

SEPTEMBER, 1932



WIRELESS COMMUNICATIONS



SEPTEMBER, 1932

A.W.A. COMMUNICATION SERVICES



GENERAL INFORMATION
RATES
BEAM WIRELESS MESSAGES
WIRELESS TELEPHONE SERVICE

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Amalgamated  **Wireless**
(Australasia) Ltd.

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A.W.A. COMMUNICATION SERVICES.

The Beam Wireless Service for messages between Australia and Great Britain, Ireland, Europe, Canada, the United States of America and South America.

The A.W.A. Radiophone Service between Australia and Great Britain, the Continent of Europe, North and South America, Java, New Zealand, and Ships at Sea.

The Coastal Radio Services for radiograms between Australia and ships at sea.

Marine Wireless Services for communication between ships at sea and the Australian Coastal Radio Stations, between ships at sea and the nearest Coast Station in whatever part of the world the ship happens to be, and between one ship and another ship.

The Pacific Island Service for messages between Australia, and Papua and New Guinea, and between New Guinea and Fiji, and the various islands in the Pacific and ships at sea.

The Fijian Service supplies the communication needs of the Fiji group of islands and the interchange of messages between Fiji and Australia and between Fiji and other places in the Pacific and also ships at sea.

New Caledonia and New Hebrides Service for the interchange of traffic between Australia and New Caledonia and the New Hebrides and between the latter stations and ships at sea.

BEAM WIRELESS.

THE science of wireless has advanced by leaps and bounds during the last few years. Its commercial application has been a veritable triumph, annihilating distance and bringing the most distant parts of the world into wireless contact with the centres of civilisation. In that triumph Australia has not only played a very great part, but in the development of many phases of wireless, has led the world.

Less than six years ago, the only Australian wireless services available to the public were the Marine services to and from ships and the Island services between Australia and Papua, and Australia and New Guinea.

To-day, step into the Beam Offices at Sydney and Melbourne, or enter any Post Office in the Commonwealth, and you may send a message, via Beam, to some of the remote places of the world—to Esthonia or Greenland in Europe, Yukon or Alaska in North America; to Porto Rico or San Domingo, in the West Indies; Guatemala or Costa Rica, in Central America; to name but a few of the traffic destinations.

By day and night, messages are being despatched to Great Britain, Europe, Canada, the United States of America, and South America via Beam.

The Beam wireless service between Australia and Great Britain is owned and operated by Amalgamated Wireless (A/asia), Ltd., and was opened for commercial traffic on April 8th, 1927, and immediately came into public favour. Considering the excellent service rendered to clients—a service unknown to international telegraph users prior to the advent of the Beam—and the lower rates quoted to the public, together with the speed and accuracy of the Beam System, it is not surprising that to-day the majority of the messages between Australia and Great Britain, the Irish Free State, Europe, Canada, United States of America, and South America are transmitted "VIA BEAM." The service has been the means of effecting a saving to the Australian business community of many thousands of pounds per annum.



BEAM WIRELESS.

The greatest long-distance direct telegraph service in the world, the Beam service, is operated entirely without re-transmission or relays. It is by far the most speedy method of communication yet devised, the speed of working being limited only by the mechanical limitations of the manipulating and recording instruments at each terminal.

Beam wireless signals travel at the rate of 186,000 miles per second and the sending apparatus handles the messages at the rate of 1,250 letters per minute. It will be seen that a message of 125 code words could be in London one minute after transmission commenced in Australia.

The Beam Offices in Sydney and Melbourne are open for traffic day and night. The doors are but ornamental—they have never been closed since the inauguration of the service. Messages may be lodged at any time, or on receipt of a telephone call—in the case of Sydney BW 2211 and in Melbourne F 4161—a Beam messenger will gladly be sent to collect messages within the city area. Messages are accepted at the Beam Offices in Sydney and Melbourne and at all Postal Telegraph Offices in the Commonwealth, but be sure to mark your message "VIA BEAM."

BEAM STATIONS.

The Beam wireless transmitting centre in Australia is located near Ballan—about 50 miles to the N.W. of Melbourne, and the receiving centre is at Rockbank—18 miles from Melbourne in the same direction. Both stations are connected by special telegraph lines with the Beam Wireless Office, 167 Queen Street, Melbourne, and with the Beam Wireless Office, 47 York Street, Sydney.

At Ballan there are two transmitters—one of which is used for sending messages to London, whence they are distributed through the United Kingdom to Europe, and the other transmits to Montreal all messages for the North and South American Continents. Much of the equipment is in duplicate—some in triplicate—to ensure continuity of service under all conditions. Both stations are under the supervision of a technical staff, whose duty it is to maintain the apparatus in efficient working order.

The transmission of messages originates at the Beam Offices in the heart of Melbourne or Sydney, and the telegraph operators there, by means of special telegraph lines to the Beam stations, automatically cause the great transmitters at Ballan to radiate the messages, and likewise messages from London or Montreal are received at Rockbank and automatically passed on to the telegraph centres in Sydney or Melbourne where they are recorded on tape.



BEAM WIRELESS.



*Position of Staff Quarters and Club House, Beam Wireless Station,
Ballan, Victoria.*



*Section of Transmitting Room at A.W.A. Radio Centre, Pennant
Hills, Sydney.*

BEAM WIRELESS.

BEAM TELEGRAPH OFFICE.

A glance at the Beam Telegraph Room at Sydney or Melbourne convinces one that traffic routing and telegraph operating have fallen under the spell of the efficiency expert.

Beam messages originating in Sydney and Melbourne are mostly collected by the Beam messengers, or are handed over the counter of the Beam telegraph offices. Messages lodged at the Post Offices throughout the Commonwealth are brought to the G.P.O., Sydney or Melbourne, and there handed over to the Beam Office. As messages reach the Beam telegraph offices they are numbered, recorded and sorted according to their destination and class (full rate, deferred, daily letter or week-end letter) and distributed to expert machine telegraphists.

A continuous stream of messages flows to telegraphists seated at machines resembling typewriters—but in reality high-speed automatic perforators. As quickly as an expert types the message is transcribed by this machine, but instead of recording it in letters of the ordinary alphabet, the machine punches it in the form of a series of small perforations on paper tape about half an inch wide, similar to music rolls in player pianos. There is a distinctive series of perforations corresponding to ordinary Morse characters for each letter.

The rate of transmission is much greater than the rate at which the operator can work a perforating machine, and it is therefore necessary to keep several operators employed punching tape to satisfy the high speed of transmission.

After the tape is "punched" it is passed through an automatic transmitter at high speed. This transmitter interrupts an electric current in the telegraph line connecting the Beam Wireless Offices at Sydney and Melbourne with the transmitting station at Ballan, Victoria, and actuates at high speed the automatic signaling relay at the transmitting station. Wireless waves, travelling at such high speed that they reach England or Canada—as directed—in a fraction of a second are radiated from the aerials as Morse characters of the message. The signals are picked up by the Beam Receiving Station at Skegness, England, or the Canadian Beam Station at Yamachiche, and are passed automatically to the Beam Offices in London or Montreal respectively.



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Simultaneously with the feeding of the tape to the automatic transmitter, the message is being recorded by machines at the respective receiving offices in London or Montreal. In glancing at the recording instrument next to the transmitter at Sydney or Melbourne Beam Offices one can visualise the tape running through the machine at the other side of the world, and realise, as never before, how wireless annihilates distance.

In addition to the Beam stations, smaller stations or units are required for collecting the outward traffic and feeding it to the main Beam stations, and also for distributing the inward Beam traffic to other States. These smaller units, known as Beam Feeder Transmitters and Beam Feeder Receivers, have been installed at practically every Australian capital. Two Beam Feeder Transmitters are located at Sydney, two at Melbourne, and one each at Adelaide, Perth, and Brisbane. These stations transmit traffic direct by wireless to the Beam Traffic Office, Melbourne. From here it is automatically transmitted overseas via the Ballan Transmitting Station.

The Beam Feeder Transmitting Stations at Sydney and Melbourne can be utilised almost immediately for exchanging overseas traffic should a mishap occur at Ballan Transmitting Station.

The Beam Feeder Transmitter at A.W.A. Radio Centre, Pennant Hills, Sydney, and at Radio Centre, Braybrook, Melbourne, are operated from the Central Beam Offices at York Street, Sydney, and at Queen Street, Melbourne, respectively. A similar system is in operation at the Beam Receiving Station at Rockbank, Victoria, which actuates recording apparatus at the Beam Traffic Office, Queen Street, Melbourne, and at the Beam Feeder Receiving Station at La Perouse, Sydney, which actuates apparatus at the Beam Traffic Office, at York Street, Sydney.

The strenuous work of arranging and supervising the construction of the Australian Beam Stations, and the organisation of a staff to operate the service from its inauguration with faultless precision and in competition with telegraphic systems that have been in operation over a number of years, called for organising ability of no mean order.

The whole of this work was carried out under the direct supervision of Mr. E. T. Fisk, Managing Director of A.W.A. Ltd., who, for the last decade, had not only visualised direct trans-ocean wireless communication between Australia and Great Britain and Australia and the other Dominions, but had consistently advocated and educated the powers that be to a realisation of the needs for such services, and had demonstrated to them the technical means and methods by which it could be carried out. To-day Mr. Fisk has the satisfaction of seeing his cherished idea of a direct wireless service successfully in operation.



BEAM WIRELESS.

BEAM WIRELESS MESSAGES.

URGENT MESSAGES: The urgent rate service is recommended for all messages of an extremely urgent nature, and messages of this class are given priority over all other messages. The charge is triple the ordinary rate charge.

ORDINARY MESSAGES: Ordinary messages are promptly transmitted and rank in importance after Beam messages at triple ordinary rates.

DEFERRED MESSAGES: There are three (3) classes of deferred messages, as enumerated below. All messages presented for transmission in either of these classes must, in accordance with the International Telegraph Regulations, be written in plain language of either the country of origin, the country of destination, or the language of any other country as may be agreed upon.

The use of more than one language in the same message is not permitted. If any numbers written in letters, or in figures, commercial marks, or abbreviated expressions, are employed in the text of the message, the number of such words or expressions must not exceed one-third of the number of chargeable words in the text, plus signature if any.

Further information respecting this rule will be found on page 14. In each class of message at deferred rates, the appropriate paid service indicator must be inserted before the address, and this indicator is counted and charged for as one word. Also, the declaration respecting deferred messages on the back of the Beam Wireless message form must be duly completed and signed by the sender.

DEFERRED ORDINARY MESSAGES: The charge for Deferred Ordinary messages is one-half the rate for ordinary messages, and this service is provided for telegraphic correspondence of a less urgent nature. Messages of this class are accepted on the condition that their transmission may be deferred until all ordinary rate messages, filed on the same day, have been transmitted.

The paid service indicator—

LCO (language country of origin)

LCD (language country of destination)

LCF (language country of France)

—according to the language used in the message, must be inserted before the address.

