The Hundred per cent. Australian Radio Journal.

THE WIRELESS WEEKLY

A Journal Devoted to the Interests of Wireless Enthusiasts both Amateur and Professional

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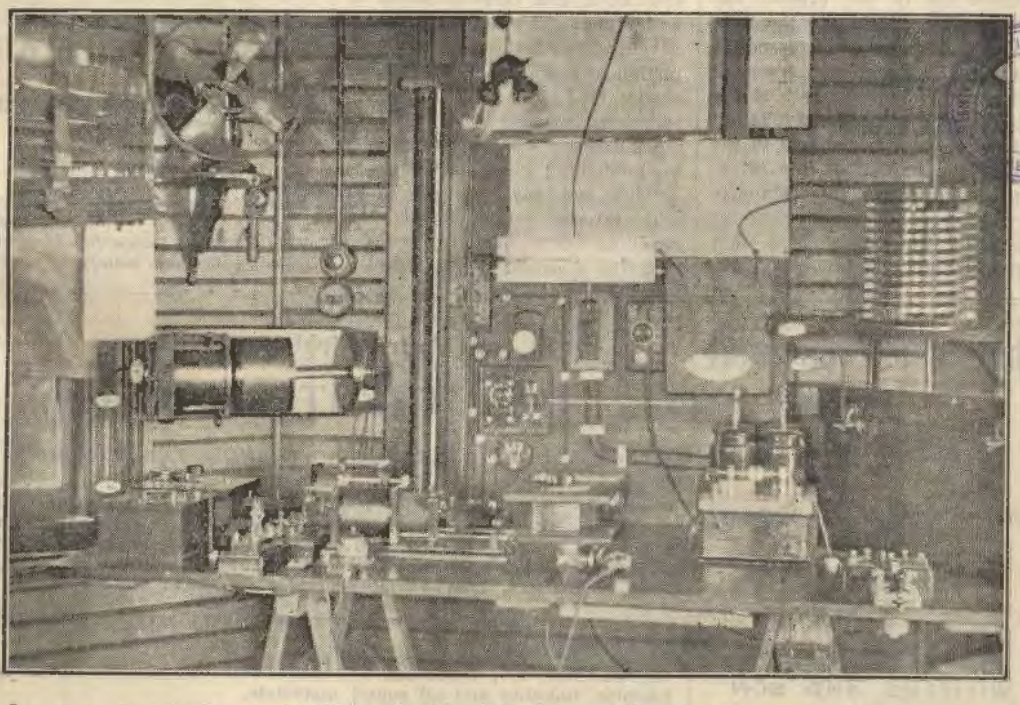


One of the first Stations in Australia. Portion of the Set that Mr. Maclurcan had on the Roof of the Wentworth Hotel, many years ago.

A TALK WITH "WIRELESS WEEKLY."

As we have pointed out many times, the Australian experimenter is a peculiar sort of chap. He is happy-go-lucky and extremely casual, which, after all, are outstanding features of the Australian character.

When "Wireless Weekly" was first put before the public, it met with a splendid reception, and its progress up to the present has been most gratifying to the publisher. Sales have increased by leaps and bounds, and from all indications its voice raised on behalf of the amateur, who it is out to serve, is carrying weight in the proper quarter. It is the intention of this journal to continue to serve the experimenter, and at the same time develop to that high standard which it should occupy as the pioneer wireless publication of Australasia.

But in the developmental work we want the assistance of the experimenter. We want him to make use of our columns to express his opinions and help his fellows by writing instructive articles.

The science is young in Australia, as far as the amateur is concerned, and there is much to be learned. The man who is well advanced can help a lot in the direction of teaching, and he should realise that it is the duty to do so.

"Wireless Weekly" will help by publishing good instructional articles and anything else that will interest and instruct its readers. We frankly confess that the standard of this publication is not yet high enough, but we console ourselves with the fact that "Rome was not built in a day." We are doing our best to give our readers that which they have a right to expect, but we make this appeal:

Give up your help, amateurs. This is your paper; make use of it.

MUSIC IN THE AIR

MR. MACLURCAN'S CONCERT.

SUNDAY NIGHT'S CONCERT

Mr. Maclurcan, of Strathfield, will send out his usual concert on Sunday night at 7.30. Listen for him on a wave-length 1400 metres.

AN EXPERT ON TRANSPACIFIC TESTS.

In the following article, specially written for "Wireless Weekly," Mr. R. E. Roesch, Radio Officer of the steamer Easterner, which arrived at Sydney last week from America, discusses the Trans-Pacific Tests, and states that, in his opinion, they should be successful:—

When in the States, I had heard nothing concerning any plans or possibilities of trans-Pacific transmission from the United States to Australia, among the amateur stations, but having once been an amateur enthusiast, I embarked with a small receiver of my own design suitable for amateur reception.

Subsequently stations over all portions of the States were heard all the way across the Pacific from Panama to Brisbane on a single tube. As yet, none have been heard actually in ports due to unfavourable conditions of atmosphere and time, but I see no reason, whatever, why a series of tests conducted at a late hour in the States over a number of days, would not be successful.

To those who are not familiar with the geographical allocation of the American stations, the calls are exactly the same as the new Australian calls, the numbers running up to nine for the nine districts into which the country is divided. The 1's, 2's, 3's, 4's and 8's are in the eastern and east central States, 5's in the south, 9's in the central Sates, 6's on the west coast, and 7's in the north-west. Both two and three letters are combined with the numerals in the call.

