

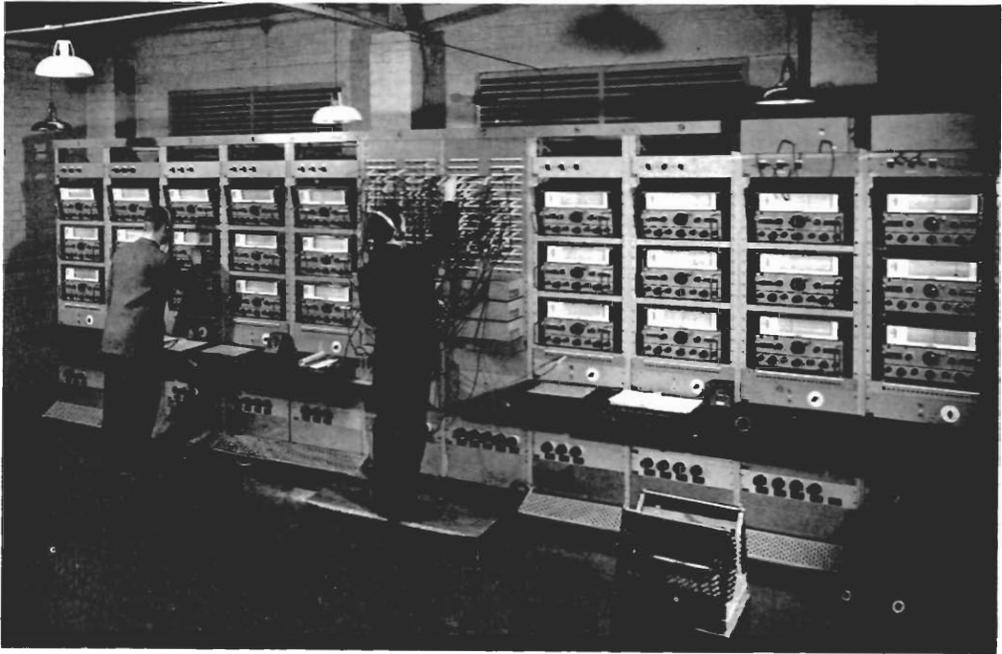
building up of the Transcription Service during the war involved the development of a comparatively small amount of equipment to an exacting specification. With the exception of some of the mechanical parts, all this equipment was designed and built within the BBC. Although a considerable number of the recordings are now on magnetic tape, many recipients still prefer discs and a large quantity of discs therefore continues to be sent overseas. During the year 1960–61 over 900 different programmes, amounting to some 70,000 records, were despatched.

THE MONITORING SERVICE

Listening to broadcast transmissions for the purpose of committing them to paper and distributing the information so obtained became known as 'monitoring' and the simple language monitoring, which was started at Tatsfield (the BBC's technical monitoring station), just before the war, developed very rapidly and became a separate unit initially set up at Wood Norton, near Evesham, in 1939. It outgrew the accommodation available there and was finally established in April 1943 at Caversham, near Reading, where the total number of staff employed exceeded 1,000, of which 650 were engaged directly in the operation of the service. At the peak, 1½ million words were listened to in each twenty-four hours, 300,000 words were transcribed and 100,000 words were circulated as a duplicated 'Daily Digest'. 24,000 words were sent daily as 'flash' material over teleprinter circuits.

The technical facilities of the Monitoring Service consisted of a series of omnidirectional aerials feeding, through a system of wide-band amplifiers and special distribution circuits, some 100 broadcast or communications receivers which were operated by the language monitors themselves. The monitors made notes of what was heard and recorded the broadcasts on dictating machines. At the conclusion of a broadcast, the monitor concerned transcribed the report in greater or less detail as necessary. For the reception of the weaker stations, a remote receiving site was set up. This occupies some 250 acres at Crowsley Park, four miles away from the headquarters at Caversham. At Crowsley the installation includes a number of directional aerials of the rhombic and Beverage types, and some fifty communications receivers operated by engineers. The outputs of the receivers at Crowsley are connected by lines to the reception rooms at Caversham where each monitor switches his headphones either to his own local receiver or to the line connected to the appropriate receiver at Crowsley. The site at Crowsley was chosen with special care so as to secure the lowest possible electrical noise level in the district, and the general neighbourhood of Reading and Caversham was chosen because it was reasonably remote from all high-power transmitters—a condition necessary to reduce to a minimum the production of intermodulation products in the wide-band amplifiers. It had, moreover, good communications with London and was considered to be reasonably immune from air attack. The arrangements made to distribute by teleprinter circuits to Government Departments the information picked up at Caversham have already been mentioned on page 23 under 'Programme and Communications Circuits between BBC Centres'. Special arrangements were made to secure immediate 'stop press' transmission of very important items.