DAILY LETTER MESSAGES: This class of message is specially adapted for social and business correspondence. They are transmitted immediately all higher rate messages have





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View of A.W.A. Radio Centre, Pennant Hills.

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been disposed of, but irrespective of the time they are lodged for transmission, are not deliverable until nominally 48 hours have elapsed, counting from the time of lodgment. In calculating the 48 hours no notice is taken of the difference in meridional time. Thus a Beam Daily Letter message addressed to London and lodged in Sydney or Melbourne at noon on the 10th will be delivered in London at noon on the 12th.

The paid service indicator DLT must be inserted before the address.

WEEK-END LETTER MESSAGES: These are accepted for transmission at a rate less than for Daily Letter messages. They may be lodged at any time during the week up to midnight on Saturday for delivery, if practicable, on the following Monday morning, or as early as possible thereafter. The paid service indicator WLT must be inserted before the address.

CHRISTMAS AND NEW YEAR MESSAGES: It has been the custom in the past for Telegraph Administrations at Christmas time to accept a special class of message, known as "Christmas Greeting Message," at a cheap rate. These are accepted by the Beam Wireless Service at a minimum charge as for 10 words. It is usual for the period of acceptance to cover the period from early in December to the first week in January. The greeting message must contain words of greeting only. The special prefix XLT must precede the address and is charged for as one word. Delivery commences just prior to Christmas, when all messages of this class received prior to that date are circulated for delivery. XLT messages arriving at their destination on subsequent dates are delivered as they are received.

REGISTRATION OF CODE ADDRESSES.

Code addresses for the delivery of Beam Wireless messages in Australia may be registered at any Post Office on payment of an annual fee of ten shillings and sixpence. The annual period of registration is calculated from 1st April each year.

Should it be desired, the Beam Wireless Service will undertake to register code addresses on behalf of clients, charging the registration fees paid to the Postmaster General's Department to the client's account.

Registration of code addresses in the United Kingdom is free and may be effected by Beam users upon application to one of the Company's Beam Wireless Offices.



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All registered code addresses may be used for Beam Wireless Messages.

Copies of Sell's Register of Code Addresses (United Kingdom) and Marconi International Register of Code Addresses (World) are held at the Company's Accepting Offices for the convenience of clients.

TELEGRAPH REMITTANCE OF MONEY.

Customers desiring to transfer sums of money to the United Kingdom and certain Continental countries may have the advice telegraphed by the Beam Wireless Service, and application should be made to any Postal Money Order Office, Reuters Ltd., or any trading bank.

When remitting money by telegraph insist upon the message being routed "VIA BEAM."

COLLECT ON ORDER.

To avoid the necessity of customers rendering accounts to their principals or agents in the United Kingdom, Canada or United States of America for messages sent on their behalf, arrangements may be made through the Beam Wireless Service whereby the charges are collected from the addressee.

CREDIT ACCOUNTS.

Customers filing traffic regularly may have their messages charged to a credit account. Copy of debit note is furnished to the sender, showing the class of message, number of words, address and amount debited to his account. Customers should verify the particulars shown with their copy of the message or messages. Credit accounts may be arranged for daily, weekly or monthly periods. Split accounts—i.e., customers filing messages to various addresses, may have separate accounts for each class of business. Customers filing at Post Offices may also have credit account facilities extended to them upon application to the Company.

COLLECTION OF MESSAGES.

Customers may, in the cities of Melbourne and Sydney, have their messages collected from their offices by Beam Wireless Service messengers.

Permanent calls, i.e., a messenger will call each day (or as desired) at a stated time; or, upon receipt of a telephone call, a messenger will be sent immediately.

TELEGRAMS MAY BE DELIVERED BY POST.

If so desired by the sender a telegram can be forwarded partly by telegraph and partly by post. The telegram is transmitted by telegraph as far as the office named by the sender and thence by post to its destination. Thus a telegram ad-



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dressed to a country outside the United Kingdom can be telegraphed to London and then forwarded by post to its destination. In addition to the telegraphic charge for the message, the sender must pay an additional charge of 4d. if the telegram is to be posted from one country to another, but no additional charge is made if the telegram is to be delivered by post within the country of the telegraphic destination.

If the sender requires the telegram to be forwarded by registered post the additional charge is 4d. if the telegram is to be posted from one place to another in the same country, and 8d. if it is to be posted from one country to another. In addition the sender must pay the amount of surcharge applicable to an ordinary letter if he desires the message to be conveyed by air mail. The address of such telegrams should be written thus—

POSTE SMITH,
10 MARINE PARADE,
VALETTA, LONDON.

The word "POSTE" is charged for as part of the telegram and the address indicates that it is to be forwarded by telegraph to London and posted from London to Valetta. If the telegram is required to be forwarded by registered post, the letters "PR" are inserted in the address instead of "Poste", or the letters "PAV" if it is to be forwarded by Air Mail.

Any further information may be obtained from the Beam Wireless Accepting Counters or any Postal Telegraph Office.

TELEPHONING BEAM WIRELESS MESSAGES.

Customers whose place of business is beyond the area of collection may telephone their messages direct to the Company's office. Messages are accepted at sender's risk, and, while every possible care is taken to eliminate telephonic errors, all messages should be confirmed by written messages as soon as possible. Phonetic code cards for use in dictating and checking messages by telephone have been prepared and are available upon request. This service is available day and night to any customer having a credit account, or to persons proving their bona fides.

CONSULTANT SERVICE.

If in doubt about the manner in which a message should be classified, addressed, or as to the compilation of the text and the application of special services, the Beam Wireless Service is always open to give users advice as to the best procedure.



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CONDITIONS OF ACCEPTANCE.

Beam Wireless Messages are accepted for transmission in accordance with the provisions and regulations of the International Telegraph Convention and the Commonwealth Telegraph Act. They should preferably be on the Company's forms, and, in order to guard against errors, should be legibly written. The text may be written in plain language, code or cypher, or a combination of the three, except to certain countries which do not permit code or cypher messages.

DEFINITIONS OF PLAIN LANGUAGE, CODE, AND CYPHER.

PLAIN LANGUAGE is that which presents an intelligible meaning in one or more of the languages authorised for International Telegraph correspondence, each word and each expression having the meaning normally assigned to it in the language to which it belongs.

Plain language is chargeable at the rate of 15 letters maximum for each word; commercial marks, numbers, etc., 5 to the word.

CODE LANGUAGE is composed either of artificial words or of real words not used with the meaning normally assigned to them in the language to which they belong, and consequently not forming intelligible phrases in one or more of the languages authorised for telegraphic correspondence in plain language; or lastly of a mixture of real words as defined and artificial words. Code words need not be pronounceable.

Messages in code language are divided into two (2) categories:—

Category A.—Telegrams in which the text contains code words of not more than ten letters having at least one vowel if they contain not more than five letters; at least two vowels if they contain six, seven, or eight letters, and at least three vowels if they contain nine or ten letters. There will be no restriction as to the number of vowels above three which may be used, and these additional vowels may be in any position in the word. In words of more than five letters one vowel at least must be in the first five letters, and at least one vowel in the rest of the word, but it must be understood that words of nine or ten letters must contain at least three vowels in all. The vowels



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are a, e, i, o, u, y. Groups formed of a combination of two or more words of plain language contrary to the custom of the language to which the words belong are not admitted.

Category B.—Telegrams of which the text contains code words of not more than five letters subject to no condition or restriction as to the method of formation of the words. Figures and groups of figures are not admitted; commercial marks consisting of a mixture of figures and letters may, however, be accepted if the sender can prove that they are commercial marks.

In Telegrams of both Categories A and B, code words must not contain the accented letters ù á â é ñ ö ü, and the groups ae, aa, ao, oe, ue, ch, are each counted as two letters.

In the case of code telegrams or mixed telegrams of Category A, the sender, if requested, must produce the code from which the text of the telegram has been taken.

In code language the maximum length of a word is fixed at 10 letters for telegrams in Category A, and 5 letters for telegrams in Category B.

In the text of a mixed telegram containing both plain language words and code words of Category A, the plain language words are counted at the rate of 10 letters to the word, any excess of less than 10 letters being counted as one word. If the mixed telegram is in Category B, the plain language words are counted at the rate of five letters to a word, any excess of less than 5 letters being counted as one word.

Telegrams of Category A are subject to the rate for ordinary telegrams. Those of Category B are charged for at two-thirds of the rate for ordinary telegrams.

A telegram in code language cannot be considered as belonging partly to Category A and partly to Category B. From this point of view it must be classified exclusively in one or other of these two Categories.

Senders presenting telegrams for transmission in Category B are requested to plainly mark them with the letters "CDE," for which no charge is made.



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PLAIN LANGUAGE IN DEFERRED MESSAGES.

We have found that many of our clients experience difficulty in interpreting the International Telegraph regulation which provides that, in plain language deferred messages, not more than one-third of the text will be in numbers, or words indicating numbers, commercial marks, etc.

In order that clients may take full advantage of plain language rates, we append a few notes on this regulation.

1. When one-third of the text gives a fractional number, this may be rounded up to the next whole number; e.g., in a text of 19 words, 7 words may be numbers or words indicating numbers, commercial marks, etc.

The signature if for transmission should be included when calculating the number of text words.

2. In daily letter and week-end telegrams (in which a minimum charge of twenty words is made), although the telegram contains less than twenty words, the full allowance of numbers may be used; e.g., if there are not more than three words in the address, the text may contain six groups or numbers, irrespective of the total number of words in the telegram.

3. Groups of figures are counted at five characters to one word, and words containing up to fifteen letters are counted as one word. If a number group is chargeable as two or more words, it is counted as an equal number of groups for the purpose of the one-third limit; e.g., £11,119/9/11 would count as three words—the 10 figures counting 2 words and the commercial pound sign one word. "Two hundred and thirty" (19 characters) would be chargeable as two words, and counted as two groups.

4. An important concession is that combinations of a cardinal number with the word "pence" up to and including "eighteenpence" are regarded as being outside the one-third limit. Also combinations of a cardinal number, and the word "penny" up to and including "eighteenpenny," provided they are used in an adjectival sense, are not regarded as being within the limit of this regulation; e.g., "eighteenpenny size."

Ordinal numbers written in the form of 1st, 3rd, 17th, 22nd, etc., should not be used; they should be written in full as "first," "third," "seventeenth," "twentysecond."