With only a few exceptions all the stations heard were C.W. In all, 78 stations were heard and identified by their calls, the majority of these being in the central and western States, and all were heard over 3000 nautical miles or more.

On the last night, we were 100 miles east of Brisbane and six stations were heard, which were located in widely distributed areas of the central and western States, two of the southern stations being 7000 miles distant and all over 6000. In the entire trip 10 stations were copied over 6000 miles, and 22 over 5000 miles.

In this proposition, two important factors enter, the difference in time between the two countries, and the effect of the curvature of the earth.

Inasmuch as there is six hours difference in time between San Francisco and Eastern Australia, the Australians ordinarily are not favored with conditions of darkness here at the time that the American stations are operating, with the exception of Sundays (Saturday in the States), when the American stations work until well into the morning.

Present apparatus prohibits reception over this distance in daylight, so that without special tests, possibility of reception is at present limited to Sunday evenings, immediately after dusk, and when static is negligible.

Due to the curvature of the earth's surface, radiated waves will theoretically commence to converge again after travelling 6000 miles or one quarter of the earth's circumference. If the losses due to absorption do not increase at a greater rate than the convergence of the waves, the signals will become louder as the distance increases beyond 6000 miles. Losses over sea water are minimum, so it would seem than on the east coast of Australia, the further stations should be almost equally as loud as the nearer ones.

From his experiences the writer believes this to be true, inasmuch as only six of the 78 stations were heard at 6000 miles or thereabouts, others being lost at 5000 and picked up again at 7000. For this reason, then ,Australia is very favourably situated for reception from all portions of the United States.

The receiver used in this work consisted only of a small variocoupler and a variable condenser in series with the antenna. the circuit embodying inductive regeneration as well as by virtue of tuned grid and plate circuits.

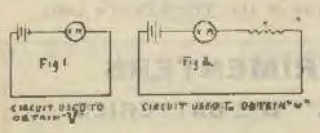
To the writer's mind, nothing but static should interfere with the success of the Trans-Pacific tests.

TECHNICAL PAGE

MEASUREMENT OF RESISTANCE.

Although the necessity for measuring resistance is often felt by the amateur wireless fan, the job is usually left undone, because the amateur neither has access to, nor can afford to buy, such instruments as the bridge megger, the ohmmeter or the wheatstone bridge. Little difficulty should be experienced, however, in obtaining a Voltmeter, and with this instrument the measurement of resistance is quite a simple matter. Two methods may be adopted. In the first place it is necessary to know the resistance of the Voltmeter before starting, but should this not be known it can be ascertained by joining the voltmeter in series, firstly with a battery and seconaly in series with a battery and a known resistance. Nearly every amateur has some piece of apparatus, such as a head set or a transformer of known resistance. Let "V" represent the voltage indicated on the Voltmeter when it is joined up with the battery alone, and let "v" be the voltage reading when the Voltmeter is joined in series with a known resistance and the same battery. The resistance of the Voltmeter would then be R x v over V - v where R is the known resistance.

Example'

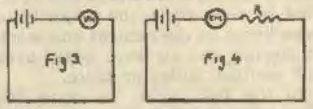


Join up as in Fig. 1; V-30 volts. Join up as in Fig. 2; V-25 volts.

Resistance 1,000W. Resistance of Voltmeter R = R x V over V - V = 1,000 x 25 over 5 = 5,000W.

Voltmeters are wound to high resistances, good instruments ranging in the vicinity of 10,000 ohms.

To measure a resistance, having ascertained the resistance of the Voltmeter, proceed as follows:—



From Fig. 3 we get V 30 volts.

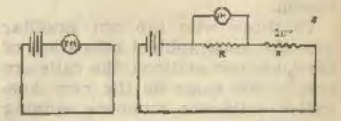
From Fig. 4 we get V 20 volts; r = resistance of voltmeter.

Unknown resistance R = r x (V - v) over v = 10,000 x 10 over 20 = 5,000W.

With an accurate Voltmeter resistances ranging from 1/100th of the resistance of the Voltmeter to 100 times the resistance of the Voltmeter may be measured. A Voltmeter of 10,000 volts may, therefore, be used to measure resistances ranging from 100W to 1,000,000W, whilst a Voltmeter of 2,000W will give fairly accurate results on resistances between 20W and 200,000W. For resistances smaller than 1/100th of the resistance of the Voltmeter this system is not satisfactory because the difference between the two readings on the Voltmeter would be so small that accurate results could not be obtained. In this case, the second method may be adopted, and will be found to give very satisfactory results. To understand how this is done, it is only necessary to know the principal of the fall of potential. Suppose two resistances are joined in series with a battery of negligible resistance, the potential of the battery will be distributed in proportion to the resistances. For example, join a battery of, say, 10 volts in series to two resistances, one of 2 ohms. and one of 3 ohms., and it will be found that 2/5th X 10 volts or 4 volts will fall over the 2 ohm coil, and 3/5 of 10V or 6V will fall over the 3 ohm. coil. This can be proved by ohms. law. The current is the same in all parts of the circuit, and for the proof we will assume that the resistances are known. Now, C = E over R. Therefore, E = C x R. The current in the case quoted would be 2 amps.

