

WIRELESS WEEKLY

THE HUNDRED PER CENT AUSTRALIAN RADIO JOURNAL

Vol. 3
No. 10



Dec.
14th
1923

3^D

REGISTERED AT THE GENERAL POST OFFICE SYDNEY
FOR TRANSMISSION BY POST AS A NEWSPAPER

SPECIAL FEATURE
THIS WEEK:

Wireless Exhibition



Model E--One Valve



*Model B--Two Valve
or Three Valve*



Model D--Two or Three Valve

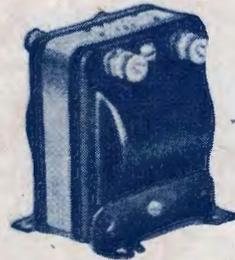
"Radiovox" Receiving Sets

RADIOVOX Receiving Sets are the result of years of experience in Radio, and in sound wave treatment in other musical instruments.

In refinement of tone and simplicity of control, we are confident that in the RADIOVOX we have attained results yet to be equalled by any other Radio Receiver offering on the World's markets to-day.

Made in Australia of the finest imported electric parts, and furnished in designs and at prices to suit every locality and purse, the RADIOVOX Series of Sets will reward your attention at the Exhibition and at our Showrooms.

Our Catalogues explain in detail the patented features and advantages of our self-contained loud speaker construction.



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CLEAR :: SWEET :: NO DISTORTION

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United Distributing Company Ltd.

DISTRIBUTORS OF THE FAMOUS "UNITED" AND "SIGNAL" RADIO PARASOLS
WHOLESALE ONLY

28 CLARENCE STREET, SYDNEY and at 592 BOURKE STREET, MELBOURNE



OFFICIAL ORGAN OF THE AUSTRALASIAN RADIO RELAY LEAGUE.

Vol. 3.

December 14, 1923.

No. 10

The Wireless Exhibition

What it Means to Australia



THE growing interest of the public in the comparatively new amusement was manifested by the crowds that visited the Wireless Exhibition in the Sydney Town Hall last week.

People, generally, had a very hazy idea of what wireless broadcasting was, and in most cases, looked upon the experimenter as a species of over-grown child.

This impression was entirely removed from the minds of those who visited the show, and most of the firms booked a large number of orders for sets.

As an indication of the widespread interests that wireless has aroused, messages and greetings were received from the Prime Minister (Mr. Bruce) and each of the State Premiers.

Signor Marconi also sent a message to the President of the Association for developing wireless, conveying his congratulations.

Wireless in Australia should progress rapidly as a result of exhibitions of this kind, and with the mistakes of Europe and America as guides, should in time be the foremost country with regard to wireless matter.

Roster for Week ending 19th December, 1923

	7.30 to 8.0	8.0 to 8.30	8.30 to 9.0	9 to 9.30	9.30 to 10
Thur, Dec. 13		2 FA	2 LO		
Friday,,14		2 JM	2 VW		
Saturday, ..15		2 JM			
	7 to 7.45		7.45 to 9.15	9.15 to 10	
Sunday,16		2 GR	2 JM		
Mon.,17	2 LO	2 FA	2 LO		
Tuesday, ..18	2 LO	2 JM	2 LO		
Wednes., ...19	2 LO	2 FA	2 LO		

Owing to the Wireless Exhibition and the Trans Pacific Tests very few stations are on the roster

Wireless Exhibition

Successful Week

Interest in the Wireless Exhibition was sustained throughout the whole of the week. There were many distinguished visitors, including the Premier of New South Wales (Sir George Fuller), the Chief Secretary (Mr. Oakes), the Chief Railway Commissioner (Mr. Fraser), and a number of others. It is estimated that the attendance was in the vicinity of 15,000.

BESIDES the experimenters' stand, the trade displays were constantly patronised. Entertainment was provided with programmes from Broadcasters, Ltd., and Farmers and Co., Ltd.

The hall was well laid out, and the lighting arrangements were excellent, many firms took the opportunity to display various makes of lamp shades and fittings.

The souvenir booklet and catalogue of the exhibition was a well set-up publication, containing much valuable and interesting information for beginners.

The wireless sets built of oak and cedar, would be a worthy addition to the most luxuriously furnished apartment.

Much praise is due to the Organising Secretary, Mr. F. H. Daniell; Mr. C. D. Maclurcan, President; Mr. Phil. Renshaw, Hon. Sec.; and other members of the Wireless Institute of Australia, whose energy and courtesy was frequently referred to by visitors.

Trade Stands.

No. 1.—Farmer and Co., Ltd. Listening-in sets of Radiola, Radiophone and Gecophone Sets, etc.

No. 2.—Radio Co., Ltd. Sectional Radio Receiver, and its component parts.

No. 3.—Wireless Supplies Ltd. Volmax Apparatus, comprising experimental and broadcasting sets.

No. 4.—Falkiner Machinery Co., Pty., Ltd., general machinery and engineers' supplies.

No. 5.—New Systems Telephones, Pty., Ltd., wireless and telephone apparatus.

No. 7.—Warburton, Franki, Ltd. Western electrical instruments, including thermo couple antennae, ammeters, filament volt and ammeters.

No. 8.—Austral Electric, Ltd. Wireless apparatus and domestic utensils, worked by electricity.

No. 9.—United Distributing Co.,

Ltd. A wide range of parts necessary for receiving sets, Radiovox sets, etc.

No. 11.—L. P. R. Bean and Co., Ltd. Audiolo receiving sets, Stromberg-Carlson telephones and Coto coil radio accessories.

No. 12.—Burgin Electric Co. Single, two, three, four, five valve and crystal Burginophone broadcast receivers, experimental equipment, etc.

No. 14.—Harrington's, Ltd. Complete range of radio equipment and sets.

No. 15.—Australian General Electric Co., Ltd. Tungar rectifiers and wireless apparatus.

No. 17.—Universal Electric Co. Australian made variable condensers, rheostats, neutrodyne parts and complete sets.

No. 19.—Fred. S. Lee, Ltd. Wireless and electrical apparatus.

No. 20.—W. Harry Wiles. Wireless receiving sets, loud speakers, valves, batteries, aerial wires, complete wireless installations, and electrical domestic appliances.

No. 21.—Radio House. Manhattan loud speakers, batteries, broadcasting receiving sets.

No. 22.—Continental Radio and Electric Co. Wide range of radio sets.

No. 23.—David Jones, Ltd. Magnavox, horns, transformers, coils, contacts, batteries, and complete broadcasting receiving sets.

No. 25.—Parkinson (Australia) Ltd. Australian made motors.

No. 26.—Colville-Moore Wireless Supplies, Colmo three circuit receiving sets, an Australian made set of excellent qualities.

No. 28.—Ramsay, Sharp and Co., Ltd. A full range of radio accessories and domestic appliances.

No. 29.—Bennett and Wood, Ltd. All British lines of wireless apparatus.

No. 31.—British General Electric Co., Ltd. Gecophone receiving sets, batteries and accessories.

No. 32.—Anthony Hordern and Sons,

Ltd. Wireless equipment and recharging batteries, etc.

No. 33.—Amalgamated Wireless Australasia) Ltd. Wireless sets, direction finders, etc.

No. 34.—Gibson, Battle and Co., Ltd. Exide batteries, equipment, etc.

No. 36.—Western Electric Co. (Aust.), Ltd. Valve and crystal sets, etc.

Prize Exhibits.

Prize ribbons were allotted for the following exhibits:—

Transmitters: L. Schutz., Lane Cove, 1.

Amplifiers: Mr. Thomas.
Multi Valve Sets: E. W. Croyley, 1; A. E. Starkey, 2; H. E. Grigg, 3.

Single Valve Sets: H. Turner, 1; G. Blanchard, 2; F. J. Ashton, 3.

Crystal Sets: A. L. Prince, 1; G. Blanchard, 2; R. Wyatt, 3.

Isolated Apparatus: H. Stowe, 1; H. Claphorne, 2.

Best Stands: New Systems Telephones, Pty., Ltd., blue ribbon; Amalgamated Wireless Co., Ltd., red ribbon; David Jones, Ltd., yellow ribbon.

Experimenters' Exhibits.

The following is a list of the exhibits which were displayed on stand No. 24:—

1. Neutrodyne receiver, 3 tubes, P. Sewell, Paddington.

2. Crystal sets, G. Blanchard, Newtown.

3. Single valve set, G. Blanchard, Newtown.

4. Variometer, R. S. Murray, Neutral Bay.

5. 3 valve receiver, A. E. Starkey, Manly.

6. ST100 receiver, R. T. Black, Vaucluse.

7. 4 valve reflex neutrodyne, J. A. Beer, Ashfield.

8. 3 coil H.C. receiver, N. Jacobs, Coogee.

9. 3 coil H.C. receiver, W. Cottrell, Randwick.

10. Crystal set, G. Rutherford, Waverley.

11. audio frequency transformer, R. Addison, North Sydney.

12. 40 volt accumulator, B. battery, H. C. Laphorne, Artarmon.

13. C.W. transformer, G. Blanchard, Newtown.

FOR SALE—Twenty Yard Aerial, complete with fifteen feet masts and Telephone Head Set. Apply, Frank Smith, Box 2234, G.P.O., or City 9148.

WIRELESS EXHIBITION — (Contd.)

