BEHIND THE MICROPHONE

by

STUART CHESMORE

Author of "Behind the Cinema Screen"

Illustrated from photographs and drawings

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BEHIND THE MICROPHONE.
The Chief Announcer, Mr. A. Stuart Hibberd,
at Broadcasting House, London.

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Edited by John Hampden and Freda Holmdahl

BEHIND THE MICROPHONE

No. 11

Uniform with this Volume

BEHIND THE CINEMA SCREEN
by Stuart Chesmore

BEHIND THE SCENES
by John Sommerfield

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BEHIND THE MICROPHONE

CHAPTER I

THROUGH THE DOORS OF BROADCASTING HOUSE

BROADCASTING HOUSE rises majestically a hundred and twelve feet above the pavement of Portland Place, eight floors above and three below street-level. There is no other building in London which excites so much interest and speculation.

Its bronze doors are for ever opening and shutting, for the streams of people passing in and out of the reception hall are unceasing. Many of them have official business there, but the curious visitor who ventures inside in the hope of looking round invariably fails to get past the stolid commissionaire on duty in the middle of the foyer.

The B.B.C.'s elaborate machinery for guarding against unwanted visitors has been defeated only once, and it was a schoolboy who achieved the seemingly impossible!

Somehow or other this lad found his way first into the office of the Director of Variety, which is in St. George's Hall, across the road from Broadcasting House.

" I'm the editor of my school magazine, and I should like to write an article about ' In Town To-night,' " he said, as if that explained everything.

Little did he realize that even the most important journalists in the country would not have been allowed to march in unannounced as he had done. But it was his lucky day. The variety director had once been the editor of *Radio Times*, so perhaps he sympathized with the lad's ambitions. Whatever the reason, he gave him a note to take to the producer of " In Town To-night," and sent him across to Broadcasting House with it.

Once inside the studio the boy produced an enormous notebook, and scribbled away excitedly all through the show. Afterwards he was left alone in the room for a little while, and when the producer came back his young visitor had gone !

It is useless to try to get into Broadcasting House without an appointment, but plenty of people make the attempt. Perhaps they have come up to London for the day, and having an hour to spare before the cinemas open, they decide that they might as well have a look at the B.B.C.

The commissionaire learns to know the type on sight. He sees a man peering nervously through the doorway, evidently rather doubtful about venturing inside ; but his wife, who is standing behind him commandingly, has no such doubts.

" Go in and ask. 'Course we can go in if we wants to. We've paid our licence money, ain't we ? " she insists, and prods him with the end of her umbrella. Thus goaded, her husband advances timorously towards the awe-

inspiring commissionaire, and turns scarlet to the tips of his ears with shyness.

"Me and the missus 'd like to have a look round," he whispers.

The commissionaire directs him to the reception desk, where he explains himself to one of the suave clerks. He is told, politely yet firmly, that he must first make an application by letter, and he has to be content with that.

It is true that conducted parties are taken round Broadcasting House; but usually there is such a long list of applicants that they have to wait for weeks before their turn comes, and even then they are admitted only if they have some good reason for making the visit. Mere sightseers are refused.

The reception clerk deals with all visitors in the same genial manner. He makes no distinction between the dear old lady up from the country, who wants to leave a packet of cough sweets for her favourite announcer, and the famous song-writer who has come along to try over some of his new tunes. The receptionist is well-groomed, unruffled, and has an air of being faultless. One could not imagine him getting up late and hastily swallowing his breakfast while his wife laces his shoes, or running all the way to the station to catch his train. He is typical of the impression of a smoothly running, punctual, and dignified organization which the B.B.C. creates so successfully.

But even Broadcasting House has occasional failures. The lifts, for example, shooting up and down with such efficiency, look as if they could never get out of order like other lifts. But once, on a day never to be forgotten,

eighteen high-spirited members of a Boys' Band crowded into one lift, and the whole cargo became stuck between two floors. They had only about ten minutes to spare before their broadcast was to begin, and the staff engineers barely succeeded in freeing them in time. But mishaps rarely occur, in spite of the bustle and the continual passing to and fro.

There is always something to see in the foyer of Broadcasting House. A musician struggles through the door with a big instrument case. He is followed by some workmen carrying scenery for the television studio.

An artist coming out after finishing his broadcast stops abruptly as he recalls that he wants to see one of the administrative staff. It is part of the etiquette of the B.B.C. that he should make a formal request for an interview, even though the person he wishes to see is one of his best friends. He therefore crosses to the reception desk and explains his requirements, and the receptionist calls up the official on the house telephone, while the artist takes a seat on a settee until a page-boy comes along to conduct him to the office.

A staff fireman may sometimes be seen in the hall of Broadcasting House. He makes an imposing figure, in his blue serge uniform ornamented with much gold braid. They tell a story about him which may be true. It is this:

One day an elderly lady was seen to pass and repass outside the door. Her eyes never left the dignified fireman. At last she appeared to take her courage in both hands, burst into the hall, and caught him by the sleeve excitedly.

"I do hope you will excuse me for speaking to you

like this," she twittered; "but, dear Mr. O'Donnell, I just wanted to tell you how much I admire your military band!"

There is a comfortably furnished waiting-room leading off from the hall, but it is not for the use of ordinary visitors. It is reserved for special occasions, and only distinguished people are invited into it. It is really more of a drawing-room than a waiting-room, and one curious feature of it is that the writing-table is supplied with *black* blotting-paper. The explanation given is that among the users of this room are foreign notabilities, statesmen from this country and abroad, business men, and other important people who, quite frequently, want to write a letter or memorandum while they are waiting, and in order to safeguard them from having their secrets read after they have blotted their writing, the blotting-paper is the same colour as the ink.

The Broadcasting Honeycomb

When Broadcasting House was first planned, back in the days of Savoy Hill, it was thought that the new building would be too big for its purpose, and the possibility of letting out the ground floor for shops was seriously considered. But several years elapsed before the building was completed, for nothing like it had ever been attempted before. With no previous experience to guide them, the designers had to carry out innumerable experiments and tests, so that work progressed slowly, and by May 1932, when the building was ready for occupation, it was found to be too small!

Savoy Hill had seven studios; Broadcasting House has twenty-two; but even these are not enough.

New types of programmes, bigger and more ambitious light entertainments, the Empire service and television all called for extra space, as well as giving rise to a vast increase of work and staff on the business side.

Expansion is going on all the time, and there is an unending game of "general post." Studios built for one purpose have to be turned over to something quite different. Extra premises have been taken farther along Portland Place. St. George's Hall, the former home of Maskeline's magic, has been bought to give the variety people more elbow room. A new studio has been built at Maida Vale on the site of an ice rink, and the Queen's Hall, close by, is also frequently used for broadcasts.

So many rooms and studios have been packed into Broadcasting House itself that the building resembles a honeycomb.

The studios are contained in a central brick tower, which is surrounded by corridors and offices. The central tower is completely sound proof and shut off from the outside world. All the rooms have to be artificially lit and ventilated. The machinery for doing this is in the sub-basement at the bottom of the building in vast chambers which surround the base of the central tower.

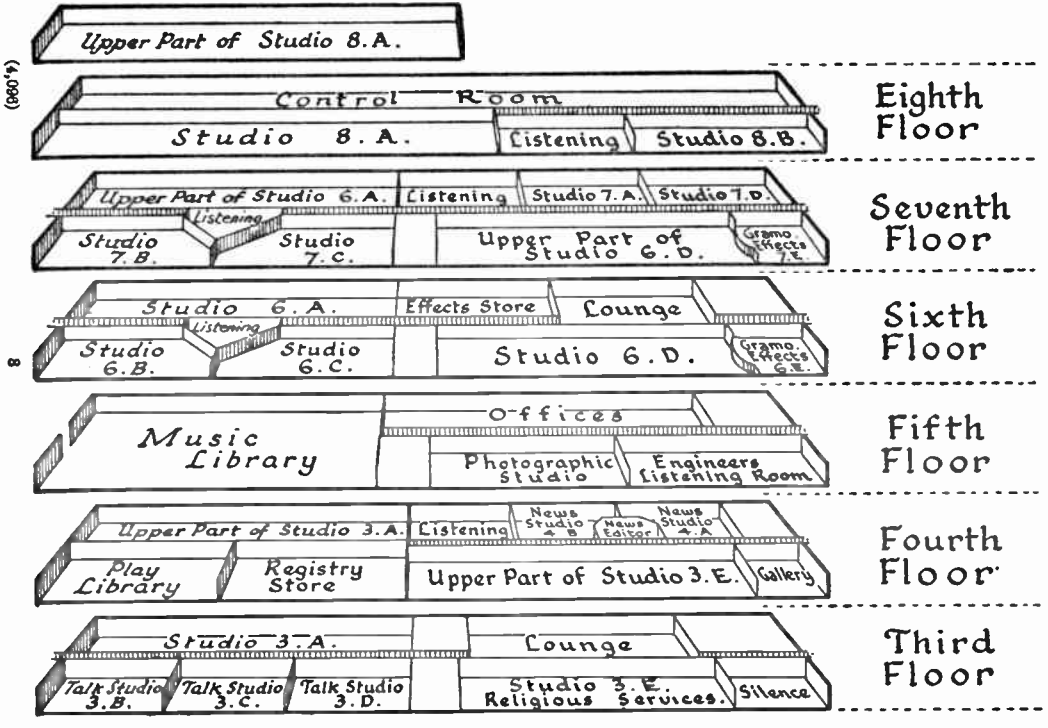
The bottom of the tower contains two studios. One of these is studio BA, which was originally intended for vaudeville. St. George's Hall was taken over for that purpose, and the studio is now used for other entertainments, such as the Kentucky Minstrels, to which a small public audience is admitted.