The following examples determine the interpretation of the rules for counting and charging:—

	Number of words Text				Number of words Text		
	In address	Plain lan- guage mess- ages	Code lan- guage mess- ages Category A		In address	Plain lan- guage mess- ages	Code lan- guage mess- ages Category A
New York	1	2	2	Portemonnaie	—	1	2
Newyork	1	1	1	Prince of Wales	3	3	3
Frankfurt Main.	1	2	2	Princeofwales (ship)	1	1	2
Frankfurtmain	1	1	2	Carlyons Hotel	2	2	2
Newsouthwales	1	1	2	Rue de la paix	4	4	4
Du Bois	2	2	2	Ruedelapaix	1	1	2
Dubois (name of a person) . .	1	1	1	44½ (5 characters)	—	1	1
Vandebrande (name of a per- son)	1	1	2	444½ (6 characters)	—	2	2
Saint James Street	3	3	3	444.55 (6 characters)	—	2	2
Saintjames Street	2	2	2	E.	—	1	1
Saintjamesstreet (16 characters)	2	2	2	E M (isolated letters)	2	2	2
Stjamesstreet	1	1	2	AP			
Hyde Park	2	2	2	— (Commercial mark)	—	1	1
Hydepark	1	1	1	M			
Hydepark Square	2	2	2	Ch23 (Commercial mark)	—	1	1
Hydeparksquare	1	1	2	GHF45 (Commercial mark)	—	1	1
Responsibility (14 characters)	—	1	2	25c (Commercial mark)	—	1	1
Unconstitutionality (19 charac- ters)	—	2	2	Emuthf (6 characters)	—	—	2
A-t-il	—	3	3	Twohundredandthirtyfour (23 characters), Numbers written out and joined	—	2	3
C'est-a-dire	—	4	4				
Porte-monnaie	—	2	2				

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PAID SERVICE INSTRUCTIONS.

Any instructions the sender may desire to give as to the delivery at destination, prepaid reply, acknowledgment of receipt, extra copies, etc., must be written immediately before the address.

The following Paid Service Instructions are transmitted by the relative abbreviations, each abbreviation being counted as one chargeable word:—

R.P. (Amount Paid)	Reply Paid (Amount Paid)
L.C.O.	Deferred Message Language Country Origin
L.C.F.	“ “ “ “ France
L.C.D.	“ “ “ “ Destination
D.L.T.	Daily Letter Telegram
W.L.T.	Week-end Letter Telegram
X.L.T.	Xmas Greeting Telegram
N.L.T.	Night Letter Telegram
P.A.V.	Air Post
T.C.	Collation
P.C.	Telegraph notice of delivery
P.C.P.	Postal notice of delivery
F.S.	To follow
Post	Post to
P.R.	Registered Post
G.P.R.	Poste Restante Registered
T.R.	Telegraph Restante
Express	Express
T.M. (number)	Several addresses
M.P.	Personal delivery

ADDRESS.

The address should contain all necessary particulars to ensure delivery. When addressing a message to a private address, care should be taken to make the address as complete as possible, i.e., name of person (if common name, preceded by Christian name), followed by house number, street and Telegraph Office.

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TEXT AND SIGNATURE.

Messages without text are not accepted.

The sender's name and address must be shown on all Beam Wireless Messages whether for transmission as paid words or not. Messages received for delivery are delivered to the address shown on the message unless otherwise directed. Customers desiring messages left in letter boxes, G.P.O. private boxes, etc., may make the necessary arrangements.

REPETITIONS.

Customers desiring a repetition of a word in a received message may have the word repeated upon application as follows:—

Messages delivered by the Company's messengers—Ring direct to F 4161 (Melbourne), or BW 2211 (Sydney), and ask for Service Clerk.

Messages delivered by the Post Office—Apply to the Telegraph Office from which the message was delivered.

REPLY PAID MESSAGES.

The sender of a Beam Wireless message may prepay a reply. The amount paid by the sender may be used in payment or part payment of a message during a period of six months following the date of issue of the voucher.

Excess charges over the value of the voucher must be paid by the sender who makes use of the voucher.

When the value of the voucher exceeds the cost of the reply message the difference is refunded to the sender of the original message if applied for within six months of the date of issue of the voucher provided the amount exceeds 1/8d.

COLLATION OF MESSAGES.

The object of collation is to ensure accuracy in transmission. It consists of a full repetition of the telegram from Telegraph Office to Telegraph Office.



The sender of an ordinary or deferred ordinary telegram has the option of requesting its collation. For this purpose he pays an additional charge equal to half the charge for an ordinary telegram of the same length for the same destination sent by the same route, and writes before the address the paid service indication "Collation" or —TC—.

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NOTICE OF DELIVERY.

Notice of the date and time of delivery of Beam Messages may be secured by telegraph or mail by writing the indicator PC for telegraphic report, or PCP for report by mail, immediately before the address. This indicator is counted and charged for as one word. For telegraphic report an additional charge equal to the toll on five (5) words at the full ordinary rate is made.

Every effort is made to have all messages handed in to our Telegraph Office during the afternoon, delivered in the United Kingdom by 9 a.m. the same day.

When it is 6 o'clock in the evening Eastern Australian time, it is 9 a.m. British Summer time, and if the messages are not lodged till nearly this hour, it is not possible for them to be delivered until after 9 a.m. in England.

The majority of messages are handed in between 5 and 6 p.m. and in their own interests customers should endeavour to file their messages as early in the afternoon as practicable in order that they may get the greatest benefit from our service.

FORMS AND ENVELOPES.

Beam Wireless message forms will be sent by messenger upon receipt of a telephone request. Should you require forms, ring our office asking for "Despatch."

Envelopes addressed to our "Counter Clerk" are supplied for use when forwarding messages by our messengers. A supply will be forwarded gratis upon request.



Messages to ships at sea in any part of the world are also accepted; these messages are forwarded to the nearest radio station to the ship at the time of filing or through the world-wide service at Sydney, at the discretion of the sender.

BEAM WIRELESS.

OUR SERVICE—AS IT APPLIES TO YOU.

THE Beam traffic officers are pleased at all times to confer with you on your overseas telegraphic problems, placing their expert advice at your disposal, so enabling you to establish your telegraphic business on an efficient basis, both as regards the times of despatch and reception, and especially with regard to economy of cost.

Many thousands of Australian business clients entrust all their telegraphic business to the Beam Service, regarding its many facilities as an integral part of their own organisation, frequently consulting us concerning important messages, so that their overseas telegraphic communications will be conducted with faultless expedition at each terminal.

The Beam officers endeavour to keep in personal contact with the huge Beam clientele, in order that they may be appraised of any defect in the service being rendered the client and take steps to rectify same, and also to make certain that clients are taking advantage of the many facilities the Service offers.



Top Left.—Thermionic Valve Transmitter at Ballan Wireless Station, Ballan, Victoria.



Top Right.—Power generating plant at Ballan Transmitting Station.



Bottom Left.—Beam aerial masts at Ballan, Victoria.



Bottom Right.—Central Radio Office, Melbourne.



TABLE SHOWING COMPARISON OF THE TIME OF COUNTRIES.

WEST LONGITUDE.

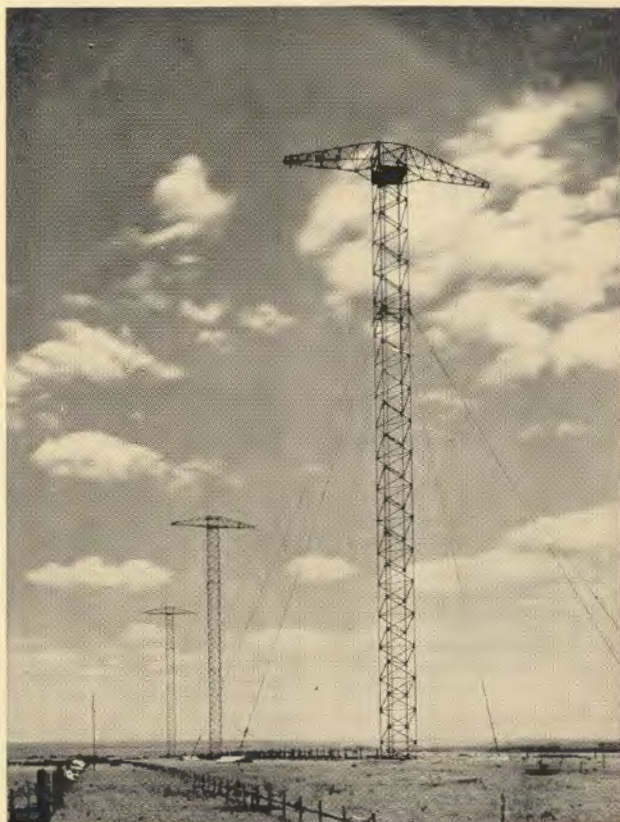
EAST LONGITUDE.

