

Between Nations

BROADCASTS POSTPONED

PUZZLE OF WAVE-LENGTHS

ALL hope for an international exchange of radio programmes between the United States and Europe has been abandoned until the American autumn, Dr. A. N. Goldsmith, chief broadcast engineer of the National Broadcasting Company of U.S.A., said recently. The experiments that have been conducted for the last five months, however, will be continued throughout the summer.

"We do not contemplate international broadcasting now until autumn," said Dr. Goldsmith. "We can listen to any amount of foreign broadcasting, but the quality must be right before we put it on the air for the American public. We must conduct our observations throughout a year before we have a complete picture of the obstacles that confront international broadcasts. We may be able to reproduce the foreign programmes in the fall. However, we cannot say today that we will. Much will depend upon the results of the summer tests."

Many Channels Needed.

"WE have learned so far with no uncertainty that a single wave-length cannot be depended upon for trans-Atlantic broadcast service. At least four or five channels are needed. A wave satisfactory for talking with England at 4 p.m. to-day is not likely to be suited for the same work three months from now, or even seven hours later. At a given time we must use a different wave for day and night and from season to season. As yet we have not decided exactly what waves are best for the international work."

"FURTHERMORE, the wave to be utilised depends upon the distance to be covered. A wave that travels across the sea in the afternoon may go only 500 miles at night. Therefore, it can be understood that international broadcasting is not merely the selection of a wavelength and then talking across it. An elaborate traffic planning arrangement is necessary, and until we are fully aware of conditions that exist in the ether between here and Europe we cannot establish a reliable exchange of programmes across the sea."

Dr. Goldsmith said that the warm weather would not stop the tests on the American side of the ocean nor would the British Broadcasting Company suspend its experimental work, much of which has been on the 24-meter wave. The objects of the observations are to explore channels which are likely to lead to a regular and reliable exchange of programmes.

Echo Rooms

APPLAUSE PRODUCED TO ORDER

HOW A SOUND IS MULTIPLIED

IF the films made at Hollywood can show action that never takes place, the B.B.C. can broadcast sounds that are never made. Both can create illusions.

The illusions of broadcasting are produced by echoes. In a valley in Sinai, as in valleys in Switzerland, a single shot fired from a rifle sounds like a Lewis machine-gun in action as the report echoes from side to side of the rocky chasm. A bugle call sounds like a Boy Scout band.

A Simple Process.

THE B.B.C. in the same way can find or create enough echoes of the sound made by a few people clapping their hands to produce the illusion that Madame Clara Butt is being encored at a benefit performance. The tattoo on one kettledrum can be multiplied till it sounds like the massed drums of the Guards when the Dead March is played.

It is as simple as clever. A pair of wires leads from the sound-receiving microphone to a loud-speaker in an empty room, the walls of which are made of materials that readily echo any sound made within their compass. The room begins to reverberate with multiplied sounds, the original ones and the echoes. These are in their turn communicated to another microphone placed in the room.

Varying the Original Sound.

THE multiplied and magnified sounds this microphone now receives are carried away in their turn to a second echo room, where in the same way they are further multiplied and magnified.

This magnification can be extended almost without limit, depending on the number of echo rooms. Now that the method is under control, all sorts of variations of the original sound can be produced to create effects such as could never be heard in any other way.

It used to be said that a photograph could never lie, till the photographers showed that it could tell all sorts of stories. The same is becoming true of broadcasting, which will some day make us hear sounds never before heard on land or sea.

POPULARITY of the alternating current receiver is shown by a survey completed by the United States National Electric Manufacturers' Association. It was found that there are at least 1,000,000 such sets in daily use. The survey also noted a slight decrease in battery-operated receivers, dry cells and direct current tubes.

Education by Air

SPECIAL ADULT TRAINING

BRITISH INVESTIGATION

HOW broadcasting may be developed from a medium to provide entertainment into a service which will enlighten the nation and vastly increase the people's range of knowledge, was explained in the report of a special committee, issued recently, which has been examining the problems of wireless and adult education.

THE report calls for the creation of a New Central Council for Adult Education, and a series of Area Councils to interpret local opinion. The main body would be composed of representatives from important educational sources, and a proportion of nominated members; and a member from each Area Council would have a place on the Central Council. It is laid down that both in matter and presentation the broadcast programme requires the greatest freedom of experiment, and "controversial subjects should not be cut out." Strict care, however, must be taken that speakers have "a proper sense of their responsibility."