14. C.W. transformer, E. R. Mawson, Campsie.
15. Crystal set, P. Kelso, Chatswood.
16. Crystal set, C. F. A. Luckman, Croydon.
17. Short wave tuner, A. V. Badger, Rozelle.
18. Crystal set, J. Walmsley, Como.
19. Crystal set, F. C. Thorpe, Bondi.
20. Crystal set, R. Wyatt, Five Dock.
21. Crystal detector, R. Wyatt, Five Dock.
22. Crystal set, J. Bristow, Neutral Bay.
23. Valve panel, F. J. Ashton, c/o Coupland, Waddell.
24. 2 valve A.F. amplifier, H. K. R. Thomas, Neutral Bay.
25. 1 valve A.F. amplifier, H. C. Laphorne, Artarmon.
26. Single valve receiver, R. Addison, North Sydney.
27. 3 valve receiver, R. W. Sharp, Royal Arcade.
28. Crystal set.
29. Crystal set, B. G. Low, Oxford Street, Darlinghurst.
30. 1 valve panel.
31. Transmitter and receiver, R. D. Charlesworth, Haberfield.
32. Neutrodyne receiver, H. A. Stowe, Chatswood.
33. Sealed set, from Woop Woop.
34. 3 miniature crystal sets, F. C. Jones.
35. Crystal set, H. Perry, Erskineville.
36. Single valve receiver, W. H. Barker, Concord.
37. Crystal set, E. J. Fox, Leichhardt.
38. Crystal set, F. R. Kirk, Dulwich Hill.
39. 3 valve set, Waverley Radio Club.
40. Crystal set, A. Franklin, Marrickville.
41. Crystal set, —, Caldwell, Bondi.
42. Valve panel, —, Caldwell, Bondi.
43. Wave meter, H. A. Stowe.
44. 5 valve receiver, H. A. Stowe.
45. 3 valve receiver, Illawarra Radio Club.
46. Wavemeter and capacity bridge, H. A. Stowe.
47. 3 H.C. coils, H. A. Stowe.
48. 1 buzzer, H. A. Stowe.
49. 1 A.F. transformer, H. A. Stowe.
50. 1 crystal detector, H. A. Stowe.
51. 1 rheostat, H. A. Stowe.
52. 1 valve base, H. A. Stowe.
53. 1 transmitter, P. Renshaw.
54. 1 transmitting key, P. Renshaw.
55. 1 audio freq. panel, H. R. Gregory.
56. 1 radio freq. panel, H. R. Gregory.
57. 1 H.C. coil (1500 T.), H. R. Gregory.
58. 1 power transformer, H. R. Gregory.
59. 3 valve receiver, H. Grigg.
60. 5 valve neutrodyne, R. C. Marsden.
61. 10 watt transmitter, R. C. Marsden.
62. Single valve set, R. Addison.
63. Partition insulator, H. R. Gregory.
64. Loose Coupler, H. R. Gregory.
65. Crystal set, A. L. Prince.
66. Frame aerial, —, Cropley.
67. 3 valve receiver, —, Cropley.
68. Transmitter, L. Shultz.
69. 5 valve receiver, J. W. Robinson.
70. Single valve tuner, —, Turner.
71. Single valve set, —, Stillely, c/o F. V. Wallace, Royal Arcade.
72. Wireless, F. V. Wallace, Royal Arcade.
73. Amplifier, Gordon Wells.
74. Cockaday receiver, —, Trimmington, Marrickville.
75. Neutrodyne, Trimmington, Marrickville.
76. Valve panel, —, Phillips, Punchbowl.
77. Heterodyne wave meter, C. W. Mann.
78. Single valve receiver, E. B. Crocker, Marrickville.
79. Resistance box, E. B. Crocker, Marrickville.
80. Transmitter, E. B. Crocker, Marrickville.
81. Power amplifier.
82. Single valve set, Quoid, Punchbowl.
83. Radio freq. panel, W. L. Hamilton, Marrickville.
84. Single valve set, in match box, —, Gray, Marrickville.
85. Piece of crystal, —, Gray, Marrickville.
86. Crystal set in thimble, —, Gray, Marrickville.
87. Tuner, —, Drew, Centennial Park.
88. Valve panel, —, Drew, Centennial Park.
89. Amp meter, W. Craig, Croydon.
90. Miniature crystal set, A. Smith, Marrickville.
91. Wave meter, E. B. Crocker, Marrickville.
92. Single valve set, E. B. Crocker, Marrickville.
93. Single valve set, E. B. Crocker, Marrickville.
94. Single valve sets, E. B. Crocker, Marrickville.
95. Photo of 2BB, E. B. Crocker, Marrickville.
96. German aeroplane set, Sydney University.
97. German aeroplane set, Sydney University.
98. German aeroplane set, Sydney University.
99. German aeroplane set, Sydney University.
100. German aeroplane set, Sydney University.
101. German aeroplane set, Sydney University.
102. Volt meter in connection with same, Sydney University.
103. Volt meter in connection with same, Sydney University.
104. German valve case, Sydney University.
105. Crystal detector, Malcolm Perry.
106. 2 call sig. books, Malcolm Perry.
107. Badge, Malcolm Perry.
108. Coherer, Malcolm Perry.
109. Aerial wire, Malcolm Perry.
110. Spark cup, Malcolm Perry.
111. Certificate of proficiency in Morse signalling, Malcolm Perry.
112. Programme of first wireless concert in N.S.W., Malcolm Perry.
113. Photo of aerial tower, Malcolm Perry.
114. Receiver and transmitter, Otto Sandel, Kensington.
115. 3 coil mount, with coils, K. Burke, Wollstonecraft.
116. 3 valve receiver, Neutral Bay Radio Club.
117. Frame aerial, E. J. Moore, Neutral Bay.
118. 3 valve set, B. Symes, Manly.
119. Exhibit of various crystals, Mines Department.
120. 3 valve set, H. R. Gregory.

RADIO FOG SIGNAL ON A MOTOR LAUNCH.

A PORTABLE automatic radio fog signal has been fitted on Crowley launch, number 11, this being the first occasion that a device of this kind has been installed on any launch in San Francisco. The apparatus is similar to that adopted by the United States Lighthouse Service, as standard, and now being installed in the various American lighthouses and light-ships. The equipment was placed on the launch to provide a better means for aiding in the calibration of radio direction finders now being placed on many of the vessels trading to San Francisco. The launch will take over the duties, in this regard, that have hitherto been carried out by the lighthouse tender "Sequola."

GROWTH OF WIRELESS

TRAVELLER'S IMPRESSIONS

(By P. C. B. Holdsworth.)

Now that broadcasting has started in Australia in earnest, possibly the impressions gained by an Australian radio enthusiast during a trip to Canada, and the United States Pacific Coast, may be of interest, since both countries have developed radio for the general public to a far greater extent than Australia has, or is likely to do for some months to come.

PROBABLY one of the first things that strikes the visitor on landing in America is the great number and variety of aerials to be seen—long aerials, short aerials, single wire, multiwire, squirrel-cage, high and low aerials stand over cottage and mansion, silent witnesses of the great hold that wireless has on the American public in general. For radio has now been fairly tried out, and has not been found wanting.

It is no wonder that radio has become popular, since it caters for the every taste of the people, the scientist and the devotee of the prize ring and baseball, the lumberjack and the Wall Street magnate, all find radio supplies for them items of interest, and in itself provides an absorbingly interesting study, which tends to weld them together into a common brotherhood.

By far the greater number are interested in broadcasting, so first let us see who broadcast, and then what they transmit through that very accommodating medium, the aether. It will be found that on the Pacific Coast the honours are fairly even between the number of newspapers and department stores, who transmit broadcast programmes. In both Vancouver and San Francisco, the leading papers broadcast news items, and critiques, which are so edited that they not only

do not discourage the reading of the paper, but actually create a desire for it. The stores, on the other hand, confine themselves usually to musical and instructive programmes. In the former they are aided in San Francisco by several hotel orchestras. These stations are mostly on the new 400 metre band, and are required by contract to keep their transmissions up to a high standard, the penalty for a lapse being the loss of their licence. It has been proved that the indirect advertising obtained, by the repetition of the name of the firm or orchestra, between items, makes broadcasting worth while as an advertising medium. The idea being that the repetition of, say, "The Fairmont Hotel Orchestra," will at some future date when a hotel or restaurant accommodation is required by a "listener-in," cause the brain to automatically think of the "Fairmont Hotel." Not only is this the case, but it is very reasonable, for who has not been perplexed by the question, "where shall we go?" or "where shall we stay?" Then, surely, the best known name will occur to the mind first, and likewise with the stores, papers, etc.

Some Programmes.

Now, let us see what these broadcasters provide for their patrons, and to do so we will listen in the part of the programmes as advertised in the daily press for the 4th October, 1923, at San Francisco:—

First, the weather bulletin for the ensuing 24 hours may be obtained with the early morning tea at 7.30 a.m. Then at 9.20 a.m. comes the news resume, by Arthur Brisbane, of the "Examiner," or the bulletin issued by the Oregonian" may be tuned in instead. At 10.30 the market prices of fruit, vegetables, meat and other commodities are broadcast, and as a full list is given the housewife is aided not only in the matter of price, but also in the selection and compilation

of her shopping list. At 11 a.m. Warner Bros. provide a morning tea programme, and go on until Messrs. Hale Bros. come on the air with the standard time signal, transmitted from the naval observatory, between 11.57 and noon. After this those so minded may listen to a Bible reading for some ten minutes. Over lunch the Fairmont Hotel Orchestra, one of the best in Frisco, may be tuned in, when an hour's programme is given. This orchestra again provides the afternoon tea programme, and it is quite the fashion for Milady to ask her friends, to tea, and to entertain them with radio music. While for the matron, and those more interested in the affairs of the home, a lecture on child welfare is available, on the particular day in question. The tea items fill in the time from 4.30 to 5.30 p.m. After 6 p.m. a multitude of stations come on, and a wonderful range of subjects are covered, however we will listen first to the baseball scores, followed by a news bulletin, and, the description of a good tour in the car for next weekend, given by the "Oakland Tribune," and then the children may be allowed to listen for a short while to the bedtime stories from the "Los Angeles Times." Coming back once more to the Fairmont Hotel Orchestra dinner programme, via Messrs. Hale Bros., by means of remote control. The programme, which comprises orchestral selections, harp solos, and songs by a well-known soprano, may delight both the wealthy employer toying with his foie gras, and his humblest employee, eating his supper of pork and beans. Later, from 10 to 11.30, those desirous of indulging in the "light fantastic," are well provided for by the transmission of dance music from the orchestra of the Portland Hotel. This programme was all, with the exception of one or two items, actually heard, using a single valve regenerative receiver of the usual more or less standardised circuit. No interference was experienced, between broadcasting stations, or from amateurs, though the 10 k.w. Federal station, close by, caused some interference during the day when working on 450 metres. However, 450 metres is not used after 7 p.m., or before 11 p.m., so that the evening programmes are not interfered with by commercial working.

