr. E. H. Sugden.
E. T. Fisk.
Professor E. W. Skeats.
Professor Wood-Jones.
Frank Shann, M.A.
Professor E. J. Hartung
Professor Max Wardell.
Professor Woodruff.
Professor J. A. Gunn.
Professor J. B. Brigden.
Professor Tasman Lovell.
Professor Radcliffe Brown.
Dr. Harvey Sutton.
Mons. Charles Barbier.
Professor Dakin.
H. M. Green.
Dr. Herbert Basedow.
Professor C. T. Madigan.
Dr. J. S. Battye
Colonel Le Soueff.
Professor A. G. Cameron.
Dr. E. M. Strang.
Dr. Roberts Jull.
Rev. Dr. McIntyre.
Professor A. D. Ross.
Principal Thatcher.
Dr. H. S. Fowler.
J. S. McDonald.
Dr. W. G. Price.
C. Brunson Fletcher.
B. J. McKenna
Dr. A. D. Ellis.
L. D. Edwards.
Atlee Hunt.
Dr. Phyllis Cilento.
E. O. Hoppe.
Professor J. K. Murray.
Signor Boffa.
Professor E. J. Goddard.
Nina Murdoch.
Professor Alcock.
Rev. A. P. Campbell.
Professor Copeland.
Dr. C. J. Prescott.
J. L. Hodges.
Dame Janet Campbell.
J. W. Howie.
C. N. Baeyerz.

J. F. F. Reid.
W. S. Reay.
E. J. Shelton.
Rev. V. C. Bell.
L. A. Downey.
Dr. Loftus Hills.
H. G. Freeman.
Hon. Geo. Black.
C. Kidd.
Miss Eleanor Ross.
J. McKenzie.
Dr. A. H. Martin.
Dr. E. A. d'Edgerley.
Wilfrid Blacket, K.C.
P. Rumble.
General Antill
Professor L. J. Wrigley.
Dr. Harold Norrie.
E. Gorman, K.C.
Dr. Maloney, M.P.
A. C. C. Holtz.
Alexander Watson.
Furnley, Maurice.
Georgia Rivers.
Dr. G. L. Wood.
Professor G. H. Cowling.
Hon. Samuel Mauger.
Mr. P. D. Phillips.
Dr. J. Dale.
Dr. Arthur.
Dr. E. Seetman.
Dr. Georgina Sweet.
J. Howlett Ross.
Captain Donald MacLean.
Dale, Collins.
Florence Austral.
Earl Beauchamp.
Sir Otto Niemeyer.
E. C. H. Taylor.

Defence.

Rear-Admiral Munro Kerr.
Rear-Admiral Evans.
Air-Commodore Williams.
Air-Commodore Kingsford Smith.
Sir Harry Chauvel.
Colonel Brinsmead.
Rear-Admiral Kayser.
Major A. Murray-Jones.
Brigadier-General Brand.
Lieutenant-Colonel Lorenzo.
Captain S. A. White.
Brigadier-General W. E. H. Cass
Lieutenant-Colonel C. E. Hughes.

Aviation.

Sir Phillip Game.
Colonel Brinsmead.
Air-Commodore Kingsford Smith.
Sir Keith Smith.

Aviation.—(Con'td.)

Miss Amy Johnson.
Captain Matthews.
Major de Havilland.
Lieutenant Ray Parer.
Captain Geoffrey Hughes.
Captain Mustar.
Captain H. J. Larkin.
Captain Bird.
Flight-Lieutenant Ulm.
Cyril L. Westcott.
W. E. Hart.

Musical Education.

Professor Bernard Heinze.
Dr. Arundel Orchard.
Dr. E. Harold Davies.
Alfred Hill.
John Dempster.
Dr. C. E. Ford.
George Sampson.
Wm. Murdoch.
Albert Mallinson.
Howard Carr.
Oscar Hammerstein.
Dr. Keith Barry.
Dr. E. H. Sugden.
Wilhelm Backhaus.
Sir Hugh Allen.
Fritz Hart.
Dr. Cyril Jenkins.
Laurence Godfrey Smith.
Frank Hutchens.
Lindley Evans.
Arnold Mote.
Isidore Goodman.
Dr. Thomas Wood.

Commerce.

Sir Henry Braddon.
Sir Kelso King.
Sir Samuel Hoyle.
Sir Arthur Cocks.
Sir Samuel Hordern.
Sir Arthur Rickard.
Sir James Murdoch.
Senator Sir Hal Colebatch.
Senator Sir William Glasgow.
Hon. Sir F. Clarke.
Sir George Julius.
Professor J. B. Brigden.
Hon. J. H. Keating.
George E. Emery.
Harold W. Clapp.
Hon. W. A. Watt.
A. G. Harston.
T. M. Burke.
Lee Neil.
G. J. Coles.
Hon. W. Forgan-Smith, M.L.A.

M. J. Kirwan, M.L.A.
Charles Lloyd Jones.
George Wright.
L. S. Barnett.
W. T. Eads.
Senator R. D. Elliott.
Hon. W. J. Beckett.
Dr. Rosenberg.
Phillip Collier.
C. J. Cowie.
W. Gurner.
F. N. Simpson.
Principal H. W. Potts.
W. J. Bradley.
W. A. Mackay.
B. R. Gelling.
W. J. Cleary.
Senator W. Duncan.
Hon. D. R. Hall.
Hon. Samuel Maugher.
Stuart F. Doyle.

Consular.

Consul-General for China (Mr. F. L. Sung).
Belgian Consul (M. Vanderkelen).
Italian Consul (Cav. Mario Carosi).
Consul for Peru (J. J. Mulligan).

Travel Tales.

Major Sandford Morgan.
Rev. F. H. Raward.
Rev. J. H. Benyon.
C. Price-Conigrave.
C. R. Hall.
Frank A. Russell.
Senator R. D. Elliott.
Madame Orff-Solscher.
Captain Bowtell-Harris.
Colonel Collett.
Rev. H. C. Foreman.

General.

