

Glossary of Wireless Terms

UNDER this heading we will give regularly sections of the glossary of wireless terms which is a prominent feature of the N.Z. Radio Listeners' Guide. In that book, although set in the smallest type, it occupies some 13 pages, and is definitely in our opinion the most comprehensive and complete glossary on modern lines which has been made available in the Dominion. For the benefit of our readers the glossary will be reprinted in our columns.

COUNTERPOISE.—A system of wires (usually insulated and placed directly under an aerial), which is employed as a substitute for an "earth." A counterpoise is frequently used in conjunction with transmitting aerials in order to reduce the effective resistance, and in receiving broadcasting to afford greater selectivity and to reduce power-line and other electrical interference.

COUPLER, LOOSE.—A convenient form of tuning instrument in which two coils are used, energy being transferred from one to the other electro-magnetically; if very close together they are "tight-coupled"; if far apart, "loose-coupled." Usually the primary is fixed in position and the secondary, being of smaller diameter, slides in or out of the primary, thus varying the degree of coupling. The tuning of the primary and secondary may be accomplished by taps, sliding contacts, or external condensers, or by the fact that the secondary sliding inside the primary not only alters the coupling but also the self capacity and therefore the tuning.

COUPLING. Represents the means by which energy is transferred from one circuit to another. A "direct" coupling refers to a condenser or inductance coil, being common to both circuits, thereby linking them together. An "indirect" coupling refers to no actual connection between the two other than by magnetic induction due to the proximity of two coils, one being included in each circuit. A "tight" or "loose" coupling refers purely to the quality of coupling in a given set of circumstances. Thus, an indirect coupling may be made very tight, while a direct coupling can be quite loose. The amount of linkage between the two circuits is known as the "mutual inductance," where the circuits are indirectly linked.

CRYSTAL DETECTOR.—A detector which depends for its action upon the fact that the contact between a crystal and a metal, or between two crystals, will only carry an appreciable current in one direction. Thus trains of high-frequency oscillations can be converted into trains of unidirectional impulses, which produce an audible sound in a receiver telephone. The "crystal set" is the most inexpensive form of radio receiving equipment, but it has generally only an exceedingly limited range for broadcast reception and, as a rule, will

receive only local broadcasting, unless valve amplifiers are employed in conjunction with the crystal. Crystals capable of performing the necessary function of rectification are of many forms. While there are some quite as efficient as valves in this respect, the valve has the advantage that it simultaneously amplifies the feeble signals.

CURRENT.—An electric current is a movement of negative electrons, driven by an electro-motive force. A current cannot flow unless there is an electro-motive force to drive it, and a conducting path for it to flow along. The unit of electric current is the ampere. Current is a distinctive effect representing quantity at a given moment. To obtain a measure of power, the current or quantity for a given time must be considered as well as the voltage or pressure. Pressure multiplied by quantity gives power in "watts." A direct current (D.C.) is one which flows continuously in a given direction. See "Alternating," "Oscillating," and "Impulsive Currents."

CYCLE.—See "Alternating Current"; also "Kilocycle."

DAMPING.—When resistance is introduced by any means into a circuit for the purpose of simplifying tuning or to render the circuit less liable to burst into oscillation, the circuit is said to be "damped." Damping tends to flatten tuning and to reduce signal strength, thus reducing the general efficiency, and should be resorted to only as a last desperate remedy for undesirable super-selectivity or uncontrollability. See "Aperiodic."

D.C. (DIRECT CURRENT).—See "Current."

D.C.C. WIRE (DOUBLE COTTON-COVERED WIRE).—A very usual abbreviation referring to the type of insulation covering a particular gauge of copper wire.

DEAD-END.—Considerable loss is occasioned by the use of a large coil for low wavelengths, the greater proportion of the coil being unused. Unless this unused portion or "dead-end" is short-circuited, it tends to absorb much of the signal strength.

RECORDS OF BROADCASTS

LATEST AMERICAN IDEA

FOR the first time, gramophone records of an American radio broadcast programme are offered to the public in the United States. A well-known gramophone company has the distinction of pioneering in this direction, and the first example is a set of three double-sided records of the ceremonies connected with the national welcome to Colonel Lindbergh, the Atlantic flyer, at Washington.

On these records you have the voice of President Coolidge, the interspersed announcements of Graham McNamee, a short address by Colonel Lindbergh, and his longer speech at the National Press Club. It's all there, and if you close your eyes it is not hard to imagine that the events are actually taking place. The cheers of the crowd, the applause interrupting the speakers, the blare of the bands, and the quiet, unruffled voice of Lindbergh.

It is time that more of the historic events which are now being offered to the radio listener with impressive regularity were preserved in permanent form. The few records already made being a rather belated start in the right direction.