All the programmes tuned in were of a very high order both from a technical and artistic point of view, while the lectures were well worth listening to.

Continued on next page

WIRELESS APPARATUS

New or Second-hand,
Bought, Sold or Exchanged

HOWELL'S

19 Barlow Street

GROWTH OF WIRELESS

Continued from previous page

American Amateurs.

So much for broadcasters, but there is another very large and very well organised band of amateurs in the States, namely, the American Radio Relay League. This very large section of enthusiasts consists of amateurs possessing transmitters, and their chief occupation and enjoyment is in transmitting and relaying messages from one part of America to another. The vast majority of these fans are excellent operators, and have a very sound knowledge of wireless, both theoretical and practical, and they give a great deal of time, money and labour for the love of the game, as may be witnessed from the fact that one amateur averaged 350 messages per month during last winter, while the Princeton University Club handled no less than 1000 in a single month. The Relay League accept messages only at the sender's risk, and do not guarantee transmission, so that commercial working is not interfered with, and indeed, the league by familiarising the people with radio as a means of com-

munication actually advertise it, and so bring more business to the commercial stations.

It will be seen from the above that radio has thoroughly entered into the daily routine of the American citizen, and it is a factor bulking large in the life of the "Hayseed and Townie," which helps both to live a fuller and more enjoyable life. And now that broadcasting is an accomplished fact in this country, it is only a matter of time for our people to realise the wonderful benefits that modern science has given them. May it not take long for the realisation to come about.

*Wireless Concert**Strand Orchestra.*

LISTENERS-IN were treated to something exceptional on Tuesday night, when Mr. McGrath, manager of the Strand Theatre, and his orchestra, broadcasted some excellent musical items from Mr. N. P. Olsen's wireless station at Waratah. The orchestra, under Mr. Harold Vincer, played the musical score from "Robin Hood," also several other overtures and selections. Other items which were broad-

casted were a 'cello solo, by Mr. Jack Webb; violin solo, by Miss Christie; and piano solos, by Mr. Harold Vincer.

Mr. McGrath spoke over the radio-telephone to all the listeners, and by numerous requests per telephone, and a considerable amount of encouragement from the rest of the company, he was persuaded to sing "An Old Fashioned Town" and "Believe Me, of All Those Endearing Young Charms," which carried through the ether with remarkable clarity.

The local amateurs are unanimous that the programme was absolutely the best they have ever heard. And that's that!

TESTING ACCUMULATORS.

A hydrometer should always be used in preference to a voltmeter for testing accumulators. This should read 1.2 when fully charged. The specific gravity should never be allowed to drop below 1.18, otherwise sulphation will almost inevitably occur. Should you, however, choose to use a volt-meter, this should read when fully charged, 2.2 for each cell, and not below 1.8 in any circumstances.

BURGINPHONE EXPERIMENTAL RECEIVERS and ACCESSORIES.

WILL ENSURE SUCCESS

WE SPECIALISE ONLY IN THE "BEST"

KELLOG Shielded Type Audio Transformers, with correct Hook up, proper Inductance and capacity, and good detection, you are assured a new and better Amplification Maximum Volume. Minimum Distortion.

Experimental Transmitting Equipment

Our Exhibit at the Exhibition was the centre of interest
WHY? because it comprised THE BEST MAKES —

Demonstrations Daily at ————— 1st Floor, 391 George Street, Sydney

BURGIN ELECTRIC COY.
Wireless Engineers, Manufacturers & Suppliers

EDITOR'S LETTER BAG

THE REASON WHY.

Editor,
Dear Sir,

I have read with interest on several occasions in your valuable paper of Victorian amateurs who request reports from N.S.W. One reason for their stations not being reported is that they forget to give the call letters, when they are testing with Tom or Harry, or someone else who has arranged a test with them. Frequently I have heard stations calling other Victorian stations, and when "Wireless Weekly" has been referred to for the call letters it often plans out that the station called is only a receiving station, and has no chance of letting us know who is calling them. To the Victorians I may say, they can be heard in Sydney on telephony, with single valve. The station I first heard from Victoria was 3DP, next 3JU, 3MC (?), and since then numerous other stations. Although there is so much in the air in N.S.W. these nights. I think if the Victorian stations send their call a little more often the

N.S.W. experimenters may be able to send a Q.S.L. card.

Yours faithfully,

"G.R.C."

Auburn, N.S.W.

* * *
F.G.M. (Collingwood, Vic.): Sorry your W.W. has not been obtainable. If you have any future difficulty, get into touch with Gordon and Gotch, Melbourne, who are our Victorian distributing agents. Better still, send 17/4 to this office, and Wireless Weekly will be sent to you post free.

* * *
R.P.M. (Balmain): Does anyone know why a crystal contact rectifies an alternating current?

The rectifying property of certain crystal contacts for high-frequency alternating currents has been the subject of a large amount of research work, but it must be admitted that up to the present no really definite conclusion has been reached as to its nature. For a long time it was not known whether it was a "body" effect or "contact" effect—that is to say, whether the effect resided in the body of the substance or in the actual point of contact. Even to-day there are some scientists who distinguish between body re-rectifica-

tion and contact-rectification, whilst others consider that all cases of rectification of this class are examples of contact rectification.

In any case, the action is very obscure. It has been suggested that it is due to the alternative generation and dissipation of heat at the point of contact, and also that the action is one of polarisation, similar to that which occurs in an electrolytic rectifier. An article on this subject will shortly appear in this journal.

* * *
D.S. (Petersham): Does the velocity of sound depend upon the pitch of the sound?

For practical purposes it may be said that the velocity of sound through the air is independent of the pitch of the sound. If this were not so, the music of a band or orchestra, heard from a little distance, would be a jumble of sounds.

It is thought, however, that to a slight extent the velocity of propagation of sound through air depends upon the frequency of vibrations, and also upon the amplitude. To take an extreme case, the velocity of an explosive wave does not follow the ordinary laws until some distance from the source.

The PACIFIC RADIO COMPANY

— SYDNEY —

COMPLETE SETS

for

Reception of Broadcasted Programmes from £7/7/-

PACIFIC De Luxe Model Four Valve Receivers, housed in floor model, highly polished cabinets, complete with loud speaker, Willard storage batteries, H.T. batteries, aerial wires, insulators, and flagpoles, installed free within 50 miles of Sydney

Price £105 : 0 : 0

EXPERIMENTAL STOCK includes New System Telephones, Headsets, Magnavox Loud Speakers, Western Electric Co's. Apparatus, and all makes of high-class Apparatus used in experimental Receivers.

The attention of the trade is called to the fact that we are now prepared to receive enquiries for the supply of sets tuned to the various broadcast stations.

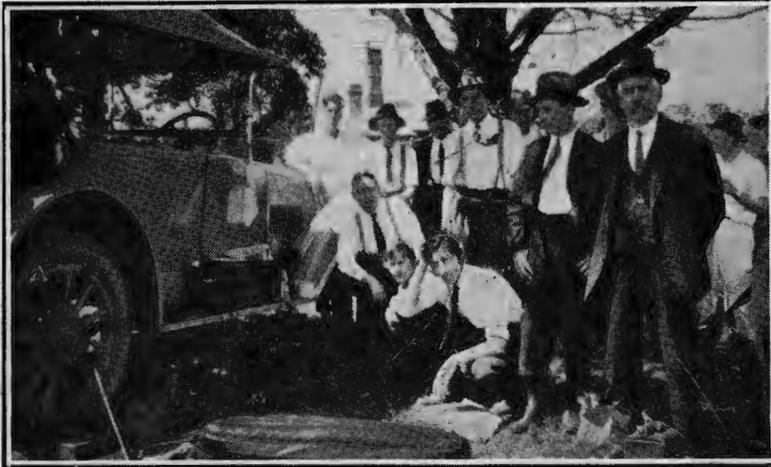
COUNTRY AGENTS REQUIRED

LIBERAL DISCOUNTS TO LICENSED DEALERS

TEMPORARY CITY ADDRESS:

C/o Mr. Henry, Architect, 2nd Floor, 121 Pitt Street

Trade enquiries to F. THOMPSON, Manager, PACIFIC RADIO COMPANY
Works and Experimental Station: 38 DONNELLY STREET, BALMAIN



No 1 Station - Headquarters



No. 2 Station



No. 3 Station

FIELD DAY

KURING-GAI DISTRICT RADIO SOCIETY.

THE "field day," held by the Kuring-gai District Radio Society, on 25th inst., proved to be a great success.

The party arrived at Kuring-gai at 11 o'clock, and after selecting a suitable position for headquarters, divided into three sections. Number two section selected a position about six hundred yards from headquarters, while number three, more reserved, withdrew to a position some three-quarters of a mile distant.

The station at headquarters was well equipped, Mr. P. Renshaw being present with his transmitter, while Mr. Bevan, with his four valve receiver and loud speaker, attended to receiving.

Although the aerial (a single wire between two gum trees) was not all that might be desired of a transmitting station, Mr. Renshaw's signals were clearly heard in Artarmon during the afternoon.

Swat That Fly!

Number two station, though greatly annoyed by Morse induction from a set of telegraph lines near by, obtained good results, while number three, far removed from this source of trouble, successfully received the speech and music transmitted from Sydney (between the slight pauses in the local Q.R.M. caused by the numerous locusts and flies).

After dinner the president, Mr. W. E. Wilson, accompanied by Mr. Renshaw, Mr. R. Wilshire (hon. sec.) and Mr. R. Hinton (hon. treas. and official photographer), made a tour of inspection of the various stations, photographs of each station being taken.

Knife for Earth.

The tour being finished, the stations resumed work, and considering that the best earths at the outlying stations consisted of a knife stuck in a tree, and as was afterwards discovered, that the party had camped in an ironstone district, the results obtained were very creditable.

