

# OPENING THE WINDOWS OF THE WORLD

Another Advance in Transatlantic Telephony

By R. T. Barrett.

"Stand by, New York. Before putting on the next speaker, we're going to open the windows and see if you can hear the chimes of St. Paul's."

Involuntarily the forty or so newspapermen who were gathered in a room on the second floor of 24 Walker street, New York, on the morning of March 7, 1926, glanced at the clock. It was almost eleven. Since half-past eight they had been witnessing and taking part in the first public test of two-way transatlantic telephony between the United States and England.

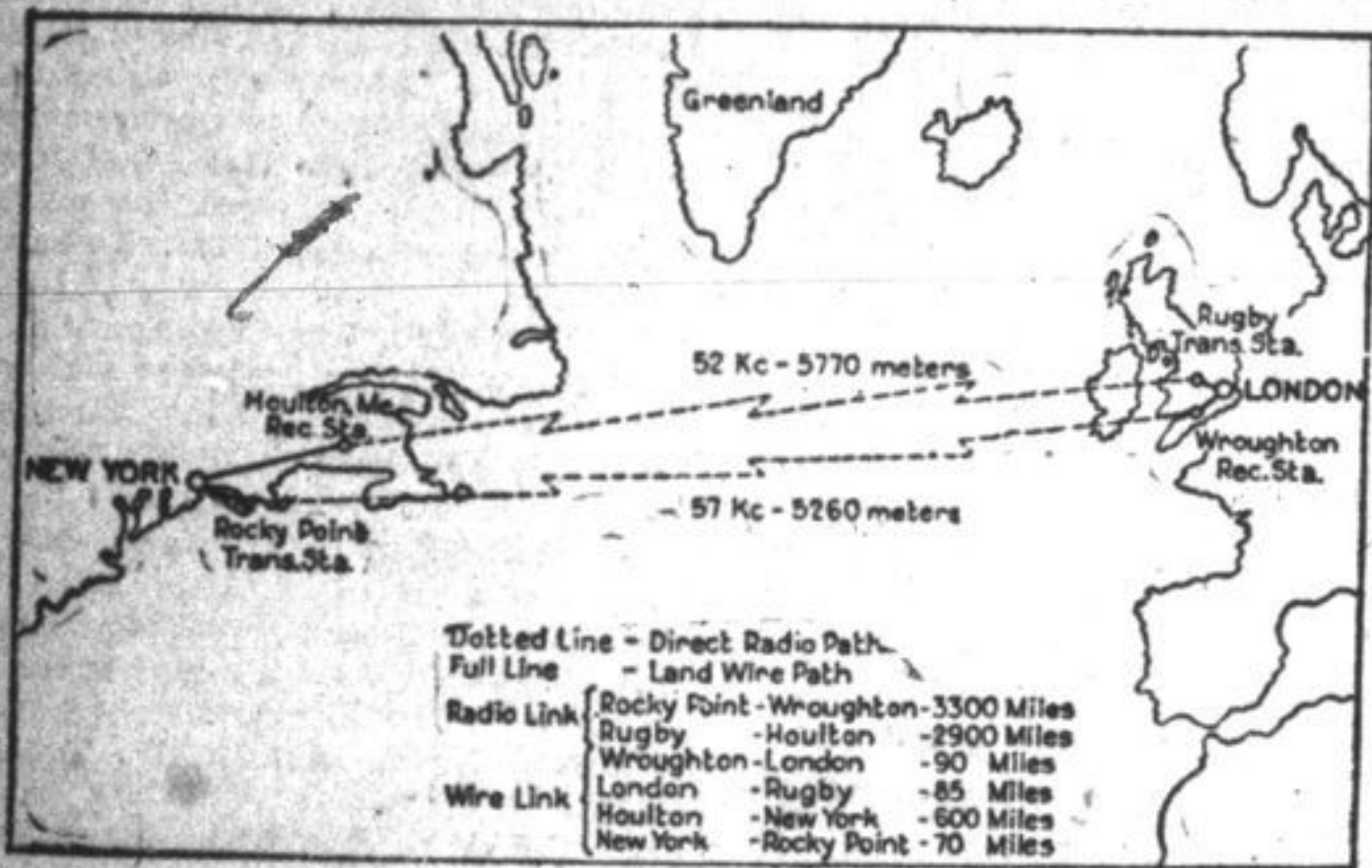
There was a silence as a wall clock ticked off the seconds and its minute hand crept around the dial. Exactly on the hour there came to the ears of the listening Americans the silver peal of a bell rung nearly four thousand miles away—then another and another until four had been sounded. It was eleven o'clock in the morning in America, four o'clock in the afternoon in England. Somebody had opened a window in London, and St. Paul's had been brought within earshot of Walker street.