Page Twenty-Four

	San Francisco, Vancouver.	New York, Philadelphia, Wash ton, Quebec, Jamaica, Peru.	Chili.	Bolivia.	Argentine, Manaoa & Acre Districts (Brazil), Barbadoes.	Uruguay. (For Paraguay deduct 7 minutes.)	Brazil (Except Manaoa and Acre Districts).	Azores.	Madeira, Portuguese Guinea, French Guinea, Iceland.	United Kingdom (G.M.T.)	Austria, Norway, Denmark, Germany, Switzerland, Sweden.	Egypt.	Western Australia.	South Australia.	New Guinea, New South Wales, Q'land, Tasmania, Victoria, Papua.
4.0 p.	7.0	7.17 p.	7.28 p.	8.0	8.30 p.	9.0 p.	10.0 p.	11.0 p.	Midn.	Midn.	1.0 a.	2.0 a.	8.0 a.	9.30 a.	10.0 a.
5.0 p.	8.0	8.17 p.	8.28 p.	9.0	9.30 p.	10.0 p.	11.0 p.	11.0 p.	Midn.	1.0 a.	2.0 a.	3.0 a.	9.0 a.	10.30 a.	11.0 a.
6.0 p.	9.0	9.17 p.	9.28 p.	10.0	10.30 p.	11.0 p.	11.0 p.	Midn.	1.0 a.	2.0 a.	3.0 a.	4.0 a.	10.0 a.	11.30 a.	Noon
7.0 p.	10.0	10.17 p.	10.28 p.	11.0	11.30 p.	Midn.	1.0 a.	1.0 a.	2.0 a.	3.0 a.	4.0 a.	5.0 a.	11.0 a.	12.30 p.	1.0 p.
8.0 p.	11.0	11.17 p.	11.28 p.	12.0	12.30 p.	1.0 a.	2.0 a.	2.0 a.	3.0 a.	4.0 a.	5.0 a.	6.0 a.	11.0 a.	1.30 p.	2.0 p.
9.0 p.	Midn.	12.17 a.	12.28 a.	1.0	1.30 a.	2.0 a.	3.0 a.	3.0 a.	4.0 a.	5.0 a.	6.0 a.	7.0 a.	12.0 p.	2.30 p.	3.0 p.
10.0 p.	1.0 a.	1.17 a.	1.28 a.	2.0	2.30 a.	3.0 a.	4.0 a.	4.0 a.	5.0 a.	6.0 a.	7.0 a.	8.0 a.	1.0 p.	3.30 p.	4.0 p.
11.0 p.	2.0 a.	2.17 a.	2.28 a.	3.0	3.30 a.	4.0 a.	5.0 a.	5.0 a.	6.0 a.	7.0 a.	8.0 a.	9.0 a.	2.0 p.	4.30 p.	5.0 p.
Midn.	3.0 a.	3.17 a.	3.28 a.	4.0	4.30 a.	5.0 a.	6.0 a.	6.0 a.	7.0 a.	8.0 a.	9.0 a.	10.0 a.	3.0 p.	5.30 p.	6.0 p.
1.0 a.	4.0 a.	4.17 a.	4.28 a.	5.0	5.30 a.	6.0 a.	7.0 a.	7.0 a.	8.0 a.	9.0 a.	10.0 a.	11.0 a.	4.0 p.	6.30 p.	7.0 p.
2.0 a.	5.0 a.	5.17 a.	5.28 a.	6.0	6.30 a.	7.0 a.	8.0 a.	8.0 a.	9.0 a.	10.0 a.	11.0 a.	12.0 p.	5.0 p.	7.30 p.	8.0 p.
3.0 a.	6.0 a.	6.17 a.	6.28 a.	7.0	7.30 a.	8.0 a.	9.0 a.	9.0 a.	10.0 a.	11.0 a.	Noon	1.0 p.	6.0 p.	8.30 p.	9.0 p.
4.0 a.	7.0 a.	7.17 a.	7.28 a.	8.0	8.30 a.	9.0 a.	10.0 a.	10.0 a.	11.0 a.	Noon	1.0 p.	2.0 p.	7.0 p.	9.30 p.	10.0 p.
5.0 a.	8.0 a.	8.17 a.	8.28 a.	9.0	9.30 a.	10.0 a.	11.0 a.	11.0 a.	Noon	1.0 p.	2.0 p.	3.0 p.	8.0 p.	10.30 p.	11.0 p.
6.0 a.	9.0 a.	9.17 a.	9.28 a.	10.0	10.30 a.	11.0 a.	Noon	Noon	1.0 p.	2.0 p.	3.0 p.	4.0 p.	9.0 p.	11.30 p.	Midn.
7.0 a.	10.0 a.	10.17 a.	10.28 a.	11.0	11.30 a.	Noon	1.0 p.	2.0 p.	3.0 p.	4.0 p.	5.0 p.	6.0 p.	10.0 p.	12.30 a.	1.0 a.
8.0 a.	11.0 a.	11.17 a.	11.28 a.	Noon	12.30 p.	1.0 p.	2.0 p.	3.0 p.	4.0 p.	5.0 p.	6.0 p.	7.0 p.	11.0 p.	1.30 a.	2.0 a.
9.0 a.	Noon	12.17 a.	12.28 p.	1.0	1.30 p.	2.0 p.	3.0 p.	4.0 p.	5.0 p.	6.0 p.	7.0 p.	8.0 p.	12.0 p.	2.30 a.	3.0 a.
10.0 a.	1.0 p.	1.17 p.	1.28 p.	2.0	2.30 p.	3.0 p.	4.0 p.	5.0 p.	6.0 p.	7.0 p.	8.0 p.	9.0 p.	1.0 p.	3.30 a.	4.0 a.
11.0 a.	2.0 p.	2.17 p.	2.28 p.	3.0	3.30 p.	4.0 p.	5.0 p.	6.0 p.	7.0 p.	8.0 p.	9.0 p.	10.0 p.	2.0 a.	4.30 a.	5.0 a.
Noon	3.0 p.	3.17 p.	3.28 p.	4.0	4.30 p.	5.0 p.	6.0 p.	7.0 p.	8.0 p.	9.0 p.	10.0 p.	11.0 p.	3.0 a.	5.30 a.	6.0 a.
1.0 p.	4.0 p.	4.17 p.	4.28 p.	5.0	5.30 p.	6.0 p.	7.0 p.	8.0 p.	9.0 p.	10.0 p.	11.0 p.	12.0 p.	4.0 a.	6.30 a.	7.0 a.
2.0 p.	5.0 p.	5.17 p.	5.28 p.	6.0	6.30 p.	7.0 p.	8.0 p.	9.0 p.	10.0 p.	11.0 p.	12.0 p.	1.0 a.	5.0 a.	7.30 a.	8.0 a.
3.0 p.	6.0 p.	6.17 p.	6.28 p.	7.0	7.30 p.	8.0 p.	9.0 p.	10.0 p.	11.0 p.	12.0 p.	1.0 a.	2.0 a.	6.0 a.	8.30 a.	9.0 a.

(Subject to operation of Summer Time Acts)

BEAM WIRELESS.



Section of Beam Aerial System
Rockbank, Victoria

A.W.A. WORLD-WIDE RADIOPHONE

OVERSEAS TELEPHONE SERVICES BETWEEN AUSTRALIA AND

THE UNITED KINGDOM, EUROPE, NORTH AND SOUTH AMERICA, JAVA, NEW ZEALAND, AND SHIPS AT SEA

The first Wireless Telephone service to be inaugurated between Great Britain and a Dominion was established and operated in Australia by Amalgamated Wireless (A'asia) Ltd. The A.W.A. Radiophone service is now available for private and business conversations between Australia and various countries and vessels at sea as set out hereunder:

HOURS OF SERVICE.

GREAT BRITAIN, EUROPE, NORTH AND SOUTH AMERICA, AND SHIPS AT SEA (via London).

Sydney Time:

(Approx.)

4 p.m. to 7 p.m.
1.30 a.m. to 7 a.m.

Greenwich Mean Time:

(Approx.)

6 a.m. to 9 a.m.
3.30 p.m. to 9 p.m.

The service is closed from about 7 p.m. on Saturday until 4 p.m. on Monday, Sydney time.

During the months that British Summer Time is observed in the United Kingdom, the time is advanced there one hour ahead of Greenwich Mean Time.

JAVA

Sydney Time:

9.30 p.m. to 11 p.m.

Java Time:

6.50 p.m. to 8.20 p.m.

The Service is closed on Sundays.

NEW ZEALAND

Sydney Time:

9 a.m. to 7 p.m.

New Zealand Time:

10.30 a.m. to 8.30 p.m.

The Service is closed on Sundays.

GENERAL INFORMATION

Where restricted service only is shown, calls are accepted and completed subject to a satisfactory service being available.

Rates are subject to alteration without notice. Information regarding future extensions of the Radiophone Service will be supplied on application.

HOW TO ARRANGE A CALL

- (a) **Telephone Subscribers:**—Call "Trunk lines" (consult Telephone Directory for number).
- (b) **Non-Subscribers:**—Apply at the nearest Post Office where "Trunk line" service is provided, or at the attended pay station, General Post Office.

RADIOPHONE RATES

The undermentioned rates are at present subject to a surcharge in respect of exchange, full particulars of which may be obtained from the Company's Offices or from any postal telegraph or telephone office.

Country	Zone	CHARGE		Report Charge
		First Three Minutes (Minimum Fee)	Each Additional Minute, or part thereof	
ARGENTINA—	1st Zone	£9 0 0	£3 0 0	20/-
(See Zonal Distri- butions below)	2nd Zone	9 18 0	3 6 0	20/-
AUSTRIA—	3rd Zone	10 16 0	3 12 0	20/-
BALEARIC ISLANDS—	(all parts)	7 4 0	2 8 0	20/-
Island of Majorca		7 7 0	2 9 0	21/-
BELGIUM—	(all parts)	6 12 0	2 4 0	16/-
BRAZIL—		9 0 0	3 0 0	20/-
Rio de Janeiro—		9 0 0	3 0 0	20/-
CANADA—	1st Zone	9 12 0	3 4 0	20/-
(See Zonal Distri- butions below)	2nd Zone	10 4 0	3 8 0	20/-
	3rd Zone	10 16 0	3 12 0	20/-
	4th Zone	11 8 0	3 16 0	20/-
	5th Zone			
CANARY ISLANDS				
Islands of Grand Canary and Tenerife		8 2 0	2 14 0	26/-
CEUTA—Morocco—		7 10 0	2 10 0	22/-
CHILE—	(See Argentina 3rd Zone)	10 16 0	3 12 0	20/-
CUBA—Havana only—	See U.S.A. 5th Zone	11 8 0	3 16 0	20/-
Other Parts—	See U.S.A. 6th Zone	12 0 0	4 0 0	20/-
CZECHOSLOVAKIA—		7 7 0	2 9 0	21/-
DANZIG—		7 1 0	2 7 0	19/-
DENMARK—	(all parts)	7 7 0	2 9 0	21/-
EGYPT—		7 4 0	2 8 0	16/-
FINLAND—	(all parts)	7 13 0	2 11 0	23/-
FRANCE—	(all parts)	6 15 0	2 5 0	17/-
GERMANY—	(all parts)	7 1 0	2 7 0	19/-
GIBRALTAR—	(all parts)	7 4 0	2 8 0	20/-
HOLLAND—	(all parts)	6 15 0	2 5 0	17/-
HUNGARY—	(all parts)	7 10 0	2 10 0	22/-
IRELAND—	(all parts)	6 6 0	2 2 0	14/-
ITALY—	(all parts, including the Vatican State)	7 4 0	2 8 0	20/-
JAVA—		6 0 0	2 0 0	12/-
LATVIA—		7 1 0	2 7 0	19/-
LITHUANIA—	(all parts)	7 1 0	2 7 0	19/-
LUXEMBOURG—	(all parts)	6 12 0	2 4 0	16/-
MEXICO—	See U.S.A. 6th Zone	12 0 0	4 0 0	20/-
NEW ZEALAND—		3 0 0	1 0 0	6/-
NORWAY—	(all parts)	7 10 0	2 10 0	22/-
POLAND—	(all parts)	7 10 0	2 10 0	22/-
ROUMANIA—	(all parts)	7 16 0	2 12 0	24/-
SPAIN—	(all parts)	7 4 0	2 8 0	20/-
SWEDEN—	(all parts)	7 7 0	2 9 0	21/-
SWITZERLAND—	(all parts)	6 18 0	2 6 0	18/-
UNITED KINGDOM—	(all parts)	6 0 0	2 0 0	12/-
U.S. OF AMERICA—	1st Zone	9 0 0	3 0 0	20/-
(See Zonal Distri- butions below)	2nd Zone	9 12 0	3 4 0	20/-
	3rd Zone	10 4 0	3 8 0	20/-
	4th Zone	10 16 0	3 12 0	20/-
	5th Zone	11 8 0	3 16 0	20/-
	6th Zone	12 0 0	4 0 0	20/-
URUGUAY—	(See Argentina 2nd Zone)	9 18 0	3 6 0	20/-
SHIPS AT SEA:				
R.M.S. "Emp. of Britain"				
R.M.S. "Olympic"				
R.M.S. "Majestic"	via London	7 4 0	2 8 0	16/-
R.M.S. "Homeric"				
A.M.S. "Leviathan"				

A.W.A. RADIOPHONE

ZONAL DISTRIBUTIONS

ARGENTINA:

- 1st ZONE.—The City and Provinces of Buenos Aires.
- 2nd ZONE.—Remainder of Argentina, as well as Monte Video, Colonial Rosario and Colonial Suiza in Uruguay.
- 3rd ZONE.—Central Santiago, Vinapelmar and Valparaiso in Chili.