Camp was broken at 4.15 p.m., and all those who had participated in the day's operations were ready and very anxious to arrange another such outing as soon as possible. The next meeting of the society is to be held on Tuesday, 11th December, at Almond's, corner Victoria Avenue and Anderson Street, Chatswood, commencing at 8.15 p.m.

Broadcasting

USE OF WAVE LENGTHS.

The solution of the broadcasting problem seems to lie in the fact that it is possible to tune wireless waves, and that only apparatus tuned to a certain wave length will respond to the transmission effect on that wave length.

[This was published in the "Sydney Evening News." It raises some interesting points.—Ed.]

This was the basis upon which the Australian regulations were drafted. Under them bands of wave lengths have been allotted to those desiring to broadcast and transmission will be effected from the broadcast station on these wave lengths. Those desiring to listen to the programmes will be able to purchase receivers which will be tuned to respond to the wave length of one or other of the stations, and will be sealed so that the tuning cannot be varied.

Thus the prospective subscriber will decide first of all which broadcast ser-

vice he desires to receive. He will then pay the necessary Government fee of 10/- a year, obtain his licence, pay the subscription demanded by the broadcasting company for the services it proposes to render, and purchase his receiver, which will be tuned to the wave length of that particular service, and will be sealed.

Business Proposition.

In some quarters the view is held that broadcasting should be provided to owners of receiving sets free of all cost, and that the companies which make the profits from the sale of apparatus should finance the erection and maintenance of the broadcasting station.

Business on these lines, however, could hardly be satisfactory, either to the proprietor of the service or to the listener. While the boom in the sale of radio apparatus continued, and large profits were being made, it would be possible to maintain a service, but as soon as the demand for apparatus fell away, there would be no revenue left to continue with the operations of the station, and owners of receiving sets might find themselves in the unhappy position of having apparatus

left on their hands and no broadcasted transmission being provided.

At Low Cost.

Wireless broadcasting is a new form of entertainment. Any person wishing to patronise an already established entertainment, such as a theatre or a picture show, must, and is quite prepared, to pay for admission, and similarly any person desiring to patronise wireless entertainment must be prepared to pay for it.

Fees need not necessarily be high; in fact, one company is now establishing a high-grade service, and has fixed a yearly subscription rate of £3/3/-. This subscription is low when it is considered that it will entitle the subscriber to the full use of a first-class service for one year, yet it is considered to be quite high enough to enable a high-class programme to be maintained permanently.

Earthing the Aerial.

Always disconnect your apparatus from the aerial when not in use, and earth the aerial so that any charges that may form on it will be conducted to earth.

David Jones' Radio Section

Directed by Mr. F. Basil Cooke, F.R.A.S.

A new assortment of high-grade American Radio equipment is now in stock, and experimenters can be supplied with the following Wireless Accessories at particularly keen prices:—

Volt Meters, 6-10 volts	7/6	A Special Line for C.W. Work . . .	18/6
Volt Meters, 0.30 volts	9/-	Rheostat and Jack Combination, which	
Buzzers, watch-case style	5/6	greatly simplifies wiring	13/6

For those desiring to "Listen-In" on various Broadcast Programmes, Valve Sets, complete with Batteries, 'Phones and Aerial Wiring, are available, from £20.

Licenses will be issued upon payment of required fee.

Mr. Cooke will gladly give information on all Wireless problems, and will suggest equipment to produce the best results under given conditions.

RADIO DEPARTMENT

David Jones', 22 York Street, Sydney

Wireless Hints

Putting a Horn on Your 'Phones.

THE use of a horn on your telephone receivers will not give satisfaction unless the signals can be heard at least two feet from them without a horn.

Acid Spots on Clothes.

Handling an accumulator one is apt to get acid on his clothes at some time or another. Well, if this calamity should occur, get busy at once with some ammonia. This neutralises the acid, and consequently, if done in time, prevents the acid burning through the material. Ammonia will also do to put on your hands if you get acid on them.

The "Best" Aerial.

A single wire aerial of about 75 feet in length will be found to equal in receiving results the much more elaborate aeriels that experimenters are prone to erect, the single wire aerial has it all over the other ones when cost is considered.

The Lead In.

Be sure that you insulate the lead in as well as you insulate your aerial, otherwise you will have trouble at some time. Don't forget to include the lead in when you are calculating the wave length of the aerial circuit.

Amplifiers.

When making up that amplifier, don't forget to put your transformers at right angles to each other; also see that the primary and secondary windings are correctly connected.

BOOKS ON WIRELESS

Wireless Receivers of To-Day; Their Use and Adjustment. Price, 2/3, posted.

How To Make Your Own Broadcast Receiver, by J. Scott Taggart. Price 2/3, posted.

Simplified Wireless, by J. Scott Taggart. Price 1/5, posted.

The Complete Wireless. Price 1/5, posted.

N.S.W. BOOKSTALL CO. LTD.

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Valves.

To.. secure the best results from that valve, never burn the filament too brightly.

Loop Aerials.

A loop aerial works best in a building that has no metal used in its construction.

Care of Accumulators.

See that the plates of the accumulator are well covered at all times, if the acid falls below the tops of the plates; distilled water should be added until the plates are again well covered. Water should be added just before putting the battery on charge. Never add acid to an accumulator unless some has been spilt.

Learn the Code.

All experimenters are advised to become proficient in the code, then they will be able to identify that station that is always interfering with the reception of concerts, also the knowledge of the code will open up a new and interesting world for the experimenter to conquer.

Telephone Cords.

That pair of 'phones that you have just purchased, after much scraping, don't neglect to make third tip fast, so that no strain is made on the connecting tips, if you get too far away from your best set with them on. This will save broken cords.

That New Circuit.

When connecting up a new circuit, don't connect up the "B" battery until last, also if available, insert a very fine piece of fuse wire into the "B" battery circuit before switching on; this may save a few valves. If no fuse wire is available, connect only one side of the "B" battery, then gingerly touch the other side with the connecting wire, intently watching your valves. If nothing happens, the connection can be made with safety.

Multi-Stage Amplifier.

When making that multi-stage amplifier, be sure that you screen your inter-valve transformers; these should be placed at right angles to each other and spaced at least four inches. Also be sure that the primary and secondary sides are correctly connected.

Aerial Wave Length.

When figuring the wave-length of your aerial, remember the lead-in counts.

When charging your storage battery at home, don't forget that a fully-charged battery gasses freely, also when a battery is fully charged it ceased to increase the density of the electrolyte, this is easily determined with the use of the hydrometer. Overcharging is as detrimental as undercharging to a battery.

One long wire will serve you better than several short ones for a receiving aerial.

The "cat-whisker" of a crystal detector should not be too long, two inches of a steel "E" violin or mandolin string being about right. The wire should rest lightly on the crystal, if the wire is too long it is liable to be jarred off by vibration.

When a loud-speaker is being used, try mounting it on a thick piece of felt or rubber; this improves the quality and clarity of reproduction.

Don't forget that dust is an enemy. Dust your set daily, preferably with a soft brush.

There have been over three thousand five hundred patents granted, in the United States, on wireless.

After charging your accumulator, don't forget to readjust your filament rheostats, otherwise the higher voltage of a newly charged battery may burn out your valves.

When fitting your earth, be sure that it is the water pipe, and not the gas pipe, that you are connecting to.

That dial that scrapes on the panel, remove it and cover the back of it with thin felt or plush, then replace it, it will now rotate silently.

Learn how to use your set; at least fifty per cent. of the efficiency of wireless apparatus depends upon the skill of the operator.

Never get out of temper with your receiver, take time to familiarise yourself with it. Anyone used to a similar set, could probably find that fault in a couple of minutes.

If signals do not come in as well in damp weather as in fine, look to your aerial insulators, they are probably faulty.

HONORARY RADIO INSPECTOR—
MR. J. W. ROBINSON RESIGNS.

MR. J. W. ROBINSON, who was appointed Honorary Radio Inspector at Sydney, under the amended wireless regulations which were issued some little time ago, has forwarded his resignation to the Chief Manager, Wireless and Telegraphs (Mr. J. Malone).

Mr. Robinson has taken this action owing to his having become commercially interested in wireless. Up to three or four weeks ago Mr. Robinson was a member of the literary staff of the "Sydney Morning Herald," and his articles on the experimental movement and wireless generally, which appeared under the nom de plume of "2 RN," were a feature of that journal. He has, however, like many other keen experimenters, resigned to become wholeheartedly associated with wireless, and has joined Farmer and Company's broadcast service. In conversation with a representative of "Wireless Weekly," during the present week, Mr. Robinson stated that he very much regretted having to resign

the honorary inspectorship, but he felt that it would not be fair either to himself or the Federal Authorities to carry on while commercially interested. While carrying out his duties as an inspector, he stated, that he had come closely in touch with many experimenters, and had derived much pleasure from visits to their stations. On no occasion had he been regarded as an intruder, but on the other hand, had been welcomed in almost every case. "The amateurs as a body," he said, "view the regulations in the proper manner, realise that they are framed in their own interests, and that the honorary radio inspectors are not acting as spies, but are actually the guardians of the experimenter's own rights and privileges."

Mr. Robinson, it is understood, will continue to contribute wireless articles to the "Sydney Morning Herald."

Tell your friends about
"Wireless Weekly"

A PRECAUTION.

BE careful not to leave your set connected to aerial and earth at this time of the year when it is not in use for receiving. Thunder-storms are apt to come upon us without much warning, and when they are about the aerial may become charged to a very high potential. Though there is little risk really of fire, the set may be seriously damaged if these large voltages are applied to it. An earthing switch, provided that it is large and well insulated, is quite a good protection; but the best method of all is to disconnect down lead and earth wire from the outside terminals of the respective leading-in tubes, and to devise some means of hooking them together. They then swing clear away from the house, and a good path to earth is provided for anything that may come along.

Better reception is done at night time than in the day time, especially on the short waves used by experimenters and broadcasters.



