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NBC SHORT-WAVE LISTENING POST

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Summary—The reasons for establishing a central point for the monitoring of international broadcasting stations are given. The physical arrangement of the equipment used is described, and because of the peculiar demands placed on men working in this service the problems encountered in obtaining necessary personnel are discussed.

THE National Broadcasting Company's short-wave listening posts are located in the NBC Newsroom in RCA Building, at 30 Rockefeller Plaza in New York City, and at Bellmore, L. I. The listening post was first established as an experiment on April 1st, 1940, operating two receivers during the late afternoon and early evening hours. Its importance has grown such that the service has been expanded to include eight receivers and twenty-four hour coverage. The Staff, under the direction of Mr. A. A. Schechter, Director of the News and Special Events Division, is headed by Mr. J. Van Item, as Supervisor, and includes five interpreters and four junior engineers. The men work in pairs, composed of one linguist and one engineer per eight-hour shift.

As the European War began to spread, it became necessary to obtain up-to-the-minute news from Europe for use on the NBC News broadcasts. As a trial, two receivers were installed and monitoring of the news periods in English from foreign short-wave broadcasting stations was observed. Several instances during the invasion of Holland and Belgium proved the value of this service, but indicated that it would have to be extended to cover more languages than English alone. We, thereupon, started on the two problems that had to be solved to enable us to provide a complete service. These two were first—as efficient a technical plan as could be had at the location available and second, the employment of linguists capable of using these facilities to best advantage.

It was early indicated that facilities should be as near as possible to the NBC news desk. This was necessary in order to pass along with an absolute minimum of delay, any information received concerning the rapidly changing events in Europe. Usable information received