CANADA:

- 1st ZONE.—South and East Quebec and South-East Ontario. This area includes the towns of Quebec, Montreal, Hamilton and Toronto.
- 2nd ZONE.—The rest of Quebec, Nova Scotia, New Brunswick, and Central part of Ontario outside of 1st Zone and as far west as a line drawn from Moose Factory on James Bay, to Michipicoten Bay on Lake Superior. This area includes the towns of Windsor, St. John, and Halifax.
- 3rd ZONE.—The rest of Ontario and Manitoba. This area includes the towns of Winnipeg and Fort William.
- 4th ZONE.—Saskatchewan and Alberta. This area includes the towns of Calgary, Edmonton, and Regina.
- 5th ZONE.—British Columbia, including the town of Vancouver.

UNITED STATES OF AMERICA:

- 1st ZONE.—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Delaware, District of Columbia.
- 2nd ZONE.—Ohio, Indiana, Illinois, Michigan, Wisconsin, Virginia, West Virginia, North and South Carolina, Georgia, Kentucky, Tennessee.
- 3rd ZONE.—Florida, Alabama, Mississippi, Minnesota, North and South Dakota, Iowa, Nebraska, Missouri, Kansas, Arkansas, Oklahoma, Louisiana.
- 4th ZONE.—Montana, Wyoming, Idaho, Colorado, Utah, New Mexico, Texas.
- 5th ZONE.—Washington, Oregon, California, Nevada, Arizona, Town of Havana in Cuba.
- 6th ZONE.—Mexico, Cuba.

A.W.A. RADIOPHONE

METHOD OF EXTENDING AND TIMING CALLS.

It is important that users of the overseas service should understand that the procedure in connection with the extension of calls differs somewhat from that followed with the ordinary inland trunk line service. In the case of the overseas service the exchange operator times the call from the commencement and announces to the calling subscriber when "3 minutes," "6 minutes," etc., of commercial speech have expired. The conversation is not otherwise interrupted at all, and the subscriber ends or extends his call as he wishes when being specifically asked at any time by the operator whether he desires an extension. At the end of 11 minutes, if other calls are waiting, the caller is informed by the operator that there is only one minute more to elapse, as it is the practice to allow only 12 minutes' conversation to any one caller when other subscribers are waiting to use the channel.

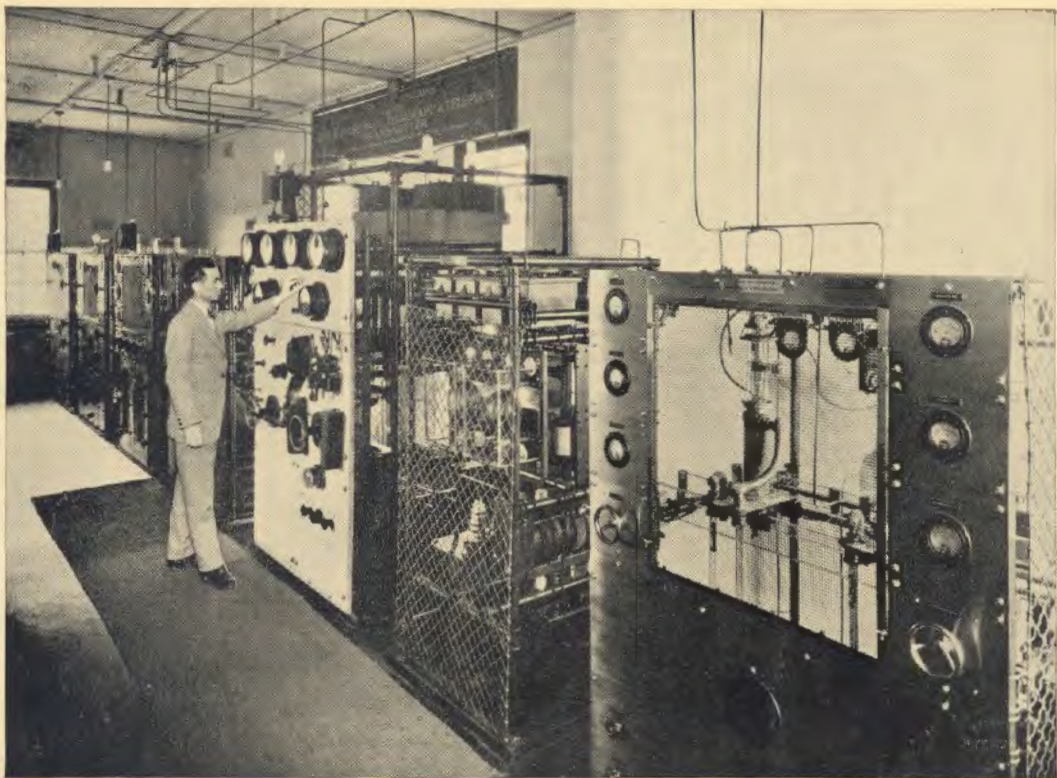
INTERFERENCE WITH SERVICE.

Cases have been noticed recently where users of the overseas service have allowed one or more persons to listen in simultaneously at their premises. This practice seriously reduces the efficiency of the service and, in certain circumstances, has rendered conversation impracticable. Users would co-operate by restricting the call to one person at a time. Where, owing to special circumstances, a caller desires a second person to listen in to take notes, etc., and will furnish advice in advance, steps will be taken to provide suitable facilities at the cost of the subscriber to enable this to be done.

LANGUAGE DIFFICULTY WHEN SPEAKING TO OTHER COUNTRIES.

The amount of chargeable time on the radio circuit is based from the time conversation begins to the time conversation ends, due allowance being made during the intervening period for interruptions or interference caused by the functioning of the radio channel or other land-lines used to establish the call. No allowance can be made for difficulties experienced owing to the limitations of the caller or called person understanding the language used in carrying on the conversation.

SHORT WAVE TRANSMITTER



20 K.W. Short Wave Transmitter at Radio Centre, Pennant Hills, for use in Overseas Broadcasting and Telephony. Manufactured and designed by A.W.A.

AUSTRALIAN COASTAL RADIO SERVICE

THE Australian coastline is dotted with wireless stations for the purpose of keeping in touch with ships at sea, and thus destroying the one-time isolation of those who go to sea in ships. These stations are owned and operated by Amalgamated Wireless (A/sia) Ltd.

Radiograms for ships at sea may be lodged at the A.W.A. Wireless Offices in Sydney or Melbourne, or at any telegraph office in Australia. Every wireless-equipped ship is a telegraph office, and passengers may lodge radiograms at the Wireless Office on board for transmission to any telegraph office on land or sea in any part of the world.

In addition to the exchange of radiograms between ship and shore, the Coastal Radio Stations are also extensively used for the broadcasting to ships of official time signals, meteorological bulletins, weather reports, storm warnings and warnings of any wreckage or other navigational dangers.

The Company's Australian Coastal Radio Stations are located at:—

Adelaide	Esperance	Rockhampton
Brisbane	Geraldton	Sydney
Broome	Hobart	Thursday Island
Cooktown	King Island	Townsville
Darwin	Melbourne	Willis Island
Flinders Island	Perth	Wyndham
Lord Howe Island		

MARINE WIRELESS SERVICE.

EVERY ship at sea fitted with wireless is a floating telegraph office handling radiograms for the public to and from all parts of the world. The wireless apparatus on the majority of Australian owned vessels was designed and manufactured by A.W.A. and is operated by the Company. Messages for ships at sea are accepted at all Post Offices throughout the Commonwealth and also at the A.W.A. Wireless Offices at Sydney and Melbourne.

The business man travelling at sea finds great value in the Marine Radio Service, as it enables him to arrange in advance, and at his leisure, booking of hotel accommodation, rail-berths, and appointments,

If you desire to send a message to a ship at sea, and it is not convenient to lodge it at a telegraph office, you can telephone it to the Chief Telegraph Office, and the cost of the message will be charged in your ordinary telephone account. The procedure to be adopted is shown in the latest telephone directory under the heading of "Telegraph Information."

A system that has been in successful operation for some years is the "Poste Radiogram," whereby a message may be sent from ship to shore, and on receipt at the Coastal Radio Station instead of being telegraphed to the addressee may be sent by letter from the Station, the message thereby costing less to the sender than an ordinary radiogram.

To have a radiogram from a ship at sea delivered quickly on shore on Sunday or at other times when the local telegraph office is closed, include the addressee's telephone number in the address of the message, and the message will be telephoned to the addressee.



Radiograms are also accepted at the discretion of the sender for transmission to ships at sea in any part of the world, through the Company's world-wide service at Sydney, provided the ship of destination is equipped with reciprocal long range apparatus.

The conditions of acceptance are similar to Bearer Wireless messages in all respects.

MARINE WIRELESS SERVICE.

ADDRESS OF SHIP RADIO MESSAGES.

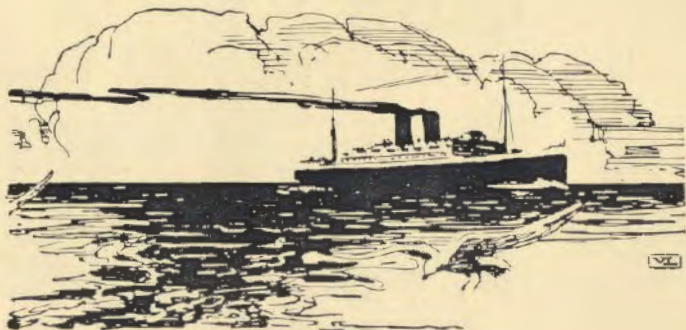
Messages to ships should be addressed in the following order:—

1. The passenger's name, in the case of common surnames, Christian names should be added.
2. Ship's name. Double names should be connected, i.e., JERVISBAY, and are counted as one word.
3. The Radio Station. The station in range of the vessel can be ascertained from the daily papers, the Company's Offices or main Telegraph Offices.

It will be seen that ships' radio messages should always consist of at least three words in the address as shown: CASHMORE, AORANGI, SYDNEYRADIO.

The rates to ships vary, and while messages to ships on the Australian or New Zealand Register are accepted at 6d. per word (no minimum), messages to ships on English, American or Foreign Registers are accepted at rates varying up to 11d. per word (no minimum).

A list of the ships to which the 6d. per word rate applies is available at the Beam Wireless Offices in Sydney and Melbourne, and at all A.W.A. Coastal Radio Stations in Australia, Papua, and New Guinea and at all Postal Telegraph Offices throughout the Commonwealth and its territories.





Wireless Cabin MV "Manunda" showing $1\frac{1}{2}$ K.W. Marine Valve Transmitter on right with $\frac{1}{4}$ K.W. spark emergency Transmitter and long wave and short wave Receivers in centre. Auto Alarm equipment at left.

