

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.

DEMAGNETISATION.—Telephone and loudspeaker magnets, having a definite polarity, may become demagnetised and consequently weakened, if the instrument is wrongly connected to the set, so that the current opposes instead of assists the permanent magnetism of the core. The positive terminal of phones or loudspeaker should be connected to that terminal of the set (sometimes also marked "plus"), which goes directly to H.T. plus (B battery plus).

DETECTOR.—A device, usually either a valve or crystal, for converting into audible sounds the radio impulses received from the aerial circuit. A valve which carries out the function of detection by means of a grid leak and grid condenser (known as grid rectification) or by variation of the grid potential by means of a potentiometer (known as anode rectification). A detector valve should never have as high a B battery voltage applied as in the case of an amplifier valve. To obtain the best results various B battery voltages should be applied to a detector valve before the correct voltage is decided upon. See "Rectification" and "Condenser, Grid."

DIELECTRIC.—The substance, or element, occupying the space between the plates of a condenser. An air dielectric is now generally used in variable condensers, and a mica dielectric in fixed condensers.

AIR DIELECTRIC.—The most usual form of variable condenser makes use of air as a dielectric medium, but as the dielectric constant of air is low (unity, in fact), a greater area of overlapping plates is required for a given capacity than if mica, ebonite, oil or glass were used. For power purposes where high voltages are used, air has the advantage of being self-healing in the event of a sudden surge of pressure breaking down its insulating power and causing a spark; but as the same applies to oil, which has a higher dielectric constant and consequently necessitates a smaller bulk, this is more commonly used for power purposes.

DIRECTIONAL RECEPTION.—For all practical purposes the usual outdoor aerial may be regarded as non-directional—that is, it is capable of collecting energy from any direction. Theoretically, however, the free end of the aerial should point away from the transmitting station. Generally speaking, the lower an aerial the more directional is its effect. A loop aerial is distinctly directional.

DISCHARGE.—The operation of exhausting the accumulation of electrical energy in either an accumulator or a condenser. A lightning flash is a visible and audible discharge of the accumulation of energy in the atmosphere to earth or any point—such as a cloud of lower potential.

DISTORTION.—In the endeavour to obtain increased range or volume without extending the set, the latter may be overworked, with the result that the desired increase is obtained at the expense of quality. If reaction is pushed too far, distortion reaches painful limits. Distorted loudspeaker reception is usually due to a badly-adjusted set rather than a fault in the loudspeaker, to lack of a C battery, poorly designed audio transformers, or transformers of too high a step-up ratio. With respect to the last-mentioned the second audio-frequency transformer should, as a rule, not be of a higher ratio than three to one. A higher ratio transformer may be used immediately after the detector valve—that is, in the first stage.

DISTRIBUTED CAPACITY.—It is desirable that a tuning coil should possess a natural frequency in which the inductance component is high and the capacity is low as possible. To this end, various systems of winding designed to reduce the inherent distributed capacity of the coil to a minimum are adopted. Bank, honeycomb, or basket windings may be cited.

D.S.C. WIRE.—Double silk-covered wire. As silk is a better insulator than cotton there is less likelihood of breakdown in coils wound with silk. It is more expensive than cotton, naturally.

DUAL AMPLIFICATION.—A form of circuit in which a single valve is made to do

TELEVISION STUDY

PROBLEM OF WAVE-LENGTH

INVESTORS WARNED.

RADIO television to fit the waves instead of waves to fit television was proposed recently in New York by the United States Government Radio Commissioner, O. H. Caldwell, as a field to be more thoroughly studied by scientists. Mr. Caldwell explained that radio television as it is now being developed calls for the use of channels between fifty and 500 kilocycles wide, depending upon the size of the image desired, and that there are only a few such bands available in the short wave spectrum. Because of the meagre number of such television "roadways" which can be assigned without encroaching on other established waves in that vicinity, Mr. Caldwell expressed the belief that engineers will find a way some day to confine television broadcasts within a few kilocycles.

"The enthusiastic inventor should remember that not only the problem of television transmission and reception has to be overcome, but the problem of fitting television into the wave spectrum has to be surmounted simultaneously before television can become a service to the public," said Mr. Caldwell. "Great care should be taken by persons proposing to invest in television proposition to make sure that the commercial television application will measure up to the bright prospects indicated in the laboratory experiments."

