

# How Radio Relay Linked Six Stations

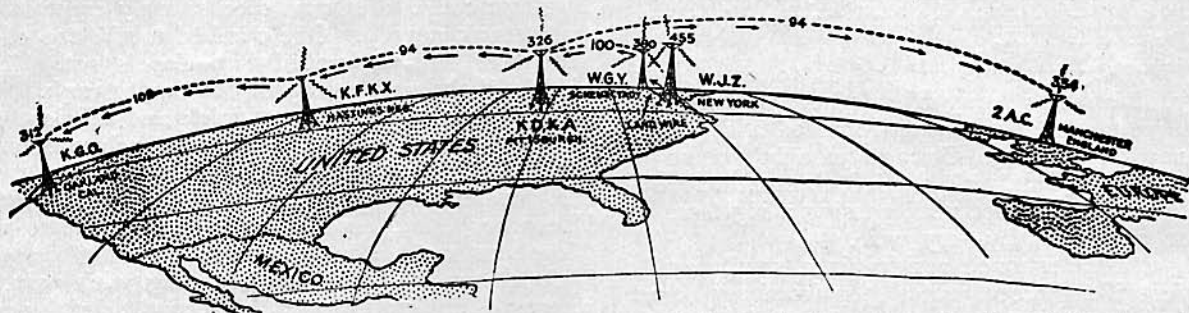
## Simultaneous Broadcasting of Single Program by Stations Separated Seven Thousand Miles

**T**HE latest and greatest achievement of modern radio science was successfully demonstrated recently by an experiment of heretofore unheard-of proportions when five powerful broadcasting stations in the United States and one in England, linked only by radio, simultaneously broadcast the speeches and music at the Annual Alumni Dinner of Massachusetts Institute of Technology given by the Technology Club of New York in the main ballroom of the Waldorf-Astoria Hotel in New York City.

Station WJZ of the Radio Corporation of America

The accompanying illustration shows pictorially just what paths the radio waves followed in their leaps from station to station. The speed with which the radio waves travel is so terrific that 2AC was broadcasting the same sounds as KGO at practically the same instant, there being an inappreciable time loss in the jump from the Waldorf to Manchester or to Oakland.

Because of the difficulties in perfecting relay transmission at one link of the chain, no advance notification of the experiment was given the listener-in, although



Sketch showing how it was possible to broadcast the same program simultaneously from six stations located throughout the United States and England without the use of any interlinking cable or telegraph lines, with the one exception of the line between WJZ and WGY. This simultaneous re-broadcasting opened the eyes of the scientific world to the wonderful possibilities of short wave relay broadcasting.

in New York City had its microphones installed upon the speakers' table and musicians' rostrum in the main ballroom of the Waldorf-Astoria, and carried the program from there to its control room at Broadcast Central by direct wire. Station WJZ broadcast the program on its usual wave length of 455 meters, while a tap-off wire from the amplifier panel in the control room carried the speeches and music to station WGY of the General Electric Company in Schenectady. From that wire the program was sent out from WGY by two different transmitters, one on the customary wave length of 360 meters and by the other, a specially designed short wave transmitter, on a wave length of 100 meters. This 100-meter signal, inaudible to the ordinary listener-in, was received on a special receiving set at station KDKA, Pittsburgh, Pa.

From that receiving set the program was again transferred to two separate transmitters, one broadcasting on KDKA's usual wave of 326 meters for listener-in reception, the other sending on a 98-meter wave length. This 98-meter wave linked KDKA with stations KFKX in Hastings, Nebraska and 2AC in Manchester, England. Station KFKX also re-transmitted the speeches on a 108-meter wave to station KGO in Oakland, California, which latter station re-broadcast the received signals for local reception on the west coast.

telephonic, telegraph and radiogram communication was arranged between the Waldorf-Astoria and the various stations which were to re-broadcast the program in order that early reports as to the success of the transmission could be secured. Consequently listeners-in from England to California were amazed to hear the announcement that "This program is being broadcast by station WJZ, New York City, WGY in Schenectady, KDKA in Pittsburgh, KFKX, Hastings, Nebraska, and KGO, Oakland, California." Almost immediately upon the conclusion of Mr. Ralph Howes' opening address, telegrams of congratulation commenced pouring in to the Waldorf-Astoria Hotel and continued to arrive from increasing distances until the conclusion of the program at 12:15 Eastern Standard time. At 11:22 P. M. Eastern Standard time, the first report of reception by station 2AC in England was telephoned from the radiogram office. At 12:15 A. M., Eastern Standard time a telegram from Mr. Sadenwater, engineer-in-charge of station KGO in California, stated that the signals had been received and rebroadcast. These latter messages definitely placed the stamp of success upon the experiment, for two stations over seven thousand miles apart had inconceivably received and been able to rebroadcast the same program without the use of any material connection.

## Communication Conference Postponed

**T**HE Inter-American Electrical Communication Conference, set for March 27 in Mexico City, was postponed until May 27, at a recent meeting of the Pan-American Union in Washington. This action, it is reported, was agreeable to the twenty-one countries interested, for several reasons. Unsettled conditions in Mexico and the fact that some of the member countries have not yet completed their agenda are understood to be among the reasons for postponement.

One of the most important subjects to be discussed at the conference is the use of radio in the western hemisphere and the relations between these two continents and the Old World. An All-American agreement is hoped for, and this would in turn be presented at the world conference at Paris, when that general session is assembled.

A full report of the activities and agreements reached by this conference when it meets will appear in RADIO WORLD at some future date, as soon as the information is available.