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A TALK WITH "WIRELESS WEEKLY."
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The writer said to a wireless experimenter the other day: "Well, what are you doing to help the campaign to get these new Regulations out?"

"Oh," he replied: "I don't see anything that I could do. What notice would they take of me?"

This is an excellent illustration of the apathy of the average person who adopts Radio as his hobby. It is entirely the wrong attitude, and if persisted in can only result in one thing in the end—suppression of experimenting.

This statement seems a rather sweeping one, but a little thought will reveal the truth of it. The authorities are none too fond of amateurs. They have their rea-

sons, which may or may not be sound, but the fact remains if there were no amateur experimenters, they would be pleased. As it is now, the official eye looks on the man with a set as a necessary evil.

The wide publicity given to the science during the past year or so, and the formation of many clubs, pointed to the feelings of the public, and the authorities were forced to give the amateur some measure of recognition. Then came the framing of the unissued Regulations, which are, it is popularly supposed, to give experimenters more latitude.

We want those Regulations out. Somebody is holding them up. If the amateur were not the apathetic person he is, enough noise

could have been made by now to have had them issued.

Wake up, experimenters! The elections are coming round. If each of you wrote to the Federal member for your electorate, something may come of it.

But for the good of the cause, shake off your apathy.

— * —

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 1100 metres.

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AT LAST!

REGULATIONS TO BE ISSUED
THIS WEEK.
PRIME MINISTER DECIDES.

Following on the editorial in "Wireless Weekly" two weeks ago, several enthusiastic experimenters and amateurs, and the Radio Association of Australia, have been busy plying various politicians with the question, "Where are those regulations?" The answer has been furnished by the Prime Minister, Mr. W. M. Hughes, at his meeting at Crow's Nest, on Monday night last, in response to a question: "In view of you having promised in the House of Representatives, on the 18th October last, that the regulations would be issued in a week from that date, will you state when these new Regulations will be issued?"

Mr. Hughes replied that he was surprised that they had not been issued, but would see that they were announced this week.

At last experimenters, amateurs, the general public, and commercial interests will be able to see what the position will be. We take Mr. Hughes at his word, and expect the regulations to be issued this week. Our only regret is that we are not able to print them in this issue.

The future of Wireless is undoubtedly bound up in these new regulations. The possibilities from all points of views are immense, providing the regulations are constructed fair and equitable to all.

There seems to have gained an impression that a monopoly may be granted some particular company. If "Hansard" records are perused it will disclose the fact that the Treasurer, Capt. Bruce, M.P., stated some time ago, "that no monopoly will be granted." This, then, should be taken for granted, and "Wireless Weekly" is of the opinion that such a policy will be adhered to.

The next question to be considered by all Radio enthusiasts is: "When will broadcasting commence?"

The position in England might be cited as an example, where the Postmaster-General (who controls Radio over there) has called the manufacturers of Wireless equipment together and suggested the formation of a broadcasting company. So that the whole subject will receive the benefit of the united brains of the Wireless fraternity. The question of continuity of an efficient service is one to be considered by all interested. And we would suggest that similar action be taken here, so as to establish this new industry on a permanent basis. Now it is also up to all the amateurs and experimenters to think seriously of the government of their Radio Association, and so make it a power in the land. One that will be looked upon by the authorities as something worth while. Put your best men into office, and progress.

"Wireless Weekly" will help you.

W. J. MACLABDY, 249 Castlereagh St., Sydney.

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A LOUD SPEAKING DEVICE

You simply clip one of your receivers into the base, and Speech, Music, and Morse will be amplified sufficiently to be heard in any part of the room. It works well with one or two valves and produces a loud, clear, undistorted tone. Price, 35s. Post paid.

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NEW WAVEMETER,

65 to 85,000 METRES.

Capable of measuring wave lengths ranging from 65 meters to 85,000, or when expressed in terms of frequency, from 3,500 to 4,600,000 cycles a second, a standard wavemeter has been developed by R. C. Cox of the United States Bureau of Standards. The insistent needs of Government, commercial, and university laboratories for apparatus with a capacity for correctly determining the frequency of rapidly alternating currents are satisfied in this instrument.