EMPIRE BROADCASTS

DIFFICULTY IN RECEPTION

A QUESTION asked recently in the British House of Commons dealt with the establishment of a broadcasting service for receiving at moderate cost in such places as West Africa and East and Central African Colonies, where thousands of British citizens were in remote and lonely stations and where a broadcasting service would be a great boon to them. The reply given was that the difficulty in providing such a service lay not in the transmission but the reception. The British Broadcasting Corporation had been conducting daily transmissions from its short-wave station, 5SW, ever since December 12 last, and from time to time programmes had been heard in Africa and elsewhere. The British Broadcasting Corporation, however, had stated that prolonged experiments under varying conditions were necessary before a definite receiving set policy could be evolved. It was suggested that the Government could give help in the matter, and Colonial Governments were co-operating by forwarding reports on local reception.

IT was announced recently that the Paris Eiffel Tower broadcast station intended to offer listeners prizes for competitions, taking the form of three flats of three rooms each, the rent of which will be paid for three years.

Auckland Notes

(By Listener.)

AUCKLAND is certainly fortunate in its "children's hour" service. An enthusiastic body of "Uncles" hold juvenile attention nightly, and to know how much these radio relatives are appreciated one has to visit a home where there are kiddies—and a radio set. Dinner-table conversation is not considered good form by the youngsters, who before, during and after the meal hang on to every word that comes from the loud-speaker. "I often desire to switch the thing off," said a father, "so that I may talk to the family myself, but they would far rather listen to 'Uncle' than to parent. He is much more interesting than I am, they tell me, and when I realise the benefits my children are deriving from their radio hour, I am content to listen too, and frequently, to enjoy."

ON Sunday evening last the officials at IYA substituted a gramophone recital for the fortnightly organ recital. The change was an appreciated one, for it provided that variety for all tastes which our Sunday evening organ recitals seem to lack.

Our station came to light with the bad tidings of the All Black debacle on Sunday morning, and it was surprising to find out later how many listened in to hear the news. There are thousands in the city and suburbs who possess a receiver but not a telephone, and to them the broadcast rendered a signal service. There will be much dependence on IYA for the result of the next test, but an earlier hour of announcement would be welcomed, if the opinions of a number of listeners are to be relied on.

TO what extent the radio pirate exists in Auckland it is hard to say, though two cases have been brought under the notice of the Local Listeners' League, which has duly reported them to the proper quarters. But there is another form of piracy that is rife in the city, and that requires observation and checking. This is the unlicensed quasi-amateur home constructor and repairer who, if all reports are to be believed, is doing quite a big business, to the detriment of legitimate traders and of licensing revenue. It is very difficult to locate such folk, and still more difficult to secure grounds for their prosecution, but their existence is due largely to the short-sightedness of their patrons. The man who wants a set assembled or repaired should realise that, in having dealings with an unlicensed constructor he may be saying a pound or two, but he is getting all too frequently an unreliable service, and he is deliberately hindering the improvement of broadcasting by depriving the company of revenue which will be spent for his entertainment.

THE announcement that the establishment of a full studio orchestra has been postponed has been received locally in the spirit in which it was made. Though there have been one or two grumblers, listeners generally realise that the service cannot stand unlimited expenditure, and as a body they feel satisfied to wait for the inevitable increase in licenses that will finance the project. A correspondent in the local press suggests that by increasing the number of gramophone records used sufficient might be saved in programme expenditure to defray the cost of an orchestra. His suggestion has brought favourable comment on the idea, but he and other correspondents seem to forget that even with gramophone records a heavy royalty has to be paid when they are put on the air.

THE forthcoming extracts from light opera, which are to be featured on Saturday evenings, are being keenly anticipated. There is a fascination

Television

IN A POPULAR FORM

"A LONG WAY OFF"

TELEVISION in practical everyday form is a long way off, says Mr. L. M. Clement, chief engineer, Tada Radio.

The "wrong impression" is created upon the layman when he is led to believe that television is here. In a sense, it is true that television is here, but there is a vast difference between television in what we engineers call the experimental stage and its practical application.

To explain further, an invention may be perfect technically and yet still be in the experimental stage in the sense in which I am now using the word. All old-timers in radio know that radio itself was an engineering fact a long time before it became a practical matter put to practical uses, so far as the general public was concerned.

To-day television, even in the laboratory, is practical only in what is known as a limited area. I shall explain that, but before doing so, I want to agree with the director of the Radio Manufacturers' Association and our own general manager, both of whom recently pointed out that television must in reality be a separate piece of mechanism from what we to-day visualise as a radio receiver. Most people have the idea that television will be accomplished by a simple attachment for a present-day radio set. Not so at all. As Mr. Richmond and Mr. Klein pointed out in viewing the commercial possibilities of television, not only does television at the moment involve a costly and elaborate equipment, but the very nature of television means distinct apparatus.

As I see it, real television requires a speech channel, a picture channel capable of handling modulation frequencies up to 30,000 cycles and either a synchronising channel or a crystal control synchronising equipment. In addition to the radio equipment, amplifiers and control equipment are required.