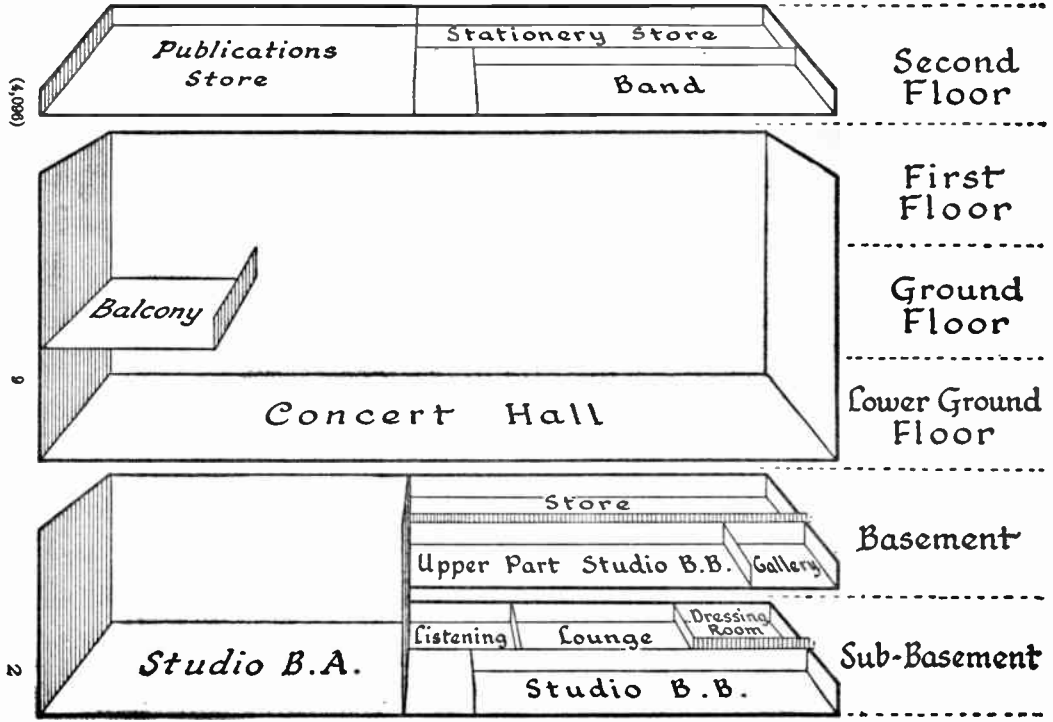
The second studio, BB, originally intended for television, was used for a short time by Henry Hall. When he and his dance orchestra moved to the famous studio, No. 10, built in an old warehouse under Waterloo Bridge, BB was turned over to a number of different kinds of musical broadcasts.

The powerful plant which surrounds these two studios is the lungs of Broadcasting House. Suction fans draw fresh air down into this underground cavern from the top of the building; but London air is notoriously grimy, and in its raw state is not considered fit for the staff of the B.B.C. Hence it is made to pass through a filtering duct, which extracts all the soot and dirt. It is then warmed, dried, washed, passed through water to humidify it, and, finally, it has its temperature regulated. In winter it is warmed, and in summer it is cooled. Then blowers send the conditioned air up to the studios, where it enters at the ceiling, and is drawn away just above floor-level. The atmosphere of the central tower never varies more than one degree Fahrenheit above or below normal.

A hundred and twenty tons of sheet steel were used to make the four ventilating shafts. Each shaft supplies air to a widely separated group of studios. This is done to avoid the danger of noises being conducted from one studio to another along the shaft.

The studios are fitted with thermostats—instruments which regulate the speed of the incoming air. They work in the same way as a thermometer—by the expansion and contraction of a column of mercury. If the studio becomes too warm the mercury rises and opens a valve to increase the supply of air.





Plan of the studio arrangement in the Central Tower.

The task of making the studios sound-proof was the one which gave the engineers most trouble. The problem was to arrange each room so that no sound could penetrate or leave it, except through the microphone.

No vertical steel girders could be used in building the tower, for they would have conducted sounds from one floor to another. The walls of the studios themselves were made of two thicknesses of cellular concrete, packed with a sound-absorbing material known as Cabot Quilting, which is dried eel grass—a growth found along the dunes on the shores of Nova Scotia.

Floors and ceilings were elaborately built to make them sound-proof, and, as an extra precaution, a layer of rooms not used for broadcasting was sandwiched between the floors containing studios. Such rooms act as sound-barriers. A short explanation of the arrangement of the tower will make this clear.

On the top floor of all is the control room and two studios. There are five studios on the seventh floor, and five on the sixth floor, but none at all on the fifth, which is a sound barrier, and contains the music library.

There are two studios on the fourth floor, both of which are occupied practically all day long, because they are used by the announcers, and for gramophone recitals and talks.

The chapel and four other studios are on the third floor.

The second floor is another sound-barrier. It holds the library of gramophone records. The first floor, ground floor, and lower-ground floor are combined into one to form the lofty concert-hall. The remaining floor, the sub-basement, has already been described.

They Oil the Wheels

The permanent staff of the B.B.C. in London and the provinces numbers about two thousand. The largest proportion of them are engineers, or " plumbers," as the office staff dubs them. Men are greatly in the majority, but there are jobs for women as well. About two hundred and fifty are employed at Broadcasting House, and they occupy all ranks, from typists to heads of departments.

There could be no broadcasting without these energetic unknown folk. They oil the wheels to make the great machine run smoothly. Many of them rarely go near a studio. Certainly their voices are never heard on the air.

One very responsible post is that of House Superintendent. Receiving visitors is only one of his manifold duties. This is a task requiring infinite sympathy and tact, for many of the artists with whom he has to deal are new-comers to the microphone, and most of them are feeling " a bit wobbly inside " at the thought of the ordeal before them.

Sheer nerves often get the better of would-be broadcasters. It may be that even while the House Superintendent is striving to calm a new arrival, the staff nurse, in her own little dispensary, is having a busy time reviving some one who has just fainted at an audition !

During the mornings a strange little procession of four ladies may be seen making a tour of the offices and studios. One wears rubber gloves, and carries a pair of scissors. Another carries flowers. From room to room

they go, tastefully arranging the vases of flowers which each one contains. The occupants of the offices are so used to this daily ritual that, apart from a word or two of greeting, they take no notice of the invaders.

The House Superintendent has a staff of two hundred and fifty under his control, including fifty page-boys and a regiment of cleaners. He is also responsible for the reception of members of the public who are admitted as audiences to some of the larger shows.

Another job which is vital to the maintenance of perfect efficiency in broadcasting is that of the engineer who keeps the programme log. His must be a tedious task, for he cannot allow his attention to wander for a second.

He sits at his desk with a sheet of paper in front of him, and just listens. Every little failing is noted down. If the programme runs too long, if some one whispers a remark that is not in the script, if there is a delay between the items, down it goes on the sheet.

On the following day the log is examined by the programme chief, who tries to evolve some means of preventing these faults from occurring again.

The importance of this work can be illustrated by a single instance. A studio that had been used entirely for rather noisy musical performances was turned over to play production. During the show the listening engineer detected, at intervals, faint, rumbling noises. This only occurred when there was a lull, or when voices were soft. When the volume of sound rose above a certain pitch it appeared to drown the unexplained rumbling.

Inquiry showed that the culprit was the Bakerloo Railway, which passes beneath Broadcasting House. What the engineer had heard was the noise of underground trains !

Arrangements were made to provide the studio with a different system of sound-proofing, and the offending noise was shut out.

The B.B.C. Postbag

Another very big job at Broadcasting House is that of dealing with the sacks of correspondence that come in by every post. There is a special department, called the Correspondence Section, whose duty it is to answer every letter, and also to compile statistics.

Contrary to what some people may imagine, ninety per cent. of the letters express approval of the programmes, or of some particular item which the listener has enjoyed sufficiently to feel urged to write about. A few, but only a very few, of the ten per cent. of criticisms are downright rude.

Mr. Vernon Bartlett once received a letter so disgustingly abusive that he immediately wrote back to the sender, saying :

" If you will meet me under the clock at Charing Cross I shall take much pleasure in punching your head."

Mr. Bartlett kept the appointment, but his opponent failed to appear !

Some of the letters are very amusing. One, which gave the Correspondence Section a distinct shock, ran as follows :

"DEAR SIR,—I am fed-up with talks about pig foods and tifoid. Why can't we have more of Henry Hall and his band ?—Yours truly,

"DAVID LLOYD-GEORGE."

This correspondent with the famous name turned out to be the ten-year-old grandson of the Rt. Hon. David Lloyd-George, and not the statesman himself !

A more or less standardized letter is sent out to most of the correspondents who praise or blame the programmes. Plainly it would be an impossible task to compose strictly individual replies to every one, but that does not mean that if you write to the B.B.C. your letter will be disregarded. It will be carefully read to see if it contains any helpful fact or suggestion, and if it does it will either be passed on to another department to be dealt with, or put in the files for future reference.

As a rule broadcasters do not ask listeners to write to them. They get enough letters without inviting them. But on the occasion of his historic speech on the subject of Germany's withdrawal from the League of Nations, Mr. Vernon Bartlett asked for opinions, and got 23,000 replies.

Again, Mr. Val Gielgud, the Drama Director, asked for opinions on the topic of broadcast plays, and got 13,000 almost by return of post.

A third occasion, which arose in the Savoy Hill days, ought to be mentioned. Listeners were asked to record their opinion as to whether relays of dance music should close down at midnight, or continue for an hour or so longer. A terrific public response was expected. The

B.B.C. considered it a subject which would arouse a record controversy. In anticipation of the flood of letters, arrangements were made with the Post Office to hold an extra mail van in readiness.

The number of replies received was the lowest on record—seven !

The Libraries

A large amount of floor-space at Broadcasting House is taken up by the libraries and the filing systems connected with them. Looking up at the rows upon rows of items that form the collection to-day, one can only stand and marvel at the way in which the early pioneers of 2 LO got along without them. There is no doubt that if some catastrophe were to occur now, so that the contents of the B.B.C. libraries were destroyed, the result would be chaos.

First of all there is the main music library, containing more than half a million orchestral scores. With only a few exceptions, there is scarcely an orchestral piece in existence which is not represented on the shelves; and in the case of popular pieces which are frequently played, two or even three sets are kept, because the Portland Place library supplies the needs of regional stations as well.

Another section is devoted to vocal music, including a hundred thousand choral pieces, thirty thousand songs, and an unrivalled collection of operatic works.

Valuable private collections have been bought and added to the library from time to time. The collection of the late Percy Pitt, former Music Director, also finds a place, and there are many rare items.

Apart from published works, the B.B.C. accumulates a good deal of specially written music of its own. For example, the Wireless Military Band may broadcast a work which was not originally written for this particular combination of instruments. Special parts will have to be written for the band, which consists of two oboes, two flutes, two E flat clarinets, one euphonium, eight B flat clarinets, two bassoons, four horns, three cornets, two trumpets, three trombones, three basses, and drums.

Therefore the library is bound to keep on growing.

It is the same with vocal pieces. A singer who has been engaged for a recital sends in particulars of the songs she intends to give, and even though she may bring her own sheets with her, the B.B.C. has to have copies as well, and probably a piano accompaniment has also to be prepared.

Another fascinating library is the collection of gramophone records. It was started in 1933, and 30,000 discs were obtained in the first year. The records are filed vertically in their cases in rows on steel shelves.

There is a separate section consisting of records made by celebrities who have since died. Here one may find songs by Melba and Caruso, a speech by Sir Arthur Conan Doyle, a recitation by Sarah Bernhardt, and so on. All the records are elaborately indexed under their titles, name of author, composer, and number.

Musical scores are similarly indexed under title and composer. The index card also contains the number of players required to perform the piece, and the exact time taken to play it.

This collection of musical scores was begun in the

early days of 2 LO, when a member of the staff was sent out with ten pounds in his pocket and a long list of titles, with instructions to buy as many as he possibly could with the money. He made a search of the second-hand shops in the Charing Cross Road, and his first purchase was a soiled copy of *The Geisha*.