IN their conclusions, the Committee emphatically dissent from the prophecies of those who hold, like Mr H. G. Wells, that as soon as the novelty has worn off, interest in broadcasting will be spent. Unless its place is taken by some new invention, they maintain that broadcasting "is likely to become one of the most powerful forces in the modern world."

Special Wave-Length.

"THE most satisfactory method of providing a regular educational service would be to set aside the whole or the main part of one wave-length capable of covering the country for a special service of lectures, music, etc." Until then, a definite proportion of the time in general programmes should be allotted to general talks, and appropriate periods in the day reserved for more formal education. The fact that broadcasting is a public service is held to strengthen the case for using it in the interests of national education.

IT is acknowledged that a general raising of the standard of reception is of the highest importance, and a service of visiting and advisory engineers should, it is claimed, assist those responsible for sets which have an educational purpose. Advice should be made available to secure the efficient construction of apparatus. The Committee suggest that the "follow-up" policy inaugurated by the B.B.C. should be developed by increased publicity, by a weekly illustrated educational journal, and by a closely organised advisory system.

The cost of the developments outlined, can and ought, it is declared, to be met out of that part of the revenue for licences which is at present retained by the Postmaster-General, over and above the costs of collection and administration.

THE PIRATES' PARADISE

BROADCASTING IN INDIA.

NOT long ago the noble Hottentot could affirm that his country sheltered more broadcast pirates than any other. Not so to-day. The palm goes to India.

The "grand" total of licenses issued in India from January to October last was 1692!

Income £500; Expenditure ?

Quite naturally the Indian Broadcasting Company is beginning to feel the draught. The company gets eight rupees, or about 10s. 8d., per license per annum, so its income during the ten months under review came to little more than £500. Thus it is unable to afford Sir Harry Lauder.

No Rush for Licenses.

In the December "Indian Radio Times" some astounding figures are published showing how receiving licenses have been issued in various districts. In the whole of the Punjab during the period of review licenses were taken out by seven persons, i.e., 0.7 person per month; precisely the same number found their way to the license counter in the province of Assam. The United Provinces showed a more go-ahead spirit, producing one licensed soul a month.

A Significant Point.

Among the cities Shillong cut a poor figure with two holders of licenses (not much oscillation here!), and even Delhi could only muster seven. Bombay led the way with 1108 licensed listeners, Calcutta following with 550.

In the opinion of the Indian Broadcasting Company, "piracy" exists on a considerable scale, to judge only from the sale of the "Indian Radio Times," which far exceeds the total number of licenses! "Why," asks the company, "should anyone buy the 'Radio Times' unless he has a receiving set?"

America's Needs

HIGH POWER AND NETWORKS

BETTER ECONOMY IN 100,000 WATTS

HIGH-POWER broadcasting is an absolute necessity for efficient public service to the radio public, said Dr. A. N. Goldsmith, president of the United States Institute of Radio Engineers, recently, in commenting on his remarks on the radio situation quoted in "The New York Times." He said he feared "any erroneous impression that I am an advocate of low-power broadcasting, while I firmly believe in high power."

"The plan for the reallocation of waves as submitted to the Federal Radio Commission by the Institute of Radio Engineers does not advocate low power but is in favour of high-power broadcasters," Dr. Goldsmith continued. "The plan is the result of an unbiased and technically sound analysis of current broadcasting needs and possibilities."

"Network broadcasting is also necessary, because no single station can cover the country or any considerable fraction of it. All the great nations are planning their radio service along the same forward-looking lines—namely, the establishment of national programme service to all the people through extensive networks of as many high-power transmitters as is feasible, each on a cleared channel."

"THE public interest demands that radio stations occupying exclusive waves be required to have high power, instead of medium power, which 'ruins a whole channel with interference and yet cannot be heard for many miles.' Government Radio Commissioner O. H. Caldwell, of New York, said recently, on an application to the Radio Board by one of the New England stations to have its power raised to 2500 watts."

Economy in Size.

"In this respect," the Commissioner continued, "a 50,000-watt station is far more efficient in utilising this public resource than is a 5000-watt. A 100,000-watt station would give even better economy and public service, as experiments in New York State last summer clearly showed."

MR CALDWELL said that the Government authorities in the public interest "should actually require these high powers, were it not for the tremendous expense and investment involved, which prevents many stations from using such power."

The Commissioner said that when station owners are willing to make the investment for the service of the public high power should not be refused, "nor millions of listeners denied the service and satisfaction which it brings."

