THE WORLD and RADIO

New Zealand Administration on Sound Basis

The recently-held International Radio and Telegraph Convention, a report of which has been submitted by Mr. A. Gibbs, M.I.E.E., Chief Telegraph Engineer to the Post and Telegraph Department, shows how sound is the basis of administration of radio in the Dominion. This conference is the first to be held since 1912, and has had as its aim the straightening out of radio transmission generally, in order to lessen interference. In future, broadcasting stations are to be confined to a wavelength of 200 to 545 metres, on which basis all of our New Zealand stations are at present operating. The report which we give below shows the steps which are to be taken for the prevention of interference, and deals with the gradual elimination of spark installations. A feature of special interest is the reservation of a wave band to be reserved solely as a distress signal band.

The International Convention was attended by seventy-six different radio administrations, and lasted a considerable time. It was naturally a difficult matter for all the countries represented to meet on the common basis of understanding, but, thanks to the strenuous work of the various committees, most of the major problems were successfully tackled.

"The conference," says the report, "was faced with a bulky volume of proposals, many of which seemed incapable of reconciliation. Upon the various sub-committes devolved the task of reconciling these conflicting issues, of forming unique texts that would not only satisfy existing conditions, but would also safeguard the developments and discoveries which are constantly being introduced, and which might at any time radically modify existing practice. Our delegate was appointed to the following sub-committees:—Technical, tariffs, mobile and special services, general regulations, code language. All delegates were ex-officio members of the convention committee, and of the plenary sessions. As committees often met simultaneously, it was impossible for him—being the sole New Zealand delegate to attend all meetings, but minutes of all proceedings have been obtained, and these will be of value in the interpretation of regulations, the full purport of which might otherwise be obscure.

SPIRIT OF COMPROMISE.

"The unanimity that was ultimately obtained on the various proposals was made possible only by lengthy discussion, and by a commendable spirit of compromise and good-will, which reflected the greatest credit on such a cosmopolitan gathering, and was an interesting commentary upon the possibilities of international agreement, even in the presence of widely divergent views. The resolutions arrived at form a bulky volume, covering, as they do, all phases of radio communication, and regulating the procedure to be observed and the technical features to be recognised, in the practice of radio-frequency signalling.

"These regulations and convention articles are being printed, and will shortly be circulated for general guidance. In anticipation of this issue I am briefly outlining herein a number of features in which the New Zealand administration is more or less directly interested.

FREQUENCY ALLOCATIONS.

"Prevention of interference between stations of all classes and of all nationalities has engaged the earnest attention of the conference, and has been one of the most difficult problems. This also applies to the allied duty of allocating the available signalling frequencies among the many classes of radio services now being effected. The great growth in mobile services (ships and aircraft) is now making big demands upon the common signalling medium, and it was no easy task to satisfy all legitimate requirements. In 1912 no one could possibly have anticipated the great expansion which has taken place in radio communication, and the many uses to which radio signalling would be applied. Ships, aircraft, submarines, land stations, beacon and direction-finding stations, picture transmission, broadcasting, all had to be provided for, and it was with no little difficulty that the available signalling channels were allocated to meet the needs of the art.

A comprehensive allocation of frequencies to the different services has now been made, and it is believed that this schedule will do much to reduce interference and multiply, as far as possible, the avenues open to the transmission of intelligence by means of electro-magnetic waves.

"Administrations are required to exercise every care to avoid mutual interference, and to this end shall confer as may be necessary with a view to minimising the same, especially in the case of adjacent countries carrying on similar services in the same wave bands.

SPARK INSTALLATIONS.

"The use of damped waves (spark installations) is to be gradually but seriously curtailed. Spark transmitters, by reason of an inherent breadth of wave band and consequent heavy demand upon the already too limited channels of communication, are now regarded more or less as an evil which must be eliminated as soon as such action can be warranted on economic grounds. To this end the following proposals were adopted:—

(a) No new spark installations are to be made on land stations, and existing land stations are to be modernised as soon as possible.

(b) From January 1, 1930, no new spark installations may be made on ships or aircraft unless of low power (less than 300 watts primary input).

(c) No spark transmitters shall operate above 800 metres except as provided for existing land stations referred to in (d).

(d) From January 1, 1935, all land station spark operation shall cease.

(e) From January 1, 1940, all spark operation of whatever character must cease.

"The only exceptions to the above are stations which by reason of location, etc., are incapable of interfering with the conduct of public radio correspondence.

SPECIAL DISTRESS BAND.