Dance music has a library to itself, and is in the charge of its own librarian. It contains the scores of all pieces specially orchestrated for the B.B.C. Dance Orchestra, as well as sheet music and arrangements submitted to the B.B.C. by various publishers.

Another very important department is the reference library. Here is a vast collection of books so carefully chosen that the shelves can supply facts and figures on almost any subject under the sun. Some one always wants to know something or other. The librarian is never idle. The *Radio Times* rings up to check a fact in an article based on a forthcoming programme. An announcer wants to know the exact location of some remote place with a crackjaw name. The producer of a scrap-book programme wants to confirm the date of some long-forgotten event. It is sure to be found in the reference library.

Most of the daily, weekly, and monthly periodicals are kept on the files in this room for the staff to browse over. Everything referring to broadcasting is marked with blue pencil.

Broadcasting House also has a library of four thousand plays, and a unique collection of steel-tape records of historic events and running commentaries that have been transmitted in outside broadcasts, as well as records

of programmes that have been made for retransmission in the Empire programmes.

Meal-time at Broadcasting House

There is one important branch of activity at Broadcasting House which has really nothing to do with broadcasting at all, and yet which is of vital importance to every one who broadcasts. For since the members of the B.B.C. staff are but mortals after all, they needs must eat. Broadcasting House provides adequately for them. At any hour of the day or night it is possible to obtain a meal in Broadcasting House. There is a caféteria where one can get breakfast, lunch, tea, or dinner. There is a snack bar for sandwiches.

The B.B.C. kitchen supplies eight hundred teas in the afternoon, which are taken straight up to the staff in the various offices.

Every one patronizes the caféteria, from the Governor-General down to the page-boys. No special fuss is made of the important officials. They select their dishes from the same menu as their typists. Only one distinction is made, and that is in favour of the page-boys. Growing lads have big appetites, and in order that they can get more for their money they are allowed to have their lunches at special cheap rates. A good satisfying meal can be bought for one and sixpence. Fish and meat dishes cost, on an average, ninepence each. Vegetables cost twopence a portion. Puddings and sweets cost threepence.

The caféteria is an L-shaped room in the basement

capable of seating a hundred people. It is very modern in appearance, furnished with chromium chairs and tables with black glass tops.

Members of the public are not admitted to this restaurant, so that it is no use for you to think of dropping in there for lunch next time you are in London for the day. But if you were a member of the staff, or a broadcaster, and went down for a meal, you would pause at the entrance to help yourself to a tray and cutlery, and then pass along a long counter where you would find all the dishes set out temptingly for you to make your selection.

Having loaded your tray you arrive at the cash desk, where an attendant with an expert eye reckons up the cost of your meal in a twinkling.

As you pass between the tables in search of a seat you notice the odd appearance of the pillars supporting the roof. They are marked off in squares, and in each square there is a combination of letters and figures. These refer to the various studios, and can be lit up when necessary to recall artists who are required back at work.

All the food is prepared in the B.B.C.'s own kitchen, where everything is up-to-date and run by electricity, even to the ingenious revolving cutter which can be adjusted to slice meat or bread to any desired thickness.

The amount of work involved in catering for the needs of Broadcasting House can best be illustrated by giving the figures for an average year.

Here they are:

Nearly 200,000 afternoon teas; 93,000 morning

snacks; 71,000 lunches; 43,000 evening meals; 6,000 breakfasts.

Getting a Job with the B.B.C.

The B.B.C. chooses its staff with great care. A good deal of criticism has been levelled from some quarters on account of the very pointed questions concerning his private life that the B.B.C. puts to every applicant for a post.

Yet the fact that the B.B.C. is growing in power every day, and that it possesses an influence that could have dire results if put to misuse, provides the reason why every member of the organization must be absolutely above suspicion. Even if some of the questions asked may seem rather inquisitive, it is much better for the B.B.C. to err on the side of excessive caution than of carelessness.

In 1934, when Chancellor Dollfuss was assassinated and the Vienna broadcasting station was seized by rebels, a tremendous sensation was caused by Lord Allen of Hurtwood declaring that there was "some kind of movement to bring off a similar *coup* in this country."

There is no reason to doubt that his statement was made in good faith, but the chances of a group of plotters attaining their object are extremely small. The B.B.C. has had the foresight to protect itself in every possible way, and by no means the least of its precautions is that it makes certain that even the humblest member of its staff can be trusted.

Every member of the staff is included in a pensions scheme. The B.B.C. retains five per cent. of each person's

salary to be saved and invested for him until it is time for him to retire. But the B.B.C. does more than that: it adds an extra five per cent. to the employee's savings.

If the employee so wishes he can have seven and a half per cent. put by each year, and in that case the B.B.C. also adds seven and a half per cent. instead of five.

A job with the B.B.C. is as safe as one in the Civil Service. Once the applicant has served three months' trial, and is accepted as a permanent member of the staff, he will not be discharged unless he misbehaves himself. He will go steadily on, with regular increases in salary, until it is time for his retirement.

The staff member who wants to do more than just jog along in a humdrum fashion has to make his own chances, and show that he is worthy of something better. A number of people now holding big posts at Broadcasting House started in a very humble way, but when an opportunity came they took it with both hands.

One of the typists who was keen on music used to slip into vacant studios during the lunch hour and practise on the piano. Before long her gift for playing catchy tunes resulted in her being asked to play at a concert organized by the staff. Later she volunteered to fill a gap by taking charge of the piano at a rehearsal, and she did so well that it was not long before she permanently gave up typewriter keys in favour of piano keys, when she was appointed an official accompanist.

It is a typical example of what can be done by any one with talent and ambition. This particular young woman, whose name is Doris Arnold, is now one of radio's best-known light pianists.

There was a similar occurrence one Sunday afternoon when the pianist who was to take part in an instrumental concert failed to turn up. The producer made frantic efforts to get into touch with one substitute after another, but without success. As it was Sunday the agency offices were closed, and there seemed to be no chance of finding some one to fill the vacancy.

In despair the producer rushed down to the foyer and asked the commissionaire if he had seen anything of the missing artist. The man in uniform listened to the tale of woe and reluctantly shook his head. He had seen no one.

"But I do a little playing myself, sir," he said modestly; "do you think I could be of any use?"

The producer was ready to clutch at any straw. He hurried the man up to a studio, pushed him on to a piano-stool, and gave him several widely varied classical pieces, asking the volunteer to see what he could make of them.

The commissionaire played them faultlessly at sight. The delighted producer bundled him into the transmitting studio. Still wearing his uniform, the eleventh-hour broadcaster took his place at the piano. It had been a nerve-racking ordeal for him, but he performed so well that other engagements followed.

While London Sleeps

Although the office staff keep ordinary office hours, Broadcasting House is never empty. As soon as the National programme closes down at midnight, an Empire transmission to North America starts up.

As much of the Empire transmission is done by

Blattnerphone tape, all that the announcer has to do is to introduce the programme and then signal to the men in charge of the reproducing apparatus to go ahead. It is only during the small hours, when work is at a low ebb, that many jobs vital to the smooth working of the headquarters of broadcasting can be attended to.

Men of the engineering and mechanical staff are busy cleaning and furbishing the air-conditioning plant, checking up the wiring system, and overhauling the oil feeds in the boilers.

There are 7,000 electric lamps in the building, and 150 miles of wiring in the various circuits. The 450 horse-power ventilating plant has been supplying 180 rooms. The boilers have been at full pressure, supplying 840 radiators with heat. Many things might go wrong. Slight faults must be remedied before they develop into big ones.

Such breakdowns are very rare, but when they do occur artists show a praiseworthy presence of mind, and manage to carry on by exercising their ingenuity.

On one occasion John Bridge was conducting the Northern Studio Orchestra in the *William Tell* Overture, when all the lights went out!

Such a calamity might well have caused chaos, but few listeners were aware that anything had gone wrong. The orchestra faltered for a bar or two, and then went on as strongly as ever, thanks to the presence of mind of the conductor.

As the overture was such a well-known one he knew that his men could play it from memory, and so he took a cigarette from his pocket, lit it, and conducted in the dark by means of the glowing cigarette-tip!

Incidentally, although smoking is permitted in the offices, it is barred in the studios. John Bridge was the exception that broke the rule.

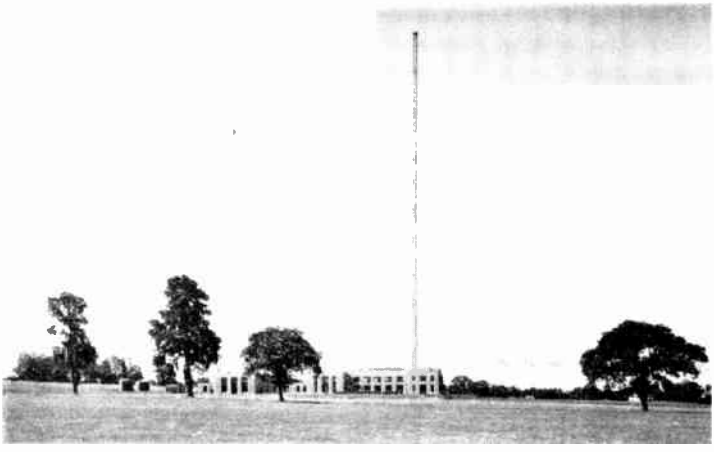
During the early morning a squad of men in dust coats make their appearance, flitting along the dimly lit corridors like ghosts. Their job is to set the studios straight. Perhaps a light concert has been given in the concert hall the previous evening, to which a public audience was admitted. This morning at ten o'clock the orchestra will want the hall for a rehearsal. Two hundred and fifty seats have to be removed to make room for them, and a miniature forest of music stands must be set up so that work can be begun without delay.

At six o'clock every morning a regiment of one hundred and thirty women cleaners enter the doors of Broadcasting House. All the studios, waiting rooms, and offices have to be cleaned and tidied, the furniture must be kept spick and span, and there is a mile of corridor to be scrubbed.

The carpets in the studios are cleaned every day. Vacuum suction pipes are built into the corridor walls, with points for each office and studio. All that the cleaners have to do is to connect up their machines to the nearest pipe-point and the dirt is sucked right down to the basement.

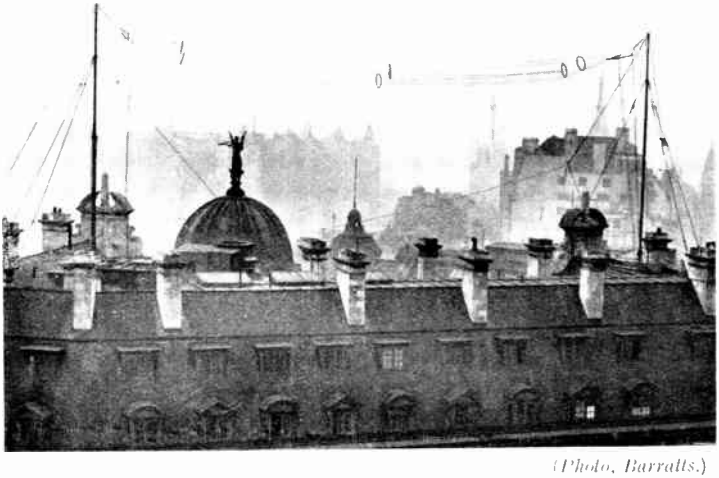
There are also five hundred ink-wells to be filled—a job which takes up the time of two people. They are provided with a sort of tank on wheels, which they trundle from room to room.