Considering first of all the 2 ohm. resistance, E = C x R = 2 x 2 = 4V. In the case of the 3 ohm. resistance, E = C x R = 2 x 3 = 6V. To measure resistances by the second method, all that is required is the voltmeter and a known resistance.

The resistance of the voltmeter in this case need not be known, but should be as high as possible. Join the Voltmeter across the battery and take the reading "V." Next, join the Voltmeter across the unknown resistance which is now joined in series with the battery, and a known resistance. The unknown resistance is equal to r x v over V - v.



V = 30 volts; v = 10 volts; r = 20 W.

R = r x v over V - v = 20 x 10 over 30 - 10 = 10W.

The fact of joining a resistance (voltmeter) in parallel with the resistance which is being measured necessarily introduces an error, but a calculation of the the joint resistance will show this error to be negligible when small resistances are under test. Example, joint resistance is equal to R x r over R x r. Let the resistance to be measured be, say, 100 ohms., and the resistance of the voltmeter 10,000 ohms. The x 100 over 10,000 + 100 = 99.02W.

From this it will be seen that the error is less than 1%, and, therefore, with a 10,000 ohm. voltmeter resistances up to 100 ohms. can well be measured by this method. The greater the disparity between the resistance of the voltmeter and the resistance under test the smaller the error will be.

MEASUREMENT OF RESISTANCE.

SUMMARY.

Two systems may be adopted:—

(1) The Voltmeter is joined in series with the unknown resistance.

(2) The Voltmeter is joined in parallel with the unknown resistance.

By the first method, resistances between R over 100 and R x 100 may be measured, and the resistance (R) of the Voltmeter must be known.

By the second method smaller resistances may be measured, but a battery of low internal resistance, preferably a secondary cell, should be used, and the resistance of the Voltmeter need not be known.

THE REGULATIONS.

The long overdue Wireless Regulations were approved of this week. The full Text of them will appear and be discussed in our next issue.

TABLE OF EUREKA RESISTANCE WIRE.

Size. S.W.G.	Inch	Resistance. (Approx.) Ohms. Per lb.	Ohms. Per 100yds.
8	.160	.144	33.5
10	.128	.352	52.3
12	.104	.807	79.3
14	.080	2.304	133.9
16	.064	5.620	209.4
18	.048	17.800	317.8
19	.040	36.85	535.6
20	.036	56.17	661.3
21	.032	90.	837.2
22	.028	153.	1093
23	.024	284	1487
24	.022	403	1770
25	.020	590	2142
26	.018	900	2645
27	.0164	1305	3186
28	.0148	1970	3914
30	.0124	4000	5575
32	.0108	6950	7350
34	.0092	13174	10128
36	.0076	28308	14840
38	.0060	72856	23808
40	.0048	177744	37184
42	.0040	368480	53564
44	.0032	900000	83664
46	.0024	2845360	148764
47	.0020	5900440	214284

SOUND MADE VISIBLE.

One of the most remarkable developments growing out of the widespread interest in radiotelephony, is the construction of an apparatus for making sound vibrations **visible.**

An adaptation of the vacuum tube is the basis of the new apparatus, and one of the most striking advantages is that it overcomes the lag occasioned by the mechanical inertia of devices formerly used for this purpose. The new tube is pear-shaped, about 8 inches long by 1 inch diameter at the socket end and 4 inches at the other end. The large end of the tube is covered with a fluorescent screen. The filament is about ¾ inch long.

Four platinum plates around the filament direct a beam against the fluorescent screen. The current fluctuations caused by sound vibrations cause this beam to move up and down the screen with great rapidity, and it is then possible to record these movements in the form of a moving-picture film.

RECORDING RADIO SIGNALS

The capacity of radio telegraph stations is to be increased to a considerable extent in the near future by the use of rapid methods for receiving the messages. Efforts in this direction have been made by one of the largest French radio companies. This firm has been very active in the construction of wireless stations, one of the most recent being the great station of La Doua, at Lyons, which is now working with the United States. Mr. Francis P. Mann gives a brief account of the methods and apparatus which are employed for recording the messages at high speeds.

The phonograph method is employed for taking down messages at speeds which are considerably above the usual rate, this speed being in all cases above 25 words per minute and may reach as high as 100 to 150 words. But it is evident that messages with the dot and dash system cannot be read at such high speeds on the telephone by the operators of the station. The phonograph can, however, be called upon to take down the messages at these rates, and by means of the new apparatus the signals are now recorded upon the phonograph without difficulty.

A phonograph of the customary disc type is employed for this purpose, making necesary certain slight changes in the equipment, such as are required to adapt it to radio service, all that is necessary being to amount the receiving telephone in the place of the usual phonograph recording diaphragm, the telephone diaphragm being provided with a stylus for producing the record on the disc.

It is found that the phonograph record is still quite satisfactory when the apparatus is working at 150 words per minute. When the disc has received the telegraph message, it is transferred to a second device which serves to reproduce the sounds in the usual manner, but the record type of phonograph is of a somewhat different design, and is designed to operate at slower speed, in order to enable the operator to read the messages.

High-speed phonographs are employed to take down the messeages, while the slow-speed apparatus is used for reproducing purposes only, with an operator for each phonograph taking down the messages on a noiseless typewriter as fast as he is able to write.