The variable condenser, although in principle adhering to a type previously designed by the Bureau of Standards, has been modified in design so as better to serve the specific object outlined. This modified variable condenser shares with other condensers developed by the Bureau of Standards, certain outstanding virtues. Among these are: Assurance of constant calibration by its rigid construction, its shield, its unimpeded progress through 360 degrees without "stop-overs" which would jar the plates from alignment. Also, barring air, its dielectric losses are negligible. Large semi-circular plates, unshaped at one edge or rounded at the corners, afford a capacity calibration curve nearly approaching linear from 5 to 170 degrees.

Extremely low resistance and correspondingly low power losses

of this condenser are guaranteed by the elimination of insulating material other than three short glass rods which act as non-conductors of electricity between the fixed plates and the movable plates and the shield. The topnotch capacity of the condenser is 0.0012 microfarad.

Fixed mica condensers employed are sources of supplementary power. Four shielded condensers are accessible, having capacities of 0.001, 0.002, 0.004, and 0.008 microfarad, respectively. The phase angle of each does not exceed five minutes at 500,000 cycles a second. The high potential terminals consist of rods climbing to the level of the top of the variable condenser, terminating there in mercury wells.

Four other units of the latter are projected from the high-potential terminals of the variable condenser. Thus, by means of interchangeable links between the mercury wells any combination of fixed condensers may be placed in parallel position with the variable condenser.

The five coils forming a component part of the wave-meter have, with reference to inductance, a range from 10 to 5,000 microhenries. Electrical factors determined the minimum limitation while the

maximum figure was fixed in obedience to mechanical convenience.

At present, the Bureau is constructing a coil wound on a skeleton frame resembling single-layer coils, but the unit in the making is composed of three spaced layers and will have an inductance of 23,000 microhenries. For an even higher inductance, a coil bank-wound with high frequency cable wire on a Pyrex glass cylinder, the wire impregnated with collodion, yields 128,000 microhenries.

Resonance is indicated by a single turn of a one-eighth-inch brass rod coupled to the wave-meter coil. The terminals of the loop are in mercury wells fixed at the bottom of an insulating cup. Practice heretofore involved the resting of a sensitive thermogalvanometer in this cup with its terminals merging in the mercury wells. Greater sensitiveness is obtained by exchanging this instrument for a thermo-element with leads to a wall galvanometer. This turn is fixed so that its coupling with any one coil of the wave-meter is unchanged. It is grounded on the side in closest proximity to the condenser.

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FUTURE OF TELEPHONY

As the result of their investigation of the possibilities of wireless telephony, a sub-committee of the Radio Research Board are of the opinion that, in the present stage of development, the system as a commercial proposition is of distinctly limited ability. In their report recently presented to the British Parliament they thus summarise their conclusions:—

(a) We consider that the development of radio telephony for long ranges is in an extremely elementary stage, and we see no line of development which would be likely to lead to its establishment on a commercial basis within a measurable period.

(b) For range of the order of 1000 miles we consider that in certain remote localities, where the interference from atmospheres and other radio communications is not excessive, it would be possible to establish non-secret radio telephonic services using waves of the length usually employed by medium power radio telegraph stations communicating over the same range. The power necessary for radio telephony, however, would be much greater than that required for satisfactory communication by radio telegraphy over the same distance.

(c) For ranges of the order of 200 miles, we consider the position more hopeful, and it seems that the lines of experiment, which are being followed will lead to the development in a reasonable time of a system of radio telephony at any rate to the requirements of a commercial system.

BROADCAST SERVICES.

(d) We cannot, however, recommend the use of radio telephony as a substitute for any other means of telegraphic communication except in those cases where the special requirements can be met in no other economic way; for example, the broadcasting of intelligence of general information where one costly transmitting station supplies a great number of simple, inexpensive receiving stations, seems a

practical commercial problem, especially in localities ill-equipped with land lines.

All the witnesses examined agreed that for the transmission of a specific message over any distance—long or short—the radio telephone was greatly inferior to the radio telegraph in accuracy, speed, and cost; and was likely to remain so.

They agreed also that the articulation of the best radio telephone installations known to them compared favourably with that over a trunk land line, but that it was necessary to repeat or spell unusual words or proper names and repeat figures. The sub-committee consider, therefore, that the spheres of utility of the two systems are as separate and clearly defined as those of land line telephony and telegraphy.