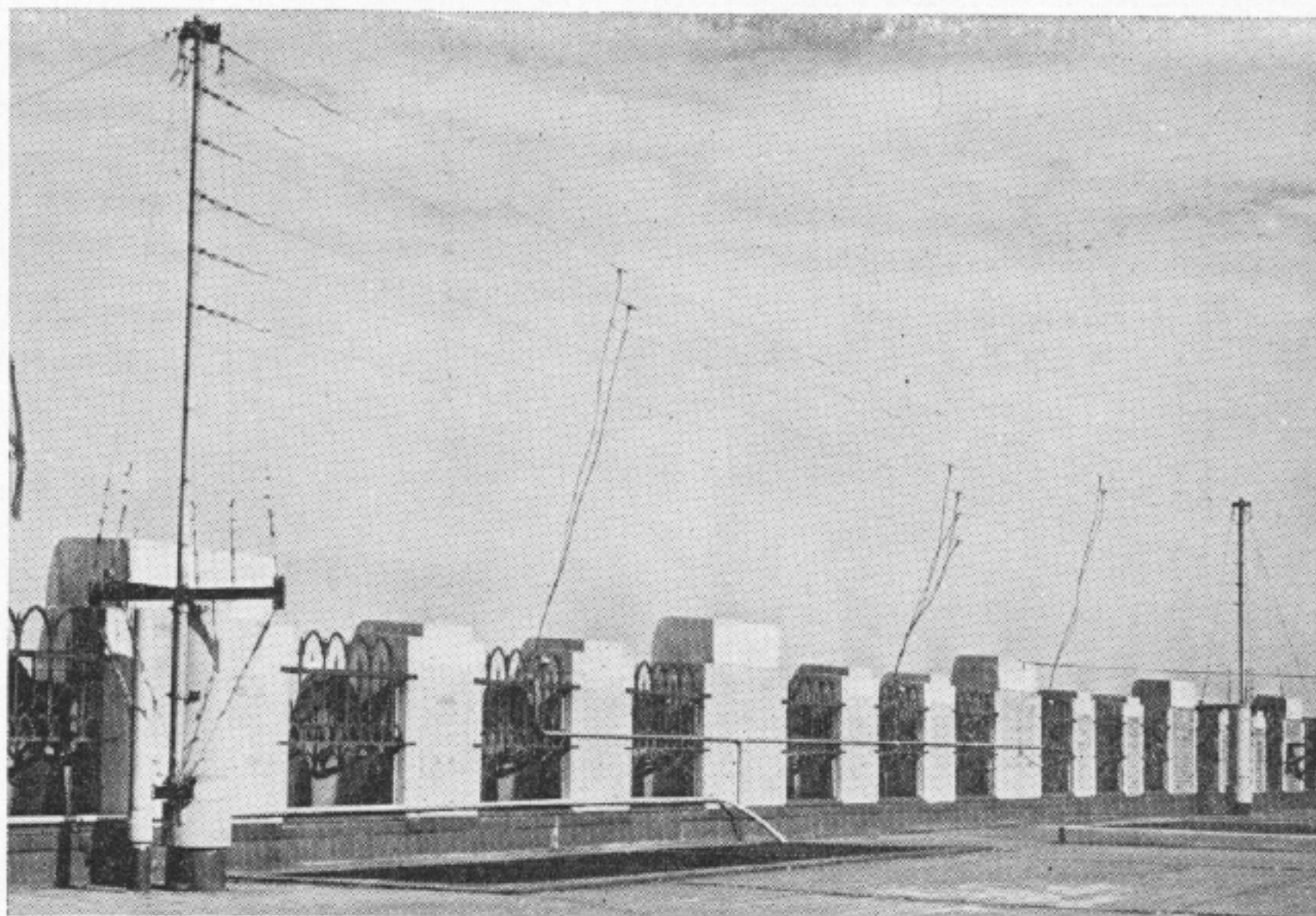


Fig. 1

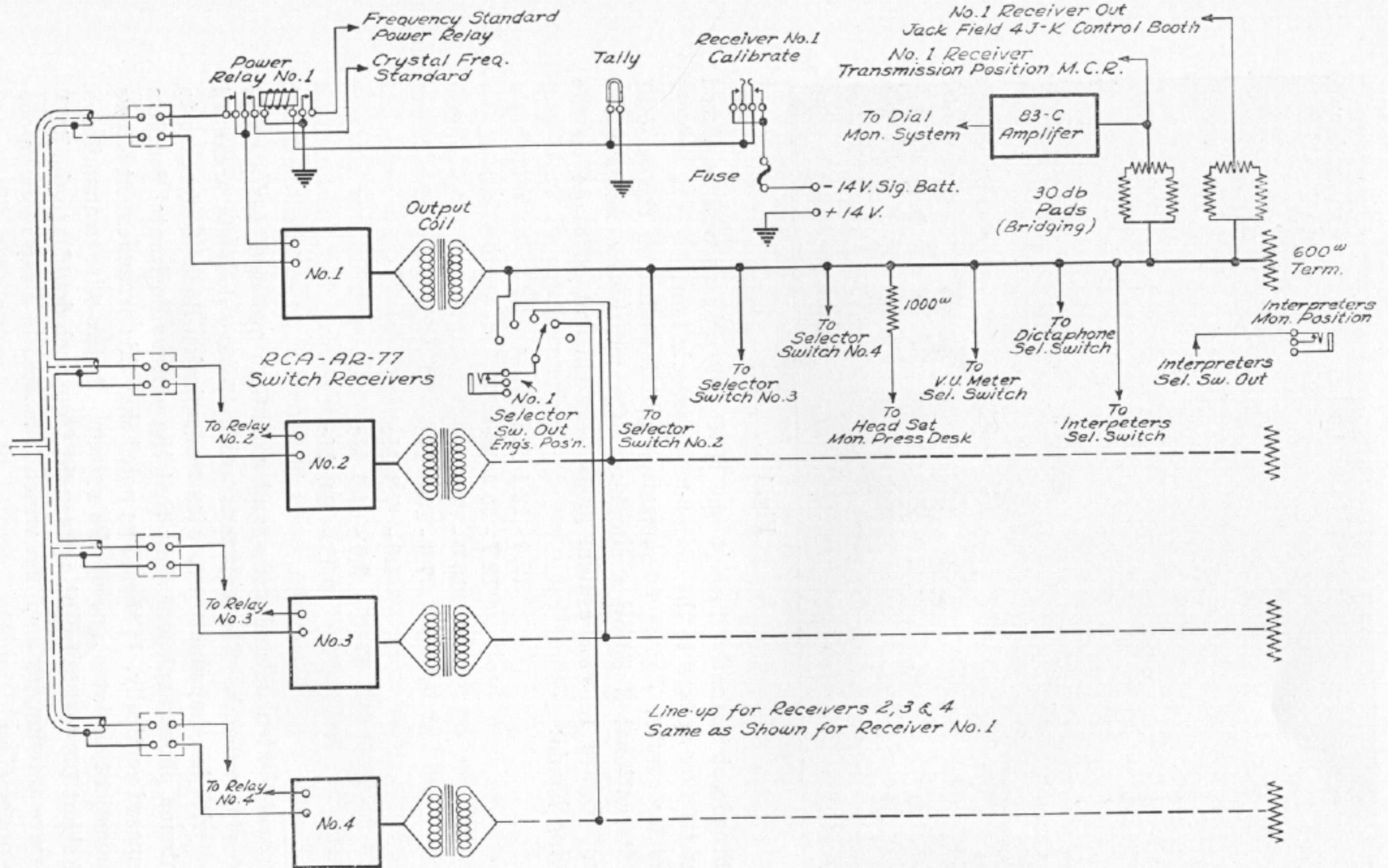
was broadcast instantly through the NBC networks as well as placed on the teletypewriters to the major news associations.