In order that the sound shall not be of too low a pitch when running the phonograph at reduced speed for receiving the messages, the radio receiving apparatus is regulated, in case the system of continuous waves is employed, in such manner as to provide a high pitch for the original message, so that the pitch can afterwards be reduced without being too slow to carry out the receiving operations to good advantage.

A still higher speed for recording wireless messages can be reached by making use of the photographic method, and by the use of improved apparatus recently brought out by the French firm it is possible to operate at speeds which can handle up to 500 words per minute. This makes it a more rapid means for receiving messages than the phonograph system, and the new photographic apparatus is not of an unduly complicated nature. Indeed, it is so designed that all the operations can be carried out in a very simple manner and by persons having no very special skill.

The photographic recorder is based on the use of a galvanometer containing a small mirror. This is adapted to swing under the action of the radio impulse forming the signals, the current at the receiving end being amplified to the proper degree by the use of the usual amplifying devices. The duration and amount of the swing of the mirror will correspond to the dot and dash signals, while the mirror reflects a beam of light on to a strip of sensitive paper tape which is caused to unroll at a greater or less speed, according to circumstances. The beam of light thus traces the message on the strip. The result is that the message will appear in the form of dots and dashes, as shown in the illustration, when the strip is developed by the usual photographic process. No difficulty is experienced in taking down messages at the rate of 500 words per minute. It should be remarked that such messages could not be read by a station which is not provided with the photographic receiving devices.

The new system, reports the 'Scientific American,' will be valuable as affording a method of considerably increasing the capacity of radio stations, and the method is, in fact, comparable to automatic telegraphy. The developing, fixing, washing and drying of the photographic strip are carried out automatically by means of an improved device which performs all these operations within a very short time. It is now found possible to use the same photographic strip to receive messages sent out by two different stations at the same time, or by the same station sending out simultaneous messages (in fact several messages can be sent) on the new multiplex system.

In the present device two messages can be taken down at the same time and upon the same photographic strip. When the latter is completely finished it can be read in the same way as an ordinary telegraph recorder tape.

MAKE YOUR OWN.

MEASURING A CONDENSER.

By H. A. STOWE, Member W.I.A.

It is often desired to know the capacity of condensers which have been constructed either variable or fixed.

If the experimenter possesses a caliahrated condenser up to, say,

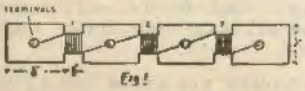


Fig 1

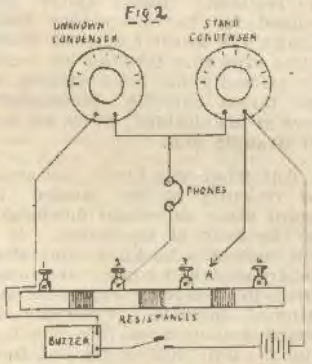
.001 mf., it is quite simple to test other condensers by comparison to it. Following is the description of an easy method of doing same, and also the particulars of the material required. Cut three cuts in a piece of ¾ inch ebonite, as shown in Fig. 1, ¼ inch deep, and wind in them the following resistances, using about 34 or 36 gauge insulated resistance wire: Slot No. 1 = 20 ohms., No. 2 = 20 ohms., No. 3 = 180, bringing the ends to the terminals as shown. The only things required now are a buzzer with a good note and a pair of phones.

Connect up as shown in Fig. 2, and proceed as follows:—If the condenser to be measured is of about the same capacity as standard condenser, or lower, connect lead "A" to terminal 3 and set Buzzer in operation. And then for any setting of the unknown condenser, vary the standard condenser until no buzz is heard in phones.

The capacity of unknown condenser will then equal the capacity of standard condenser at that position of plates.

Proceed in like manner over the whole range of the condensers. If the condenser to be measured is above the capacity of standard, connect lead "A" to terminal 4, and proceed as before, but the results now found must be multiplied by 10, so that by

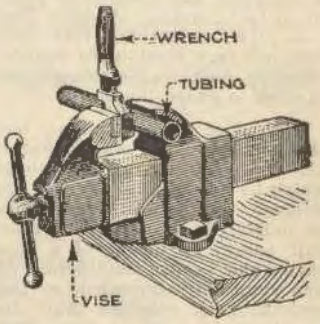
Fig 2.



this means capacities up to .01 m.f. can be read, using a standard condenser of wax capacity of .001 mf. If carefully made and operated, this little piece of apparatus will prove very handy to the experimenter.

USEFUL HINT.

A handy kink that will oe found useful in many cases, when cylindrical work must be clamped in an ordinary bench vise, is to use a



monkey wrench in the manner illustrated. Adjust the wrench jaws until the work will rest only on the edges of the jaws; clamp the wrench and work in the vise in the position shown, and the stock will be held as securely as in a pipe vise.—"Popular Mechanics."

NEAT CONDENSER.

One of the neatest of the many variable condensers for use with radio apparatus, is the type now being manufactured by a concern in Cincinnati, Ohio. The essentials of the condenser are two thin sheets of copper—one of them covered by a sheet of mica—fastened on two small laminated wooden plates. The plates are so arranged that they are opened from the side with a booklike action which is controlled by a specially designed cam and spring tension. There being no friction between the different parts, these last indefinitely, and are said to be absolutely proof against voltage punctures or showering.