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SYDNEY



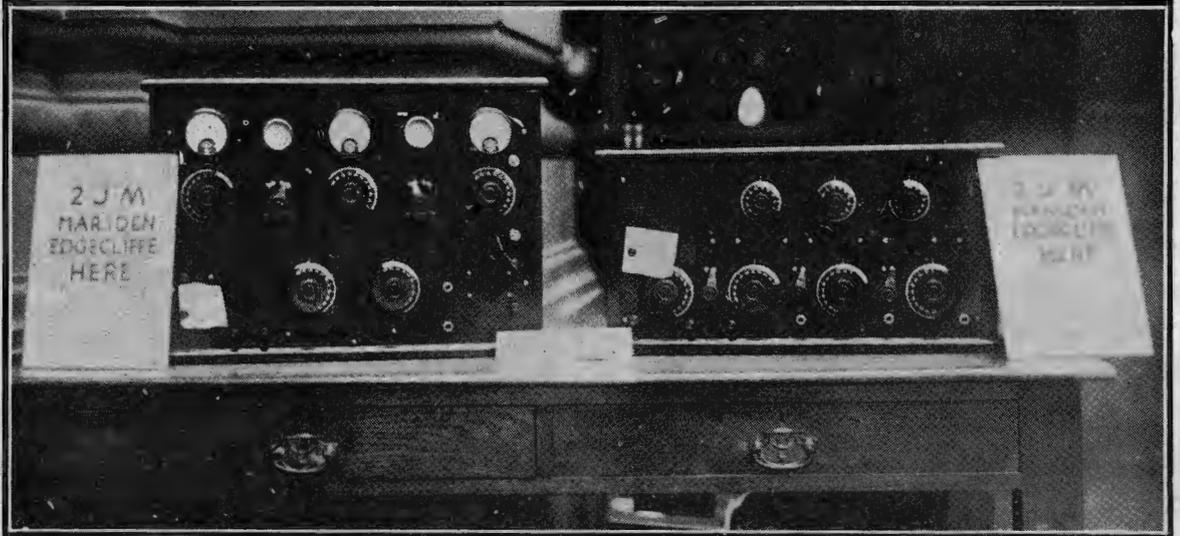
Of importance
to Experimenters
and to those
about to enter the
field of Wireless

DURING the month of December **LARGE REDUCTIONS** will be made of our stocks of **EXPERIMENTAL SETS and PARTS** at **COST** and under **COST PRICES**, all of which will carry our guarantee to give satisfaction.

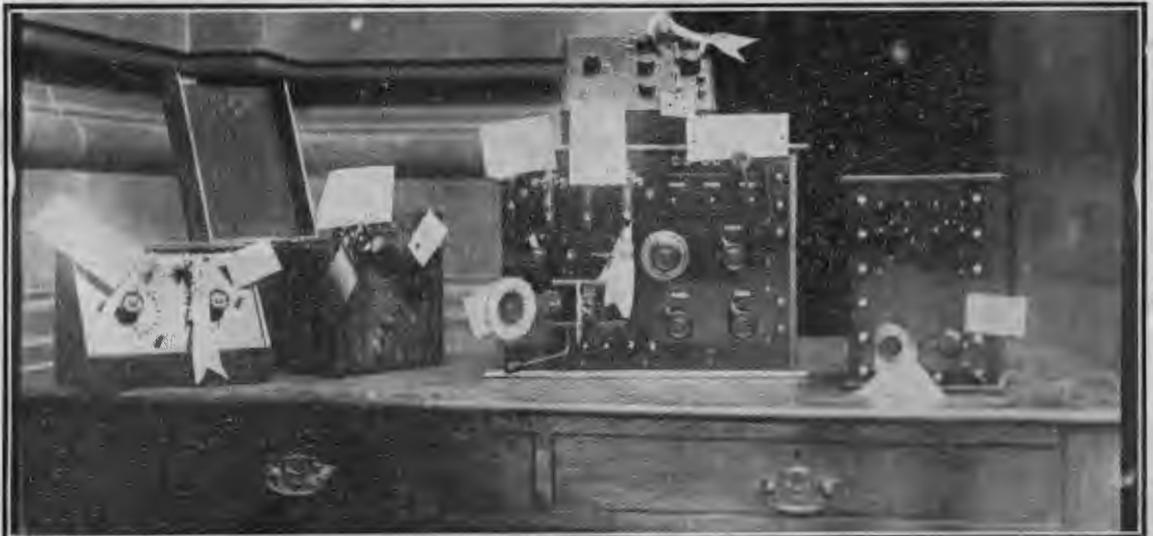
A Small Transmitter with Tube Modulation complete with Valves and Batteries ready for use at £25 is just one of our many bargains.

Stocks limited. Send your Order as early as possible

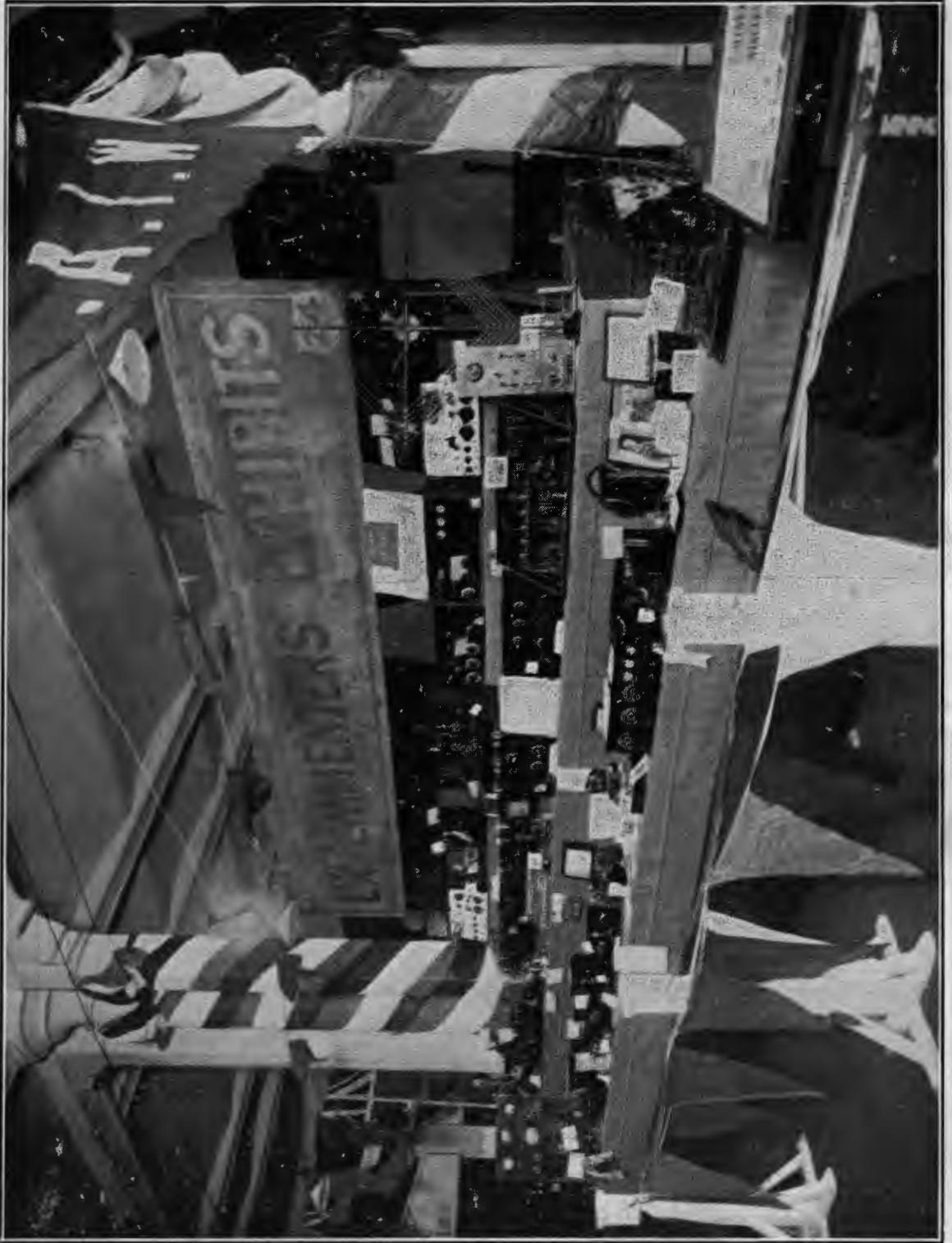
Wireless Exhibition Pictures



5 valve Neutrodyne and 10 Watt Transmitter. Mr. R. C. Marsden's Exhibits



Other exhibits which attracted visitors.