It is pointed out that for successful operation a radio telephone installation must satisfy the same requirements as a land line system. It must give at least as good articulation, and sufficient power must be used to overcome all interference from other signalling or from atmospheres. At the same time this power must not be so large that running and maintenance costs are excessive.

The interference of atmospheres is very variable both in respect of locality and season, and in certain localities communications may be interrupted from this cause for hours or days, even when very high transmitting powers are used. Further, some degree of secrecy must be provided. The ideal, of course, is absolute secrecy; but a service might be considered commercially possible if the interception of a conversation required costly and elaborate apparatus needing skilled adjustment.

LACK OF SECRECY.

In the sub-committee's opinion, the possibility of establishing satisfactory radio telephone communication on a commercial basis over

long distances—3000 miles or more—is remote.

Witnesses variously estimated the powers necessary for such services to be from three to 20 times greater than those at present considered necessary for similar radio telegraph services over the same ranges. The necessary charge for a conversation would accordingly reach an impracticable figure. No means are at present known by which any appreciable secrecy can be obtained for a conversation taking place at such a range.

The interference with other radio communications would be greater than that due to two radio telegraph stations communicating over the same distance on the continuous wave system, owing largely to the increased power. Radio telephone communication would be exposed to atmospheric interference, and the interference of other radio stations, to a greater extent than radio telegraph communication over the same distance. For medium ranges the sub-committee consider that the difficulties as regards a commercial service are practically the same as those for long distances.

As regards short distances, it is stated that the Marconi Company is experimenting with semi-secret systems with the expectation of placing radio telephony on a commercial basis in the near future for distances up to about 200 miles over sea. Certain experiments carried out by their experts at a range of 90 miles over land have also had very promising results. Neither of the systems, however, has yet been tested in an actual commercial service.

The sub-committee consider that the conditions requisite for a commercial service can be met at the present time in the case of a service over a short range to the following extent:—

(a) The articulation is approximately as good as on land lines of similar length.

(b) It seems probable that a full 24-hour service could be maintained in most localities.

WHAT ABOUT THIS SET?

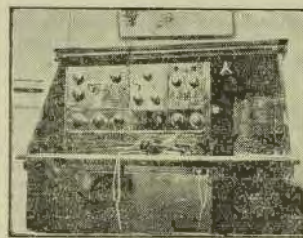
Mr. H. A. Stowe, of Royal St., Chatswood, has a station to be proud of. A photograph appears herewith, and Mr. Stowe supplies the following details:—

Three valves are used at present, one Radio Freq. Amplifier, one Detector, one Audio Freq. Amplifier. Provision is made for the second stage of Audio Freq. Amplifier. The circuits used are as follows:—

Long wave, 2 coils, using a conductive tickler wound in with the secondary and forming part of it. Both Primary and Secondary coils are tapped and brought out to switches, shown on the top left hand of photo. Coupling variation is obtained by means of double acting lever, which projects through panel.

Short Wave.—Ordinary 3 coil system, Primary Secondary, using honeycomb coils. The coup-

ling is varied by the levers, which project through panel shown in the middle top. The change over switch, for changing from Long to Short wave, changes over all condensers and coils, also aeri-



ling is varied by the levers, which project through panel shown in the middle top. The change over switch, for changing from Long to Short wave, changes over all condensers and coils, also aeri-

and contain the sockets for Transformers also Pot. and Rheostat and switch for cutting in or out. By means of these switches any combination of amplification can be obtained at will. These switches also control the valve filaments.

The whole of the set was made by myself with the exception of the cabinet. The home made portion includes, valve sockets, condensers, knobs and switches, switch studs, coils and transformers, and also telephone transformer for the Baldwin Phones. With this set any of the high power Continental and American stations can be heard and copied on long wave and the short wave any of the Australian and N.Z. Coast stations and all shipping. Using 2 valves, the Sunday night concerts can be heard all round the room from the phones.

TELEPHONY : COMMERCIAL OUTLOOK.

DIFFICULTY OF INTERCEPTION.

(c) Atmospheric disturbances and, under present conditions, interference by and with other stations are very much less troublesome on the short waves used, so that delays of traffic through these causes are less probable, and the power required is not excessive.

(d) Unauthorised reception is made more difficult by the use of short waves, but the conversations can be picked up by special apparatus. Moreover, the transmission can be made to some extent directive, i.e., the waves can be made stronger at points on the line joining the transmitter and receiver than at points off that line, thus reducing the area over which interception is possible. In any system, irrespective of distance, the use of different wave lengths for transmission and reception at a given station makes it more difficult for one person to overhear the whole of a conversation.