Somebody had opened other windows, to make this miracle possible.

similar to those used by operators when on duty. In talking to London, the speaker entered a sound-proof booth similar to those of a public pay-station and spoke into a transmitter very much like the ordinary transmitter in appearance. The mouthpiece and transmitter case were, however, somewhat larger than those of the familiar desk set, this being a special "high-quality" transmitter. The receiver was of the standard type.

Near the speaker's booth was another, equipped with what was to all intents and purposes an extension telephone of the same type, at which sat an engineer of the American Telephone Company, who kept in constant touch with an engineer of the British Post Office, working on a similar extension on the London end of the circuit. These two men introduced the speakers and, jointly, acted as masters of ceremonies.

Each pair of speakers was allowed two minutes of conversation. For the most part these chats were carried on between representatives of New York newspapers and their confreres of the journalistic world in London. On account of the difference in time, the English journalists



The Route of the Transatlantic Conversations.

Somebody had flung back the shutters of silence which had hitherto isolated one hemisphere from another, making reciprocal communication by the spoken word impossible. Telephone engineers, schooled by long experience to guard against over-enthusiasm, told newspapermen in a rather matter of fact way that this was merely one of a series of tests, required for the further development of transoceanic telephony. But to more than one of the laymen present, it seemed as if someone had, in deed, thrown wide the windows of the world.

A philosopher might have speculated, but would have speculated in vain, as to whose hand had swept aside these barriers to the spoken word. The test itself was carried on through the joint co-operation of the American Telephone and Telegraph Company, the Radio Corporation of America, and the British General Post Office. Scores of engineers on both sides of the Atlantic had played some part in bringing about the success of the experiment. In a larger sense, however, its success was made possible by the thousands of men and women who, throughout fifty years, have contributed to the development of the Art of Communications in general and to the telephone in particular. In this epoch-making event telephone workers everywhere may rightly feel a particularly keen interest, for it marks a forward step in the development of an art to which they, themselves, are daily contributing.

**A Significant Coincidence.**  
The importance of the test as an event in telephone history was given double emphasis by the fact that this first public demonstration of two-way telephony across the Atlantic took place exactly fifty years, to a day, after the granting, on March 7, 1876, of the first telephone patent to Alexander Graham Bell.

It is a far cry from the issuing of this government document, covering the patent rights on an instrument which had not even then been made to transmit a complete sentence, to the maintaining of continuous contact for a period of many hours between two telephone instruments separated by four thousand miles of ocean.

The room in which the new New York end of the test was held was equipped with some fifty headsets

were all on hand at the beginning of the test, while the Americans were somewhat slow in arriving. On the American end, accordingly, telephone engineers and others "got on the line" in order to carry out the schedule as nearly as possible as arranged.

**Differences in Speech.**

Differences of phraseology and pronunciation added interest to the conversations from the standpoint of the listeners in. Americans invariably began their conversations with the typically Yankee "Hello," while now and then some Londoner used the equally typical "Are you there?" To the valedictory "Good-bye" of the New Yorkers the Londoners were more likely than not to answer "Cheerio!"

A number of the leading papers in Scotland were represented by a journalist who had brought with him his Harry Lauder accent. To the credit of the transmission qualities of the wire and radio circuit it should be recorded that the characteristic pronunciation of these Scots came through with its delightfulness unimpaired.

**How the Circuit Ran.**

In transmitting eastward, the speech is carried from New York over land lines to the transmitting station of the Radio Corporation of America at Rocky Point, Long Island, a distance of some seventy miles. From this point it is transmitted by radio a distance of 2,300 miles to a receiving station of the British General Post Office at Wroughton, England, about seventy miles southeast of London. The land-line circuits of the British Post Office carry the speech current over this lap of the journey to the London headquarters.