Hon. Norman Makin.
H. P. Brown.
Dr. Gordon McAdam.
Archdeacon Hancock.
Rev. T. W. Baldwin.
Rabbi J. Mark.
S. H. Deamer.
Edgar Whittington.
Lieutenant-Colonel J. Blake.
Dean Aicken.
H. Frazer-East.
Dr. J. J. C. Bradfield.
L. Ennis.
F. Arlington-Burke.
W. F. Jackson.
Commissioner Whatmore.
Commissioner McKenzie.

Sporting.

W. M. Woodfull.
W. A. Oldfield.
C. V. Grimmett.
A. J. Richardson.
Victor Richardson
C. Walker.
Don Bradman.
L. Constantine.
Dr. Peltzer.
W. L. Kelly.
G. E. Grant.
Clarence Weber.
Hubert Opperman.
W. B. Carr.
Allan Fairfax.
Percy Hornibrook.
S. McCabe.
Harry Sunderland.
Tom Gorman.
H. Horder.

Roger Fitzhardinge.
Colonel Duncan Neill.
M. A. Noble.
Donald MacKinnon.

Women's Topics.

Lady Somers.
Lady Hore-Ruthven.
Lady Irvine.
Dame Janet Campbell.
Mrs. Skene.
Dr. Sandford Morgan.
Mrs. Head.
Mrs. W. A. Holman.
Mrs. Cumbrae Stewart.
Mrs. Albert Littlejohn.
Mrs. Helen Longman.
Mrs. J. L. Bonython.
Mrs. A. E. Moore.

PROMINENT MUSICIANS OF THE YEAR

Conductors.

Professor Bernard Heinze.
Fritz Hart.
Dr. Arundel Orchard.
Andrew MacCunn.
Gustave Slapoffski.
Dr. E. Harold Davies.
Dr. A. E. Floyd.
Gerald Peachell.
Alfred Hill.
Howard Carr.
J. Sutton Crow.
Harry Shugg.
Albert Cazabon.
Leslie Curnow.
E. J. Roberts.
Will Prior.
Percy Code.
John Hurn.
William G. James.
Horace Sheldon.
Harold Browning.
Ted Henkel.
Graham Burgin.
Lionel Lawson.
A. Belcher.
George English.
Hamilton Webber.
Hugh Niven.
A. C. Bartleman.
Hubert Clifford.
Hugh McCrae.
William Mallinson.
Alexander McConachy.

Owen Griffith.
George Sampson.
Knight Barnett.
Christian Helleman.
Arnold Mote.
John Palmer.
J. Pheloung.
F. C. Johnstone.
Stan Porter.
Maestro Peterelli.

Pianists.

Brailowsky.
Edward Goll.
Arthur Benjamin.
Henri Penn.
Edith Harrhy.
Harry Isaacs.
Isidore Goodman.
Laurence Godfrey Smith.
Frank Hutchens.
Lindley Evans.
Iris de Cairo Rego.
Alexander Sverjensky.
Paul Vinogradoff.
Beatrice Tange.
Carl Budden-Morris.
Brewster-Jones.
T. Lingard.
Lindsay Biggins.
George Findlay.

Singers.

Alfred Cunningham.
Spencer Thomas.
Ernest McKinlay.
Senia Chostiakoff.
Lance Jeffery.
Goosens-Viceroy.
Constance Burt.
Bessie Blake.
Molly de Gunst.
Cecily Adkins.
Mona Deutscher.
Virginia Bassetti.
Eileen Boyd.
Marjorie Allomes.
Clement Q. Williams.
Franco Izal.
Vladimir Elin.
Frazer Coss.
Oliver King.
Raymond Beatty.
Stanley Clarkson.
Clifford Lathlean.
Eileen Castles.
Freda Treweeke.
Ray Carey.
Godfrey Beckwith.
Gregor Wood.
John D. Sullivan.
John Donovan.
Joy McArden.
Evelyn Ashley.
Elsie Davies.
J. Alexander Browne.
Eda Bennie.
A. C. Bartleman.
May Craven.
W. J. Cadzow.
Herold Kyng.
Mina Heseleva.
Aussia Reka.
Muriel Cheek.
Alice Orf-Solscher.
Jill Manners.
Walter Kirby.
J. Howard King.
Gladys Moncrieff.
Molly Mackay.
Violet Jackson.
Ernest Wilson.
Victor Baxter.
Marcelle Beradi.

Violinists.

John Dunn.
Bernard Heinze.
Peter Bornstein.
Donald McBeath.

Lionel Lawson.
Gerald Walenn.
Cyril Monk.
Norah Williamson.
Florent Hoogstoel.
Lloyd Davis.
Moore MacMahon.
Mischa Dobrinski.
Reginald Bradley.
Pietro Sarcoli.
Stanislaus Tarczynski.
Jan Rubini.
Cecil Parkes.

'Cello.

David Sisserman.
Louis Hattenbach.
Gladstone Bell.
Athos Martelli.
Jules Van der Klei.
Elford Mack.

Organists.

Dr. A. E. Floyd.
George Sampson.
Christian Helleman.
Ernest Truman.
Lilian Frost.
G. Vern Barnett.
T. W. Beckett.
Ambrose Gibb.
Horace Weber.
Fred Scholl.
F. J. Nott
A. E. H. Nickson.

Symphony Orchestras Heard During the Year.

Melbourne University Symphony
Orchestra.
N.S.W. State Conservatorium Or-
chestra.
Victorian Professional Musicians' Or-
chestra.
N.S.W. Professional Musicians' Sym-
phony Orchestra.
Queensland State Orchestra.
South Australian Professional
Musicians' Symphony Orchestra.
Melbourne Symphony.
Newcastle Symphony Orchestra.
Ipswich City Concert Orchestra.
National Broadcasting Orchestra (Mel-
bourne).
National Broadcasting Orchestra
(Sydney).

Symphony Orchestras

(Continued)

State Theatre Symphony Orchestra (Melbourne).
Malvern Symphony Orchestra.
Music Teachers of Victoria.
Prince Edward Symphony Orchestra.
State Theatre Symphony Orchestra (Sydney).
Capitol Theatre Symphony Orchestra.
The New Symphony Orchestra (Adelaide).
Unley Symphony Orchestra.
Australian Orchestra (Melbourne).

Dance Bands.