(e) There are no insuperable difficulties in the system being worked satisfactorily in connection with the ordinary trunk lines, and, as far as subscribers are concerned, the conversation can take place exactly as with the land line system, i.e., the subscriber has not to instal in his office any special apparatus or to manipulate any switches during a conversation.

HE DID IT!



Mr. J. W. Robinson, of Macpherson Street, Ryde, the Winner of Mr. Maclurcan's Monkey and Weight Puzzle.

FURTHER TESTS.

Mr. Maclurcan to test with Pago Pago.

Music for S.S. Sonoma.

Mr. Chas. Maclurcan will be testing with s.s. "Sonoma," commencing on Wednesday, 15th to 22nd inst., every evening 7 p.m. to 7.30 p.m. Music, speech and C.W. call. Letters T.J. and 2C.M.

Monday, 20th, and Tuesday, 21st, he will test with Hull, Melbourne, at 8.30 p.m.

Same procedure as in previous tests.

Different call letters for each power.

From 23rd to 30th inst., he will test with Pago Pago. Call N.F.W.-2C.M., 6 p.m. to 6.15 p.m., and 8.15 to 8.30 p.m. C.W. only.

MAKE YOUR OWN.

A variometer affords a means of obtaining a continuous variation of inductance, and is therefore useful in radio frequency circuits. The principal advantage that the variometer has over the ordinary variable inductance is the absence of sliding contacts or

gether by a suitable length of flex, as in fig. 1. The beginning of one coil and the end of the other are connected to the two terminals, shown in fig. 3. A scale can be fitted as also shown in Fig. 3, to enable you to have a record of certain positions on different sta-

ally, and connected in series. When the inner coil is turned so that its axis coincides with the axis of the outer coil, and the current circulates through both windings in the same direction, their magnetic fields add and the self induction of the variometer is maximum.

If the inner coil is then turned 180 degrees, the current circulates in the two coils in opposite directions, their magnetic fields oppose and the self induction of the unit is a minimum, or nearly zero.

When the inner coil bears any other angle to the outer coil, the self induction is a function of the angle of rotation.

It is a general practice in amateur stations to use a single receiver attached to a large horn for loud speaking purposes. Baldwin phones are particularly adapted for this purpose.

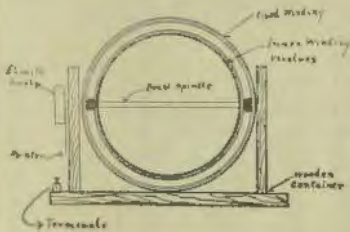


Fig. 2.

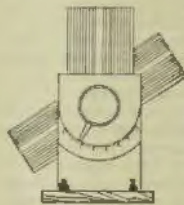


Fig. 3.

complicated switches.

To proceed with the construction. The following material will be required:—

Two ebonite or cardboard tubes to measurements as in fig. 1; 2 terminals; one piece of 1/4-inch rod 8 inches long; one knob, a pointer; 1-lb. of No. 28 gauge S.S.C. copper wire; 2 feet of flexible wire to connect the stator and rotor coils together.

First, drill a 1/4-inch hole in the two formers to take the brass spindle. Wind each former as full as possible with No. 28 gauge wire, and be sure you get the same length of wire on each former. This is easily reckoned. A space of 1/4 inch is left in the middle of each of the windings to pass the spindle. After winding the two formers shellac well so that the turns of wire will not come adrift. Next, make a frame container of wood, as in fig. 2, to hold the coils.

Secure the smaller coil to the 1/4 inch brass spindle, as it has to revolve within the larger coil. The two coils should be connected to-

inals. We think that the figs. 1, 2 and 3 are self explanatory, but for those who do not understand the action of a variometer, a few words will not go amiss. The

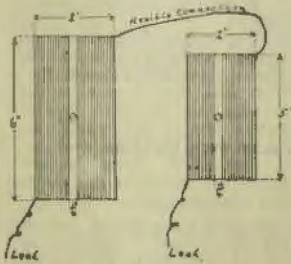


Fig. 1.

reader should not confuse the variometer with the vario coupler, as often done.