The Rockefeller Center Organization had installed on the roof of the International Building a standard RCA multi-wave antennaplex system, Figure 1. This system gives very efficient coverage on the following bands:

15.4 - 18.1 Mc
12.7 - 15.4 Mc
10.0 - 12.7 Mc
7.3 - 10.0 Mc
4.6 - 7.3 Mc
2.0 - 4.6 Mc
0.53 - 2.0 Mc

Separate antennas and wide-band amplifiers are used for each of the frequency bands. The antennas are half-wave doublets arranged for use with low-impedance two-wire transmission lines. Reference to the antenna photograph will show that the various horizontal doublets are disposed vertically. It should be noted that this arrangement allows for convenient maintenance of the system. A two-wire transmission line of about 100 feet in length is brought from each doublet to the RCA multi-wave antennaplex amplifier which is located in a fan room on one of the upper tiers.

The length of the coaxial cable which starts at the antennaplex unit



**SHORT WAVE MONITORING FACILITIES
NBC LISTENING POST**

Fig. 2

near the top of the International Building and runs to the NBC news-room in the RCA Building is about 1500 feet. The antennaplex unit, as it was installed, did not have enough gain on the high-frequency bands to make up for the loss in the coaxial cable. An auxiliary amplifier was added which contained two more amplifier stages for the 9, 12, and 16-megacycle bands.

Four RCA AR-77 receivers mounted in a special table are used for listening. An input switching system is provided so that the receivers can be fed with a series of calibrating radio frequencies.

Since only two men are on duty at one time, it was deemed advisable to provide an audio-switching system whereby either or both men could monitor the output of any one of the receivers without moving from his normal position, Figure 2. Also, because at times there might be as many as three simultaneous news transmissions to be observed, special provisions were installed enabling both men to monitor one receiver each while the third was fed into a recording machine. Selector switches were provided at each of the receiver positions for the engineer. The interpreter's normal position, as can be seen in the photograph of the complete listening post, Figure 3, is at the left end of the table. Here he has one selector switch connecting him to the output of any receiver. He also has a selector switch by means of which he can feed the output of any receiver into the recording machine. Facilities are also provided so that the output of any receiver may be fed directly into the NBC networks through the adjoining news studios, one of which can be seen in the photograph. This has been done on a few occasions when the monitors, tuning over the various bands between scheduled news periods, came upon an event of great enough importance to be put on the air immediately. Ordinarily, the news broadcasts from foreign countries retransmitted over the networks, are received in the United States by regular communication companies. The material received by the monitoring post is used if warranted in domestic news broadcast periods.