Ambassadors.
Romano's.
Palais.
A.B.C. Dance (Melbourne).
A.B.C. Dance (Sydney).
A.B.C. Dance (Brisbane).
The Melodians (Melbourne).
Collin's Band.
Jeacle's Band.
New Era Dance.
Maison Masters of Melody.
The Revellers.
The Melodians (Adelaide).
The Rexonians.

Light Music.

A. B. C. Light Orchestra (Melbourne).
A.B.C. Quintet (Brisbane).
The Tivoli.
Hotel Carlton (Brisbane).
Cadenza Mandolin and Banjo Band.
A.B.C. Quartet (Adelaide).
New Era Quartet.
The Harmony.
The Steiner.
A.B.C. Septette (Melbourne).
A.B.C. Septette (Sydney).
A.B.C. Quintet (Perth).
A.B.C. Light Orchestra (Adelaide).
New Era Ensemble.
Capitol Theatre Ensemble.
State Theatre Ensemble (Melbourne).
State Theatre Ensemble (Sydney).
Prince Edward Concert Ensemble.

Chamber Music.

University Conservatorium (Melbourne).
N.S.W. Conservatorium.
Elder Conservatorium (Adelaide).
Alexander Sverjensky's Ensemble.
Albert Cazabon's Ensemble.
Hadyr Beck Quartet.
The Sisserman Trio.
Sisserman String Quartet.

Choral Societies, Clubs, and

Choirs.

Brisbane Apollo Club.
Brisbane Eisteddfod Choir.
Lismore Philharmonic.
Murwillumbah Philharmonic.
Blackstone-Ipswich-Cambrian.
The Silkstone Apollo Club.
Brisbane City Council Choir.
Maryborough Philharmonic.
Victorian Postal Institute.
Victorian Singers' Choir.
Bartleman Male Choir.
Melbourne Ladies' Choral Union.
Cambrian Glee Party.
Orpheon Choristers.
Royal Victorian Liedertafel.
Melbourne Choral Union.
Massed R. C. Choirs (Melbourne).
Royal Melbourne Philharmonic Society.

St. John's, Latrobe.
Lyric Ladies' Choir.
Wayfarers' Male Chorus.
St. Ambrose Choir.
Browning Ladies' Choir.
Southern Choral Ladies' Choir.
Melbourne Philharmonic Choir.
St. Paul's Cathedral Choir.
Adelaide Choral Society.
Adelaide Bach Society.
Adelaide Competitive Choir.
Adelaide Glee Club.
Adelaide Orpheus Society.
Port Adelaide Orpheus Society.
Moonstr Choir.
Angaston Male Choir.
Kadina Choir.
Adelaide Liedertafel.
Tanunda Liedertafel.
Holden's Male Voice Choir.
Marist Brothers Boys' Choir.
Richmond School Choir.
Westminster Glee Singers.
Goulburn Liedertafel.
Sydney Male Choir.
Sydney Royal Apollo.
Sydney Madrigal Society.
Sydney Royal Philharmonic Society.
Sydney Welsh Choral.
Dee Why District Choral.
Hurlstone Park Choral.
Ashfield Choral.

Bands Heard Through the

Studios.

Brunswick City.
Melbourne Metropolitan Fire.
Collingwood Citizens.
Ashfield District.
Malvern Tramway.
Westmead Boys'
St. Augustine's Orphanage.
Coburg City.
A.B.C. Military Band (Melbourne).
Victorian Railways Military.
Newcastle Steel Works.
Hamilton City.
N.S.W. Fire Brigade.
National Broadcasting Band.
N.S.W. Tramway.

Sydney Metropolitan.
Manly Municipal.
A.B.C. Military (Sydney).
Newcastle City.
Glenelg Municipal.
Guild Vice-Regal.
S.A. Railways.
Hindmarsh Municipal.
Tanunda Town.
Holden's Military.
Thebarton Brass.
Brisbane Municipal Concert.
Brisbane Federal.
Brisbane Excelsior.
Brisbane Citizens.
The Windsor.
The Newtown.
Brisbane S.A.B.

SOME OF THE MAIN BROADCAST PRODUCTIONS HEARD DURING THE YEAR.

Opera and Musical Comedy.

"Little Jessie James."
"The Belle of New York."
"Lilac Domino."
"Tangerine."
"The Rise of Rosie O'Reilly."
"Little Nellie Kelly."
"The Bohemian Girl."
"Il Trovatore."
"Norma."
"Faust."
"Rigoletto."
"Fidelio."
"William Tell."
"The Master Wayfarer."
"Rio Rita."
"Tales of Hoffman."
"Il Seraglio."
"Little Bo Peep."
"Mother Goose."
"La Traviata."

Dramatic.

"Within the Law."
"The White Chateau."
"Abraham Lincoln."
"The Broken Wing."
"The Squirrel's Cage."
"My Old Dutch."
"Daddy Long Legs."
"The Beloved Vagabond."
"David Carrick."
"School for Scandal."
"The Amateur Gentleman."

"The Green Goddess."
"Money for Nothing."
"Othello."
"Henry the Fourth."
"The Merchant of Venice."
"Romeo and Juliette."
"As You Like It."
"Julius Caesar."
"Macbeth."
"Camille."
"Twelfth Night."
"Good Friday."
"Valentine."
"Belle of Barcelona."
"The Story of Waterloo."
"Samson Agonistes."
"Victorian Nights."
"Arrah-Na-Pogue."
"The Touch of Silk."
"Colleen Bawn."
"The Flowers are not for You to Pick."
"Phillip the King."
"Dandy Dick."
"The Second Mrs. Tanqueray."
"Sowing the Wind."
"Captain Barty."
"Arms and the Man."
"The Younger Generation."
"Mr. Wu."
"Caesar and Cleopatra."
"Frithjof."
"Caste."
"Coventry Nativity Play."
"Scrooge."

**MUSICAL
MASTERPIECES.**

Concertos.

Mozart D. Minor—Piano and Orchestra.
Mozart E. Flat—Violin and Orchestra.
Mendelssohn D Minor—Piano.
Mendelssohn G Minor—Piano.
Mendelssohn E Minor—Violin and Orchestra.
Vieuxtemps—Violin and Orchestra.
Beethoven's Emperor Concerto—Piano and Orchestra.
Liszt Concerto.
Tchaikowsky Concerto—Piano and Orchestra.
Tchaikowsky Concerto—Violin and Orchestra.
Brahms Concerto—Violin and Piano.
Mozart Concerto.
Beethoven C Minor.