A clean ink-well, freshly filled, is provided each morning. The dirty one is taken away to be washed and



(*Photo, B.B.C.*)

General view of the Droitwich Transmitting Station, opened in 1934.



(*Photo, Barratts.*)

The aerial of Marconi House, in the centre of London, where broadcasting first became a reality.

cleaned. Any ink that remains is filtered and used again, thus preventing a big waste.

By the time that the cleaners have finished it is nearly time for the day staff to arrive to start another day's work. Meanwhile, down in the restaurant, an announcer who has been speaking to Australia is finishing his breakfast and thinking about getting home to bed.

Where the Licence Money Goes

Most people seem to have only a very hazy idea as to what happens to the money they pay over the Post Office counter in exchange for their wireless licences.

Critics are fond of pointing out that the B.B.C. must be very wealthy, therefore it could well afford to do this, that, or the other, regardless of expense.

From year to year the number of radio licence-holders increases, and it is hard to tell what the maximum number may be; but as the B.B.C. grows in proportion to the increased number of listeners, the best way to give an idea of how the money is spent is to show what happens to a single ten-shilling licence. The percentages remain roughly the same, even though the total sums increase.

The B.B.C. has a source of income apart from the licence money. It makes a profit on its official publications equal to about another shilling and threepence on each licence.

The B.B.C. does not keep all the money it receives. The Government sees to that! The Treasury takes three shillings and sixpence out of each licence, and

another sixpence goes in income-tax, paid on the excess of the B.B.C.'s income over its expenditure.

The Post Office receives one whole shilling out of every ten shillings. This may seem a big slice, but the Post Office does a lot of work for the B.B.C.

First of all there is the cost of issuing the licences.

It is the Post Office which sends out those quaint detector vans that have caused so much controversy, because nobody seems to know whether they work or not.

Many people declare that the elaborate equipment in these vans is all make-believe ; others state that it is so highly sensitive that it can even tell how many instalments have been paid on the set ! In any event they produce results, for the appearance of a detector van in any locality where " pirates " are suspected always results in a sudden increase in the number of licences taken out.

The Post Office also provides the B.B.C. with a permanent network of land lines for outside broadcasts, and it is Post Office engineers who deal with complaints of electrical interference.

When these various payments have been made, the B.B.C. is left with six shillings to spend.

Half a crown of this goes on the actual programmes. That is to say, on fees to artists, the hiring of special land lines, fees to authors, composers, and news agencies, and wages to the actual programme staff.

Another shilling is taken by the engineering department. This includes the salaries of the technical staff, maintenance of the transmitting stations, experiments to secure still better transmissions, and research in television.

Machinery wears out, furniture gets wobbly, decora-

tions grow dingy. Repairs and replacements demand fivepence of your money. The B.B.C. has to pay for rent, rates, insurance, telephones, heating, lighting, and a host of other items which, between them, cost each listener sevenpence.

The salaries of the business staff—that is to say, those who do not have anything to do with actual programme production, but who deal with clerical work, correspondence, etc.—take another threepence halfpenny. A penny goes towards the pension scheme.

For one fleeting moment every year each licence-holder has the satisfaction of paying the salary of that lordly body, the Board of Governors. Less than a farthing comes out of each licence for this charge.

The few coppers that are left over when all these charges have been met are saved up for future developments.

A good deal of wild guessing goes on among the public as to the fees paid to broadcasting artists. The question is often asked, "If an ordinary man gave a talk at the microphone, how much would he get?"

The answer to that is that the ordinary man does not get the opportunity to speak at the microphone. People are asked to broadcast because they have done something that others have not, or because they are authorities on their subjects.

The fee depends on the standing of the artist. In the early days of broadcasting, Tetrazzini received £5,000 for a single broadcast. Harry Lauder was paid £1,000, and so was Chaliapine.

But these are isolated examples. The B.B.C. is not

in the habit of paying out fabulous sums. A famous comedienne who, on account of her power to draw money into the box-office, can earn £1,000 a week on the London stage, only receives £50 when she faces the microphone, and that is reckoned to be a top-line fee.

Even in such a popular feature as "In Town To-night," the average fee is only £3.

The B.B.C. itself admits that it is not lavish with payments. It cannot afford to be. Even at present rates it is paying out a pound a minute all day long to its artists. But although the performers are by no means overpaid, the B.B.C. can rightly claim that their fees are reasonable and fair.

A broadcaster does not have to wait for his money. He gets it from the desk on his way out after his performance. There is a cashier on duty all day and all night, and even those people who take part in Empire programmes at unearthly hours in the morning get their money as soon as they have given their turn.

As a general rule, morning and afternoon broadcasters are paid less than evening performers. Actors who play the lead in radio plays can command as much as fifty guineas if they are at the top of their profession. Small-part players come down with a bump to five guineas, which includes payment for rehearsals.

Dance-band music is one of the most expensive items in the B.B.C. programme expenditure. All the members of the B.B.C.'s own dance orchestra are under contract and receive salaries, but they are not barred from doing a certain amount of extra work, such as making gramophone records or appearing in films.

The outside bands which broadcast at night get £40 for an hour's performance.

Performing rights have to be paid to the composers or owners of the copyright of music that is broadcast, and this is done in a rather interesting fashion.

In the early days of radio the clerical staff had to deal with a tremendous mass of book-keeping and correspondence, because every piece of music was paid for separately. It was impossible to keep pace with the work. The problem was solved by evolving an entirely new system. The B.B.C. pays a lump sum annually to the Performing Rights Society, a body to which nearly all composers, music publishers, and owners of musical copyright belong. The money is then shared out among the members according to the number of times their music has been performed.

In order to gauge the value of each piece points are awarded according to a scale which has been carefully worked out. For example, a dance melody which will be forgotten in a month or two, and which is broadcast from a regional station, would only be awarded one or two points. A great symphonic work, radiated through the National transmitter and simultaneously broadcast by a network of relay stations, would be judged worth several hundred points.

Even so, the dance tune composer does fairly well out of this arrangement, for his melody is likely to be performed day after day for a month or two until it becomes stale, while the concert piece will probably be broadcast only once or twice in a year.

CHAPTER II

BUILDING THE PROGRAMMES

German voices are heard singing a carol. English voices take up the tune, and are superimposed upon it. Some one begins to speak.

" I'll see you later, Herr Oberlieutenant."

A guttural German voice replies :

" At the football match, eh ?"

The carol gradually fades down until it is only a faint background of sound. A whispered voice is superimposed on the music.

" So there you are, Williams . . . poor old Williams—you were such a good chap . . ."

The voice goes softly on, with the carol a background heard through it. The speaker's voice dies away. The strains of the carol become softer and softer. A new melody is heard, growing louder as it is cross-faded in. It is an orchestra playing Elgar's " Chanson de Nuit." The carol is faded out altogether as the orchestra swells louder.

The voice of a narrator is superimposed upon the music :

" Are they gathered there to-night
In their eternal No-man's-land ? . . ."

That is how the listening world heard the concluding stages of Mr. Leslie Bailey's radio construction of the famous Christmas Truce, in his "Scrapbook, 1914."

It is a fine example of the new art, drama in sound, coming through the loudspeaker in a steadily flowing stream, conjuring up a vivid mental picture of one of the most emotional events of the Great War.

The entire effect is obtained by the clever mixing of a series of performances going on in separate studios dotted all over Broadcasting House.

The speakers were in one studio, the orchestra in another, the singers in a third, and so on.

All these studios are wired to the Dramatic Control Panel, which controls the output in the transmitters.

Broadcasting House has several such panels of varying sizes. One has fifteen fade controls. Each source of programme has its own control, the studio being indicated on an illuminated disc above the control. A separate control produces echo effects if desired. There are also switches which operate the warning studio lights, and it is possible, by making use of a return circuit from the panel to loudspeakers in the studios, to let each group of performers hear the parts of the programme in which they are not actually taking part.

Planning the Programmes

Long before the programme reaches the stage when it is sent out to a listening world via the control panel, it has been the cause of hours of patient work, spread over many weeks.

The programmes department, working weeks ahead of the actual transmission date, begins by drafting out a skeleton programme. It is part of this department's job to see that the items on alternate wave-lengths are well contrasted. Sometimes it just cannot be done. Then the letters from listeners come showering down on Broadcasting House like a blizzard.

The dance music fan writes :

" For half an hour last night it was impossible to get any light music. Nothing but chamber music and talks. What is the meaning of this ? If it happens again I shall refuse to pay my licence.—Yours,

" FATHER OF SEVEN."

Or if things are the other way round, the lover of high-brow music writes :

" I was unable to use my set for half an hour last night. There was a vulgar music hall show on the National programme, and gramophone records of dance music on the Regional. What is the good of having an alternative programme ? What are the Governors doing about it ? It is scandalous.—Yours,

" PRO BONO PUBLICO."

The whole trouble is, of course, that you cannot please everybody all the time, no matter how much you try, but the B.B.C. does its best, although the task is much worse than fitting together the most difficult jig-saw puzzle.

Fortunately, there is a sort of framework round which to build. There are items that are permanently fixed,

such as the Weather and News at six o'clock, and programmes which run in series—talks, promenade concerts, " In Town To-night," and so on.

Sometimes an outside broadcast is decided upon which overlaps the time usually occupied by a regular item. If the B.B.C. wishes to broadcast the Prime Minister speaking at some function at eight o'clock on Saturday night, the regular variety programme must be postponed, with the result that all the rest of the programme has to be twisted about.

On account of the fact that plans are laid so far ahead, one can never foresee whether something is going to happen at the very last moment which cannot be ignored.

A famous personage arrives suddenly on a flying visit from America or Timbuctoo, and room has to be found in the programme for a broadcast talk. Sometimes tragedy intervenes. The late Julian Wylie, theatrical producer, was engaged to broadcast in a pantomime programme at Christmas-time in 1934. He died suddenly a few days before the date of his broadcast.

Another item which gives the programme people considerable trouble is the variety show. Listeners are frequently demanding to know how it is that the programme, as officially printed in the *Radio Times*, so seldom tallies with the actual broadcast.

The reason is that show folk are very elusive. They travel all over the country to fulfil engagements. They cannot tell weeks ahead whether they will be free to broadcast on the night. If the offer of a big engagement in Aberdeen, or Cardiff, or Plymouth comes their way in

the meantime, they cannot turn it down for the sake of doing a ten-minute turn on the air.