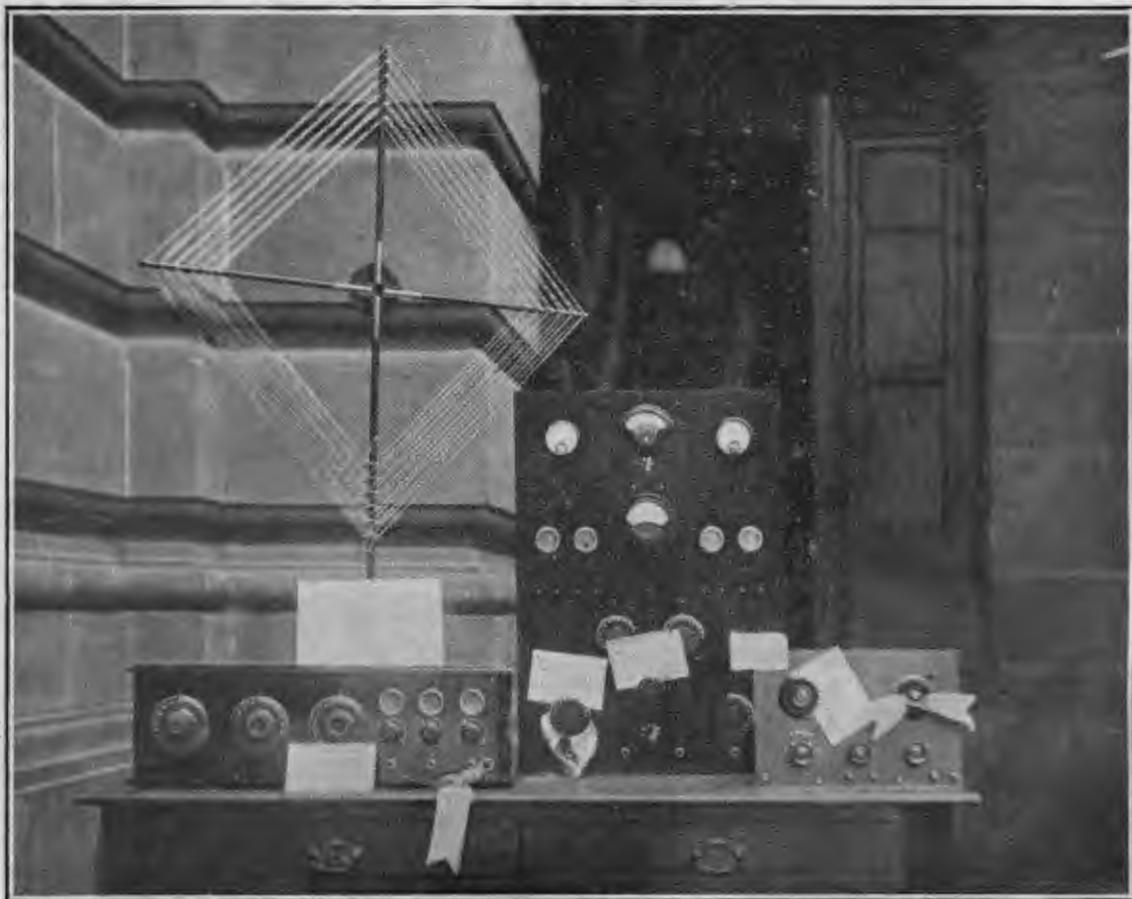
A View of the Experimenters' Stand at the Wireless Exhibition



The Second Half of the Experimenters' Stand



Experimenters' Receiving Sets



Loop Antennae, Transmitters and Receivers exhibited by experimenters

NEWS IN BRIEF

WHAT is claimed to be the most powerful broadcasting station in the Southern Hemisphere, has been erected for Farmer and Company, Ltd., at Northbridge, Sydney.

The first official tests were held between December 5th and 12, between the hours of 7.30 and 9.30 p.m.

The power used during the period was 500 watts, but it is said that 5,000 will be used when the station is in full swing.

Following entirely successful experiments, says the "Evening News," on board the Mantua, the P. and O. Co. proposes to instal direction-finding apparatus on all its mail steamers.

During the recent military manoeuvres in Sussex, experiments with wireless telephony "in action" were carried out by the Royal Air Force. The equipment used was mounted in a specially built motor van and extreme dexterity was shown in the manipulation of the apparatus. Indeed, the operators claimed to be able, in less than three minutes, to erect an aerial and establish communication with aeroplanes on reconnaissance work.

The annual license for South African "listeners-in" is to be 5/6.

In a recent issue of a daily newspaper, the following definition of atmosphericics appeared: "Atmosphericics is the wireless term for unnecessary objectional interference with wireless transmission."

The American Government's wireless telegraph station, situated on the island of St. Paul, in the Behring Sea, which was blown down by a gale last winter, has been rebuilt, and was in commission for the opening of the salmon fishing season.

In order to try to settle the dispute now raging in the States as to whether the broadcasting of a song or piece of music increases the sales or not, "Radio News," New York, has arranged a competition. Competitors will be required to send in original music, and if the two winning attempts are popularised they can be said to have

been "boomed by wireless." A large money prize is to go to the winners, besides the royalties of the sales.

There appears to be a likelihood of broadcasting being established in Italy. According to the New York "Tribune," "the wall of opposition which thwarted every radio plan has been demolished by the Facist Government." A company has undertaken to establish a broadcasting service, and to pay a tax to the Government for the necessary authority. It is proposed that funds be raised by taxing the subscribers, but this important point does not appear to be quite clear. The Government tax on amateur transmitting sets will vary according to the power of the set.

Mr. E. Barlow (2GQ) has been receiving excellent reports from all over this State relative to his transmissions, and also from Queensland, and he would like any amateurs hearing his tests to communicate with him.

Mr. Bruce Haynes (2YA) and 2GQ have been experimenting with two-way telephony, and the results have been highly satisfactory, not over one second being lost between conversations. Further experiments are being carried out by these two amateur experimenters with different types of aerials, and reports from experimenters are always welcomed.

Interviewed by the Capetown "Argus," General Smuts said he regarded the British Government's attitude on the wireless question as entirely reasonable. In any case, he added, the British station would be finished before the South African, and it would be to South Africa's advantage to make use of that station.

The United States Department of the Interior is said to be making extensive preparations at the Government Experimental Coal Mine at Bruceton, Pennsylvania, to continue experiments to determine the value of wireless in mine operation and rescue work, and it is anticipated that some useful results will be obtained. This reminds us that interesting work in

the same direction was conducted in this country by various amateurs and wireless societies, notably the Sheffield and District Wireless Society, and some results have been published in past issues of this journal.

In an editorial of a recent issue of the "Wireless World," which dealt with some legal points for the wireless amateur, the following reference to loud speakers was made:—"A loud speaker, particularly if afflicted with distortion, may disturb the amenities of life in the adjacent flat, but it is necessary to prove that it causes an unreasonable commotion before the law will interfere." In this connection it is amusing to note that at a town in New Jersey, U.S.A., the law has been called upon to settle a dispute between two neighbours, one of whom complains that the other's loud speaker keeps him awake at night. Defendant called upon several neighbours, who testified that the concerts broadcasted to their flats through the loud speaker was soothing, and conducive to sleep. The case appears to have attracted a good deal of attention.

WHAT A READER THINKS OF WIRELESS WEEKLY

To the Editor.

Dear Sir,

I would be obliged if you would forward me the back numbers, also any future numbers that you may publish. I have been trying for some time to obtain copies from various people in Sydney, but up to the present I have had no success.

I think that it is an excellent publication, and I certainly do not want to miss it.

I am, yours faithfully—

Municipal Electrical Engineer

ARMIDALE CONCERT

SUCCESSFUL TESTS.

ON the nights of the 29th and 30th of November, a public demonstration of wireless reception was given, under permission of the Manager of Telegraphs and Wireless, at the Public School, Armidale, by Mr. E. Barlow (2GQ), assisted by Mr. Bruce Haynes (2YA) and three other experimenters of this town.

A programme of music, provided by a local orchestra, and vocal and individual items was transmitted from the experimental station of 2GQ (Barlow, Armidale), Mr. Bruce Haynes temporarily operating same for the occasion, whilst Mr. Barlow manipulated the receiver, which was one of one stage radio detector, and three stages of audio.

Prior to the programme of music, the demonstration was opened by Mr. W. Curtis, J.P., and Mr. Morgan Stephens, Mayor of Armidale. The opening speeches were heard very clearly in the grounds of the school to a distance of approximately 80 yards away.

The musical programme was held in a large room of the school, and every item came through excellently, espec-

ially those of stringed instruments and songs.

Single Wire Aerial.

A small aerial was used of Single wire. On the first night interference was negligible, but on the second night QRM paid a visit in great form, but the volume of speech and music coming through was not interfered with. Tests were conducted with piano items also and results were highly satisfactory.

This is the first demonstration of its kind to be held, to the writer's knowledge, outside of Sydney and Newcastle, and the results were of high satisfaction, both from a public point of view and from the experimenters concerned. A valuable lot of data has been gleaned from the experiment.

A WARNING.

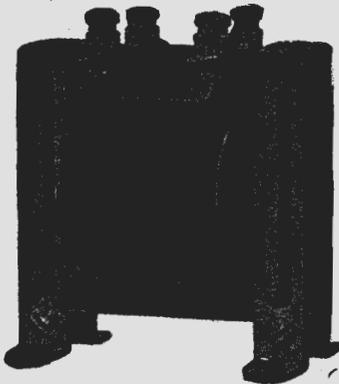
NEVER try to use the set if atmospheric are very strong. To do so is folly, for you cannot enjoy a transmission that is accompanied by a fusillade of loud cracklings. There is, too, the risk of obtaining a shock if high-resistance phones are being used. When you are wearing them your head is earthed, since your whole body

is at earth potential, and should some fairly big discharge take place your ears may tingle for some minutes afterwards whilst you are still wondering what has hit you!

H.T. BATTERY CONDENSER.

A number of ready-made sets are on the noisy side owing to the fact that they have either no condensers at all or else condensers of small capacity across the high-tension battery. Opinion has undergone rather a change during the last twelve months as regards the size of this condenser. In the older text-books you will find capacities of from .01 to .3 microfarad recommended as suitable. There are really too small. For good results the condenser should be of at least one microfarad, and it is better to have one with double that capacity. You may, therefore, find that an improvement results if you substitute a larger condenser for that now on your set. The Mansbridge paper-dielectric type of condensers are usually found quite satisfactory, but they are apt to give way if high voltages are used. It is better to make up condensers from cop-perfoil and ruby mica.

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AMPLIFYING

World's Leading Transformers stocked by Colville-Moore, Wireless Supplies, Radio House, Radio Co., A. Hordern and Sons, Ramsay Sharp, Universal Electric, Wireless Supplies Ltd., Harry Wiles and all Leading Wireless Stores

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RADIOCULOUS

The following story, which was broadcasted by a big New York firm, is said to have done more to cement the ties of friendship between Britain and America than what a dozen politicians could do in a year.—(Ed.)

A Mutual Misunderstanding.

He was introduced as a visiting Englishman.

"Oh, boy!" I remarked right off, extending a fervid hand. "Put 'er there, pardner. You have come to some little country."

"'Pon my soul," he replied. "What-what-what? Rawther."

"I reckon you'll like it mighty well, pardner," said I.

"Quite so—what? Oh, top-hole, that is to say," said he.

"Reckon you'll take in all the big sights, hey, ole boss?"

"Not hawf," said he. "Oh, cheer-oh, yes-yes-yes."

"Well, man alive, you'll sure have a swell time, I'm stating."

"Pip-pip," said he, effusively.