Symphonies.

Mozart.
Beethoven—1st and 3rd.
Tchaikowsky—5th and 6th.
Schubert—Unfinished.
Dvorak—New World.

Choral Works.

"Mass in B Minor" (Bach).
"Judas Maccabeus" (Handel).
"Imperial Mass" (Hadyn).
"Stabat Mater" (Rossini).
"Messe Solonelle" (Gounod).
"The Messiah" (Handel).
"By Babylon's Waves" (Gounod).
"The Revenge" (Stanford).
"Rhapsody" (Brahms).
"Maid of Japan" (Coleridge-Taylor).
"The Phantom Host" (Huger).
"The Elijah" (Handel).

SOME OUTSTANDING ALL-AUSTRALIAN

RELAYS.

Policy Speech of the Right Hon. J. H. Scullin, Prime Minister of Australia.	Welcome Home to the Mawson and Arctic Expeditions.
Policy Speech of the Right Hon. S. M. Bruce.	Descriptions of the Test Matches—England v. Australia, in England.
Policy Speech of the Right Hon. Dr. Earle Page.	Descriptions of the Test Matches between West Indies and Australia.
The Melbourne Cup.	Arrival of Air-Commodore Kingsford Smith.
The Sydney Cup.	Arrival of Miss Amy Johnson.
Loan Appeal by the Hon. J. A. Lyons, M.P., Acting Treasurer of the Commonwealth.	Geneva Radio Conference.
Farewell Address by His Excellency The Governor-General of Australia Lord Stonehaven.	Opening of the Federal Parliament from the Senate Chamber at Canberra.

CHIEF SPORTING EVENTS OF THE YEAR.

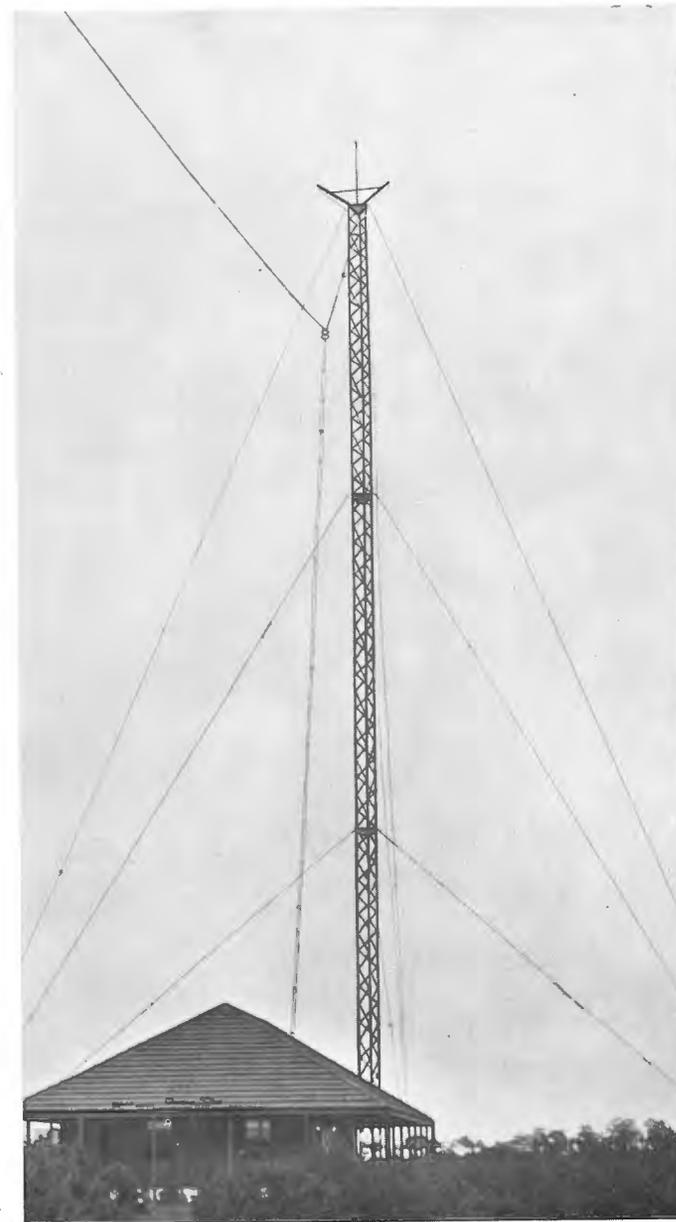
Racing.

Melbourne Cup.
Sydney Cup.
A.J.C. Derby.
V.R.C. Derby.
Q.T.C. Derby.
S.A. Derby.
W.A. Derby.
The Metropolitan.
The Epsom.

Grand National Hurdle.
Grand National Steeple.
Caulfield Cup.
Brisbane Cup.
Perth Cup.
Adelaide Cup.
King's Cup.

Rowing.

King's Cup Race.
Henley Regatta.



The Transmitting Station of 5CL at Brooklyn Park, Adelaide, S. Australia.

Personalities of the Studios :



*Dorethea Webster,
Brisbane.*



*Rita McAuliffe,
Brisbane.*



*The Bird Lady,
(Mrs. L. Sowton),
Adelaide.*



*W. McKennairy,
Brisbane.*



*M. Flanagan,
Brisbane.*



*Barney Cook,
Brisbane.*



*A. L. Holman,
A.B.C. Accountant.*



*Enid Baumberg,
Sydney.*



*H. P. Williams,
Sydney.*

Rowing—(Con'td.)

Melbourne G.P.S. Regatta.
Sydney G.P.S. Regatta.
Interstate Championships.

Boxing and Wrestling.

Haines v. Palmer.
Lewis v. Stetcher.
Australian Amateur Championship.
State Amateur Championships.

Athletics.

International Championships at Sydney.
International Championships at Melbourne.
Australian Amateur Championships.
State Amateur Championships.

Cricket.

Australia v. The Rest.
Australia v. West Indies.
Test Matches and Games against States.
England v. Australia (The Five Tests in England).
Sheffield Shield Matches in all States.

Football.