OUR YARN

Retribution

BY C.Q.

Old Andrew Dark was making his final tour of inspection around the house, before retiring for the night.

Yes, all the doors and windows were securely locked and bolted, all the burglar alarms and safety catches set, and everything seemed to be in order. Andrew Dark had surely something very precious, or very terrible to conceal, when he took such elaborate precaution to guard his house.

The house was a two-story one, and Andrew had a microphone in his bedroom upstairs, through which he had only to whisper and a large volume of sound would be delivered into the entrance hall below, by means of a magnavox and power amplifiers. All was cunningly concealed, so that nothing was visible, but the sound would seem to come from out of the very walls themselves.

A very sensitive microphone was also concealed in this entrance hall, and a cat had only to walk along it, and a dull thud-thud would be heard in Andrew's room. Andrew left his watch lying on the hall-stand, and went upstairs to switch on the apparatus and make sure that everything was in perfect working order. He opened his bedroom door, and listened with satisfaction to the regular tick tick, which sounded almost like the blows of a small hammer on steel when magnified, and saying "good-night" at the door of the room, he heard the voice shouted back at him from the hall, the magnified "good-night" sounding through the magnavox.

Descending once more to get his watch, he entered and carefully bolted the door of his room. Why, all this elaborate precaution Andrew fondly imagined that if he shouted out "hands-up" or some similar remark, that a burglar—or was it a murderer he feared—would instantly beat a retreat?

Before finally retiring, Andrew opened the door of a large cupboard in the room, and gazed for a long time into it, his eyes gleaming with satisfaction. Closing the door carefully, and replacing a picture over the cunningly concealed lock, he switched out the light and got into bed. He lay there for hours, or at any rate it seemed hours, as he restlessly tossed about and longed for the sleep that could banish the awful memories which came crowding through his mind. Occasionally his hand strayed to his throat and he involuntarly tore at his clothing, which seemed to strangle him.

Ah! what was that? He started violently as he fancied he heard some movement downstairs at the back of the house. In a few moments he knew that what he dreaded had come. He tuned down his receiving apparatus and listened intently. Presently he heard a door open into the hall and the dull thud of muffled footsteps. Two voices were whispering together, and old Andrew broke into a heavy perspiration as he heard them planning to "do for" him. Now was the time to make use of his magnavox below, and scare these intruders away. Switching on his own microphone, he put it to his mouth and was just going to shout "hands-up," when he found himself unable to utter a single word.

A fierce despair took hold of Andrew as he heard someone commence to stealthily ascend the stairs, and seizing a knife from a nearby table, he sharply rapped on the microphone with it, the result being a deafening clanging down below in the hall.

Just then he heard a voice boom, "hands up, you fellows, we've got you at last." The tramp of heavy feet sounded, and Andrew sank back in a chair, not knowing whether to be relieved or not, as he realised that the police had evidently discovered the intruders, and were arresting them.

Andrew turned off all his apparatus and throwing on an old dressing gown, opened his door and stepped out on the landing. As he did so, he was seized by the arms and thrust back into his room.

'We fooled him that time,' said one of his captors to the other. "I thought that the police stunt would bluff him, and you never know what devil's arrangement the old man might have rigged up."

Andrew was forced into a chair and found himself confronted by four desperate looking men all well armed.

"Now Andrew Dark, you have just two minutes to live," said the man who had previously spoken, "and then you will go into the unkown, where you sent my daughter nearly sixteen years ago. I have just finished my term of fifteen years for attempting your life, and there will be more than an attempt this time."

"You old fiend"—he continued, but the old man's head had fallen forward, and those standing round, saw that death had stepped in, and stayed their hands.

They lifted him on the bed, and began a careful inspection of the room. The cupboard was soon discovered, and breaking down the door a surprising sight met their eyes. Inside were small shelves and trays loaded with jewels, and one of the men, lifting up a long pearl necklace, dropped it hastily as he noticed that it was smeared with blood.

The men hurriedly left the house, and when the discovery of old Andrew Dark's death was made, the detectives after a careful investigation, were satisfied that the gallows had been cheated of a notorious criminal for whom they had been searching for years.

GETTING READY.

In New Zealand.

BROADCASTING PLANS.

A statement of the Government's intentions with regard to the regulations of wireless broadcasting in New Zealand was made recently by the Hon. J. G. Coates, Postmaster-General.

A great deal of interest, said Mr. Coates was centring around the proposals for establishment of broadcasting stations in New Zealand, and already a large number of electrical firms who would be dealing in wireless apparatus had made inquiries for licenses to authorise them to broadcast by radio-telephone for the benefit of their clients and the public generally.

It appeared that the Auckland district would be well catered for, as applications has already been received for licenses to establish broadcasting stations at Whangarei, Auckland and Hamilton. No applications had so far been made for licenses to operate at other broadcasting centres in the Auckland district, viz., Kaitaia, Dargaville, Thames, Tauranga, Whakatane, and Te Kuiti, but even if these centres were not directly served by a local broadcasting station, they could, by the use of a slightly more sensitive receiver, keep in touch with the other centres in the Auckland district.