Music on the Air

Much of the music is performed by the B.B.C.'s own orchestras. The compiling of the programme is then the conductor's responsibility. He receives a memorandum to the effect that on such and such a date he will give a programme to last an hour.

At least five weeks before the actual date of his broadcast he must supply details of the pieces he proposes to play, so that they can be approved by the department and forwarded to the *Radio Times*.

First of all the conductor will find out what the alternative station is doing, and also what sort of programmes come before and after the hour allotted to him. It is then " up to him " to make his recital as different from these three as possible.

Having selected his music, he may be told that one or two of the pieces are occurring a little too frequently. " Mr. So-and-so's sextet want to play it next week, and the Splendiferous Cinema Orchestra want it for the week after. Will you please fit in something else ? "

At last he gets a suitable programme together. He informs the music library, and gets all the necessary parts. Then he books a studio and settles down to play the whole programme through with a stop-watch beside him. This may reveal that he is five or six minutes too long, with the result that something has to be cut out.

The Search for Talent

The B.B.C. has to be constantly on the watch for new talent. Scouts are always searching for fresh broadcasters in London theatres, cabarets, music halls, and theatres, in the provinces, and even abroad.

If the young man who is sitting beside you in the cinema has got his eyes shut, he may not, after all, have been lulled into sleep by sheer boredom. He may be a talent-spotter from the B.B.C. !

Pretty faces or comic costumes are of no interest to him. What the players *sound* like is all that he wishes to know.

One famous broadcaster was found singing in the street. A B.B.C. official rushed him to the studio for a test, and after his audition the singer fainted from lack of food. But his luck had changed. As soon as the B.B.C. put him on the ether he received a shower of offers from theatre managers and gramophone companies, and is not likely to have to go without any more meals.

Besides this hunt that is continually going on in the highways and byways, there is also a legion of would-be broadcasters who fiercely bombard Broadcasting House with letters demanding auditions.

If the writer of the letter appears to possess the least spark of originality, he or she will be invited up for a hearing, although not more than one in a hundred is successful in securing an engagement, for the standard is high, and the people who secure an encore at a village

concert are not necessarily going to make the B.B.C. staff dance for joy.

Most of the people who write for auditions are either players of musical instruments or singers. These stand small chance of getting a hearing. In any case they must have some professional experience, and have their applications signed by a well-known musician.

The B.B.C. applies this rule because it already has far more musicians than it needs. There are hundreds of people on the books who have actually passed the audition tests, but who have not yet broadcast because no opportunity of giving them a chance has yet arisen.

One morning a newspaper published a small paragraph to the effect that there was a vacancy in one of the B.B.C. orchestras. Hundreds of applications poured in by the next post. One man was invited up for a hearing. He travelled two hundred miles from his home, but omitted to bring either his music or his instrument with him. He said he didn't think there was any need for them to hear him play!

It is in the variety department that the hunt for new talent is keenest. Anybody who can make people laugh over the radio is certain to be booked.

But do not run away with the idea, you who read this, that because you made the party laugh at Christmas by putting on a false nose and a straw hat, you are just the person the B.B.C. is yearning to meet.

Wireless listeners would not appreciate your funny nose or your straw hat, nor would the man at the B.B.C. who took your audition, for the simple reason that he would not see you until after it was all over.

He wants to know what your voice is like, what sort of sounds you can produce ; that is all. Even tip-top music hall artists find it hard to realize this.

Variety auditions are held on two or three afternoons each week. Twenty or thirty new acts are heard. The judges, four producers, sit in a control room overlooking the studio. Each judge has in front of him a sheet on which is written such headings as Artist, Type, Producer's Remarks, Decision.

Each of the applicants is known simply by a number. Names are not used, so that the aspirant who is turned down has no grounds for saying that his act was rejected on account of jealousy, or anything like that.

The judges need to have a shrewd knowledge of human nature. It is only natural that most aspirants are terribly nervous. This spoils their performance, and makes it sound a good deal worse than it would do under normal conditions. The judges make allowance for microphone fright. But even so, a big, despairing *No* usually goes down in the space marked " Decision."

It is a wonder that the gallant judges do not go stark mad. Listeners are constantly complaining that the variety shows are poor. Yet they are the pick of the bunch. Think of these luckless producers listening for hour after hour to a series of deadly dull third-rate comedians. There is no one more maddening than the man who thinks he is being funny when he is not.

And then there is the torture of listening to the same song time and time again. Whatever song happens to be the rage at the moment will smite the ears of the judges all through their nerve-racking " vigil."

It will be played by the man who performs on a tin whistle with his toes, and by the lady who gives solos on a saw. An impersonator renders it as she imagines Greta Garbo would do it, and a child imitator gives his idea of the song as rendered by a little girl of three years old.

Sometimes a would-be comedian does reveal, in an audition, that he has a new and attractive style, but his patter will probably be very weak. The B.B.C. is ready to give him a chance. If they think his personality will get across to listeners, they will have good material written for him.

Another man may come equipped with sparkling and funny lines, and yet deliver them in flat, dull tones. He does not possess a microphone manner, but he has ideas, and it is ideas that the B.B.C. wants. He is worth encouraging. If he cannot actually broadcast, he can write material for others.

There is an unsolved mystery about these auditions. One day two quaint old ladies applied for a test. They sat down at the microphone and gave a sketch which consisted of catty, tea-table gossip. It was so funny that even the listening judges laughed.

They were splendid ; they had got a new idea ; they were just the type of turn which the variety department is always longing to find.

But people who come for auditions are never told, on the spot, that they are considered successful. The system is to tell them :

" We will write and let you know."

The old ladies went away. A few days later a con-

tract was sent to the address they had left. It came back marked "Not known." No amount of inquiry could find the clever pair, and they have never been heard of since.

When the producers decide to give an artist an engagement, one of several courses may be followed. If the person is well known and a frequent broadcaster, the producer may ring him up in a friendly fashion and ask if he is free to come along and broadcast. But that is a very unofficial thing to do, and the producer follows his telephone call with a formal letter. When the offer has been accepted by the broadcaster, he is sent an imposing contract.

If some one is needed in a hurry, say to give a talk on a subject which has suddenly become topical, he is booked by telephone. There is no time for sending letters or contracts through the post. But it is a rule at the B.B.C. that the cashier's department must not make a payment unless a contract has been signed, and so the form of agreement is sent out *after* the broadcast has been given. The performer signs it, and in a few days gets his money.

There is no golden rule for the person who wishes to become a radio artist, but one important thing to remember is that the material has to be strong enough to compete with other things that may be interesting the listener at the time, whether he be reading his paper, bathing the baby, doing a crossword puzzle or even a carpentering job.

It is not like being on the stage of a theatre, where the audience is more or less compelled to listen. Unless

the radio artist's act is good, his listener will either become bored and find something else to do, paying nothing more than a vague attention to what is coming out of the loudspeaker, or else he will exclaim, "Drat that noise," and switch off.

The artist who lets his imagination rove, and who begins to think of all the hundreds of thousands who may be listening to him, will run the risk of being seized by acute stage fright.

Indeed, one lady whose name is famous on both sides of the Atlantic for her work on the stage and in films, so terrified herself with thinking of the size of her audience that at the end of her turn her legs gave way, and she rolled underneath the grand piano.

In contrast there is a man who had never done any work of this kind until the B.B.C. invited him to the microphone, but who has gained tremendous popularity because his style is so friendly that the listener can almost imagine him to be chatting by the fireside. The method this man uses is to wipe from his mind all thought of his legion of listeners, and imagine that he is talking to his mother.

Several schools and academies are now including courses of microphone training among their subjects, and the London School of Broadcasting has also been established, run by Mr. Bertram Fryer, who was with the B.B.C. for ten years.

Such schools as this are doing good work in teaching people with broadcasting ability to make the best of themselves when they go to Broadcasting House for an audition.

(*Photo, B.B.C.*)

A man at the Control Panel in the Listening Room of Studio BA, with the Studio beyond.

(*Photo, B.B.C.*)

" Stephen," " Mac," and " Barbara " broadcasting during a Children's Hour.

The Show Rehearses

When the programme has been compiled, when auditions have produced suitable artists, and when those good people have been supplied with their parts, the next step is to collect them together in the studio for rehearsal.

The producer finds rehearsals quite as trying as the actual broadcast. The players, musicians, balance and control men, and effects department, can relax when they are not actually needed, but the producer himself gets no chance to slacken.

Only a small number of people who are heard on the ether are able to make a living by broadcasting alone. Most of them have other jobs, which take up the bulk of their time.

Collecting a cast for rehearsal is a difficult task. The producer fixes a time, books a studio, and notifies his players. The telephone soon begins to ring. One member of the cast has been booked to pose for some advertisement photographs, another is just off to Southampton for some " location " scenes in a film, a third has got an appointment with a gramophone company.

By hook or by crook the cast is gathered together. Big shows are allowed three hours for rehearsals. Halfway through a fifteen-minute break is called, during which every one makes a bee-line for the restaurant for coffee and a cigarette.

During rehearsals the producer spends most of his time in the cramped control room, staring out at the

studio through the plate-glass window. The control is sound-proof. In front of the producer is a microphone, and close at hand is a little switch marked " Listen " and " Speak."

As the producer moves the switch from " Listen " to " Speak," the flood of sound that has been coming in through the loudspeaker is choked off abruptly. His voice booms across the studio.

" I think the orchestra was rather slow in coming in there; and you were dropping your voice on the last line of the chorus, you know, Miss Goldilocks. Let's have it again, please, and try it a little bit faster this time."

At last everything seems to be satisfactory. The programme has been carefully trimmed and adjusted, so that it fits exactly to the time allotted to it. This has meant, among other things, cutting out one chorus of the leading lady's first song, and she is inclined to be a bit huffy about it; but that can't be helped.

With a sigh of relief the producer lets himself out of his cell.

" Well done, everybody; that came over very well," he says. " Don't forget that I want you all back at seven-thirty, sharp."

The players disperse in little gossiping groups. The studio empties, but it does not remain empty for long. In a few minutes a pair of comedians arrive to try over a sketch that they have been booked to give in the Children's Hour. They have spent a lot of effort in preparing their manuscript, timing it, phrasing it so as to get the maximum effect with the minimum number of words.

They have gone over every line so many times that there no longer seems to be anything funny in it. As they go through their parts in front of the microphone in the dead silence of the studio they find themselves wondering how on earth they came to write such rubbish.

Then a hurried glance through the window of the control room shows them an official grinning from ear to ear with enjoyment, and they realize with relief that their material is all right after all.

CHAPTER III

THE MICROPHONE COMES TO LIFE

At 10.15 every week-day morning the National transmitters come to life, heralded by the booming voice of Big Ben.

In the control room an engineer flashes a signal to studio 3 E, which is the chapel of Broadcasting House. This studio is one of the most attractive in the building. There is no altar, but the conductor of the service sits at a desk in front of an alcove in the east end of the studio. The alcove is screened by a dummy window of clouded glass, and is lit in such a way that the shadow of a cross is thrown upon it.