Rates for International Telegrams via "BEAM WIRELESS"

	Ord. Rate		Def'd Rate		Daily Letter		Week-end					
					20 words or less	Extra Words	20 words or less	Extra Words				
	s.	d.	s.	d.	s.	d.	s.	d.				
EUROPE—												
Great Britain and Northern Ireland ..	1	8	0	10	10	0	6	8	4	0	5	
Albania ..	2	3½	1	1½	.....	.....	.....	.....	.....	.....	.....
Austria ..	2	2	1	1	15	0	0	9	13	4	0	8
Azores ..	2	9	1	4½	.....	.....	.....	.....	.....	.....	.....
Belgium ..	1	11½	0	11½	15	0	0	9	12	6	0	7½
Bulgaria ..	2	4	1	2	.....	.....	.....	.....	.....	.....	.....
Czecho-Slovakia ..	2	2	1	1	17	6	0	10½	15	0	0	9
Danzig ..	2	1½	1	0½	15	10	0	9½	13	4	0	8
Denmark ..	2	1	1	0½	15	0	0	9	12	6	0	7½
Estonia ..	2	4½	1	2½	.....	.....	.....	.....	.....	.....	.....
Faroe Islands ..	2	0	1	0	.....	.....	.....	.....	.....	.....	.....
Finland ..	2	2½	1	1½	.....	.....	.....	.....	.....	.....	.....
France ..	2	0½	1	0½	15	10	0	9½	13	4	0	8
Germany ..	2	1	1	0½	15	0	0	9	12	6	0	7½
Gibraltar ..	2	2½	1	1½	.....	.....	.....	.....	.....	.....	.....
Greenland ..	2	5½	.....	.....	.....	.....	.....	.....	.....	.....	.....
Greece and Islands } of Poros and Eubaea }	2	4	1	2	.....	.....	.....	.....	.....	.....	.....
All other Greek Islands }	2	4½	1	2½	15	0	0	9	12	6	0	7½
Holland ..	2	0	1	0	15	0	0	9	12	6	0	7½
Hungary ..	2	3	1	1½	.....	.....	.....	.....	.....	.....	.....
Iceland ..	2	1	1	0	.....	.....	.....	.....	.....	.....	.....
Irish Free State ..	1	8	0	10½	10	0	0	6	8	4	0	5
Italy ..	2	1	1	0½	15	0	0	9
Jugo-Slavia ..	2	2½	1	1½	.....	.....	.....	.....	.....	.....	.....
Latvia ..	2	3½	1	1½	15	10	0	9½	.....	.....	.....
Lithuania ..	2	2	1	1	15	10	0	9½	.....	.....	.....
Luxembourg ..	2	0	1	0	15	0	0	9	12	6	0	7½
Malta ..	2	3½	1	1½	.....	.....	.....	.....	.....	.....	.....
Norway ..	2	1½	1	0½	15	10	0	9½	13	4	0	8
Poland ..	2	2	1	1	.....	.....	.....	.....	.....	.....	.....
Portugal ..	2	3	1	1½	.....	.....	.....	.....	.....	.....	.....
Rhodes ..	2	3	1	1½	.....	.....	.....	.....	.....	.....	.....
Roumania ..	2	3	1	1½	.....	.....	.....	.....	.....	.....	.....
Russia ..	2	5½	1	2½	16	8	0	10	14	2	0	8½
Saar ..	2	1	1	0½	.....	.....	.....	.....	.....	.....	.....
Spain ..	2	1½	1	0½	.....	.....	.....	.....	.....	.....	.....
Spitzbergen ..	2	4½	1	2½	.....	.....	.....	.....	.....	.....	.....
Sweden ..	2	1	1	0½	15	0	0	9	12	6	0	7½
Switzerland ..	2	1	1	0½	15	10	0	9½	13	4	0	8
Turkey in Europe, via France Eastern ..	2	5½	.....	.....	.....	.....	.....	.....	.....	.....	.....
Turkey in Europe, via Jugo-Slovakia ..	2	6	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vatican City ..	2	1½	1	0½	15	0	0	9
UNITED STATES OF AMERICA—												
STATE												
Alabama ..	2	3½	1	1½	12	11	0	7½	.....	.....	.....
Alaska ..	3	1	1	6	.....	.....	.....	.....	.....	.....	.....
Arizona ..	2	1½	1	0½	10	10	0	6½	.....	.....	.....
Arkansas ..	2	3	1	1½	12	11	0	7½	.....	.....	.....
California ..	2	1	1	0	10	10	0	6	.....	.....	.....
Colorado ..	2	2½	1	1½	11	3	0	6½	.....	.....	.....
Connecticut ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Delaware ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
District of Columbia }	2	5	1	2½	13	9	0	8½	.....	.....	.....
Florida ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Georgia ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Idaho ..	2	1½	1	0½	10	10	0	6½	.....	.....	.....

Rates subject to alteration without notice.

EARLIER LODGMENT MEANS EARLIER DELIVERY

SOME A.W.A. WIRELESS ACHIEVEMENTS

- 22nd SEPTEMBER, 1918.—First direct wireless messages transmitted from England to Australia, received by Mr. E. T. Fisk, at Wahroonga, N.S.W. The messages were transmitted from the Marconi Station at Carnarvon, Wales, and were from Mr. W. M. Hughes, Prime Minister of Australia, and Sir Joseph Cook, Minister for Navy, at that time.
- AUGUST, 1920.—Mr. E. T. Fisk gave the first public demonstration of Wireless Broadcasting at the Royal Society of N.S.W., Sydney
- OCTOBER, 1920.—Complete public broadcasting concert at the Queen's Hall, Federal Parliament House, Melbourne, arranged by Mr. E. T. Fisk.
- JANUARY, 1921.—Commencement of weekly broadcast programme transmitted from Melbourne offices of A.W.A.
- DECEMBER, 1921.—First press message direct by wireless from England to Australia received at A.W.A. Experimental Station at Koo-wee-rup, Victoria.
- 4th MAY, 1923.—First daily newspaper, "Wireless News," published on board a British ship in the Pacific, was carried out by A.W.A. on board R.M.S. "Niagara."
- 5th DECEMBER, 1923.—Opening of Broadcasting Station—2FC—first high-power broadcasting station in Australia. The station was designed, manufactured and operated by A.W.A.
- JANUARY, 1924.—The first successful transmission of low power short-wave signals from England to Australia received at Mr. Fisk's Experimental Station at Vaucluse, Sydney.
- MAY, 1924.—Wireless telephone communication between England and Australia established.
- 10th NOVEMBER, 1924.—First transmission of wireless telegraphic signals from Australia to England.
- 1924.—Record working distance of 7,000 miles obtained between Sydney Short-wave Station and R.M.S. "Niagara" by means of short-wave, low power apparatus.
- 1926.—Record working distance of nearly 10,000 miles obtained between Sydney Short-wave Station and T.S.S. "Jervis Bay" at Tilbury Docks, London, by means of short-wave, low power apparatus.

Rates for International Telegrams via "BEAM WIRELESS"

	Ord. Rate.		Def'd Rate.		Daily Letter. 20 words or less.		Extra Words.		Week-end. 20 words or less.		Extra Words.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Illinois	2	3½	1	1½	12	11	0	7½	.....	.....	.....	.....
Indiana	2	3½	1	1½	12	11	0	7½	.....	.....	.....	.....
Iowa	2	2½	1	1½	11	3	0	6½	.....	.....	.....	.....
Kansas	2	2½	1	1½	11	3	0	6½	.....	.....	.....	.....
Kentucky	2	3½	1	1½	12	11	0	7½	.....	.....	.....	.....
Louisiana	2	3½	1	1½	12	11	0	7½	.....	.....	.....	.....
Maine	2	5	1	2½	13	9	0	8½	.....	.....	.....	.....
Maryland	2	5	1	2½	13	9	0	8½	.....	.....	.....	.....
Massachusetts	2	5	1	2½	13	9	0	8½	.....	.....	.....	.....
Michigan	2	3½	1	1½	12	11	0	7½	.....	.....	.....	.....
Minnesota	2	3½	1	1½	12	11	0	7½	.....	.....	.....	.....
Mississippi	2	3½	1	1½	12	11	0	7½	.....	.....	.....	.....
Missouri	2	3½	1	1½	12	11	0	7½	.....	.....	.....	.....
Montana	2	2½	1	1½	11	3	0	6½	.....	.....	.....	.....
Nebraska	2	1½	1	0½	10	10	0	6½	.....	.....	.....	.....
Nevada	2	1½	1	0½	10	10	0	6½	.....	.....	.....	.....
New Hampshire	2	5	1	2½	13	9	0	8½	.....	.....	.....	.....
New Jersey	2	2½	1	1½	11	3	0	6½	.....	.....	.....	.....
New Mexico	2	2½	1	1½	11	3	0	6½	.....	.....	.....	.....
New York	2	5	1	2½	13	9	0	8½	.....	.....	.....	.....
North Carolina	2	2½	1	1½	11	3	0	6½	.....	.....	.....	.....
North Dakota	2	2½	1	1½	11	3	0	6½	.....	.....	.....	.....
Ohio	2	3½	1	1½	12	11	0	7½	.....	.....	.....	.....
Oklahoma	2	1½	1	0½	10	10	0	6½	.....	.....	.....	.....
Oregon	2	1½	1	0½	10	10	0	6½	.....	.....	.....	.....
Pennsylvania	2	5	1	2½	13	9	0	8½	.....	.....	.....	.....
Rhode Island	2	5	1	2½	13	9	0	8½	.....	.....	.....	.....
South Carolina	2	2½	1	1½	11	3	0	6½	.....	.....	.....	.....
South Dakota	2	2½	1	1½	11	3	0	6½	.....	.....	.....	.....
Tennessee	2	3½	1	1½	12	11	0	7½	.....	.....	.....	.....
Texas	2	1½	1	0½	10	10	0	6½	.....	.....	.....	.....
Utah	2	1½	1	0½	10	10	0	6½	.....	.....	.....	.....
Vermont	2	5	1	2½	13	9	0	8½	.....	.....	.....	.....
Virginia	2	1½	1	0½	10	10	0	6½	.....	.....	.....	.....
Washington	2	5	1	2½	13	9	0	8½	.....	.....	.....	.....
West Virginia	2	3½	1	1½	12	11	0	7½	.....	.....	.....	.....
Wisconsin	2	2½	1	1½	11	3	0	6½	.....	.....	.....	.....
Wyoming	2	2½	1	1½	11	3	0	6½	.....	.....	.....	.....
BRITISH NORTH AMERICA (Canada)—												
Alberta	1	5½	0	8½	10	10	0	6½	8	9	0	5½
British Columbia:												
Zone 1	1	5½	0	8½	10	10	0	6½	8	9	0	5½
Zone 2	1	7	0	9½	.....	.....	.....	.....	.....	.....	.....	.....
Zone 3	1	8	0	10	.....	.....	.....	.....	.....	.....	.....	.....
Zones 4 & 5	1	10	0	11	.....	.....	.....	.....	.....	.....	.....	.....
Labrador	1	10½	0	11½	.....	.....	.....	.....	.....	.....	.....	.....
Manitoba	1	5½	0	8½	10	10	0	6½	8	9	0	5½
New Brunswick	1	5½	0	8½	10	10	0	6½	8	9	0	5½
Newfoundland	1	9	0	10½	13	9	0	8½	11	8	0	7
Nova Scotia	1	5½	0	8½	10	10	0	6½	8	9	0	5½
Ontario	1	5½	0	8½	10	10	0	6½	8	9	0	5½
Prince Edward Island	1	8	0	10	12	11	0	7½	11	3	0	6½
Quebec	1	5½	0	8½	10	10	0	6½	8	9	0	5½
Saskatchewan	1	5½	0	8½	10	10	0	6½	8	9	0	5½
Yukon	2	7	1	3½	.....	.....	.....	.....	.....	.....	.....	.....
HAWAIIAN ISLANDS—												
Honolulu and Oahu	3	0½	1	6½	.....	.....	.....	.....	.....	.....	.....	.....
Hawaii, Kauai, Maui and Molokai	3	7½	1	9½	.....	.....	.....	.....	.....	.....	.....	.....
MEXICO	2	11½	1	5½	.....	.....	.....	.....	.....	.....	.....	.....