The object in drawing up the regulations and in allocating the centres at which broadcasting would be permitted, was to ensure that service would be given in remote localities as well as in the more densely-settled communities. The department had prepared detailed regulations governing the operation of broadcasting and receiving stations, and these would be gazetted at the earliest possible moment.

A number of inquiries had been made as to the nature of the programmes that would be permitted. In this connection, a careful study had been made of the experience elsewhere, and it had been decided to prohibit, absolutely, direct advertising. The regulations provided that broadcasting stations should not be used for the dissemination of propaganda of a controversial nature, but should be restricted to matter of an educative or entertaining character, such as news, lectures, useful information, religious services, musical or elocutionary entertainment, and such other items of general interest as might be approved by the Minister from time to time.

The licensee of a broadcasting station would not transmit radio communications which, in the judgment of the Minister, did not come within the authority of this regulation or did not conduce to the public interest.

Already, continued the Minister, a limited amount of broadcasting on low power had been permitted in different centres, Auckland included. Now that the issue of permanent licenses was within measurable distance, no further temporary permits of this kind would be granted.

It is expected that in the near future a limited number of radio broadcasting stations of the superior class in the United States, will be granted a licence to use 400 metres instead of 360 metres as at present. This will reduce the radio-phone jamming that occurs around some of the cities at present.

A GIRL'S LAMENT

I'm feeling bewildered and sad,
For my Boy is Radio mad,
And never takes me out any more
I cannot understand him, for—
He kisses me in dots and dashes,
And squeezes my hand in Morse,
My crystal eyes and my lashes
He compares to lines of force,
And nothing will please him, save
My hair in a Marcel wave.

Arrangements have now been made whereby any ship provided with a radio outfit can receive prompt medical service from the United States Health Service, through one of several Radio Corporation of America stations and other stations.

AMATEUR CALLS

NEW SOUTH WALES.

The following is a list of Licences issued to amateurs in the State of New South Wales to the end of October, 1922:—

Call Signal.	Name.	Address.	Nature of Licence.
2 A A	Radio Inspector	MacDonell House, Sydney	T.
2 A B	S. M. Wood	99 Catherine St., Leichhardt, Sydney	R.
2 A C	Woolridge, R.	Sailor's Bay Rd., Northbridge	R.
2 A D	R. J. Walker	Liverpool Rd., Croydon	R.
2 A E	J. A. Hirsch	33 Fitzroy St., Croydon	R.
2 A F	J. H. Leadbitter	Gladstone St., West Wyalong	R.
2 A G	Grace Bros. (W. G. Keogh)	Broadway, Sydney	R.
2 A H	J. F. Gilhooley	C/o. W. Bulgin, Queen & Moncur Sts., Woollahra	R.
2 A I	J. H. Connor	93 Carlton St., Summer Hill	R.
2 A J	W. Short	Queenscliff Rd., Manly	R.
2 A K	E. A. Tarrant	Eulah Creek, Narrabri	R.
2 A L	A. E. C. Cooper	"Edale," Cecil St., Ashfield	R.
2 A M	W. K. Gilfillan	"Glengarry," Greenwich	R.
2 A N	W. E. Gardner	478 William St., Broken Hill	R.
2 A O	K. M. Rennie	"Koorali," Wolseley Rd., Point Piper, Edgecliffe	R.
2 A P	W. H. Lock	"Wycollar," Copeland Rd., Beecroft	R.
2 A Q	L. L. Channon	"Rockleigh," Arthur St., Manilla	R.
2 A R	W. H. Hudson	1 Terrace Rd., Dulwich Hill	T.
2 A S	H. E. Grigg	370 Military Rd., Mosman	R.
2 A T	F. C. R. Swinburne	39 Parkview Rd., Manly	R.
2 A U	T. E. Dickinson	Weston St., East Hills	R.
2 A V	S. C. Davies	"Clarburn," Duntroon St., Hurlstone Park	R.
2 A W	R. Vowles	"Truro," Condor St., Burwood	R.
2 A X	J. H. Stephenson	56 Rangers Rd., Neutral Bay	R.
2 A Y	J. P. Cureton	"Maruna," Burwood Rd., Burwood	R.
2 A Z	G. P. Junk	Napoleon St., Sans Souci	R.
2 B A	W. E. Hilton	"Frankenberg," Oxley St., Crow's Nest, North Sydney	R.
2 B B	E. B. Crocker	14 Roseby St., Marrickville	R.
2 B C	M. J. Hurll	"Strathcona," Northcote Ave., Killara	R.
2 B D	W. R. Drew	"Hemah," Lang Rd., Centennial Park	R.

(To be Continued next week).

WHEN WE ALL FLY

News in the Air.

The business man of the future when journeying by air from one capital to another, will be able to follow the Stock Exchange quotations as they are reeled off from the ticker carried in the plane, as if he were sitting in his office.

This has been made possible by an invention called the teltype, which has been officially tested by the American Naval Air Force. For the benefit of air passengers, the "skyway expresses" of the future, equipped with a teltype, will give all the news of the hour in exactly the same way as it is now obtainable on the tape machine in clubs and hotels.

A passenger on a civil aeroplane could actually type a letter, and it could be delivered without any possibility of error before he had reached his destination. The instrument looks like the ordinary typewriter. It has all the letters of the alphabet, figures, and other conventional symbols. By an easy change-over, messages can be either received or transmitted. Each key of the board is connected up to the radio installation in the plane and when a letter is struck it sends out a radio impulse which is recorded on the instrument on the ground.