Coming down to the action of a variometer, it is as follows:—The two coils are mounted concentric-

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Our
Radio YarnConverting the Skipper. By
C.H.A.

Captain Statton watched the riggers at work on an aerial for his little steamer with a frown on his face. He was a bull-necked little man of the old school, and viewed the installation of wireless on the Centipede with undiagnosed hostility.

He faced the mate, who was coming along the deck, with a snort of disgust. "See that these men clear away the decks after they have finished with their nonsense, Mr. Mate," he said sharply. "Nonsense, sir?" said the mate, surprised.

"Yes, nonsense. This new-fangled contraption will only clutter up the ship and serve no good purpose. The owners must be mad to spend money on this foolishness. As if I can't find my way from port to port without being connected up with the shore like a banker in his office."

The captain snorted again and made off along the deck. The mate shook his head and said nothing. He had sailed with the captain on several voyages, and knew his little ways.

The Centipede received her cargo in due course and sailed for her destination. But Captain Statton still refused to acknowledge the necessity for the wireless, and lost no opportunity to run it down. The young operator's position during the first few days was no pleasant one.

One morning the captain climbed to the bridge, where the mate was on watch, in a talkative mood.

"I calculate that the Beaver will be somewhere near us tonight," he said. "She has a lot of passengers this trip, and my youngest daughter is aboard." He talked a good deal about this daughter, and if it was plain that she was his favorite.

When darkness descended on the ocean, the Centipede was plunging on in the teeth of heavy seas and half a gale of wind. The captain kept the bridge, nursing his vessel through the rough patches, and helping the of-

ficer of the watch to keep a good look out.

Suddenly the door of the cabin, which had been fitted out as a wireless room, flew open, and the young operator sprang on to the bridge. Clawing his way along the wind-swept structure to the captain's side, he gave his message.

"Just picked up the S.O.S. from the Beaver, sir. She's struck a floating obstruction, and is sinking fast." He gave the Beaver's position, and was pushed aside as the captain rushed into the chart-room to work out his course.

A few minutes later he appeared again, gave the helmsman a new course, and explained things to the chief engineer, with a request for more speed. Then he sent for the wireless operator, who told him that several vessels had answered the distress call, but none of them could reach the sinking vessel for many hours.

"We shall be on the spot in half an hour," said the captain, "can you tell them so?" The operator nodded and went below. He was soon back with the information that the captain of the Beaver thought his vessel would hold out, but urging the Centipede to hasten.

The minutes dragged on, and soon the watchers on the hurrying vessel saw flares ahead. They arrived near the Beaver, apparently only just in time. Her bow was low in the water, and the seas were breaking over her. The passengers could be seen huddled in a group in the shelter of the deckhouses.

Captain Statton was a seaman to his finger tips. He soon had his vessel in position, and sent his boats away to the rescue. The work was difficult, and fraught with danger, yet eventually the whole of the passengers and crew were taken off the sinking ship.

The last boatload was hardly alongside the Centipede, when the Beaver's stern rose high out of the water, and she plunged be-

neath the waves.

Captain Statton saw his daughter lifted aboard his ship, and his eyes were wet with tears.

An hour or so later he entered the wireless room, and astonished the operator by shaking him by the hand.

"Sonny," he said, "I'm a silly old man, who is far behind the times. I'll take back all I ever said about your gadgets. Wireless for me every time in future."

AN ANNOUNCEMENT.

"Wireless Weekly" wants contributions. There are plenty of amateurs in Australia who can help their fellows by discussing the various problems met with during experimental work, and giving them points on the making and management of apparatus. There is room for good technical matter in these columns.

Interesting news items pertaining to Radio in Australia are also wanted.

All contributions published will be paid for.

Typed M.S.S. is preferred. Write on one side of the paper only. Suitable photographs on Radio subjects are also wanted.

Contributions should be addressed, The Editor, "Wireless Weekly," Box 378, G.P.O., Sydney. Unsuitable M.S.S. will be returned if stamps are enclosed for postage, but no responsibility is taken.

THIS IS TO BE A WIRELESS CHRISTMAS.

Book your order now for a wireless set, for your boy, or for the home. Do not leave it to the last minute, because WE KNOW that hundreds of people are buying sets for Christmas presents, and there will be a shortage.

Prices, from £2.