Great Britain v. Australia (Rugby Test at Sydney).
Great Britain v. Australia (Rugby Test at Brisbane).
Australian Rules Interstate Games.
Rugby Unions Interstate Games.
Rugby League Interstate Games.
Association Interstate Games.

Tennis.

Australasian Championships.
Interstate Championships.
State Championships.

Swimming.

Australasian Championships.
Interstate Championships.
State Championships.

Motor Racing and Cycling.

Australian Championships.
Interstate Championships.
State Championships.
International Test Championships.
Sydney-Melbourne Road Race.
Goulburn-Sydney Road Race.
Warrnambool-Melbourne Road Race.

Shooting.

"The King's Prize."

Aviation.

Principal Air Races of the Year.
Aerial Derby.

Sailing and Yachting.

Interstate Championships.
State Championships.



ADDENDA

THE matter dealt with in the previous pages of this publication covered the period of the first year of the National Broadcasting Service, but as the Year Book was ultimately held up until the close of the calendar year of 1930, some additional figures in regard to progress of licences and the participation of the stations in the £28,000,000 Loan Appeal have been added just before going to Press.

THE EDITOR.



"By Jove . . . what a valve . . . just look at it . . . you can see at once it's better . . . big, strong electrodes . . . all electrically welded into position, too . . . not a hope of them being jolted out of place . . . and here's the new box type of screening grid I've heard so much about . . . I believe it reduces inter-electrode capacity to a negligible amount . . . and that's why effective amplification is so great. . . . No wonder they surprise everyone with the results they give. . . . Splendid valves these Cossors."

Wholesale Distributors

W. G. WATSON & CO., LIMITED

Branches in All States.

Obtainable from all wholesale and retail dealers.

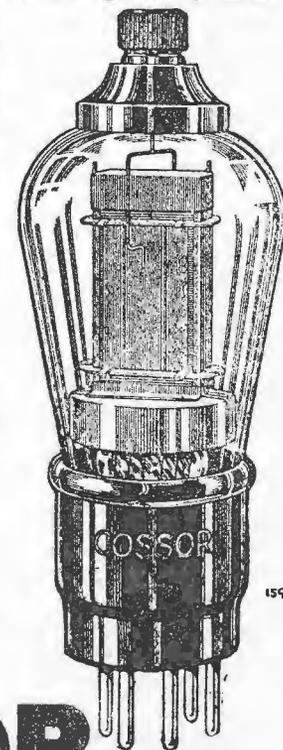
100 PER CENT BRITISH

COSSOR

New Process **VALVES**

A Valve for
every purpose

G. D. MACLURCAN,
Australian Representative,
26 Jamieson Street, Sydney



EFFICIENCY



Clyde Heavy Duty
2 Volt Cell.



Clyde 4 Volt
Radio Assembly



Clyde 6 Volt
Radio Assembly.

THE efficiency of a Battery may be judged only by its ability to deliver steady, non-fluctuating power over very long periods. Because of the extremely high standard adhered to in its manufacture, the Clyde is a battery assuring dependability and remarkably long life. That is why most battery-set owners choose a Clyde.

Clyde Batteries for Radio, Cars and Home Lighting, are made by The Clyde Engineering Co. Ltd., Granville, N.S.W., largest makers of Storage Batteries in Australia. Obtainable at all Radio Dealers and Garages

CLYDE

RADIO. BATTERIES

THE INFLUENCE OF BROADCASTING IN A GREAT NATION-WIDE APPEAL.

TOWARD the close of the year 1930 the Commonwealth of Australia was facing the necessity of raising a sum of £28,000,000 to cover £18,000,000 of maturities falling due on the 15th December, and £11,000,000 required for financing current expenditure in the Federal and State spheres.

For the first time in the history of Australia the stations under the National Broadcasting Service were used for the purposes of a National Appeal in the Interests of the Nation. A committee consisting of the Acting-Treasurer of the Commonwealth, the Hon. J. A. Lyons, M.P., the Director-General of Posts and Telegraphs, Mr. H. P. Brown, and the Chairman of Directors of the Australian Broadcasting Company Ltd., Mr. Stuart F. Doyle, set in motion a nation-wide appeal over the air to ensure the success of the Loan. At this period Australia was passing through—together with other countries—the very severe depression which characterised the year 1930, and it was felt that an appeal by the spoken word would bring home very definitely to the whole community the great need of making a success of this effort to raise such a large amount. On Tuesday night, December 9th, the Acting-Commonwealth Treasurer opened the campaign from the Federal Capital, Canberra, and then on each successive night until Tuesday, December 16th, the net work of National Broadcasting Stations continued the effort in each State. The total amount received through the activities of the stations in direct payments reached £672,200, but the enthusiasm engendered by this novel form of public appeal created such a wave of patriotic subscription, that ultimately the Loan closed with just on £30,000,000 paid into the Federal Treasury.

Government's Thanks.

“The Hon. J. A. Lyons, Acting-Federal Treasurer, wired to the Australian Broadcasting Company from Canberra on the closing day of the appeal as follows:—

“As Acting-Federal Treasurer, I wish to tender my very sincere thanks to all those men and women, boys and girls, who have subscribed to the Commonwealth Conversion Loan as a result of the recent broadcast appeals. Let me tell you that your action has been of great assistance to Australia, and I appreciate your help very much indeed. You have shared in a great national effort, and helped Australia to meet her obligations, and to preserve her fair name and fame. For this service to your country let me again thank you.

" I should also like to say that the Government very much appreciates the patriotic action of the Broadcasting Stations, in placing their services at the disposal of the Government for this Loan. Your appeals for the Loan have been heard right throughout Australia in every city and town and village. It is impossible to measure the value of these services, but we know it has been very great indeed. I am sure listeners will join with me in very heartily thanking the broadcasting stations for what they have done in this great cause."