ONE MAN MAST.

Easily erected by one man and standing 30 feet 3 inches above its base, a pole for supporting a radio aerial that is being manufactured by a Cincinnati, Ohio, concern, commends itself to the wireless enthusiast.

The pole is shipped in knock-down form, consisting of four sections of bent sheet steel, each section 7 feet 10½ inches in length, and the necessary bolts, etc., for assembly. When assembled and ready to erect, the total weight is only 140 pounds, and by means of anchor lugs on the base, it can be placed on flat-cement or composition roofs as well as on the ground.

LEICHHARDT AND DISTRICT RADIO SOCIETY.

At the sixth general meeting, held at the Club Room, 3 Annesley St., Leichhardt, on Tuesday, November 14th, Mr. Thompson presented the Society with a very acceptable gift in the form of a crystal receiving set. A very hearty vote of thanks was accorded the donor, who responded briefly. A discussion on wireless matters generally was then entered upon, and members were invited to ask questions to be answered by any others present who felt disposed to do so. The loose-coupler contained in the set donated by Mr. Thompson came in for a considerable amount of attention, and that gentleamn was kept busy supplying information regarding its construction, action, &c. Many other interesting points were raised and discussed to the mutual advantage of all. The hon. secretary, Mr. W. J. Zech, 145 Booth Street, Annandale, continues to receive inquiries with regard to the society's activities, and he will be pleased to supply any information in that connection to anybody interested in same.

The next meeting of members is to be held on Tuesday next at 8 p.m.

WESTERN SUBURBS AMATEUR WIRELESS ASSOCIATION.

At the last meeting of the W.S.A.W.A. a general re-election of officers took place. The following is the result of the election:—President, Mr. R. S. Burman; vice-president, Mr. G. R. Challenger; secretary, Mr. W. B. Martin; treasurer, Mr. S. St. Hill; committee, Messrs. H. Browne and Lucas; technical committee, Messrs. G. R. Challenger, R. S. Burman, and Lucas; trustee, Mr. G. R. Challenger.

It was decided that the members be divided into two parties, one to devote its activities to the transmitter, and the other to look after the receiver.

After the business was completed some long wave duo-lateral coils which were made by the club were tested and found to work splendidly. American stations being received remarkably well.

The next meeting will be held on November 29th, when a redrafting of the rules will take place, and also a discussion re the erection of the transmitted and a new receiver.

FOR PARIS POLICE.

The raido telephone has been introduced in the operations of the Paris police force with promising results.

Regular radio telephone communication is now maintained between one police airplane, two police automobile ambulances, and headquarters, all four being equipped for sending as well as receiving, according to Radioelectricite.

Standard French military sets are used, supplied with current from a propellor driven generator on the airplane, and from storage battery-driven motor generators in the ambulances. Two four-meter long steel tubes, attached at the end of a bakelite stick, form a mast to support a 40-meter single-wire antenna, the other end of which is fastened to a short bamboo pole, driven in the ground. If no gas or water outlets are available for a ground connection, a copper wire mesh 10 metres by 0.8 meters is stretched out on the ground. Only ten minutes are required from the instant of arrival to make the necessary set-up. Perfect telephonic conversation can be maintained among these stations within a radius of about 30 kilometers.

STATION CALLS.

SHIPS STATIONS. GREAT BRITAIN

Rounton Grange, ZER; Rowan, GDVB; Rowanpark, GFCR; Roxmead, EJH; Royal City, GBMF; Royal George, ZRY; Royal Prince, YJI; Royal Sceptre, BFE; Royal Scot, ZTJ; Royalstar, ZRZ; Royal Transport, ZHE; Royston Grange, GLZ; Ruahine, MKA; Ruapehu, MKB; Rubens, GBCY; Rudelsburg, GBJQ; Rugia, GBTL; Runic, MWC; Runo, GDNW; Ruthenia, GDYL; Ryburn, XHX; Ryckett, EIA; Ryde, BSN.

Sabor, GBQW; Sachem, MOL; Sagama River, ZEK; Sagua, LTP; Sakkarah, GBSN; Salacia, YIV; Salagia, ZMU; Salerno, EUR.