In transmitting westward, the speech is carried over seventy miles of telephone lines to Rugby, northwest of London, and there picked up by the newly-built radio transmitting station of the British postal service, which transmits it through the ether to a receiving station at Houlton, Maine. This radio link is 2,300 miles in length. From Houlton to New York, the speech is carried over 600 miles of telephone circuits of the American Telephone and Telegraph Company and its Associated Companies.

The radio transmission from

Rocky Point is on a wave length of 5,260 meters, and the transmission from Rugby is on a wave length of 5,770 meters. The power used in transmitting from each end is about 100 kilowatts. Due to a special system employed in these tests, an output to the transmitting antenna of 100 kilowatts is as efficient as 300 kilowatts would be under the systems commonly used for radio telephone purposes. One of the features of this system is the suppression of all waves except those actually transmitting the message. This system was described in many of The Bell System magazines in an article on the one-way transatlantic telephony test of January 14, 1923, when officials of the American Telephone and Telegraph Company talked for a period of over two hours to listeners in England.

That and other articles have also described in some detail the high-power, water-cooled vacuum tubes which play an important part in developing the energy output required for transoceanic radio transmission, and it is hardly necessary at this time to refer to them or to other details of the radio apparatus.

**Problems to be Solved.**

The present series of tests is a continuation of the experiments begun three years ago and is being carried out to determine the possibilities of giving regular transatlantic telephone service. It is simply

a phase of the study of the problem of overcoming the great difficulty in long distance radio telephone transmission—the extreme variations in received signals due to continuously changing conditions in the intervening space.

At times, transmission conditions in America, in England and throughout the area that separates them are so good that even comparatively low power broadcasting stations in one country can be picked up by radio listeners in the other. At other times conditions are so poor that no reception can be had.

The longer wave lengths and the high effectiveness of the transmitting stations used in the present tests have provided a stability and dependability of transmission that affords communication across the Atlantic for extended periods of the day. During certain hours, however, it is impossible to maintain satisfactory communication, this being particularly true of the hours of the sunset period, especially at the radio receiving station. Transmission is also much more difficult in summer than in winter, because of greater static interference. The variation is so great that a given reception may require, under poor conditions, 10,000 times as much transmitted power as is required under favorable conditions.

**Linking in the Land Lines.**  
In addition to problems of radio

transmission, of which those briefly outlined above are only two, there are others which may be described as practical operating problems, such as linking the radio with the regular wire telephone systems of both England and America in such a way as not to introduce undesirable noises, weak reception or other factors which would impair the quality of transoceanic service.

In their statements to the press, telephone officials of both countries have made it clear that it is not possible to predict how soon transoceanic telephone service can be made available. It is perfectly obvious that much intensive work remains to be done before an American telephone subscriber can take his receiver off his hook and call up a friend in London, or vice versa. This work is under way—the test on March 7, 1926, was a part of it—and will continue. The results thus far accomplished are encouraging to those who are directly concerned in them, and are such that all members of The Bell System "family" may take pardonable pride in the part which the scientists and engineers of this organization have played in bringing them about.

There is five feet of snow at Timmins. It fell on Thursday and Friday.

Capt. Frank Foley died from bullet wound received during target practice at Fort Crook, Neb.

# Ford

## ANNOUNCEMENT

The welfare of over 100,000 Canadian employees and their dependents in our own and allied industries, together with our tremendous investment in plants, equipment and organization, representing \$31,000,000, allows of no alternative but to continue operations in spite of recent tariff reductions on motor cars.

For the present at least we have no option but to meet the competition of imported automobiles. In consequence, we announce the following price reductions retroactive to April 16th. We also declare our intention to continue operation as usual until such time as costs of manufacture under the new tariff can be ascertained. In so doing there will be no compromise on our part either as regards our employees' interests or the traditional high quality of our product.

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Right—Radio receiving unit. Left—Telephone testboard and amplifier for wire circuit to New York.



**WINE TRANSPORTATION IN PARIS**

In gay Paris, where wine is red and bootleggers are respectable merchants, they transport it by the Standard Oil system—in tank cars.

John H. Connor, sr., 94, said to have been oldest active tailor in U. S., is dead in Cincinnati.  
New pocket pencil that will write in any one of five colors has been invented at Washington.

The village of Hoopuloa, Hawaii, was engulfed by the flow of lava from Mauna Loa volcano.  
Mrs. Raymond Adams, of Gloucester, N.J., found \$80 diamond in gizzard of chicken.