"Toodle-oo, what-ho, heaver!" He was becoming a bit red in the face.

I ransacked my mind for further idiom. "Say, stranger," I ventured,

"watch your step, in this here little burg in particular."

"Oh, grateful no end," he retorted.

"Sorry, y'know. Thanks awf'ly, eh? Chin-chin, 'pon honour. Er-er-er, I mean what-what—" his voice trailed off into uncertainty.

"Dammit," he exploded suddenly, "I never was good at music-hall imitation. Do you mind if I continue the conversation normally?"

"Not at all," I answered in amazement. "But may I ask the same privilege?"

"But—but isn't that the way you always talk?" he asked.

"Heaven forbid," said I. But I didn't want to disillusion you. Therefore I tried to speak American as set forth in your humorous magazines."

"Mother, how long ago did daddy die?"

"He didn't die, darling. He joined a radio club."

Ping: "Binks is no longer interested in wireless."

Pong: "Great Scott! When did he die?"

Wibble: "My wife has just sold her crystal set to a chap from somewhere in the West Indies."

Wobble: "Jamaica?"

Wibble: "No, she did it of her own accord."

Most radio owners would rather hear a mosquito sigh in Timbuctoo than an opera in Sydney.

A Melbourne "Herald" headline announces: "Ford heard across the Atlantic." It must have been a trifle

noiser than usual.—"Smith's Weekly."

Little Joe had completed his crystal receiving set and had made it "work." His astonished and proud mother said to him:

"Wasn't it very hard to do all this?"

"No," said Joe; "most of it was easy as anything."

"What was the hardest part of it?" she asked.

"Getting the oscarash from Dad," replied Joe.



When a fellow needs a friend

RADIO TERMS EXPLAINED



A "Two Slide Tuner"



A "Lead In"



A "Coherer"



A "Binding Post"



North Sydney Radio Club

TWO YEARS OF PROGRESS.

Tuesday, November 27th, completed the fourth half yearly term of the North Sydney Radio Club's existence. During the current term the club has come well into limelight, and has established itself amongst the leading radio societies. Though it has not been very well advertised regarding its meetings, etc.—through the papers—on several occasions its call has been picked up by amateur transmitters, and experiments carried out, sometimes to a late hour with them.

The Trustee, Mr. J. O'Brien (who is also Secretary), wishes to thank those gentlemen who assisted by reporting during transmission, for their generous help towards the good results.

Communications may be addressed to the Secretary, J. O'Brien, 363-365 Pitt Street, Sydney.

Bega Radio Club

VISITORS WELCOMED.

A radio club was recently formed in Bega, on the South Coast, and it is hoped to get going after the new year. A visit from any wireless enthusiast who is touring this beautiful part of the coast, and would be willing to address a meeting to arouse interest in wireless matters, would be much appreciated by all in this far-flung place (so far as wireless at present is concerned). The club officers are: President, Mr. W. H. Balmain; vice-presidents, Messrs. Maurice Pell and R. B. Bush; hon. treasurer, Mr. H. Jardine; hon. sec., Mrs. R. V. Ritchie.

Croydon Radio Club

DEMONSTRATION ON 15th DECEMBER.

The Croydon Radio Club met on Saturday, December 1st, at the club rooms, "Rockleigh," Lang Street, Croydon, at 7.30 p.m.

Much time was taken up making

arrangements for the wireless demonstration, to be held in St. Peter's Hall, Queen Street, on Saturday, December 15th, and a large audience is expected. Mr. Cureton, 2AY, will transmit for the benefit of those who are present. Tickets may be obtained from the hon. secretary, "Carwell," Highbury Street, Croydon.

The club will have a break from December 15th until the first Saturday in the new year. Intending members should communicate with the hon. secretary, G. Maxwell Cutts, at the address given above.

Illawarra Radio Club

THE 36th meeting, held on 4th inst., showed a smaller attendance than usual, many members being absent, no doubt on account of the attraction provided by the Wireless Exhibition.

The Secretary read two letters which had been received from the Chief Manager of Telegraphs and Wireless, one being to the effect that holders of experimental licences could, if they so elected, pay a subscription to any broadcasting company for the purpose of receiving broadcast programmes, and merely have an endorsement made on their experimental licence, without the necessity of taking out a broadcast listener's licence. The other communication asked that steps should be taken by clubs and societies with a view to the inauguration of a Federal Council, representative of experimenters in the Commonwealth generally, which could speak for Australian experimenters as a whole (not merely separate bodies, as at present existed). A body of such wide representation was desired by Mr. Malone in the event of experimenters having to be consulted on any questions arising out of the broadcasting regulations or on matters of policy generally. This matter was discussed at some length, and all members were agreed as to the urgent necessity for some Federal organisation of experimenters such as was suggested by Mr. Malone, and it was decided by the meeting that the club's delegates to the Radio Association be instructed to urge the Association that some immediate and definite action be taken by that body to this end.

Among other matters discussed was a suggestion for a club outing and picnic. The idea was thought to be a good one, and it was decided to allow the matter to stand over till a more fully attended meeting. Members are

asked to attend next meeting and give their views on this subject of a club picnic.

The falling off in attendance at recent meetings is much to be deplored. It is admitted that meetings of all kinds of societies are apt at times to be a little dull, but it should be remembered that the task of the committee in arranging attractive programmes for meetings is not by any means an easy one, and members should show some appreciation of their efforts by being more regular in their attendance. They must learn to take the good with the bad. Members of the Illawarra Radio Club, you pride yourselves on being called experimenters, live up to the name by attending the club, whose aim is your experimental welfare. Surely one night a fortnight is not too much to ask of your time, and do not let it be said you would sooner stay at home and listen to a broadcast programme. Remember, that upon your support depends the club's success—do not be found wanting.

Under stress of hard work by willing hands, the club's three-valve, unit-panel receiver (comprising tuner, one stage r.f. amplification, detector, and one stage a.f. amplification) was completed in time for the Wireless Exhibition, where it was exhibited, and more than held its own among the various fine experimental exhibits. The new set presents a fine appearance, and is one of which the club should be well proud.

The set will make its appearance in the club room at next meeting; meantime final testing of same is being carried out to make sure that the members will have an efficiently working set.

Members whose subscriptions are unpaid are reminded that same are long overdue. Under the rules they are payable within one month from 1st July. Any such are requested to attend to this matter without delay, as all funds are needed.

The next meeting will be held at the club room, 75 Montgomery Street, Kogarah, on Tuesday, 18th December, at 8 p.m., when the new set will, we hope, be given its first run, and there will also probably be a lecture. Members are also asked to take advantage of the buzzer practice from 7.30 to 8 o'clock.

The Secretary, Mr. W. D. Graham, 44 Cameron Street, Rockdale, would be pleased to hear from any prospective members or to supply any information concerning the club on application.

Proper Antenna for Tuning.

By F. Conrad.

THE ability to hear a desired station alone, or "selectivity" as it is called, depends in part on the receiving apparatus and in part on the antenna system to which it is connected. Many believe that the better the antenna, the better the signals. This is true, but it does not necessarily mean that the best antenna is the largest. The function of the antenna is to transfer to the receiving apparatus the electric forces which are set up by the waves being transmitted through space. This receiving apparatus must discriminate between the electric forces due to the radio wave it is desired to receive, and the forces due to the undesired waves, among which are the waves from "Dame Nature" herself, or "static" as they are called.

The selective receiver is one that offers a high resistance to the flow of current which would be set up by the electric forces from undesired waves, and offers a low resistance path for

the flow of current due to the electric forces from the waves it is desired to receive. In other words, it permits you to hear the stations you wish, and to tune out those you do not wish to hear.

The receptive ability of an antenna is, in general, determined by the height of its horizontal portion above the ground, or, stated differently, the strength of the electric forces induced in an antenna by the radio waves is proportional to the height of this antenna. Therefore, to tune out or discriminate between different waves, the selectivity or resisting power of the receiver to interfering waves would have to be increased as the antenna height is increased, while to receive an equal signal from a desired wave, the resistance in the receiving set to this desired wave, would have to be decreased as the antenna height is decreased.

Experiments have shown that when the antenna height is increased and a receiver, such as a crystal-detector or set or a tube set not using regeneration, is used, the signal at first increases but soon reaches a maximum strength, which cannot be exceeded by further increase of antenna height.

This height is such that the electric forces set up by the incoming wave is sufficient to drive through the receiving apparatus the full current strength which is equivalent to the received signals. To express it in another way, this maximum current is that which would itself set up the same strength of radio wave around the receiving antenna as is induced by the transmitting antenna sending out the signals it is desired to hear.

TESTING CONDENSERS.

THESE condensers should be tested from time to time to see that all is well with them. Here is a simple method of doing so. Connect the terminals of the condenser to a flash-lamp battery for a few moments, then remove the battery and touch the condenser terminal with the phone leads. There should be a click caused by the discharge of the stored energy. A good condenser should produce this click even if the 'phone test is not made for some hours after the battery has been disconnected.

GET A GOOD PAIR OF HEADPHONES

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H.T. BATTERY TIP.

IT is modern practice to connect a large condenser across the high-tension battery, say of the order of two microfarads capacity.

The purpose of this condenser is to by-pass any high-frequency current in the plate circuit of the valve, and to smooth out any irregularities in the high-tension supply.

Now, if on closing down for the night we switch off our filaments and afterwards pull out the high-tension wander-plug, the condenser remains charged to the full potential of the battery. This throws the same strain on the insulation of the transformers, etc., as if the high-tension battery were left connected. This is wrong.

The correct procedure is to switch off the high-tension supply first, and then the small charge left in the condenser will leak off through the valve before the filament is extinguished.

It is interesting to note that in transmitting plant where the high-tension condensers become charged to many thousands of volts (a shock from which would probably prove fatal), high-resistance leaks are provided across these condensers, so that when

the power is switched off the charge slowly leaks away.

R. H. McC.

BEING CRUEL TO BE KIND.