J. A. LYONS.

There is no Substitute for
QUALITY
nor for the
New Screen Grid
Stromberg-Carlson
Radio Receivers

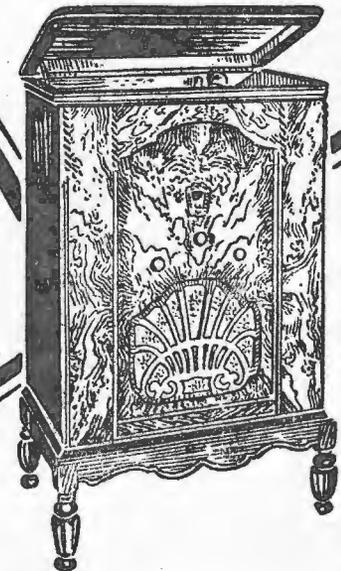
In radio there is no makeshift for *Quality*. It you want true reproduction you must have an instrument of superb tone.—A Stromberg-Carlson will gratify your fondest musical ideals and lend genuine grace to the room in which it is placed.

Ask your local Dealer to demonstrate to you the New Dante 36 Console. It is a masterpiece in appearance, selectivity and tone and it is equipped with the latest feature in Radio — TONE CONTROL. Remember, Model 36 Dante!

Stromberg-Carlson
Radio Receivers
range in price
from

£18 to £94.

Absolutely complete with all Accessories.

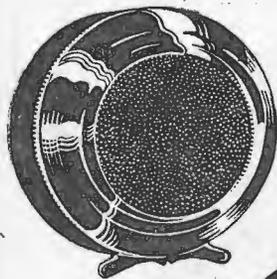


Important:

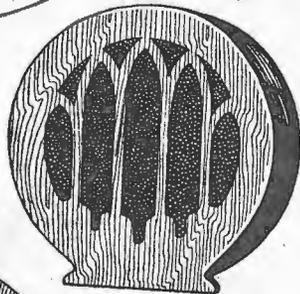
In the interests of the public, Stromberg-Carlson Radio Receivers are sold only through Dealers holding an Authorised Dealership Certificate, which is a guarantee of their ability to service our Receivers both before and after our twelve months' warranty against defective workmanship has expired.

BLUE SPOT SPEAKERS

The Tone's the Thing



Speech
and
Music
Faithfully
Reproduced

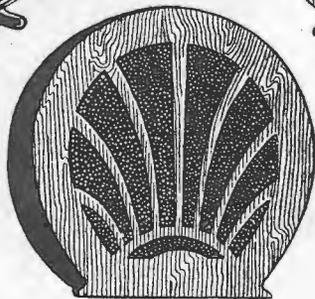


"CHANCERY COURT"

Blue Spot Speaker, incorporating the Famous "Blue Spot" 66 K unit.

In metal, 12½ in. diameter.

Price £3/7/6



"CHANCERY R."

Blue Spot Speaker. Highly finished mahogany. Incorporating 66R Blue Spot unit, capable of carrying 50 M/A.

Price £4/2/6

"CHANCERY GOTHIC"

Blue Spot Speaker. Highly finished mahogany, 12 ins. diameter.

Incorporating the famous 66 K Blue Spot Speaker.

Price £3/7/6

Distributors
BLOCH & GERBER, LTD.
48 YORK ST., SYDNEY

Distributors
FOX & MACGILLYCUDDY LIMITED
57 YORK ST., SYDNEY

Factory Representative
HECHT & CO.

Broughton House, 181 Clarence Street
SYDNEY

Chancery House, 450 Collins Street
MELBOURNE

VIII.

COMMONWEALTH LOAN APPEAL — STATION RESULTS IN EACH STATE.

	TUESDAY Dec. 9TH	WEDNESDAY, Dec. 10TH	THURSDAY, Dec. 11TH	FRIDAY, Dec. 12TH	SATURDAY, Dec. 13TH	SUNDAY, Dec. 14TH	MONDAY, Dec. 15TH	TUESDAY, Dec. 16TH	TOTAL
N.S.W.	14,330	16,860	26,910	36,360	14,990	11,160	28,480	24,250	173,340
VICTORIA	5,720	7,140	17,640	18,270	41,690	18,590	25,190	2,730	136,970
SOUTH AUSTRALIA	4,180	6,200	4,100	75,000	4,250	27,090	67,110	1,750	189,680
QUEENSLAND	13,760	5,980	3,880	14,180	6,440	54,940	48,770	1,530	149,480
WEST AUSTRALIA	—	1,880	980	3,450	2,200	5,300	7,120	3,010	23,940
TASMANIA	—	—	—	—	—	—	—	790	790
	£37,990	£38,060	£53,510	£147,260	£69,570	£117,080	£176,670	£34,060	£574,200

RADIO LICENCES FOR THE COMMONWEALTH FOR THE CALENDAR YEAR 1930.

	N.S.W.	VICTORIA.	QUEENSLAND.	SOUTH AUSTRALIA.	WEST AUSTRALIA.	TASMANIA.	COMMON-WEALTH.
JANUARY	108,835	144,165	22,388	25,337	4,759	5,590	311,074
FEBRUARY	108,780	142,196	22,422	25,140	4,857	5,606	309,001
MARCH	109,193	141,852	22,589	25,265	5,023	5,649	309,571
APRIL	109,256	140,945	22,476	25,253	5,163	5,668	308,761
MAY	110,682	141,081	22,797	25,448	5,552	5,762	311,322
JUNE	111,253	140,072	23,335	25,729	5,755	6,048	312,192
JULY	115,345	143,716	23,628	27,102	6,631	6,582	323,004
AUGUST	120,673	147,180	24,217	28,227	7,298	7,442	335,037
SEPTEMBER	117,915	144,925	24,193	28,002	7,547	7,587	330,169
OCTOBER	118,189	143,819	24,214	28,082	7,668	7,655	329,627
NOVEMBER	117,885	142,421	24,235	28,266	7,809	7,691	328,307
DECEMBER	119,131	141,687	24,418	28,447	8,030	7,752	329,465



The Australian and West Indies Test Teams, whose contests in each State have been described in detail from the grounds by the Cricket Announcers of the Australian Broadcasting Company.



MAGNAVOX

“ THE BIG VOICE IN RADIO ”

Ask yourself the reason.

IX.