"With such insistent demands upon the ether brought about by the growth of national and international radio traffic, it was no easy matter to make adequate provision for ensuring the safety of life at sea by means of radio distress signalling. The demand of traffic and the watch for distress signals are somwehat difficult factors to reconcile, and to a large extent are mutually conflicting. It is, however, worthy of note that this subject received the most careful and preferential treatment. In spite of the problems mentioned, this early and humanitarian application of wireless signalling has been placed on a more satisfactory footing than was formerly the case.

It may confidently be expected that the service rendered to ships in distress will be even more dependable and reliable—if that be possible—than the remarkably efficient and valuable services rendered in this connection in the past. As a contribution to this end the wave band from 580 to 620 metres is to be reserved almost entirely as a calling and distress signal band.

SPECIAL NEW ZEALAND CONCESSION.

"A special concession was made to New Zealand by the convention with respect to its home trade ships of small tonnage. These vessels, in accordance with New Zealand marine laws, are compulsorily fitted with wireless apparatus, with the main object of ensuring the safety of the passengers and crew. New Zealand holds a somewhat unique position in requiring ships of such small tonnage, if carrying nineteen persons or more, to be equipped with wireless apparatus. In the absence of international regulations that would appropriately cover such cases, and not impose impracticable requirements, local regulations were made in New Zealand in 1925 permitting the installation of comparatively low-power equipment on such small vessels, and considerably modifying the operating qualifications compared with those required of larger sea-going ships.

While sympathetic with the objects of the New Zealand Administration, it was the general feeling of delegates that the time had arrived when, in the interests of the prompt disposal of traffic in an already congested medium, the convention would, as a general principle, have to impose more instead of less rigorous conditions upon the operating personnel of ships' installations.

"Overtures made by shipping companies in other parts of the world to relax the operating conditions had always been consistently declined; it had to be admitted that any movement to degrade the standard of operating would have a serious effect upon the conduct of traffic and the general efficiency of radio communication.

PERIODICAL TESTS.

It was, however, pointed out that these small New Zealand coastal vessels were equipped almost entirely in the interests of safety of life, and were permitted to engage in public correspondence only in matters of maritime urgency; that the conditions under which such vessels operate render the employment of a full-time and fully qualified wireless operator impracticable and unnecessary; that the infrequent use of the apparatus reduces interference with public and other radio correspondence to a minimum; that these ships are engaged upon a somewhat hazardous service, and should be fully entitled to the security afforded by a wireless installation, even though not carrying a high-grade operating personnel, and that already such installations had been justified by the saving of human life.

In view of the above arguments it was ultimately and unanimously decided to meet the case by a special reservation permitting New Zealand coastal ships of this class to carry a modified installation and to be operated by ships' officers fulfilling the requirements which the New Zealand Government deemed best suited to the special circumstances of the case. It was agreed in this connection that periodical tests would be made to ensure that the standard imposed was being properly maintained.

THE BROADCAST BAND.

"The wonderful strides made by radio telephone broadcasting during recent years rendered it imperative to make due provision for this most popular application of science to the entertainment and instruction of mankind. It further required the curtailment of long-wave stations—fortunately non-existent in New Zealand—which were seriously encroaching upon the frequencies required for mobile and point-to-point services. Broadcast stations are, in future, to operate between 200 and 545 metres. This is the wave band in use in New Zealand, and in this and certain other respects this administration has been fortunate in being able to anticipate the trend of development and thereby avoid any considerable alteration to existing equipments, and the expense thereby involved.

Provision has been made for ship-stations to operate on longer waves than at present with a view to reducing the interference now being caused to broadcast listeners.

AMATEUR WORK.

"The regulation of amateur transmitting stations and the finding of signalling room for these non-commercial services were the subject of considerable discussion. In this connection the policy of New Zealand has been a generous one, and has many features in common with that of the United States of America and Canada, where amateur experimentation has been encouraged, and has reached a high state of development. Many other countries viewed this non-professional radio work with a good deal of misgiving, and were disposed to give but scant encouragement to the amateur experimentalist to pursue his study and practice of high-frequency signalling.

The final result—although not all that could have been desired by the amateur radio world now totalling about 25,000 devotees—was, in my judgment, a reasonable compromise. Ample scope can be made available to the amateurs of New Zealand for the prosecution of their work.

"No doubt they will continue to respect the privileges afforded and the responsibilities involved, and do their share to contribute to the data already accumulated with respect to radio communication on low power over a wide range of distance and frequencies.

TECHNICAL DEVELOPMENT.