OCCASIONALLY transmitting stations has distorted certain low-frequency sounds; purposely making these several tones louder than the treble notes, so as to correct that acknowledged fault of all loud-speakers—the softening of all notes from lower C downwards. One station retrograded their piano, in which instance the audience got perfect tones, but the performer was not at all happy, and declared that he could not perform on that instrument again. This magnetomicrophone also gives a more faithful transmitting of recorded music. This is because the mechanical merits really warrant. Their chief drawbacks are these: first, to grip the crystal firmly it is necessary to apply considerable force to the screws, which often causes a fragile specimen to crumble, and, secondly, the crystal may only make contact at two or three quite small points with the cup, and these points may set up rectifying effects which oppose that produced at the cat-whisker contact.

The only really satisfactory way of mounting a crystal in a screw-type cup is to pack it in with tinfoil, tighten the screws, and then pack it all round with more foil until contact is assured.

TRY EARTHING THE SECONDARY.

NOT everyone realises what an advantage it often is to earth the secondary of sets with double-circuit tuners. The inductively coupled tuner vastly increases the selectivity of the set, but unless the closed circuit is earthed the set may be noisy owing largely to the fact that the batteries are left, so as speak, up in the air. There may also be a tendency on the part of the note-magnifying valves to oscillate and even to produce howls in the receivers. Try the experiment of taking a lead from low-tension negative to earth. Normally it makes tuning easier, does away with parasitic noises, and eliminates the tendency to oscillate on the low frequency side. Most audio-frequency transformers, too, are all the better for having their cores earthed. If a terminal or a clip is not provided for the purpose, a connection can usually be made to one of the bolts which hold frame and core together.

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THE ANTENNA

By L.O.C.

A vacuum tube receiving set, in which the principle of regeneration is employed, tends to reduce the resistance to the flow of current from a wave corresponding to that for which it is tuned. Therefore, if a regenerative receiver is used, it will be found possible to maintain the maximum strength of signal, even with a reduced antenna height. However, as the same resistance will be maintained by this receiver against undesired waves the reduction of height will therefore give a greater selectivity. Of course, in general practice it usually will not be possible to obtain quite the same strength of signal with the low as with the high antenna, as there is a certain amount of absorption or loss near the ground which tends to reduce the possible signal strength.

Should the location be such that the antenna is perfectly clear and free from surrounding objects, the low one will be found to be practically equal to the high one, when a regenerative receiver is used. But should the antenna be located where it is considerably shielded, as where it is surrounded by high buildings, it is possible that the signal strength will be greatly in-

fluenced by the height. In this latter condition, it will probably be necessary to make up for the poor selectivity of the high antenna by using a somewhat elaborate receiving apparatus. Under the conditions surrounding the average resident district, it usually is possible, with care in the location of the antenna, to maintain good signals, even though the height is considerably less than with the scheme generally employed of attaching the horizontal wire to some point near or on the roof of a two story house.

The actual selectivity required divides itself into two classes or conditions of service; one in which it is desired to discriminate between two relatively nearby stations of approximately equal signal strength but separated by some interval of wave length, the other where it is desired to discriminate against a nearby station and receive from a distant one, the signal from which would, of course, be very much weaker than that from the nearby station. For the first condition, it will be found that with the average regenerative receiver, ample strength will be obtained from an antenna which is not over ten or fifteen feet high, or it may even be entirely within an ordinary living room. The second

condition, however, is a much more severe one and requires either a location where antenna of not over fifteen or twenty feet high will not be unduly shielded, or where the lesser selectivity of a high antenna will be counterbalanced by a more elaborate and selective receiving set.

HEALTH NECESSARY.

IN using your wireless receiving set, you notice considerable variations in sensitiveness for reception, and these variations, of course, are generally due to alterations in the adjustments of the instrument. But it is not generally known that the human ear may vary considerably in sensitivity from day to day, and some, at any rate, of the variations experienced with the set, particularly on feeble signals, may be due to this cause. According to the Journal of the American Medical Association, Professor Martin Gildemeister, a German doctor, has found that the acuteness of the hearing depends very much upon the health. This shows itself by alterations in the upper limit of audibility; on "good" days an observer may be able to hear notes as much as 200 vibrations per second higher in pitch than on "bad" days.

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A.R.R.L.
APPLICATION FOR MEMBERSHIP.

The Secretary,
Aust. Radio Relay League,
N. S. W. Division. 192

I,

of

beg to apply for admission as Active Member of the Australasian Radio Relay League If accepted I agree to abide by the rules and regulations of the League.

License No. Date of issue

Address at which Station is maintained

Postal Address of applicant

Particulars of License (transmitting or receiving)

Power of Station (if transmitter) I enclose herewith.
being payment of fees for one year.

Usual Signature

Active membership only to persons operating transmitters for League,
Associate membership to holders of receiving licenses.

Qualifications for membership.
(A) A bona fide interest in wireless; (B) Holder of an experimental license.

P.S.—This form must be accompanied by one year's subscription (active member £2/2/-; associate member 10/6) and forwarded to J. W. ROBINSON, Hon. Secretary, "Milano," Edward St., Concord.

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We Stock all the parts necessary to make Radio Receiving Sets.

Word Stations

Wireless Weekly has been successful in securing a list of the principal wireless stations in the world, together with the times of operation and the matter broadcasted.

The Sydney mean time is given after the military style.

The figures 0000 represent 12 o'clock midnight; 0340 is 3.40 a.m.; 1640 is 4.40 p.m., etc.

Further lists will be published in each of our succeeding issues

Time. (Sydney)	Name.	Call.	Wave.	Type.	Remarks.
0000	Prague	PRG	4,600	CW	Working with IQZ (Pola).
0000	Air Ministry	GFA	4,100	CW	Weather report.
0015	Nantes	UA	9,500	CW	Time signal (International system).
0020	Paris	FL	7,300	CW	Weather report.
0027	Adelaide	VIA	600	Spk.	Time signal (International system).
0030	Mediouna	CNM	5,000	CW	Moroccan weather report.
0030	Lyons	YN	15,000	CW	
0030	Nantes	UA	9,000	CW	Calls FRI (General call French Navy).
0035	Paris	FL	6,500	CW	Working with HFB (Belgrade).
0040	Konigswusterhausen	LP	5,700	CW	German weather report.
0050	Air Ministry	GFA	4,100	CW	European weather report.
0050	Konigswusterhausen	LP	5,700	CW	Weather report (May replace 0150).
0055	Sandhams	OJA	5,700	CW	Finnish weather report.
0100	Nantes	UA	9,000	CW	Working with OSM Constantinople).
0105	Konigswusterhausen	LP	5,700	CW	Upper air report.
0115	Paris	FL	8,000	CW	Working with BUC (Bucharest).
0120	Sidi Abdallah	FUA	5,150	CW	African weather report.
0120	Vienna	OHL	5,600	CW	Austrian weather report.
0130	Arlington	NAA	5,950	CW	Code weather prefix USWB
0130	Prague	PRG	4,500	CW	Czech weather report.
0150	Konigswusterhausen	LP	5,250	CW	Weather report (see 0050).

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Hong Kong Radio Society Formea

A radio society has been formed in Hong Kong to promote popular interest in this fascinating science.

The question of broadcasting has been referred to the British Government, and it is expected that they will deal favourably with the appeal.

Experimenters are also eagerly awaiting the outcome of their applications to be allowed to erect experimental sets. If these are allowed we may see an Australian-Hong Kong Relay being arranged, the air-line distance being approximately 3500 miles.

HOW TO USE A BRACE.

THE brace, owing to the number of uses to which it may be put, is one of the most useful tools one can possess. If properly used, it may serve for drilling ebonite panels, etc., the chief difficulty being to drill in a true vertical position. This is due to the fact that the bit is placed on the point where the hole is to be made, while the left hand is placed on the handle. It is held in a vertical or horizontal position in this manner, while the shank is turned round with the right hand. It will be seen that to keep a dead-true position in this way is almost impossible, owing to the motion of the body. To overcome this difficulty, attach an angle piece to the work bench. This angle piece should be made to fit the shank of the brace, and should be attached to the work bench in such a way as to make it possible to raise or lower it to any desired position. The augur bit is by far the best type for woodwork or drilling panels, but it should be remembered that if the bit is found to be working in an unwilling manner, it should not be forced, but gently coaxed, by means of taking a turn backwards and then proceeding in a forward direction until the difficulty is overcome by gentle persuasion. A screwdriver bit is very useful when used in a brace, as it makes the operation of putting in screws much quicker and easier.

FOR SALE—Portable valve set, polished oak cabinet, takes 4 sets of 'phones, receive all broadcasting stations. £22 complete. Read, 28 Anderson St., Chatswood.



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HOME ELECTRICS, 106a King St., Sydney

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PITT, VICKERY, Ltd., 335 Pitt Street

PACIFIC RADIO CO., c-o. Edgar A.
Henry, 121 Pitt Street, Sydney

RADIO HOUSE, 619 George Street

RADIO COMPANY Ltd., 15 Loftus Street

RAMSAY SHARP & CO. Ltd., George St.

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UNITED DISTRIBUTING CO., LTD.
28 Clarence Street

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21 Royal Arcade

W. HARRY WILES, 62 Goulburn Street

*Further Lists will appear each
week as Agents are appointed.*

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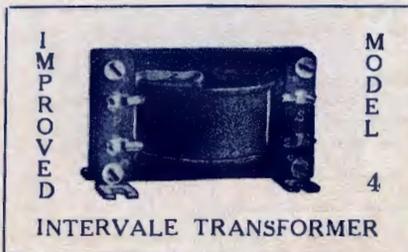
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Telephone: B2261.

Continental Radio & Electric Company

350 George Street, Sydney.
Telephone: B 2467.

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387 George Street, Sydney.
Telephone: City 2961.

Home Electric

106a King Street, Sydney.
Telephone: B 5565.

Pacific Radio Co.

Suite 6, 4th Floor.
333 George Street Sydney.
Telephone: B 4355.

O'Sullivan's Electric Shop

(Frank L. O'Sullivan)
296 Pitt Street, Sydney.
Telephone: City 8070.

Swains

119-123 Pitt Street, Sydney.

N. P. Olsen,

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