A star-like light shines out from the window as a warning that the microphone has come to life.

It was towards the end of 1926 that the B.B.C. first decided to broadcast a daily service. There was a good deal of doubt as to how the experiment would be received, and it was decided that unless listeners definitely showed that they appreciated it the service would be discontinued. The B.B.C. need not have worried. Eight thousand enthusiastic letters were received in the first ten days, and the service has continued to be one of the most popular items ever since.

The difficulty lay in devising a service which would appeal equally to listeners of all creeds, without offending the feelings of any of them.

There is no sermon. The fifteen-minute service consists of two or three well-known hymns sung by the Wireless Singers, two prayers, a Psalm, and a short reading.

The religious studio is also used for the Sunday evening studio broadcasts, but nowadays the tendency is more and more to go outside Broadcasting House for the 8 o'clock service, so that members of all denominations in turn may have the satisfaction of hearing a service from one of their own churches.

The direct result of this, as has been proved by letters written to the B.B.C., has been that listeners gain an increased respect for other people's religious views. Members of various sects, who would not dream of going into any church but their own, tune-in to services given by denominations against which they have always felt a rooted prejudice, only to find that they have been harbouring misunderstandings, and that, after all, they have a great deal in common.

Every church and cathedral from which services are relayed provide the outside broadcast engineers with special problems, since no two are built alike. Sonorous echoes, which heighten the effect of a sermon or a Psalm for the congregation, have quite a different effect on the microphone.

An organ, too, differs according to the position of the hearer. At least five microphones are necessary to cover the whole service, and sometimes twice that number may

be required. One instrument is fixed on the pulpit, another on the lectern for the reading of the lesson, a third in the stall for prayers, a fourth somewhere near the roof for the organ, and a fifth for the bells.

Bells are always a problem. The engineers may have to clamber about in the tower for hours trying to find the most suitable position. When the positions are decided upon they are marked on a chart which is put on a file so that it can be referred to when next a service is relayed from that particular church.

Microphones and wires are concealed from sight as much as possible. If it is necessary to run a cable up the aisle the job is done with care, so that the congregation do not trip over it.

All the microphones are connected to a control panel, which is usually set up in the vestry. This control panel corresponds to the control room which adjoins each studio in Broadcasting House.

An engineer follows the service with headphones, a carefully drawn-up order of service close at hand, so that he can bring the various microphones into action as they are required.

The Week's Good Cause

The feature which follows regularly after the Sunday service is the Week's Good Cause.

From its earliest days the B.B.C. has always been ready to put its resources at the disposal of charity. The first broadcast appeal was radiated on February 17, 1923, and was made by Ian Hay on behalf of the Winter Distress League.

Applications for permission to broadcast a cause are dealt with in the first place by the B.B.C.'s religious director, who passes them on to an Appeals Advisory Committee of seven people, which meets twice a year. To them falls the unhappy task of turning away many deserving cases for whom time cannot be found.

Some of the people who make application do not seem to have a very clear notion of the object of the Week's Good Cause. One writer actually suggested that a fund should be opened to provide the King with a television set!

When an application has been accepted, the next task is to decide the scope of the appeal. On two Sundays in each month appeals are radiated throughout the country. These dates are allotted to organizations with a national coverage, such as the Salvation Army and the British Legion.

On the remaining Sundays charities with more local scope are allowed to appeal through separate stations. No organization is allowed to appeal more than once in two years, and all applicants have to submit a balance sheet to prove that they are in urgent need of money.

The B.B.C. has a scheme which enables listeners to pay the Corporation a lump sum if they wish, to be distributed to a number of appeals, either in equal parts or in varying amounts. If the listener chooses the second method he sends the B.B.C. a post card each week, telling them how much of his deposit he wishes to be handed to the current good cause.

About £100,000 a year is raised for charity by these appeals.

The most successful appeal was made by Lord Knuts-

ford, in 1928, on behalf of the London Hospital, when the sum of £19,050 was raised.

An appeal once made from a small regional station brought no result at all. The speaker had been at great pains to prepare a really moving speech, and when he reached the microphone he delivered it in what he felt sure was a most pleading manner.

Unhappily his speech coincided with a breakdown, and it was the cruel duty of some luckless official to break the news to the speaker that nobody had heard a word that he had said!

A Recital of Gramophone Records

The Morning Service is followed by the First Weather Forecast, and then come talks on household and similar subjects for women at home.

During the lunch hour and early afternoon there is light music from a cinema or restaurant, an organ recital, or a gramophone record programme.

One thing that listeners to gramophone recitals must have noticed is, that when a long musical work is played which covers two sides of a record, or even two or three records, there is no apparent break in changing from one record to the next.

Careful preparation is needed to obtain this effect. A duplicate set of records and two turntables are used. The official who is going to control the programme plays the first record of the series, and as it nears the end he picks out some easily distinguished chord, stops the record, and makes a mark where the needle rests.

While the record has been playing he has been following it on a printed score which he has obtained from the music library, and he marks the score at the spot where he marked the record.

Then with a stop-watch the operator times how long it takes for the record to play on to the end. He also times how long it takes for the next record to begin playing once the needle has been lowered.

The difference in the two times tells him exactly how long the second record has to run while the first is still playing, in order that the second one will start the moment the first one stops.

"In Town To-night"

It is in the evening, after the first news bulletin has been read, that Broadcasting House reaches the peak of its activity. Not until after 7 o'clock can it expect to reach the bulk of listeners, when folks have got home from work, had a meal, and settled down to let the loudspeaker entertain them.

The show that has proved one of the most popular of all is one which is the least rehearsed, and which is given by people the majority of whom have never even seen a microphone before.

They are the people who take part in "In Town To-night." Sword-swallowers and stamp collectors, herring fishers and handcuff kings, sandwich men and screen stars, muffin men and merchant adventurers are led to the microphone to tell listeners queer facts about themselves.

The feature was started as a sort of stop-gap to fill up an awkward space in the Saturday evening programme, but the producers soon found that they had underestimated the appeal of the idea. The element of surprise, the informal air, and the topical touch combine to make it one of the most fascinating events of the week.

The producers watch the daily papers for news of unusual people and events. They do not, as a rule, begin the actual work of gathering their performers until Saturday morning.

Then telephone wires begin to hum. Telegrams flash backwards and forwards. Perspiring men, with grimly-set expressions on their faces, spurt from the doors of Broadcasting House and leap into taxis, to be whirled all over London in search of men who keep boa constrictors for pets, and old ladies who have knitted bedsocks for Queen Victoria.

Having run their victims to earth, the producers chatter away to them, and skilfully extract the information they require. Then, after warning the broadcaster to appear at Broadcasting House in time for a rehearsal, they leap once again into their waiting taxi, to be whirled back to the office. A fierce assault is made upon a typewriter, and dialogue is hammered out at breathless speed.

Sometimes people write and offer their services for the programme. This was the case with " Mademoiselle from Armentières," whose broadcast, on the eve of Armistice Day, 1934, caused such a sensation that it was front-page news in the next day's papers.

This lady was a Mrs. Rogers, of Barnes. The letter which she wrote, detailing her life in Armentières during

the war years, and the story of her marriage to an English corporal, attracted the interest of the producer. He could see that he was being offered a scoop. He went to see the lady, and came back enthusiastic. She had a good speaking voice and an attractive French accent.

Her story was written up for her, and it was suggested that at the end she should broadcast a special message to her family, who still lived in Armentières. Mrs. Rogers gladly agreed, and wrote to her family, telling them to be sure to listen.

At 6 o'clock on Armistice eve she arrived at Broadcasting House with her husband, and rehearsed her part. At 7.20 p.m. the actual broadcast began. Everything went well until within a minute of the end. Her talk had come to an end, and she began to speak to her family. After speaking a few words she broke down, dropped her face in her hands, and burst into tears.

As quickly as possible the man at the control panel switched the studio off, but not before the anguished sobbing had been radiated into a million homes, giving listeners one of the most poignant episodes ever broadcast.

A famous newspaper proprietor was listening-in. Thrilled by his experience, he phoned his paper and ordered a reporter to rush to Broadcasting House to obtain an interview with Mrs. Rogers. But the B.B.C. knows how to protect its broadcasters, and Mr. and Mrs. Rogers were smuggled out of another door while the reporter was detained in the hall.

After that—the deluge. Every newspaper in the

country wanted to know all about it, and all Saturday night the producers were bombarded with telephone messages and callers.

Hectic excitement and bitter disappointment jostle each other in the production of "In Town To-night," and nobody knows how it is going to turn out until it is all over.

The producer was very elated when he succeeded in tracing the man who mined the gold for the Duchess of Kent's wedding ring. He was interviewed, and promised to give a talk; he struggled through a rehearsal; he turned up at Broadcasting House with plenty of time to spare; but while he was waiting, his courage oozed out of the heels of his boots. After all, who can blame him? Facing the microphone is one of the most nerve-racking experiences that this scientific age has produced.

Twenty minutes before he was due to go on the air, the miner abruptly shook the dust of Broadcasting House from his feet, and headed for his native Wales with all possible speed!

Fortunately the mine manager was on the spot, and he gallantly took over the broadcast at short notice.

The producers get used to filling last-minute gaps. Once, when some one dropped out, an official dashed out of Broadcasting House and grabbed a girl standing outside. She was an autograph collector, hoping to obtain some signatures of her radio favourites.

"Would you like to broadcast?" demanded the official.

"Rather!" was the enthusiastic reply.

She was hurried inside. A part was written for her,

and almost before she realized what was happening, she was facing the microphone.

At her home, on the other side of London, her parents switched on their radio and, to their amazement, heard their own daughter's voice coming through the loudspeaker !

" One autograph I am more keen to get than any other," the girl concluded, " is that of the chief announcer."

And, as a reward for her excellent effort, she got it !

It is not every one who considers it a privilege to broadcast. The producers once thought it would be a good idea to interview a sweep. The man they approached was very indignant.

" I am a master chimney-sweep, and employ a boy and a man," he wrote. " I'm not going to be made a clown of by Sir John Reith or the B.B.C."

The interviewer has a difficult time with some of the people whom he brings to the microphone. They get nervous and muddled, and he has to cover up their blunders. His worst predicament occurred when a man began to read out the questions the interviewer was supposed to ask him, as well as his own answers !

Two and a half minutes is all that the average visitor to the microphone is allowed in this weekly feature, and the producer spends a hectic time at rehearsals, checking each turn with a stop-watch.

" In Town To-night " opens and closes with the music of the Knightsbridge movement from Eric Coates's " London Suite," upon which is superimposed a record of sound effects made in Piccadilly.

Variety

Variety programmes are among the most popular with listeners. They are also the most criticized. These programmes are sometimes given from St. George's Hall, and sometimes from the concert hall, or one of the bigger studios at Broadcasting House.

A few minutes before a studio variety broadcast is due to begin there is such din and confusion that it seems impossible that the show will be ready in time.