Salient, EKR; Sallust, ZQH; Saltees, GFMD; Salvador, ZBV; Sambre, GCDV; Sampan, EQI; San Blas, GBWD; San Bruno, GDWT; Sanday, ZRM; Sandon, Hall, GDPY; Sandown Castle, GFBW; San Felix, GFJZ; San Dunstano, MAN; San Eduardo, MJV; San Fernando, MUX; San Florentino, MUQ; San Fraterno, GYN; San Gaspar, GFPK; San Gil, GDXP; Sangola, GOD; San Gregorio, MAC; San Jeronimo, MJP; San Lamberto, GFKC; San Leon, GDZK; San Lorenzo, MND; San Melito, MRZ; San Nazario, MUH; San Pablo, ZTR; San Patricio, MQY; San Ricardo, MBR; San Silvestre, MYS; Santa Fe, GBSM; Santa Gertrudis, GFDK; Santa Theresa, BLJ; San Teodoro, GFKB; Santeramo, ZGH; Santhia, GOE; San Tiburcio, GDYT; San Tirso, MAO; San Ubaldo, GFKL; San Ugon, GFKM; San Valerio, MHZ; San Yeferino, MPS; San Yotico, GBRY; Sapele, YME; Sapphire, MHK; Saranac, EYG; Sarah Jolliffe, ZAU; Sardinia, GMB; Sardinian, MDN; Sarthe, GCDW; Saturnia, MBF; Sauerland, GDKY; Sausenberg, GBNF; Saxicava, GFLD; Saxilby, ELW; Saxoleine, LTX; Saxon, MQI; Saxonia, MSA; Saxonstar, YVY; Scaldier, EXI; Scalfaria, GFKZ; Scandia, YUN; Scandinavian, MNC; Scarpa, BUI; Scatwell, YEQ; Schwaben, GBQL; Schwarzenfelde, GBVL; Schwinge GBKX; Schwarzenfels, GHKZ; Scientist, GXD; Scindia, MHJ; Scipio, ODR; Scotia, GBJZ; Scotia, GDRW; Scotian, MJN; Seabark, BUW; Scottier, ZRR; Scythia, GDYP; Sealda, GOF; Scottish American, GDSM; Sea Glory, LYG; Scottish Bard, BOR; Scythian, ZGW; Scottish Monarch, ERS; Seamew, LSE; Scottish Prince, YXV; Seapool, ZWC; Seaham Harbour, GDXQ; Seatonia, BUU; Sea Serpent, ZIH; Seattle, ZJA; Sea Victory, GCTW; Sedgepool, XEW; Sellasia, ZIR; Seminole, GFML; Semper Paratus, GFMQ; Senator, EPM; Sentinel, II., MFB; Serbino, XII; Sebistan, GCYD; Sesostris, GBVD; Servian Prince, YTR; Settler, YAF; Severn, GBQT; Severnmede, ELT; Shadwell, YVK; Shahjehan, GDVS; Shahristan, GCDK; Shahzada, GDVQ; Shakespear, GJX; Shandon, GBYJ; Shannonmede, ZUK; Sheaf Arrow, GDWF; Sheaf Don, ZOL; Sheaf Dart, MLX; Sheaf Lance, XMT; Sheaf Mead, YFP; Sheaf Mount, GBPW; Sheaf Spear, MXH; Sheerness, GFMJ; Shelley, GFNL; Sherard Osborn, MFK; Sheridan, XHU; Shonga, ZMI; Shropshire, GSF; Siam City, GBWR; Siamese Prince, YYN; Siberian Prince, ZTI; Sicilia, GMC; Sicilian, MUN; Sicily, ESO; Siddons, ZHY; Sidlaw Range, XHV; Sikh, YKZ; Silarus, GBRC; Silverlight, GDWS; Silversand, EKA; Silvertown, GMD; Singapore, YYA; Singleton Abbey, GDLX; Siptah, OFX; Sir Harvey Adamson, MUK; Siris, GBRD; Sirsa, GDNQ; Sithonia, YUO; Sitra, EOJ.

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What do you want to know?

Every reasonable specific query in the field of general wireless addressed to the Information Department will receive a prompt reply.

Address the Information Editor, "Wireless Weekly," Box 378, G.P.O., Sydney.

W.W.C (South Melbourne).

(1) Yes. Tap every ¼in.
(2) Yes, but a longer one would be better.
(3) Wind to within ¼in. each end.
(4) With a good aerial possibly 500.

G.R.L. (Melbourne).

(1) Depends on the capacity of aerial.
(2) One wire is as good as a number.
(3) Secondary will have a loaded as well as Primary.

SALE & EXCHANGE

Three Lines (approximately 15 Words, may be inserted in this Column for 9d.

Extra Lines or part thereof, at 6d per line.

FOR SALE.—Complete Wireless Receiving Plant, in 4 panels; tuning, detector, 2 audio freq. H. coils, accumulators, aerial, etc. Apply Box 378, G.P.O.

FOR SALE.—"Apple" Generator, 6 volt. Box 378, G.P.O.

FOR SALE—Complete Radio Set, including aerial wire, cheap, at £2 10s. Apply C. J. Gray, 32 George St., Marrickville.

FOR SALE.—1 6-Volt 40 Amp. Accumulator. C/o. Miss Wallace, Royal Arcade. H. T. Davis, 104 Bay Rd., North Sydney. ¼

FOR SALE.—Murdock Crystal Set, with Stromberg Carlson 2,000 ohm, phones; complete set, new, £4 15s. E. Gooch, 112 Oxford St., Woollahra.

FOR SALE.—Morse Recording Inst. and Theiler Relay as new, offer. These were used for Recording Radio Signals, or exchange the Relay, value £5, for II W. panel ammetre, 0-3 amps. G. Blanchard, 60 Bligh Street, Newtown.

WANTED.—Loose Coupler complete 2,000 metres. Letter only to Radio, 99 Catherine Street, Leichhardt.

RADIO HEALTH HINTS.

A semi-weekly "radio telephone health bulletin service" has been inaugurated by the United Staes Public Health Service. It is planned to broadcast every Tuesday and Friday through the naval radio station at Anacostia, Va., a message of advice or how the average man and woman may insure continued good health. Under very favourable weather conditions it is expected that the messages will be heard on the Pacific Coast, in Europe, and the north parts of South America.

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