"According to our present knowledge a very wide frequency band will be required for any satisfactory television operation, and it is already apparent that only a few such bands can be put into service. The Federal Radio Commission has been disposed to grant to laboratories the use of the ether for experimenting, but to date engineers have largely devised things just to put on the wavelengths rather than to devise methods of fitting devices into narrow limits on the all-too-small radio spectrum."

Mr. Caldwell pictured the future radio television scheme, in the light of present knowledge, as consisting of a few very powerful stations, each capable of covering the entire country with its broadcast. Commenting on recent talk about plans of television broadcasters, he said that to his knowledge there had been no application lately before the commission for permission to use any of the waves for such purposes.

Mr. Caldwell was in the New York and New England area for a few days to listen-in on the waves and also to learn what listeners have to say about radio, both new and old, before returning to the task of formulating with the other commissioners the future radio picture of the country.

2YA ORCHESTRA

APROPOS of programmes, "Wanganui" in this week's "Mail Bag," submits a weighty argument and hopes to see the subject ventilated further. His suggestion, based on an analysis of a week's renderings by the 2YA orchestra, that the position of two-thirds classical and one-third light opera and dance music be reversed, in conformity with popular taste, is one which can only be endorsed. I cannot say that I agree with your correspondent's view that the orchestra should figure more in the programmes, for I think that we hear ample of this enjoyable combination of instrumentalists. "Wanganui," in quoting 3LO's huge revenue, as well as drawing attention to the predominant fare supplied by that station, viz., light music and comedy items, makes out an excellent case for the adoption of such a programme policy by the New Zealand Radio Broadcasting Company. It passes my understanding how radio, as a home recreation, is ever going to enthuse the general public as it should do, while the contrary policy is being pursued. The non-appearance of the dinner-music sessions, referred to by your correspondent, does not cause me, personally, much sorrow, for after all the music was intended to be of the "subdued" type, and my little circle are all satiated with the latter. There is one thing, however, which I do mourn, and that is the disappearance of a dance band from 2YA. Really, Mr. Editor, are we never to hear one again from Wellington. We were promised Saturday evening dance sessions this winter, which have not materialised. [We are not aware of any such promise. When the orchestra started Saturday was set down for vaudeville.—Ed.] However, in closing, sir, there can be no doubt but that in the fulness of time our radio programmes really will be popular, and with regular dance sessions at the close of each evening's entertainment—not in the form of gramophone records.—W.G.R. (Wellington).

Some Suggestions?

WHEN I started listening-in, Easter, 1927, there was a very poor choice of fare from New Zealand stations, and it was only Australian stations which made radio worth while. Now the New Zealand Broadcasting Company are giving us quite a feast of musical items, which are appreciated by the majority. For a young country like New Zealand the Broadcasting Company are quite well to the fore in the way of high-powered stations and have skilful engineers who are the chief link between artist and listener. There is quite a lot to alter and add in the way of management to suit listeners, and bring more attraction to the still waiting public.

Does the Broadcasting Company for one minute put themselves in the place of a listener who has invested £40 in a 5-valve set? Have they ever sat over their machine burning midnight oil

ETHICS OF BROADCASTING

AN industry, like an individual, becomes a useful member of society, when it attains consciousness of its moral duty to others. During its early struggle for existence neither an individual nor an industry can think of aught but itself. But as either grows in strength it begins to think of others in terms of its ideal behaviour toward them. The fineness of these ideals is a measure of the real development of the industry or individual.

Consequently, great interest should be attached to the first code of ethics which has been recommended for adoption by the United States National Association of Broadcasters as printed in the latest number of their official publication. Do the broadcasters really realise their moral duty and responsibility? Are they ready to be admitted to the ranks of those who are working for human advancement? Their code of ethics answers affirmatively:—

"1. To realise that radio enters into the daily lives of a greater number of people than any other man-created or man-directed activity since civilisation began.

"2. To realise that no enterprise can long endure and prosper unless it renders a real service to humanity.

"3. To be conscious that the vast audience we reach is of mixed tendencies, prejudices, and beliefs, and to guard against any utterance or false note that might offend the sensibilities of any.

"4. To realise that radio goes as an intimate friend into the homes, and helps to mould the minds of little children as well as of grown-ups.

"5. To realise that the development of better cultural standards, better living, and better thinking is our principal mission.