The outputs of all receivers are also permanently connected to the dial monitoring system in all offices and studios of the National Broadcasting Company. It is thereby possible for any point equipped with the dial monitoring system and a loudspeaker to listen to any of the channels received by the listening post. Since the input to the recording machine, the input to the broadcasting circuits, and the input to the house monitoring system must be kept at a constant level, a VU meter is available on a selector switch at the engineer's position. Thus, maximum flexibility of control of the entire short-wave monitoring facilities has been provided. The receivers are in use 24 hours a day and have given excellent service.

The duty of the engineers assigned to this service is to have the

receivers tuned to the proper stations at the required time and to assist in the copying of reports. They are also constantly tuning throughout the entire radio-frequency spectrum looking for new international broadcast stations. At the outset, engineers were assigned to this service when they were free from regular broadcasting assignments. At present, however, there are four men assigned exclusively to this service as it was found that by monitoring regularly a kind of sixth sense is developed that enables a man to understand weak or noisy signals which one assigned only occasionally could not decipher. International broadcasting stations today are operating as close as five kilocycles and in some cases only three kilocycles apart. It is no longer



Fig. 3

possible to be certain that one knows the nationality of the station by the language in use, as so many of these stations use many languages, the British at present transmitting in twenty-seven different tongues. Only an experienced operator can be reasonably sure that he has the proper station tuned in at the required time.

Difficult as was the technical problem, that of securing the services of qualified monitors was even greater. Since the profession of news monitoring was comparatively new, very little was known concerning the qualifications of a monitor, with the result that a large number of applicants presented themselves merely on the strength of their knowledge of languages. The chief difficulty in finding duly qualified monitors lay in an apparent contradiction. The monitor must be fairly young in order to stand up under the incessant pounding he receives by listening through earphones day in and day out, and at the same time, his knowledge of languages must be such as is usually encountered only in persons of advanced age.

The following qualifications were finally determined:

Must be American-born or a naturalized citizen of long standing, a college graduate or equivalent. Must know thoroughly at least four languages: English, French, German, Spanish (or Italian). Some newspaper or writing experience essential. Must have European educational background, or have lived in Europe for a great number of years, in order to speak at least German and French like a native, so that he understands dialects, patois, colloquialisms, idioms, etc. Must be thoroughly familiar with geography, international affairs, political situations, foreign prejudices, customs and opinions, minority problems and similar factors.

While these requirements may seem rigid, such a background was necessary in order to properly evaluate news items, talks, special features, etc., as distinguished from the wealth of pure propaganda which was transmitted by all foreign short-wave broadcast stations. After several months of trial and error, the present staff was assembled.

Between 650 and 700 individual reports are written by the monitors each month. Quite frequently the reports of the English, German, and Italian broadcasts of a single important incident such as the bombing of a city or sinking of a battleship are recorded at different periods and then written into one report in an effort to obtain from them all, as nearly as possible, the true story. Recently, transmitting stations have been opened in various parts of the world, such as Japan, Indo-China, Belgian Congo, Greece, and Eire of sufficient power to be received regularly. To these can be added Australia, South Africa, Turkey, French Equatorial Africa, Persia, China, all of South America as well as all the major countries of Europe. Thus, through the short-wave listening post the National Broadcasting Company is in constant touch with the news of the world. The material received is used daily in the making of the news bulletins broadcast on the networks. The success of the plan is also attested by the fact that a monthly average of 150 of the reports written are used by the news associations in their releases.

Of the several news "scoops" received by this group, the outstanding one was the speech of Marshal Petain, announcing France's capitulation. Regular communication channels with France were jammed and delayed and radio reception was very poor. After playing the recording of the speech over twelve times, a complete transcript was obtained and broadcast and sent to the newspapers long before its receipt by regular communication channels. With the present war situation expanding throughout the world, the listening post takes on added importance in the proper transmission of the important news of the world to our American listening audience.