**THE AUSTRALIAN BROADCASTING
COMPANY LIMITED**

ADDRESSES

- HEAD OFFICE 251A PITT STREET,
G.P.O. Box 2529BB,
SYDNEY, NEW SOUTH WALES.
(Tel. M 6991)
- SYDNEY GROUP—2FC SYDNEY AND 2BL SYDNEY—
96/98 MARKET STREET,
G.P.O. Box 2529BB,
SYDNEY, NEW SOUTH WALES.
(Tel. M 6991)
- MELBOURNE GROUP—3LO MELBOURNE & 3AR MELBOURNE—
120A RUSSELL STREET,
G.P.O. Box 1686,
MELBOURNE, C.1, VICTORIA.
(Tel. G 1928)
- 5CL ADELAIDE HINDMARSH SQUARE,
P.O. Box 226C,
ADELAIDE, SOUTH AUSTRALIA.
(Tel. C 3448)
- 4QG BRISBANE STATE INSURANCE BUILDING,
G.P.O. Box 293E,
BRISBANE, QUEENSLAND.
(Tel. B 2028)
- 6WF PERTH 940 HAY STREET,
PERTH, WEST AUSTRALIA.
(Tel. B 8147)
- 7ZL HOBART BURSARY HOUSE,
ELIZABETH STREET,
G.P.O. Box 401,
HOBART, TASMANIA.
(Tel. G 5059)
- 2NC NEWCASTLE.. .. STRAND THEATRE,
HUNTER STREET,
NEWCASTLE, NEW SOUTH WALES
(Tel. 852)

INDEX TO ARTICLES

	PAGE
ADDENDA	138
A Review and a Forecast	48
Unique Economic Considerations	48
Australian Network of Land Lines	49
Removal of Line Noises	49
The Value of Selective Sets	50
Frequencies and Wave-lengths—Not Guesswork	53
Fading out Distortion	53
Television Still of the Future	54
A ROUND THE WORLD CHAT WITH THE AUSTRALIAN CRICKETERS	88
The King's Congratulations	88
"Hullo, Bertie!"	89
"Hullo, Don!"	89
Hornibrook Speaks	90
Bosie Bowler Sends Greetings	90
"Hullo, Allan!"	90
"Baby of the Team"	93
The Manager Sums Up	93
A STATEMENT OF POLICY	22
First Year's Success	22
Our Objective—A Really National Organisation	23
Confidence in the Future	23
AUSTRALIAN BROADCASTING COMPANY'S ADDRESS IN EACH STATE	143
AUSTRALIAN BROADCASTING STATIONS	34
BANDS HEARD THROUGH THE STUDIOS	133
LICENSED BROADCASTING STATIONS	32
New South Wales	32
Victoria	32
Queensland	33
South Australia	33
Western Australia	33
Tasmania	33
Federal Capital Territory	33
"B" CLASS STATIONS	42
BROADCASTING IN AUSTRALIA	7
The Sealed Set Scheme	7
"A" and "B" Stations	8
Patent Royalty Charges	11
The First "A" Licences	11
The "B" Class Licences	12
A Proved Success	12
National Broadcasting Service	13
Stations Come under the Government	14
Listeners' Licence Fees	17
Hours of Transmission of Stations	18
Outside Broadcasts	21
Relaying Circuits	21
Studio Accommodation	21

	PAGE
BROADCASTING OF RELIGIOUS SERVICES	96
The Daily Resolve	96
Daily Messages	96
Daily Prayer	99
Daily Devotion Roster	99
Sunday and National Services	100
BROADCASTING SERVICES	101
How they are Maintained	101
Process of Telephony	101
Radio Telephony	101
Higher Frequencies	102
From Studio to Station	102
National Broadcasting Service	105
Transmission Properties	106
Fading	107
Distortion Fading	108
Service to the Local Listener	111
Power Rating of Broadcasting Stations	111
Service Areas	111
Depth of Modulation	112
Percentage Modulation	112
Modern Broadcasting Equipment	113
BROADCASTING THE MELBOURNE CUP	83
Elaborate Network of Lines	83
2,000 Miles of Telephone Lines	84
Nine Stations Employed	87
BROADCASTING AND THE PRESS	117
Advantages to Both Sides	117
The Position in the United Kingdom	117
Newspapers Own Stations in U.S.A.	118
Reverse Position obtains in Australia	118
Beneficial Reaction on the Press	121
CAN A PLEBISCITE BUILD A PROGRAMME?	71
Can the Public Judge what it Wants?	72
The Public Wants to be Taught What to Want	75
Cater for all Tastes	76
CHAMBER MUSIC	132
CHARITABLE ACTIVITIES OF THE YEAR	63
Mechanics' Work of Love	63
Hospital Installations in Victoria	64
Lord Mayor's Fund in Melbourne	65
Other Victorian Efforts	66
South Australia Lends its Aid	69
New South Wales Comes into Line	69
CHIEF SPORTING EVENTS OF THE YEAR	134
Racing	134
Rowing	134-137
Boxing and Wrestling	137
Athletics	137
Cricket	137
Football	137
Tennis	137
Swimming	137

	PAGE
CHIEF SPORTING EVENTS OF THE YEAR—Continued.	
Motor Racing and Cycling	137
Shooting	137
Aviation	137
Sailing and Yachting	137
CHILDREN'S SESSIONS	
The Kiddies' Friends	55
Birthday Clubs	56
CHORAL SOCIETIES, CLUBS AND CHOIRS	
CHORAL WORKS	134
COMMONWEALTH LOAN APPEAL—STATION RESULTS IN EACH STATE	141
DANCE BANDS	132
EDITOR'S FOREWORD AND ACKNOWLEDGMENT	6
FIELD OF SPORT	79
The Sport of Kings	79
Cricket Booms through the Radio	80
Head of the River	80
INFLUENCE OF BROADCASTING IN A GREAT NATION-WIDE APPEAL	139
Government's Thanks	139-140
INTELLIGENT LISTENING	94
The Listener's Part in Broadcasting	94
The Abuse of Over-Listening	94
Listen with discrimination	94
Be an Epicure, not a Glutton	95
INTERFERENCE WITH RECEPTION	114
IN THE REALM OF EDUCATIONAL WORK	43
The Universities Co-operate	43
Help in Home Studies	43
The Household Session	44
Musical Field of Education	47
LICENCES—A STORY OF PROGRESS	26
New South Wales	26
Victoria	26
Queensland	26
South Australia	29
Western Australia	29
Tasmania	29
Licence Statistics Graph of Wireless Receiving Licences in Force	30
LIGHT MUSIC	132
OUTSTANDING ALL-AUSTRALIAN RELAYS	134
PROMINENT MUSICIANS OF THE YEAR	130
Conductors	130
Pianists	130
Singers	131
Violinists	131
Cello	131
Organists	131