Rates subject to alteration without notice.

EARLIER LODGMENT MEANS EARLIER DELIVERY

SOME A.W.A. WIRELESS ACHIEVEMENTS

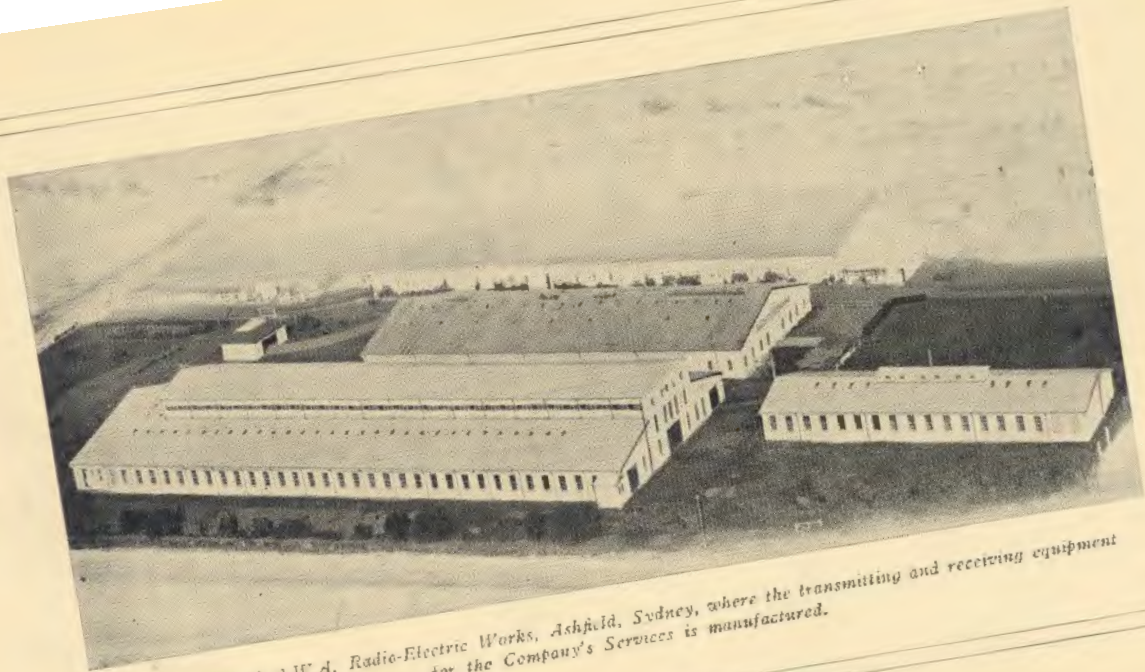
- 8th APRIL, 1927.—Beam Wireless Service between Australia and Great Britain and Ireland opened for commercial traffic. This is the longest direct telegraphic service in the world, and at the cheapest rates.
- 5th SEPTEMBER, 1927.—First Empire Broadcast Programme transmitted through A.W.A. Overseas Experimental Station, 2ME, Pennant Hills, Sydney. The programme was arranged by Farmer and Co.'s Station, 2FC. The "Sydney Morning Herald" also co-operated with A.W.A. on this historic occasion.
- JUNE, 1928.—Beam Wireless Service between Australia and Canada, U.S.A., South and Central America opened for commercial traffic.
- JUNE, 1928.—A.W.A. Receiving Centre at Sydney was in constant communication with Captain Kingsford Smith's aeroplane, the "Southern Cross," from the time it left San Francisco until it reached Australia.
- SEPTEMBER, 1928.—Installation of Marconi Loud Speaking Equipment at St. Mary's Cathedral, Sydney, for Eucharistic Congress.
- 1st NOVEMBER, 1928.—First wireless telephony tests carried out by Mr. E. T. Fisk and General Electric Co. of America, between Sydney and Schenectady, New York, and Sydney and Java.
- AUGUST, 1929.—Wireless telephony tests between Australia and Great Britain successfully carried out by Mr. Fisk.
- AUGUST, 1929.—By arrangement with A.W.A., patient at Prince Alfred Hospital, Sydney, spoke by wireless with his mother in London.
- 30th APRIL, 1930.—Opening of A.W.A. Wireless Telephony Service between Australia and Great Britain, the Continent of Europe and North and South America.
- 25th NOVEMBER, 1930.—Wireless Telephony Service between New Zealand and Australia opened.
- 10th MARCH, 1931.—The inauguration of a direct wireless telegraph service between Sydney and Port Moresby.
- 31st MARCH, 1931.—New and modern Radio-Electric Works, Parramatta Road, Ashfield, officially opened.
- 5th JULY, 1931.—Inauguration of World-wide Broadcasting Service from the A.W.A. short wave broadcasting station, VK2ME, at Pennant Hills, Sydney.

Rates for International Telegrams via "BEAM WIRELESS"

	Ord. Rate		Def'd Rate		Daily Letter		Week-end.	
	s.	d.	s.	d.	20 words or less	Extra words	20 words or less	Extra words
CENTRAL AMERICA—								
COSTA RICA—San Jose, Limon, Puntarenas, Colorado Bar ..	3	8½	1	10½	.....	.....	.....	.....
All other Offices	3	11	1	11½	.....	.....	.....	.....
GUATEMALA—San Jose de Guatemala	3	8½	1	10½	.....	.....	.....	.....
All other Offices	3	11	1	11½	.....	.....	.....	.....
HONDURAS, REPUBLIC OF	3	11	1	11½	.....	.....	.....	.....
HONDURAS, BRITISH	3	5½	1	8½	.....	.....	.....	.....
NICARAGUA—San Juan del Sur	3	8½	1	10½	.....	.....	.....	.....
Cape Gracias .. .. .	.....	.....	.....	.....	.....	.....	.....	.....
El Gallo and Rio Grande .. .. .	.....	.....	.....	.....	.....	.....	.....	.....
Puerto Cabezas and Braganman's Bluff	4	4	2	2	.....	.....	.....	.....
All other Offices	3	11	1	11½	.....	.....	.....	.....
PANAMA—Colon, Panama City, Ancon, Balboa, Christobal, Almirante, Bocas del Toro	3	9	1	10½	.....	.....	.....	.....
All other Offices	3	11	1	11½	.....	.....	.....	.....
SALVADOR—Lalibertad	3	8½	1	10½	.....	.....	.....	.....
All other Offices	3	11	1	11½	.....	.....	.....	.....
SOUTH AMERICA—								
(Northern Section)—								
BRITISH GUIANA—Georgetown, Akyma, Apoteri, Enachu, Mararuma & Mackenzie City } All other Offices	3	5½	1	8½	.....	.....	.....	.....
COLOMBIA, REPUBLIC OF—								
Barranquilla, Buena Ventura and Cartagena	3	9	1	10½	.....	.....	.....	.....
Bogota	3	10	1	11	.....	.....	.....	.....
Cali Girardot & Bucaramanga	4	0	2	0	.....	.....	.....	.....
St. Andrew's Island	4	1	.....	.....	.....	.....	.....	.....
All other Offices	4	0	2	0	.....	.....	.....	.....
DUTCH GUIANA	3	9	1	10½	.....	.....	.....	.....
ECUADOR	4	3½	2	1	.....	.....	.....	.....
FRENCH GUIANA	4	10½	2	5½	.....	.....	.....	.....
VENEZUELA	4	4½	2	2½	.....	.....	.....	.....
SOUTH AMERICA								
(Southern Section)—								
ARGENTINE	4	0	2	0	.....	.....	.....	.....
BRAZIL—Pernambuco	3	8½	1	10½	.....	.....	.....	.....
Amazon Co.'s Stations: 1st Zone	4	10½	2	5½	.....	.....	.....	.....
2nd Zone	6	0	3	0	.....	.....	.....	.....
Acre District, via Belem	5	7½	2	9½	.....	.....	.....	.....
All other Offices	3	10	1	11	.....	.....	.....	.....
BOLIVIA—Wireless Offices, via Viachi	5	2½	2	7½	.....	.....	.....	.....
Wireless Offices, via Lima	5	8	.....	.....	.....	.....	.....	.....
All other Offices, via Lima	4	4	2	2	.....	.....	.....	.....
CHILI	4	0	2	0	.....	.....	.....	.....
FALKLAND ISLANDS—								
Port Stanley and Fox Bay	5	4	2	8	.....	.....	.....	.....
PARAGUAY	4	0	2	0	.....	.....	.....	.....
PERU	4	4½	2	2½	.....	.....	.....	.....
SOUTH GEORGIA	5	10	2	11	.....	.....	.....	.....
URUGUAY	4	4½	2	2½	.....	.....	.....	.....

Rates subject to alteration without notice.

EARLIER LODGMENT MEANS EARLIER DELIVERY



Aerial View of A.F.A. Radio-Electric Works, Ashfield, Sydney, where the transmitting and receiving equipment for the Company's Services is manufactured.