I do not mean to belittle television. It is coming, and will some day—five years or more from now, possibly more—be in more or less general use, but there are erroneous opinions about it, and those who have rushed into print, in many cases in half-baked fashion, are responsible to some considerable extent for the impression that has been created in the minds of the laymen of the world.

Limited Area Drawback.

I SHALL now try to explain in non-technical language, the limited area feature, which, fundamentally, is the most striking reason why television does not now, nor will it for a long time be able to, catch up with the imagination of its well-wishers. At present the effective area for the transmission of "sight" radio is limited. That is to say, at the present stage of development, from a practical standpoint, you could not "send" a ball game, a play, or even a single scene

for all tastes in the lifting refrains which we have heard from many a musical comedy, and even devotees of jazz, who rare against anything savouring of the classical, delight in listening to favourite selections from the "Belle," "The Country Girl," "The Merry Widow," and other comic operas. The complete production of one of these, though an ambitious effort, would make a great hit if it could be arranged without excessive demands for royalty.

from a play, much less a prize fight or any event encompassing an extended line or area of vision for the looker-on. Consider for yourself the practical demonstrations of television at this time mean a vision area of, say, two or three feet square. Not that this, theoretically, cannot be extended, and, indeed, there is nothing to prevent a much greater spread, but the fact remains that in its present stage, television represents the transmission of very limited areas even in the experiments being conducted.

While television is a fit subject for the engineering world to discuss and work on, there is, as I have said, a misunderstanding on the part of the general public through no fault of its own. I might go on and delve into the technicalities of the matter, but what has been explained about the area of present laboratory transmission is, perhaps, the best method of visualising for the lay citizen the fact that television as a practical proposition has not arrived.

Features are Explained.

CERTAIN phenomena of television, as in the case with our present-day radio, are highly interesting to the lay observer, as well as to the engineer. For example, some types of static on the "illuminated screen" of television apparatus look like handfuls of sand being thrown, or drops of water, being dashed against the surface.

An English publication, devoted to television, and said to be "the world's first television journal," says editorially: "We might, perhaps, be criticised as being premature in introducing a journal devoted solely to a subject which has as yet hardly emerged from the laboratory, but television, while it is not yet available to the general public, has long since emerged from the realm of theory," etc. No one can rightly deny this statement, for it sums up the situation very accurately, but one can with justice take exception to statements that would place television at this moment alongside of radio as we know it in the receivers of to-day. To say that such talk is premature is putting it mildly.

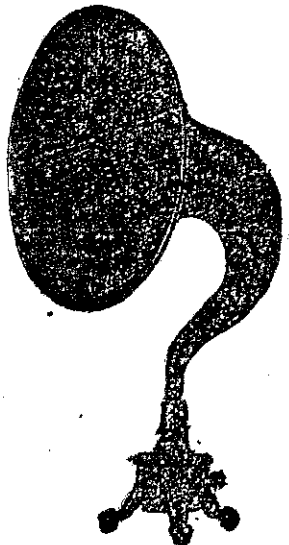
AUTOMATIC ALARM

SOS FOR SHIPPING.

ONE of the latest features of wireless equipment for ships is an automatic callbell apparatus called the auto-alarm, which has recently been perfected and passed by the navigation authorities. The apparatus is designed for use when the operator is off watch aboard ship. It is so designed that it will pick up a pre-arranged signal, consisting of four dashes, each of about one second's duration. This operating alarm bell is in the wireless-room, operator's sleeping quarters, and on the bridge, thus calling the operator to receive the distress call. This pre-arranged signal is sent out preceding the usual SOS signal used by ships when in distress. Special safeguards are provided on the auto-alarm so that in the event of the valves burning out, or the batteries dropping below a safe minimum working voltage, the alarm bells are set ringing, thus ensuring the operator being called and the fault rectified. The auto-alarm responds only to the prearranged signal, disregarding ordinary signals sent by other stations.

Auto-alarm sets have already been installed on the steamships Ferndale and Fordsdale, by Amalgamated Wireless (A/Asia), Ltd., and orders have been received for the steamships Minderoo and Gascoyne, of the West Australian Steam Navigation Co., Ltd.; Centaur, of the Ocean Steamship Co., Ltd.; Change and Taiping, of the Australian Oriental Line; Tandra, Arara, and St. Albans, of the Eastern and Australian Steamship Company.

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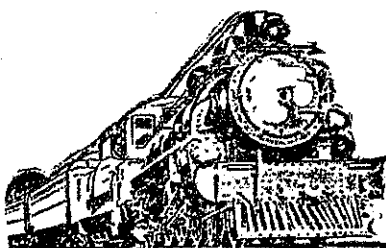
The Ethovox is manufactured by Messrs. Johnson & Phillips, Ltd., Charlton, London.

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