	PAGE
RADIO PLAYS	122
Adapting of Stage Plays to Radio	122
Lack of Local Material	125
Conventions of Broadcast Stage	125
Freedom of Interpretation	125
Deletion of Unacceptable Features	126
Radio Plays and Talking Films	126
What of Future Development?	126
RADIO LICENCES FOR THE COMMONWEALTH FOR THE CALENDAR YEAR 1930	142
RADIO TRADE	70
"SOME DON'TS FOR LISTENERS"	47
SOME OF THE MAIN BROADCAST PRODUCTIONS HEARD DURING THE YEAR	133
Opera and Musical Comedy	133
Dramatic	133
Musical Masterpieces	134
Concertos	134
Symphonies	134
SOME OF THE PROMINENT SPEAKERS OF THE YEAR	127
Overseas	127
Vice-Regal	127
Prime Ministers and Premiers	127
Ministers of the Crown	127
Lord Mayors	127
The Churches	127
The Judiciary	127
Universities and Educational	128
Defence	128
Aviation	128-129
Musical Education	129
Commerce	129
Consular	129
Travel Tales	129
General	129
Sporting	130
Women's Topics	130
S.O.S. CALLS	59, 60
SYMPHONY ORCHESTRAS HEARD DURING THE YEAR	131-132
UNLICENSED LISTENERS	114
WHAT BROADCASTING HAS DONE FOR MUSIC	37
Desire to Foster Good Music	37
Improved Standard of Performance	38
Opened a New Field of Work	38
The Artists' Friend	38
What Does the Public Want?	41
The Age of Jazz	41
Our Intellectual Heritage	42
WIDESPREAD RAMIFICATIONS OF THE AUSTRALIAN BROADCASTING COMPANY LIMITED	24
Preparing the Programmes	24
A Story of Perpetual Effort	25
Stations of the National Broadcasting Service	28
WIRELESS RECEIVING LICENCES PER 1,000 OF POPULATION	31
States	31
Metropolitan Areas	31
Country Areas	31

NOW and THEN

That's the difference between having a Radio Set
or being without one in the Home.

***It means HEAR IT TO-DAY or
BE TOLD ABOUT IT TO-MORROW***

ENTERTAIN IN YOUR HOME!

*The most prominent artists of the day will provide the
Programme.*

Orchestras	Singers
Bands	Instrumentalists
Dance Bands	Actors

KEEP IN TOUCH WITH HOME AND WORLD EVENTS!

News	Weather
Sport	Talks
Markets	Churches

288 Pennies bring you 365 days' Radio Service each
year, from early morn till late at night.

*Broadcasting offers the most effective and continuous
Daily Service in the comfort of your own
Home, at a cost impossible to secure
from any other source.*

**SECURE A SET FROM THE NEAREST
RADIO STORE**

What's the Score ?

Who Won the Event ?

What Price did the Wool Bring ?

Who Won the Election ?

Will it be Wet To-morrow ?

What's the Feeling on the Stock Exchange ?

You never ask those and one-hundred-and-one other
questions if you have a Radio Set.

The Broadcasting Station has to get the information—
You simply listen to the result.

The Up-to-date Home Installs a Radio Set

There are quite 50,000,000 wide awake households in
the world in which Broadcasting is heard each day.
The greatest force for knowledge and entertainment
in the wide world is available to you for less than

ONE PENNY PER DAY.

MOVE WITH THE TIMES

See your nearest Radio Dealer at once and join the
ranks of the millions.

**KNOWLEDGE IS THE HANDMAIDEN OF
SUCCESS—BE SUCCESSFUL.**

New Musical Compositions, Plays and Sketches



THE AUSTRALIAN BROADCASTING COMPANY LIMITED is always ready to consider new music, plays and sketches for broadcasting. Such compositions should be good enough to be worthy of performance on their own merits. In the musical section only scores suitable for concerted performances should be submitted to the Company, as the choice of songs, duets, and such pieces have a better chance of performance if submitted direct to artists, who in turn have the right to present such compositions for the consideration of the A.B.C. when being given engagements.

Plays and Sketches can be sent direct to the Company in every case, and it takes the opportunity of pointing out that humorous works are particularly acceptable. Each item submitted for consideration should carry the full name and address of the sender and be accompanied by the necessary stamps to cover its return when desired.



RAYCOPHONE

5



ONLY RAYCOPHONE HAS

1 Raycophone is engineered throughout by Ray Allsop, founder of Station 2BL. It performs brilliantly in every test of sensitivity, selectivity and reproduction.

Raycophone gives you that real thrill which comes with owning a set which reaches out to the furthest limits of broadcasting. After a set of less power, it's just wonderful.

2 Raycophone has screen grid valves, 245 power valve, and Magnavox Dynamic Speaker, and its sincerity of tone is fully equalled by the beauty of its cabinetry.

4 Radio entertainment by Raycophone represents the finest entertainment value in Australia to-day. And Raycophone is yours for a small deposit and regular weekly payments.



Let us arrange a Free Home Demonstration without obligation, or send descriptive literature.

HARRINGTONS Ltd.

386 GEORGE STREET, SYDNEY

(Wholesale only, 213 Clarence Street)

KATOOMBA, Katoomba St.; NEWCASTLE, 82 Hunter St.; MELBOURNE, 266 Collins Street; BRISBANE, 212-214 Queen Street; ADELAIDE, 10 Rundle Street; HOBART, 33 Elizabeth Street; PERTH, 28 King Street; AUCKLAND (N.Z.), 140 Queen Street; WELLINGTON (N.Z.), 42 Willis Street.

C2432



THE AUSTRALIAN WIRELESS INDUSTRY

SINCE 1913 Amalgamated Wireless has been manufacturing wireless equipment, and to-day at its modernly equipped Radio-Electric Works, the Company is designing and manufacturing every type of transmitting and receiving equipment, for use at sea, on land and in the air.



PIONEERS OF WIRELESS
MANUFACTURE IN AUSTRALIA