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Electrical Engineer.
6 Royal Arcade, SYDNEY.
Tel.: City 8543.

FIRST WIRELESS.

Find in London.

The crude but sensitive instruments with which David Hughes first discovered wireless waves have been unearthed in a London tenement and transferred to a place of honor in the South Kensington Museum.

Hughes experimented with electric waves long before Marconi, but the latter gained the distinction of being the discoverer because he was the first to recognize them as ether waves.

The newly found instruments consist of a spring wound device that sent out electric impulses at regular intervals, and a carbon microphone used by Hughes as the detector. History tells us that during an experiment in 1879 Hughes started the transmitter and then walked slowly away from his laboratory with the receiver in his hand, noting how far the sounds could be detected. At times he was able to hear them 500 feet distant.

Although Hughes was an extremely able scientist, he lived and worked in a frugal manner. Most of his instruments were made up of odds and ends, such as pins, needles, scraps of wire, and pieces of metal utensils. Yet even with these he was able to produce delicate mechanisms that were the forerunners of those in operation to-day.

The carbon grain transmitter was first studied by Hughes and a widely used electrical device known as an induction balance was invented by him. Later he published a theory of magnetism that brought him distinction.

Hughes was born in America, where he lived during his early years; but after inventing a printing telegraph he moved to England and the Continent. There he tried for many years to have the machine approved by foreign telegraph firms. Finally, after being accepted by the French government, it was adopted by all the leading companies and brought wealth to the inventor.

NEWS DISTRIBUTION.

From long and systematic experiments the German Post Office have come to the conclusion that radio telegraph is the simplest and cheapest means of distributing news from a central point. The Post Office administration have entered into an agreement with a news distributing agency for the circulation of market prices of stocks, prices of material, and so on.

Subscribers to the service pay 4,000 marks per annum to the Post Office for installation and maintenance and a subscription for the news service to the Press Agency. Reception of news services which are not subscribed for is partially prevented by changing the figures which have to be decoded by the subscribers entitled to the particular service. The apparatus consists of a single-wire antenna, loop antennae not being used since they involve expensive amplifying receivers. A single tube receiver is supplied, supplemented where necessary by two audio-frequency amplifying tubes, while filament and plate currents are taken from the mains through suitable resistances.

LOUD SPEAKER

WORLD'S LARGEST.

35-FOOT HORN.

(From "Wireless Weekly" Special Correspondent).

At Idora Park, a public amusement resort in California, U.S.A., wireless music is received and in order to make it audible over the whole park, a loud-speaker of rather startling proportions is used.

The horn of this instrument is 35ft. long and the mouth is 12ft. square. This huge horn is in successful daily operation, and the area over which it is heard, has been computed as 29 square miles.

Apart from its huge size, this loud speaker, which is claimed to be the world's largest, it is of absorbing interest, because of the facts that, through the use of the electro-dynamic reproducer, such true tones have been produced, and there is practically no distortion.



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Instructor, late R.A.N., 20 years' experience.

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Private Tuition day or night.

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THE CRYSTAL.

ITS FUTURE.

Inventor's Claim.

With a nine-turn loop aerial, three feet across, using a crystal detector and tube amplification, I have enjoyed loud-speaker reception in Boston of radio-phone broadcasts from Schenectady, 160 miles away, said Greenleaf F. Pickard, described as the inventor of the crystal, in an interview with "Popular Science Monthly." Likewise, with a crystal detector I have heard, on occasion, Pittsburgh, Detroit, and even Chicago. The distances covered in the latter instances range from 475 to 900 miles.

Knowing from long experience what a crystal detector, under the best conditions, actually will do; knowing in what respects it is superior to a tube detector; knowing, also, the key role it has played in radio history, I cannot help wondering at a recent tendency on the part of some to speak contemptuously of it.

In fact, I believe that the future of radio in the American home lies with the crystal detector. Already we can confidently estimate that of perhaps 2,000,000 receiving sets in the United States, a majority use galena for detection. It is ideal for the beginner. It is invaluable for emergency and portable sets. Government radio stations con-

stantly keep crystal detectors in reserve.

Many of the uncomplimentary remarks now current concerning the crystal detector may originate with the old-line amateur—the man who has worked with radio from the beginning, for the sheer pleasure of it, and who is perforce, the counsellor of the beginner to-day. He has found the vacuum tube much more to his liking; he associates the crystal with the "ancient" days of radio; he is himself expert enough to use with maximum success the tube detector. Hence he spreads the gospel that the tube is the only thing.