A comedian stalks up and down, muttering to himself as he memorizes his lines. The orchestra makes hideous noises as it tunes-up. People dash hurriedly in and out. The suave announcer gossips with a nervous little lady who is going to broadcast for the first time, and strives to put her in a happier frame of mind.

The harried producer rushes out to make a frantic telephone call to try to locate a cross-talk pair who have failed to arrive. He comes tearing back again and grabs the announcer.

" Look here, we shall have to take these two out of the top of the bill, and put 'em in somewhere near the end. They're doing a stage turn at the Holborn Empire, and can't get away for another ten minutes at least."

The announcer nods, and looks at the clock.

" Quiet, please, every one. We shall be going over in a minute or two now."

The light flashes up. The announcer signs to the leader of the orchestra, whose baton bites through the air. Sharply and briskly the orchestra strikes up its opening music.

From the control room overlooking the studio the producer watches intently. He sees the announcer walking towards the microphone, and gently turns a knob to soften the sound of the orchestra, while the announcer introduces the first item.

The comedian begins his turn, reading from a script, for in spite of his last-minute rehearsal he does not trust to his memory. As he comes to the end of each page he tosses the sheet on the floor, so that no crackle of papers shall betray to listeners the fact that he is reading.

It is a good scheme, but it does not always work out successfully. One of our best-known radio humorists used to rely on this method until, one night, two sheets got stuck together, and he threw away the bottom one as well. Of course he got into a muddle. Listeners heard him hesitate, fumble for words, and exclaim :

" Great Scot ! where am I ? "

An awkward pause followed, while he waved an imploring hand at the sheet of paper, yards and yards away on the floor. Then listeners were amazed to hear him hiss in a hoarse whisper :

" For goodness' sake, give me that paper."

The next time that he turned up for a broadcast he had each page stuck separately on a sheet of cardboard !

The comedian having finished his turn, a soprano takes his place. She is an old hand at the game. Every time she comes to a high note she turns her face sideways, thus improving the quality of the tone. High notes sung straight into the microphone are apt to set up resonance in the loudspeaker.

An orchestral interlude is followed by the little lady

who is broadcasting for the first time. She looks a bit nervous, but gets going safely. Then the announcer notices that the producer is making violent signals to him through the window of the control room, and he tiptoes across to the singer and gently draws her a little farther away from the microphone.

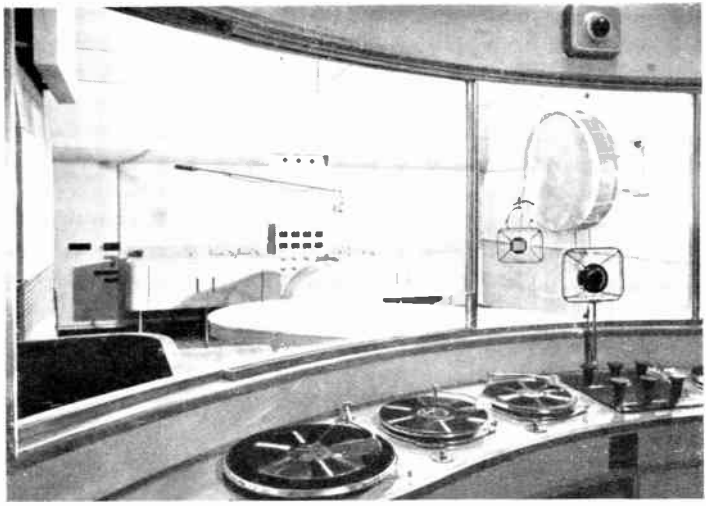
The two late-comers arrive, having dashed at top speed from the theatre, although they look perfectly cool and calm. They chuckle and chatter into the microphone with complete self-possession, and give listeners the impression that they must be two of the most leisurely men on earth, while actually a taxi is ticking up threepences down in the street, waiting to rush them off to another engagement directly their turn is over!

The Sound Mixers

It is when plays and items of the "Scrapbook" type are radiated that the fullest resources of Broadcasting House are brought into service. Up to fifteen studios can be drawn into use if necessary when there are several sets of actors, crowds, effects, orchestras, and so on, all to be blended together, as has been described, by the man at the dramatic control panel.

The last stage, so far as Broadcasting House is concerned, after the programme has passed the panel, rests with an engineer who watches a needle which indicates the volume of sound which is being sent out. He keeps the volume within limits. If not, there will be trouble.

One show called for the sound of drums, starting softly and rising gradually to a mighty roar. Un-



(*Photo, B.B.C.*)

The Effects Studio, from the lower Gramophone Effects Studio.

(*Photo, B.B.C.*)

Making the "effects."

fortunately the sound rose more quickly than was expected, and caught the engineer napping. The result was a " flash-over " at the transmitting station, which caused a breakdown.

In half a minute the damage was repaired, and the play was in full swing again. A host of listeners never realized that anything had gone wrong. They thought that the pause had been introduced for dramatic effect !

The use of so many studios is likely to lead to unexpected complications if the controller accidentally lets his hand fall on the wrong knob.

One Sunday afternoon, about 4 o'clock, listeners to the London Regional programme were enjoying a Mozart rendering by the B.B.C. orchestra, when the music stopped abruptly. A second later a voice shouted urgently something which listeners thought was :

" The police ! The police ! "

A few seconds later the announcer's voice was heard introducing the next item, and the orchestra struck up again, leaving a host of listeners staring at their loudspeakers in perplexity, and wondering what on earth had been going on in the studio.

The truth was that a slight fault had developed in a battery, with the result that the Regional programme was cut out. The National programme was switched in by mistake, and what listeners actually heard was an extract from a Bible story for children, the words being " The priest ! The priest ! " The Regional announcer was quite unaware that a breakdown had occurred, and that explained his lack of concern.

No matter how alert he may be, the engineer cannot

always switch a studio off the air at the very moment a programme is finished. Broadcasters do not realize that until the warning light goes out, the microphone is still alive, and that they must be careful what they say until the circuit is " dead."

Mr. Stanley Baldwin once rounded off a speech in statesmanlike fashion, then cleared his throat and reached for a glass of water, remarking : " Thank goodness that's over. I'm as hoarse as a crow."

The microphone was not out of action, and the listening world heard him.

The classic example of this type of mishap concerns a reverend gentleman, who concluded his address with the extraordinary sentiment :

" We shall all meet in heaven. I don't think."

What had happened was that at the end of his talk he turned to an official and remarked :

" I don't think I have been too long, have I ? "

Unluckily the control room cut this sentence short !

Even announcers are sometimes forgetful. One of them, who had probably had a tiring day, followed up his polite " Good-night, everybody," with a muttered, " And I hope your rabbits die ! "

Another occasion when listeners were treated to an amusing little slice of life behind the microphone was one evening when Miss Sackville-West had been giving a book talk. Engineers forgot to switch off at the end, and Miss West was heard to come back into the studio and ask for her umbrella.

All Kinds of Effects

Some producers of radio plays are great believers in surrounding their players with scenery, in order to give them atmosphere. Trenches, sand-bags, dug-outs, and rolls of barbed wire have been brought into the studio for a war play. One man actually took his cast on location, like a film producer, and fixed his microphones up on Blackpool pleasure beach when he was broadcasting a play with this particular setting.

Other producers hold exactly the opposite view. They will not have scenery, because they say that it is apt to trap the players into relying on facial expressions, tricks with the hands, and so on, which are lost on the listener.

Many broadcasters are recruited from the stage and screen, and to surround them with the atmosphere of the theatre may not be helpful to them in radio work. On the stage they can rely on the scenery to provide atmosphere to the audience, and they can get a lot of their effect by gestures and movement. This is particularly the case in films, where close-ups enable the player to convey a wealth of meaning simply with a twist of his mouth or the raising of an eyebrow. But it is no use grimacing and waving hands at a microphone!

Everything must be conveyed by the voice, its quality and its timbre. If the actor knows how to handle the microphone it is possible for him to convey any emotion he desires, and it is also possible for him to conjure up in the listener's mind a mental picture of practically any

type of character, ranging from a high-spirited, excitable Frenchman to a slow-witted, irascible old country gaffer.

Some actors are very versatile at this sort of thing. There was a night when one of two actors taking part in a scene suddenly fainted. The second man caught him, and held him up until the announcer removed him to be revived, and manfully held the breach by speaking both in his own voice and the other man's as well, imitating the tones of the unconscious one so well that not even the control staff realized that there had been a hitch.

All stage and screen actors are faced with the problem of making sound tell the whole story when they entertain by radio.

Will Hay strikingly illustrates how it can be done. His schoolmaster act is enjoyed as much over the air as it is on the stage.

Yet on the stage he scarcely speaks at all. His laughs are obtained by sheer pantomime, funny faces, and gestures! By adapting his material, and by making his voice do the work instead of his face muscles, he gets the same comic effect by sound alone.

There is one way in which the producer can help the actor. He can provide "effects," which are simply scenery and properties translated into sounds.

The effects studio at Broadcasting House is cluttered with apparatus for making all kinds of noises. There is a long table made up of six surfaces. One is of wood, one of metal, one of felt, one of an artificial composition resembling stone, and two of different kinds of rubber.

These surfaces are tapped, banged, rubbed, and

thumped with rods and blocks to produce all manner of sounds, from horses galloping to rifles cracking.

There is a huge wire cage, with a motor-driven fan inside to produce any sort of wind noise, from a gentle breeze to a typhoon.

A thing like a milk churn, with water sloshing about in it, which can be rocked to and fro, or turned over and over, will cause you to imagine that you are at sea, and the waves are slapping against the side of the boat.

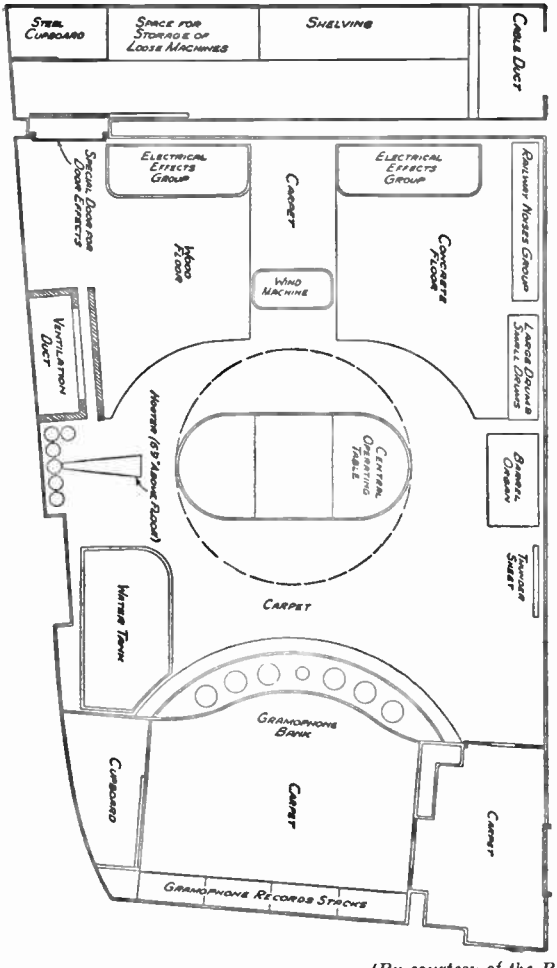
There are drums, bells, gongs, sirens, horns, rattles, and other sound-producing gadgets. New ones are constantly being invented, although one would scarcely think there was any need, since it seems that everything has already been thought of and provided.