Rates for International Telegrams via "BEAM WIRELESS"

	Ord. Rate.		Def'd Rate.		Daily Letter.				Week-end.			
					20 words or less		Extra words		20 words or less		Extra words.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
WEST INDIES—												
ANTIGUA	3	5½	1	8½								
BAHAMAS	3	6½	1	9½								
BARBADOES	3	1	1	6½								
BERMUDA	3	5½	1	8½								
CARRIACOU	3	8½										
CUBA — Havana, Santiago, Fisherman's Point	2	8½	1	4½								
All other Offices	2	11	1	5½								
CURACAO	3	9	1	10½								
Aruba	3	9	1	10½								
Bonaire	3	9										
DOMINICA	3	5½	1	8½								
GRENADA	3	5½	1	8½								
GUADELOUPE	4	9	2	4½								
HAYTI	3	10	1	11								
JAMAICA	3	8½	1	10½								
LES SAINTES	4	9	2	4½								
MARIE GALANTE	4	9	2	4½								
MARTINIQUE	5	4	2	8								
MONTSERRAT	3	5½	1	8½								
PORTO RICO	3	7	1	9½								
SAN DOMINGO	4	1½	2	0								
St. CROIX	4	0	2	0								
St. KITTS and St. LUCIA	3	5½	1	8½								
St. MARTINS	3	9										
St. THOMAS	4	0	2	0								
St. VINCENT	3	5½	1	8½								
SWAN ISLAND	3	5½										
TOBAGO	3	8½	1	10½								
TRINIDAD—Port of Spain	3	5½	1	8½								
All other Offices	3	6½	1	9½								
TURK'S ISLAND	3	8½	1	10½								
AFRICA—												
Algeria	2	2½	1	1½	17	6	0	10½	15	0	0	9
Canary Islands	2	3½	1	1½								
Egypt												
Alexandria, Cairo, Suez, Port Said and First Region (Lower Egypt)	2	7½	1	3½	12	6	0	7½				
Second Region (Upper Egypt)	2	9	1	4½	14	2	0	8½				
Third Region (Sudan)	2	11	1	5½	16	8	0	10				
Libya (Tripolitaine)	2	4½	1	2½					17	6	0	10½
Madeira	2	9	1	4½								
Morocco (Tangier, via Spain)	2	3½	1	1½								
Tunis	2	2½	1	1½	17	6	0	10½	15	0	0	9
ASIA—												
Faestine	2	9	1	4½								
Syria	2	11	1	5½								
Trans Jordania	2	10½	1	5½								

Rates subject to alteration without notice.

ALL PRIVATE CODES AND ALL REGISTERED TELEGRAPHIC ADDRESSES CAN BE USED "VIA BEAM WIRELESS"

EARLIER LODGMENT MEANS EARLIER DELIVERY

PACIFIC ISLAND SERVICES.

THE Papuan Radio Stations of A.W.A. are located at Port Moresby and Samarai and are used for carrying out all wireless telegraphic traffic between the Commonwealth and the Territory of Papua and between Papua and New Guinea.

NEW GUINEA SERVICE.

The Company has no less than eight stations in New Guinea. The main station is located at Bita Paka, near Rabaul, on the island of New Britain. This station receives all the traffic from the outside world through the A.W.A. stations at Sydney and Townsville, and distributes it amongst the innumerable islands which dot the South-Western Pacific Ocean.

The Company's New Guinea stations comprise:—

- Rabaul, New Britain
- Aitape Radio, New Guinea
- Madang, New Guinea
- Wau Radio, New Guinea
- Salamaua Radio, New Guinea
- Manus Radio, Admiralty Islands
- Kavieng Radio, New Ireland
- Kieta Radio, Bougainville Island

The stations at Salamaua and Wau serve the needs of the New Guinea Goldfields.

FIJIAN SERVICE.

The Company has four stations in Fiji—at Labasa, Savu Savu, Suva and Taveuni. The principal station in the group is at Suva, which maintains direct communication with Sydney, and through it handles overseas traffic to Great Britain, the Continent and Canada, via the Australian Beam Service. Suva Radio also communicates with Samoa, the Friendly Islands, Gilbert and Ellice Islands, New Caledonia and the New Hebrides. Messages for the Islands are accepted at the Beam Wireless Offices of the Company or at any Postal Telegraphic Office and should be routed "VIA RADIO."

For rates and classes of messages see page 43.



Rates for WIRELESS TELEGRAMS to PACIFIC ISLANDS

	Ordinary Radiograms Rate per Word.	Night Letter Radiograms.			
		20 Words or Less.		Extra Words.	
	s. d.	s. d.	s. d.	s. d.	s. d.
PACIFIC ISLANDS—					
CAROLINE ISLANDS—Truk ..	1 7	....	....	....	....
Ponape, Jalout, Yap, Palaos, Anguar Island ..	1 8	....	....	....	....
COOK OR HERVEY ISLANDS					
Niue ..	1 9	....	....	....	....
Rarotonga ..	1 3	....	....	....	....
Aitutaki & Mangaia, Atiu & Mauke ..	1 6	....	....	....	....
FATUNA ISLANDS—					
Wallis Island, Mataoutou ..	1 4	....	....	....	....
FIJI—					
Suva ..	0 6	5 10	0 3½		
Levuka, Ba, Lautoka, Nadarivatu, Nausori, Navua, Vunidawa, Ellington, Rakiraki, Tavua ..	0 8	7 4	0 4½		
Labasa, Taveuni, Savu Savu	0 8	7 6	0 4½		
Rotumah ..	0 9	....	....
FRIENDLY ISLANDS—					
Niuaotobutabu, Haapai, Nukualofa, Vavau & Niuafoou ..	1 3	....	....
GILBERT & ELLICE ISLANDS					
Ocean Island ..	1 0	....	....
Tarawa, Beru ..	1 6	....	....
LORD HOWE ISLAND					
	1½d. min.	....	....
	16 words	....	....
NAURU ..	1 3	....	....
NEW CALEDONIA—Noumea ..	1 2	....	....
NEW HEBRIDES—Vila—					
Via Wireless and Suva ..	1 0	....	....
„ Noumea Radio ..	1 7	....	....
SAMOA—					
Apia ..	1 3	....	....
Tutuila ..	1 3	....	....
Ofu, Tau & Aleipata ..	1 5	....	....
SOCIETY ISLANDS—					
Papeete ..	2 1	....	....
Atuona, Makatea ..	2 3	....	....
Utao ..	2 6	....	....
SOLOMON ISLANDS—Tulagi					
Vanikoro ..	1 0	....	....
UNION ISLANDS—					
Fakaofa ..	1 5	....	....
WILLIS ISLAND					
	0 3	....	....

	Ordinary Radiograms Rate per Word		Week-end Letter Radiograms	
	10 Letter Code Words	Plain Language, Cypher 5 Letter Code Words.	20 Words or Less	Words Extra
NEW GUINEA—				
Rabaul, Kokopo ..	0 9	0 6	7 6	0 4½
Aitape, Kavieng, Kieta Manus, Madang, Salamaua, Wau } Bulolo & Lae ..	1 6 1 9	1 0 1 2	15 0	0 9
PAPUA—				
Port Moresby, Samarai ..	0 9	0 6	7 6	0 4½

RADIOGRAMS TO SHIPS AT SEA—Rates for Wireless Messages to Ships in any part of the world will be supplied on application.
Rates subject to alteration without notice.

WHERE TO LODGE BEAM WIRELESS MESSAGES.

Beam Wireless Messages may be handed in at the Company's offices at Sydney or Melbourne, or at any Post Office in the Commonwealth.

Messages handed in at Post Offices should be distinctly marked with the free routing instruction "VIA BEAM."

Messages lodged in the United Kingdom and the Continent of Europe should be routed to Australia via Empiradio.

Messages lodged in Canada should be routed to Australia "via Marconi."

Messages lodged in the United States of America should be routed to Australia "via R.C.A. and Marconi."

BEAM WIRELESS OFFICES.

MELBOURNE, VICTORIA: Telephone No. F 4161 (10 lines)

"Wireless House," 167-169 Queen Street.—Always open.

"Collins House," 360 Collins Street.

Week days, 9 a.m. to 10 p.m.

Saturdays 9 a.m. to 6 p.m.

Sundays—closed

SYDNEY, NEW SOUTH WALES: Telephone No. BW 2211 (15 lines).

"Wireless House," 47 York Street—Always open.

Branch Office, 59 Liverpool Street.

Week days 9.30 a.m. to 1 p.m., 2.0 p.m. to 6.30 p.m.

Saturdays 9.30 a.m. to 1 p.m.

Sundays—closed

Branch Office, Royal Exchange Building, Pitt and Bridge Sts.

Week days 9.20 a.m. to 1 p.m., 2 p.m. to 6.0 p.m.

Saturdays 9.15 a.m. to 1.0 p.m.

Sundays—closed.

FOR SPEED, ACCURACY, ECONOMY

ROUTE YOUR MESSAGES

TO GREAT BRITAIN AND THE CONTINENT OF EUROPE,
THE UNITED STATES AND CANADA,
CENTRAL AND SOUTH AMERICA,
AND THE WEST INDIES.

VIA BEAM.

1932

CALENDAR

1932

JANUARY							FEBRUARY							MARCH							APRIL						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	1	2	..	1	2	3	4	5	6	..	..	1	2	3	4	5	..	..	..	..	..	..	..
3	4	5	6	7	8	9	7	8	9	10	11	12	13	6	7	8	9	10	11	12	3	4	5	6	7	8	9
10	11	12	13	14	15	16	14	15	16	17	18	19	20	13	14	15	16	17	18	19	10	11	12	13	14	15	16
17	18	19	20	21	22	23	21	22	23	24	25	26	27	20	21	22	23	24	25	26	17	18	19	20	21	22	23
24	25	26	27	28	29	30	28	29	..	..	..	..	..	27	28	29	30	31	..	..	24	25	26	27	28	29	30
31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
MAY							JUNE							JULY							AUGUST						
1	2	3	4	5	6	7	..	..	..	1	2	3	4	..	..	..	..	..	1	2	..	1	2	3	4	5	6
8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27
29	30	31	..	..	..	..	26	27	28	29	30	..	..	24	25	26	27	28	29	30	28	29	30	31	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..
SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER						
..	..	..	..	1	2	3	..	..	..	..	..	1	..	..	..	1	2	3	4	5	..	..	..	..	1	2	3
4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10
11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17
18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24
25	26	27	28	29	30	..	23	24	25	26	27	28	29	27	28	29	30	..	..	25	26	27	28	29	30	31	
..	..	..	..	..	..	..	30	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

1933

CALENDAR

1933

JANUARY							FEBRUARY							MARCH							APRIL						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	..	..	1	2	3	4	..	..	1	2	3	4	..	..	..	..	..	..	..
8	9	10	11	12	13	14	5	6	7	8	9	10	11	5	6	7	8	9	10	11	2	3	4	5	6	7	8
15	16	17	18	19	20	21	12	13	14	15	16	17	18	12	13	14	15	16	17	18	9	10	11	12	13	14	15
22	23	24	25	26	27	28	19	20	21	22	23	24	25	19	20	21	22	23	24	25	16	17	18	19	20	21	22
29	30	31	..	..	..	..	26	27	28	..	..	..	..	26	27	28	29	30	31	..	23	24	25	26	27	28	29
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	..	..	..	..	..	..	..
MAY							JUNE							JULY							AUGUST						
..	1	2	3	4	5	6	..	..	..	1	2	3	..	..	..	..	..	1	..	..	1	2	3	4	5	6	
7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
28	29	30	31	..	..	..	25	26	27	28	29	30	..	23	24	25	26	27	28	29	27	28	29	30	31	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	31	..	..	..	..	..	..	..	..	..	..	..
SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER						
..	..	..	..	1	2	..	1	2	3	4	5	6	7	..	..	1	2	3	4	..	..	..	..	1	2	..	
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
24	25	26	27	28	29	30	29	30	31	..	..	..	..	26	27	28	29	30	..	24	25	26	27	28	29	30	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..