The wide-band amplifier equipment used at Caversham was specially designed by BBC engineers. It relies essentially for its success on special types of wide-band transformers, used in the distribution of the amplified aerial signals to the receivers, which are capable of covering



Monitoring Service: Crowdsley Park Receiving Station. Communications-type receivers, aerial-signal distribution system, and wide-band amplifiers

the band of frequencies from 50 kc/s to 40 Mc/s with an attenuation, inside the pass-band, of not more than 2 db. The range of frequencies covered by the distribution system is 100 kc/s to 27 Mc/s. This range is subdivided into seven octaves and one near-octave. The distribution arrangements avoid interference from any first-order combination terms produced in the aerial amplifiers and also provide over 40 db attenuation between receivers connected to the system.

Post-war developments have included the replacement of the original octave amplifier system at Crowdsley Park by six push-pull wide-band amplifiers having a high degree of linearity, each covering the frequency range from 100 kc/s to 25 Mc/s and having ten radio frequency outputs; the replacement of the original, American, communications receivers by British receivers of improved performance; and the use of very-long-wave converters in which morse signals in the frequency range 15-150 kc/s are made to key a radio-frequency oscillator to produce an output within the tuning range of normal receivers.

The Main Listening Room at Caversham has been almost completely re-equipped with modern British communications-type receivers. Remotely-started plastic belt recording machines, replacing the earlier wax-cylinder machines, are installed so that items can be recorded for subsequent replay on transcription machines. The recording machines are arranged in groups and electrical 'booking' facilities at each monitoring position enable any recorder which is not already booked or in use to be reserved for instant use when required. Radio-teletype transmissions have now largely superseded Hellschreiber (facsimile telegraphy) transmissions

and are either received at Crowsley and fed to Caversham or, in the case of the long-wave signals, are received direct at Caversham.

The programme lines from Crowsley Park are switched in the Listening Room at Caversham to the appropriate monitoring positions at the supervisory control position. Here a BBC-designed console provides such facilities as push-button monitoring-line routing, supervisory monitoring of all monitors' listening positions, and two communications-type receivers for use by the supervisor.

The monitors now cover broadcasts from more than thirty-five countries in nearly as many languages. From the total intake, the Monitoring News Bureau selects and processes news and other urgent information for transmission by teleprinter to the BBC's news departments and to the Foreign Office. Part of this service is also supplied to subscribing news agencies. A number of publications are produced daily, or at less frequent intervals, chiefly for Government Departments, but are available also to other organizations.

INTERNATIONAL CO-OPERATION

In the field of international relations, the BBC participates in the work of a number of organizations, and is represented on numerous committees and study groups. International co-operation can naturally assist in the solution of many problems in broadcasting; for some of them it is indispensable. Many links with organizations overseas were broken by the war and have since been re-established. The International Broadcasting Union, formed by the broadcasting organizations in Europe in 1925, could not be maintained after the war as a single comprehensive union of all the broadcasting organizations in the European region, on account of political difficulties. In Western Europe, the European Broadcasting Union founded in 1950 has replaced the I.B.U.; it is an organization embracing the whole field of sound and television broadcasting, including programme and legal matters as well as technical ones. The then Director-General of the BBC was elected President of the Union in 1950 and was re-elected to that office from 1955 to 1960. A member of the Engineering Division of the BBC has been Chairman of the Technical Committee since 1952. The E.B.U. has its headquarters in Geneva; the Technical Centre is in Brussels with a monitoring and measuring station at Jurbise, in the south-west of Belgium. In Eastern Europe there is a separate union known as the International Organization of Radio and Television (O.I.R.T.), which has its headquarters in Prague and includes among its members most of the countries of Eastern Europe and others in the Far East. There is some exchange of information and co-operation between the two Unions on technical matters.

The E.B.U. operates in Brussels an international control centre for Eurovision, through which pass the vision, sound, and control lines connecting together sixteen countries in Western Europe. On 1 January 1962 a permanent network of sound and control lines was set up, linking eight of these countries together; although this network was established primarily for use in connection with television, it is available also for sound broadcasts relayed from one country to another.

The BBC also participates in the work of the International Telecommunication Union (I.T.U.) and in that of its two permanent consultative committees—the International Telegraph