Yet the radio novice doesn't know what real trouble is until he graduates from the crystal detector to the tube. His case is exactly the same as that of the beginner in photography, who gets excellent results with a cheap and simple snap-shot outfit, but who fails disastrously when he first tries to use more expensive and delicate cameras.

ARMSTRONG WINS.

By a recent decision of the United States Court of Appeals, the claims of Edwin H. Armstrong as inventor of the regenerative action or the feed-back arrangement in radio reception and transmission, are again upheld, as against the claims of Dr. Lee de Forest.

No trans-Atlantic telephone



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conversation can be carried on without use of the Armstrong principle, none of the big radio-sending music nightly through phone broadcasting stations now the air can operate except under the Armstrong patent; even the modern multiplex form of wire telegraphy must pay tribute to Armstrong, so it is claimed. Indeed, the Armstrong regenerative action or feed-back constitutes one of the greatest advances ever made in the radio art.

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670022	30/-	45/-

November 17th, 1922

WIRELESS WEEKLY

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ILLAWARRA RADIO CLUB.

Another meeting of the Illawarra Radio Club was held at No. 75 Montgomery Street, Kogarah, on Thursday, 9th inst. Mr. Hewett spoke of the last meeting of the Radio Association, and of the action of that Association in endeavouring to have the new Regulations made public. There was some discussion on the future policy of the Club, and the necessity for regular buzzer practice with a view of making members proficient in the reading of Morse signals to qualify for valve licenses. Discussion also took place on the Club's proposed benefit entertainment in the near future, but no definite arrangements could yet be made until certain permission (which had been applied for) had been granted by the authorities.

Mr. Gorman continued his lecture on "Constructional Details." He also spoke of the advantages of Radio Frequency Amplification over Audio Frequency, comparing the two systems and describing the principles on which they worked. His own set, employing the former system, was exhibited and put into operation, to the great interest of the members.

A vote of thanks was unanimously carried to Mr. C. D. MacLurean for recently entertaining two parties from the Club at his station, when very pleasant and instructive evenings had been spent.

The next Meeting of the Club will be held at the above address on Thursday, 23rd November, at 8 p.m. All persons interested or desirous of becoming members are asked to kindly communicate with Mr. W. D. Graham, Hon. Sec., 44 Cameron Street, Rockdale.

METROPOLITAN CLUB.

In order to popularise the science, the Committee of the Metropolitan Radio Club is arranging a series of fortnightly lectures, which will start on Wednesday next, at the Laurel Cafe, Royal Arcade. Everybody, whether a member of the club or not, is invited to attend, and visitors' tickets may be had from the Hon. Secretary, or the Hon. Treasurer, 6 Royal Arcade, Sydney. At the meeting on Wednesday, Mr. F. Swinburne will give a lecture, illustrated by lantern slides.

The first step in the re-organisation of the club has been the adjusting of the subscription rates. These will now be 8/- per annum for members over 16 years of age, and 5/- per annum for those under this age, payable in advance.

The secretary of the club will be pleased to supply any information required.

THE BOX HILL DISTRICT RADIO CLUB.

The last general meeting was held at the Club's room, No. 1 Dishop St., Box Hill. This Club,

in keeping with one of the ideals set out in the first meeting to raise the members above the "listening in" standard, has already started on a course of instruction which has been very highly approved of, and will hold an examination in February. This Club is growing steadily, although only two months old, and has doubled its membership since the first meeting.

Mr. MacLurean particularly wishes to find out the hours of working of N.P.U. Tutuila (Pago Pago), especially between 8-8.30 p.m. Any experimenter who will concentrate on this station during the next week or so and can find this out will be greatly assisting Mr. MacLurean. It is, of course, necessary to know if he is receiving at this time instead of transmitting.

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STATION CALLS.

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Quantock, ZJF; Quebec City, GBNX; Queda, GOA; Queen Alexandra, EZN; Quentin, ZOV; Queen Louise, EUW; Queenmead, EQL; Queen Margaret, ZRW; Queensland, EJE; Queensland Transport, ZEA; Querimba, GOB; Quillota, MWK; Quiloo, GOC; Quilpue, GLT; Quito, ZWF.