"6. To realise that there is a greater gain in holding fast to an ideal than in the temporary advancement of any individual station."

right out after distant stations? Have they ever had a party of prospective listeners to give them a musical treat and the wonders of distant reception, and the only proof is by the call sign? My suggestions are: Leave out the everlasting useless reiteration of George Court, Karangahape Road, and A. R. Harris Company Buildings. Always give the call sign between items; it is essential to people logging stations, also the name of the artist, then a person can have a choice of performer. In afternoons, why not start one station earlier, also evenings could be earlier in the winter months. Reading over most letters, there is unjust criticism and no serviceable suggestions.—James A. Moore, Dannevirke.

Printed and published for the New Zealand Radio Publishing Company at the registered office, Wakefield Street, Wellington, of the Wellington Publishing Company, by Archibald Sando, of 47 Frevberg Street, Lyall Bay, FRIDAY, JULY 20, 1928.

Children's Sessions

AT 1YA.
TUESDAY, July 24—Uncle George in charge, supported by the pupils of Miss Blamires, in songs, piano pieces, and recitations. Letters and birthday greetings.
WEDNESDAY—As I was walking round the corner, I heard some people say: Look out, here comes old Uncle Tom, He's off to 1YA. He always talks to little boys and girls on Wednesday, So hurrr up and listen in, Hip! Hip! Hip! Hip! Hurray.
THURSDAY—Peter Pan in charge. Bayfield Choir with choruses and solos, assisting. Look out for a jolly evening.

ply explained. Cousin Gladys will sing and little cousin Beverly will play a violin solo.
WEDNESDAY—Mother Hubbard and Uncle Peter have a surprise or two for you to-night, and cousin Ken and his banjo will make you feel happy and bright, and Little Red Riding Hood and Miss Muffet will sing and recite.
THURSDAY—To-night Chuckle and Aunt Pat will tell you about the Gypsies and their music. Cousin Tempe will recite "Jim" and "Something Unusual."
FRIDAY—Big Brother and the Captain again to the fore—and there will be some delightful singing and playing by the pupils of the Ferry Road Convent.



Waipounamui Maori Girls College. Performing on July 19. —Photo Stefano Webb.

FRIDAY—Something unusual for the radio family to-night.—Nod has with him girls from the Queen Victoria Maori Girls' School. They will sing to us in Maori, poi songs, canoe songs, and give cries of welcome. Be ready to listen in at 6 o'clock sharp.
SATURDAY—Here's Cinderella, and with her cousins playing the piano, and the violin. Letters, birthday greetings, jokes and puzzles.
SUNDAY—Children's Song Service conducted by Uncle Leo, assisted by cousins from Beresford Street Sunday School.

SATURDAY—Uncle Sam and Aunt May will bring forth out of their treasury things new and old—music, stories and repartee.
SUNDAY—Children's Song Service with Uncle David in charge, and a group of singers from the Lutheran Church Sunday School.

AT 3YA.
MONDAY, JULY 23—"Scatterjoy" will tell of the many funny ways in which letters have been mailed, after which there will be a tiny tot's story, and a talk on "Wonderful friendships of animal pets for their masters." How girls and boys may grow quaint new plants indoors, will be sim-

AT 4YA.
TUESDAY, July 24—Hello! hello!! hello!!! Do you remember Mr. Abel, headmaster of the High Street School, who talked about Zeebrugge? Well, to-night he talks about another ship and another wonderful voyage. Also, the choir from the Anglican Boys' Orphanage will be singing songs. Big Brother Bill, too—no, not singing, telling tales.
FRIDAY—What happens when the girl guides hold a mass parade? Big Brother Bill doesn't know; but why not listen in to-night, with him, and hear? The Anderson Bay companies will be at 4YA.

Coupon for Frequency Test on July 24

See Special Article on Front Cover.

One Guinea Prize

Information Concerning Nature of Set.

Name Address

	Frequency.	HOW RECEIVED BY SET.		
		Normal	Fading	Silent
Frequency series representing the overtones which are necessary to obtain correct reproduction of quality.	30,000			
	16,384			
	15,360			
	14,336			
	13,312			
	12,288			
	11,264			
	10,240			
	9,216			
	8,192			
4th octave above middle C.	7,178			
	6,164			
	5,120			
	4,096			
	3,072			
	2,048			
	1,024			
	512			
	256			
	128			
3rd octave below middle C.	64			
	32			

NOTE—Minimum Range for Reasonable reception. 4,000 to 80