"To limit or cut the wattage of a broadcaster on a clear channel," said Mr. Caldwell, "is clearly as outrageous a waste of a precious public resource as it would be to permit only water-wheels capable of utilising ten feet or twenty feet out of the total drop of a 200ft. waterfall, while the remaining 180 or 190 feet of fall thundered away, wasted and unusable by anyone else."

Cleared Channels Necessary.

HE emphasised the need of a number of clear or exclusive channels to bring radio programmes to the 50,000,000 of population who live more than 100 miles from any broadcasting station, on the farms, the plains, the mountains, and in the villages.

"Without cleared channels," he said, "these remote listeners will be deprived of hearing anything but a spectrum of squeals and howls, as they have mostly had for the past two years."

VIENNA ZOO BROADCAST

"Ravag" recently broadcast the noises of animals in the Tiergarten at Schonbrunn, Vienna. The difficulties which stood in the way of such a broadcast were not only of a technical character (the cages of the different separate animals are often far apart), but there was the uncertainty of getting the animals to co-operate at the right moment.

A pavilion in a central position between the cages was fitted up into a temporary studio with the necessary amplifying and listening equipment, and from here the noises of the animals were broadcast. There were nine microphone lines, all complete, running to the pavilion for connecting up the cages of tigers, polar bears, hippopotami, elephants, giraffes, the bird house, duck ponds and the cages for birds of prey. Inside the cages, the microphone line ran via the amplifier, to the Johannesburg, where the noises of the animals were again amplified and passed on to the transmitter.

Immediately before the broadcast, a message was sent out from the pavilion that all was ready, and at a given signal the keeper persuaded the individual animal to "talk," the corresponding microphone being connected up to the amplifier in the pavilion.

Dialing Stations

RADIOPHONE INVENTION

FOR SHIPS, 'PLANE OR TRAIN

A SYSTEM by which large radio telephone stations can establish contact with each other by "dialing" a number, which, if linked with wire telephone exchanges of large cities, will enable users to "dial" a ship at sea, an aeroplane in flight, or a person on a radio-equipped train travelling across the country, was revealed recently by Lewis M. Clement, chief engineer of F. A. D. Andrea, Inc., radio set makers of Long Island City, U.S.A. Mr. Clement is a joint patentee of the new radio system with S. B. Williams, automatic telephone expert of the Bell Telephone Laboratories, New York.

How the System Will Work.

"THE radio dialing device can never be expected to supplant present-day telephone wire systems, but some day subscribers in their homes may be able to dial a number and be automatically connected with telephone exchanges on ships or isolated places, to which wires cannot be run," said Mr. Clement. "The two systems, wire and radio, could be easily used together, and operated by the user just as the ordinary dial 'phone is used to-day."

The Fada engineers described the operation of the device as follows:—

"Suppose we have three channels or toll links to cities A, B, and C, which operate on separate frequencies. From a series of contacts on a dial the user would be able to select one of the waves to the city wanted by dialing the proper first letter or number. This would automatically start up a transmitter in the local system, and affect the apparatus at the receiving end. If the line was being used, the busy signal only would result, but if not, the next letter or figure dialed at the calling telephone would select the exchange in the distant city. The third letter would make further selection, and so on, until the telephone subscriber's number is obtained and the bell rings, announcing the call."

Possibilities of Use.

MR. CLEMENT said the number of different exchanges or telephones which could be called would be very great if a sufficient number of letters in the dialing number were used. He predicts that his device, which is similar to apparatus used at present in automatic wire exchanges, will have its earliest application in ship and aircraft communication work, where wire lines are impossible. Trouble on the line or radio circuit is to be indicated in the same fashion as now revealed on the wire circuits of the country. There is no immediate field of application for the system outside of its possible use for aircraft communication work, but the future may find it applied even to inter-city service, he said.

The first man to find a reliable method of forecasting reception conditions, particularly with regard to the shorter waves, will be doing what is probably the greatest service since De Forest added the grid to the valve.

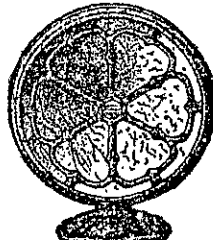
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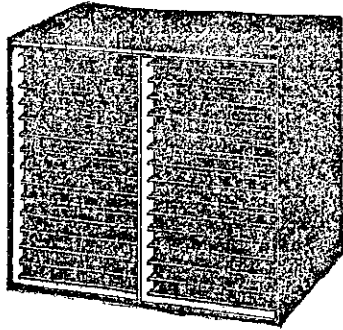
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