Rabymere, EVC; Radix, GFLK; Radnorshire, GBQX; Raeburn, MNX; Rajah, XKP; Rajput, XMU; Raneer, XKO; Ramonde Larrinaga, GCZP; Ramos, GLU.

Ramore Head, YSG; Ranella, MZP; Ranger, MLD; Raphael, MET; Rapidan, EQV; Raranga, ZNI; Rassay, MGR; Rathlin, GFMC; Rathlin Head, ZAR; Rathmore, GUT; Ravelston, YGY; Ravenrock, GCSY; Ravenshoe, YAT; Ravenspoint, XFF; Ravensstone, BRZ; Ravenswood, GFNR; Ravensworth, GBJN; Reading, EXK; Recorder, MEJ; Redbridge, YHQ; Red Cap, ZRG; Redgate, ZTL; Redruth, XMG; Rees Llewellyn, EUB; Refloater, GBVF; Regent, EZQ; Regina, GBCT; Regina, ZOD; Reindeer, MSD; Reindeer, ZRN; Relentless, XHN; Reliant, GCVX; Relillio, XLZ; Rembrandt, MEU; Remuera, MKV; Resesby, MMC; Restorer, GCVY; Retriever, GDVT; Reval, BEB; Reventayan, GDCV; Rexmore, XHY; Rheinfels, YDH; Rhenania, GBMC; Rhesus, ZII; Rhio, YHW; Rhode Island, BUX; Rhodesian Transport, ZGB; Rialto, GBNS; Ribera, GFLV; Richard Welford, GBTX; Ridley, BGL; Rimonski, GIZ; Rimutaka, MBT; Ringdove, GFJR; Rio Blanco, YXN; Riton, XJI; Rio Negro, BGK; Roath, ZRJ; Rio Preto, BAW; Ripley Castle, BBW; Ri-

? ? ?

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.F.S. (Victoria).—No. Grid condensers for V.245 being purely amplifiers. Grid cond. for exp. valve, .0003 M.F., grid leak, 2 meg.

COUPLER (Brisbane).—No. 1: Yes, concrete, although not an insulator to H.F. Currents is the most practical solution to your problem. Insulate the guy wires very carefully, breaking each guy in half with an insulator. 2: The number of taps makes no difference to the efficiency of the coupler, provided they are well insulated. Twenty taps will give you a good variation, although half this number will be sufficient if shunted with a .001 m.f. variable condenser.

BOYS GUIDE.—Start with L. coupler crystal set. Baucher's Wireless Manual.

A. R. LEETON.—See "Wireless Weekly," No. 9, 29/9/22.

I.G.T. (Corio, Victoria).—(1) Yes. (2) One or two stages of Audio Amplification would certainly increase strength of signals. (3) See "W.W.," No. 4. (4) Both are satisfactory. I prefer L. coupler.

AERIAL (Corio, Victoria).—See Baucher's Wireless Manual.

posto, GCNK; Risaldar, MTE; Rishon, GBVS; River Araxes, ZIT; Riverdale, YMX; River Dare, GCMQ; River Dart, XJA; River Orontes, EVD; River Taff, YIH; Riverton, BNE; River Trent, MCX; River Wye, BFP; Riviera, GUO; Robert Dollar, GFMN; Rochdale, BQU; Rockelie, GDJB; Rocio, ENC; Roker, BSO; Rollo, ZLR; Roma, ESU; Roma, GBMW; Roman Prince, ZGI; Romanstar, MRO; Romeo, ZOP; Romera, YVI; Romney, MEV; Romney, YKP; Ronalee, GCLS; Ronan, BQE; Ronda, GDQK; Rondo, OCS; Rooke, GAG; Roon, GCWD; Roquette, XMV; Rosalind, ZFA; Rosarina, GJW; Rose, MTO; Rose Castle, YMV; Rose den, YGE; Rosefield, BND; Roserie, GLY; Roseworth, GCZX; Rossano, ZFM; Rossetti, MEY; Rossia, YDI; Rosstrevor, YWB; Rosyth Castle, XXB; Rotenfels, EQY; Rotherhill, GDXW; Rothley, EPE; Rotterdam, ZOS; Rouen, XEI; Roulers, GPL; Roumelian, ZPG; Rounton, XFJ;

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