"A Consultative Technical Committee has been formed to consider such features as may be submitted for ruling or interpretation, and to watch the technical developments that are like to influence future regulations. This is a new departure, which will be watched with interest.

"It was pleasing to note that the practice of New Zealand in connection with the administration of the regulations of the 1912 Convention gave no grounds for criticism

On the contrary, the standard set by this Administration for the technical efficiency of its stations both ashore and afloat, and for the qualifications of their operating personnel, proved to be a high one, and compared very favourably with that of older and more highly-developed radio countries.

KEEPING PACE.

"In order to keep pace with the radio developments now taking place, and to take full advantage of the same," the report concluded, "it will be increasingly necessary for the New Zealand Government to extend its activities in the field of radio signalling, and to make a more serious effort to keep pace with modern research.

The time has clearly arrived when, in order to administer satisfactorily the responsibilities of a quickly expanding and highly scientific art, there must exist a body well equipped with the latest technical measuring apparatus, and possessing, in addition, a qualified and specialised staff capable of keeping abreast of scientific progress in the application of radio frequency to modern signalling practices.

"It is to be hoped that the newly-formed Scientific and Industrial Research Department will be able to devote some time to the unsolved scientific problems of radio transmission calling for treatment in the Southern Hemisphere, and that collaboration with this department and its practical resources will furnish a useful and economical means of contributing to the rapidly accumulating store of knowledge of the ether as a transmission medium."

STATIC "ELIMINATORS"

Inventive means for minimising static in radio reception are embodied in approximately a hundred United States patents, granted up to the present. These contrivances, so-called "static eliminators," vary in character and magnitude from improvised violin strings, which are unresponsive to atmospheric disturbances, to apparatus resembling a miniature cannon and which is so cumbersome as to require a motor truck for its transportation

Since the first patent relating to a separation of atmospheric disturbances from radio signals was granted to Dr. Reginald A. Fessenden, a quarter of a century ago, inventive minds have sought a device that would completely eliminate static. Their efforts have been only partially successful; many instruments and methods reduce this form of interference, but no device has yet been designed that will completely reject or suppress static. This fact was recently emphasised in an editorial written by Hugo Gernsback, editor of the New York "Radio News," in which it was stated that an electrical company had made the gesture of offering a bounty of 1,000,000 dollars (£200,000) for a simple, practical, and inexpensive static eliminator.

SPECIAL TENNIS BROADCAST

WORLD'S CHAMPIONS AT PLAY

Something out of the ordinary is promised from 2YA on January 17 and 18, when a broadcast description of tennis played by the French team at Miramar, will be "put on the air." The French team comprises M. Borotra, M. Brugnon, and M. Boussus, these players ranking amongst the five leading players of France. They have been matched against champions in South America during the last few months, but are now on their way to New Zealand. So far no definite arrangement has been made as to the nature of the games, but in any case they will attract the interest of tennis enthusiasts from one end of New Zealand to the other. Tennis lends itself to accurate and descriptive broadcasting, and the games should be keenly followed by thousands of listeners.

SIMULTANEOUS PROGRAMMES

CATERING FOR TASTES.

Recent statements by the British Broadcasting Corporation indicate that that organisation has decided to begin the alteration of its system to permit of the transmission of alternative programmes. As in New Zealand it has been found difficult to cater for all tastes in music. Lovers of classical music have complained when they have been obliged to listen to dance music, and jazz enthusiasts have been equally dissatisfied when they were obliged to listen to programmes of a more serious nature than those they desired. Some time ago an effort was made in America to overcome this trouble by building stations in duplicate, so that when one was transmitting light music, the other was providing a programme of classical music. Two different transmitting stations and studios and two different transmission wave-lengths were, of course, necessary. The British Broadcasting Corporation investigated the results obtained in American experiments, and its engineers are satisfied that the dual transmission is the only method by which one of the greatest problems in providing programmes can be overcome. Accordingly arrangements have been made for the conversion of the main stations for dual transmission.

A Costly Innovation.

New Zealand, with its limited population of broadcast listeners, is not in a position to expect the dual programme innovation, and even in Australia, with its hundreds of thousands of listeners, the expense of such a system precludes its introduction. A suggestion has been made, however, that in Melbourne and Sydney, where there are two or more broadcast stations, there should be some co-ordination in the compiling of programmes so that two stations in each city shall not transmit high-class, or lighter music, simultaneously. An Australian writer says:—

"The only excuse there can be for the presence of two powerful stations in one centre is that their programmes should be so co-ordinated to provide an improved service for listeners. If this is not done one of the two stations would be far better in some other centre where there is at present no station in existence."