A play producer wanted the sound of screaming seagulls. It was obtained by stretching a piece of elastic between two strips of wood and then blowing on it hard. The vibration of the elastic produced the noise required.

Sounds that are in frequent use have been made permanent by recording them on gramophone records.

A selection of assorted motor-car noises was obtained by taking the recording apparatus to the omnibus training yard at Cricklewood, where new drivers practise controlling their buses, putting them into skids, swinging them round corners, and so on.

All sorts of complicated effects can be obtained by using a number of records and blending them. A row of gramophone turntables is provided for this purpose, and if you want to give a sound picture of a street procession, you can have the sound of marching feet on one record, a shouting crowd on another, band music on a



(By courtesy of the B.B.C.)

Plan of the Effects Studio.

third, motor cars on a fourth, and mix them all up together at a control panel.

There was one broadcast in which a genuine " effect " could not be used, although it was obtainable. It was a play about a sinking ship. The author wanted to have an effect of the wireless operator sending out an S O S. The B.B.C. banned it, because it might have been mistaken for a genuine distress signal, and lead to misunderstandings, so the " effects " man was instructed to work his Morse buzzer at random, and trust to luck that listeners would not notice the difference.

An " effects " man who was in a studio with a barrel organ once had an unpleasant experience. He was wearing headphones in order to follow the programme, and when he got the cue to start, he began turning the handle. Unluckily for him, the flex of the headphones got tangled up in the handle of the barrel organ, and got shorter and shorter as he ground out the tune.

At last his head was right up against the handle, and had to go round with it, so that by the time his act was finished he was nearly strangled, and on the point of collapsing.

CHAPTER IV

TIME, WEATHER AND NEWS

THE clock on the wall of the studio is almost on the verge of six. A man is sitting at a desk with a microphone in front of him, and a wad of type-written pages lies close to his hand. The lines are widely spaced for easy reading, and here and there a word or phrase is marked in red.

In a barn-like studio on the other side of London the B.B.C dance orchestra has swung into the opening bars of its signing-off tune. Up in the control room of Broadcasting House a man quietly thumbs a knob and twirls it : the strains of the dance band fade. He reaches for another knob, and brings in the Greenwich time-signal, the famous six pips.

He flashes a warning to the announcer that his microphone is alive. As the light winks, the man at the microphone begins to speak.

" This is the National programme. Here is the weather forecast for to-night and to-morrow. . . ."

Every one who owns a wireless set knows his voice. His tones are restful and well-modulated, giving no hint of the sensational news he may be on the point of reading.

It all seems so effortless that listeners get no hint of the tense dramas, the hectic activity, that goes on in the news room.

Picture the day on which Dollfuss was murdered in Vienna. During the day rumours of the outrage had reached the news editor, but they were nothing more than rumours.

The minutes ticked on towards the hour of the final bulletin, and still no facts had arrived. If the news were true it might well cause a European upheaval. It was the biggest event of the year. On the other hand, if the news were false, the B.B.C. might involve the country in an international crisis by broadcasting the report.

The editor remained at his desk, earphones clamped to his head, anxiously waiting. He was already preparing to send the bulletin to the announcer, when he heard a foreign-speaking voice.

B.B.C. engineers at the listening station at Tatsfield had picked up a broadcast from Vienna, and were relaying it by landline to Broadcasting House; the voice was reading an official statement that Dollfuss was dead!

Announcers at Work

Most people seem to be under the impression that the man who reads the announcements has about the easiest job of all at Broadcasting House. Actually his is one of the hardest. Reading from a typescript is by no means the beginning and ending of it.

The announcer rarely has a minute to spare. The

moment he arrives he gets hold of a summary of his day's duties and programmes, and makes himself familiar with the routine.

He will announce the religious service. Before it is over he will be hurrying up to the next floor to read the first weather forecast. Then he may have to attend a rehearsal to assist in the timing of it. The problem of keeping the various sections of the programme within their allotted limits is his responsibility.

He must never keep the programme waiting. One of the announcers tells a story of an occurrence some years ago. A programme finished late; another was waiting to be introduced in a studio three floors higher up. He dashed madly up the stairs, typescript in hand, and arrived at his destination so blown and breathless that it was several minutes before he had calmed down enough to be able to read the items.

Such a thing would not be likely to happen now. Each of the announcers carries a little key which fits into a small lock on the lift gates. This key is only for use in emergency. Simply by turning it he can bring the lift to his floor, no matter where it may be. Even if it is in motion it will reverse and come back at the summons of the announcer.

If, having seen a programme safely launched, the announcer has a few spare moments, he may dash down to the library to check up the pronunciation of some unfamiliar name in an item he will be called upon to introduce later.

After that he may go to the listening-room and hear part of the programme through a loudspeaker, for

before he goes home he will have to sit down and write a detailed criticism of the day's performances.

He sits down only for a moment or two, for the control room sends a message that the present programme looks like running six or seven minutes short.

The announcer promptly gets on to the telephone, books a vacant studio, sprints up to the gramophone library and picks out one or two discs to play as a fill-up.

Here is a typical announcer's time-sheet :

Sunday, 3.30 to 10.45 ; Monday, 11.15 to 9.20 ; Tuesday, 3 till midnight ; Wednesday, 6.30 to 9.35 ; Thursday, 6.30 to midnight ; Friday, 2 to 6.30.

Saturday of this particular week was a free day, but these times do not include the hours taken up by various reports and other clerical work, much of which the announcer takes home with him.

Listeners fail to realize what busy men the announcers are. One evening a page-boy told the chief announcer that he was wanted on the telephone. The caller said it was urgent. The announcer left his work to hear what the trouble was about. One may judge something of his indignation when a voice said :

" Unfortunately I missed hearing you read the news bulletin just now. Would you mind telling me how many the Arsenal scored ? "

To the Rescue

The announcer is expected to exercise his charm to put nervous broadcasters at their ease, and to pilot them

through their turn so that, no matter what unexpected event may occur, the listening public will not know that everything is not proceeding smoothly. Hardened broadcasters can be trusted to carry on without help. It is the new-comers who give announcers qualms.

One singer making her debut quivered with nervousness the moment she started. All at once her knees quite literally let her down. The gallant announcer stepped forward, held her up, and kept her propped at the microphone until she had finished her song.

On another occasion a man who was an authority on his particular subject was invited to give a talk. He went to Broadcasting House for a voice test, which was quite satisfactory, and was asked to submit a manuscript of his talk.

The great man explained that he always spoke without notes. He had been a public speaker for years, and never required notes, but as the B.B.C. would doubtless wish to know what he intended to say, he would send it in, although he would not dream of reading from a manuscript while broadcasting.

The time for the talk arrived. The eminent lecturer sat before the microphone, staring at the empty desk before him, for he had resolutely refused to bring any notes with him.

The light glowed as a signal for him to begin. He ran his tongue round his dry lips, and swallowed a lump in his throat. His ears turned a bright red with embarrassment. He looked up at the announcer with a sickly expression. For the first time in his life he was tongue-tied! He could not remember a word of what he wanted to say.

The announcer smiled sweetly, and with the slickness of a conjurer he produced a wad of papers from his pocket and laid it before the lecturer. This was the manuscript that the speaker had sent to the B.B.C. as a check. With a sigh of relief he settled down to read out what he had written.

An announcer can never be quite sure what sort of surprise a broadcaster is about to spring on him. The willowy contralto may want him to hold her handbag while she sings, or the baritone may want him to hold his overcoat.

There was an old gaffer who came up from the country to relate his memories of the good old days. He had never spoken in public before, but in order that his voice should not give out he had slipped a packet of throat sweets into his pocket before leaving his ancestral hamlet. The wrapper on the sweets said they were invaluable to public speakers.

The old chap reached the microphone. The announcer motioned him to begin. The ancient slipped the little packet from his pocket and had one of the sweets half-way to his mouth before the announcer swooped and snatched it away from him.

It was well that he did so. Most new-comers to the microphone have difficulty in making themselves clearly understood even when doing their best to speak distinctly. One can imagine what the hilarious result would have been had the old chap tried to broadcast and suck a cough-jube at the same time!

There was another famous occasion when the announcer was not quick enough to prevent disaster. A

railway guard had been engaged to give a talk on his job. When he was half-way through, he decided to add some effects which were not in his script. He pulled a railway guard's whistle from his pocket and blew it hard within an inch or two of the microphone.

Of course the man in charge of the output was not prepared for the unrehearsed effect, otherwise he could have turned a knob and toned it down. The noise caused a sudden increase of current which overloaded the valves at the transmission station, and put them out of action.

The result was what our announcers are fond of calling "a technical hitch"—in other words, a breakdown—which lasted for ten minutes.

That whistle cost the B.B.C. £300 for repairs.

How Announcers Begin

The announcer must be a man of many parts. An official of the B.B.C. has said that "the ideal announcer does not exist, and even really good ones are rare."

So few people can read anything aloud in a voice which suggests that they are interested in it. They have little mannerisms in their speech which their friends do not notice, but which would immediately be pounced on by thousands of listeners, avid writers of letters to the newspapers, whose fingers are itching for an excuse to put pen to paper.

Applicants for the post of announcer are put through a gruelling test.

Each aspirant is asked to read a selection from a news bulletin, an S O S in French or some other foreign language, a piece of poetry, a piece of prose, and a musical programme which will include pieces with tongue-twisting foreign titles, written by composers with crack-jaw names.

Sometimes the very sight of the typescript is enough to floor the would-be announcer, and one applicant at least was rendered literally speechless. He was well educated and had good qualifications, otherwise he would not have been invited to make the test at all. The chief announcer sat him down before the microphone. In an adjoining sound-proof room officials were waiting to give a critical ear to the applicant's voice.

" Don't shout. Just talk as naturally as you can," advised the chief announcer kindly, handing him the manuscript. " Show them what you can do."

The applicant opened his mouth, but he could not utter a sound. He was overcome by shyness. The announcer sympathetically poured him a glass of water, chatted to him amiably for a few minutes to give him a chance to get a grip on himself, and then advised him to have another shot.

But it was of no use. The applicant sat tongue-tied and confused, unable to begin. To his dismay he realized that the task that had seemed so easy was beyond his powers. He would never have the nerve to sit at that desk and read calmly to millions of listeners.

The fortunate ones who survive the test and receive appointments do not take up their full duties at once. For a week or two they accompany another announcer,

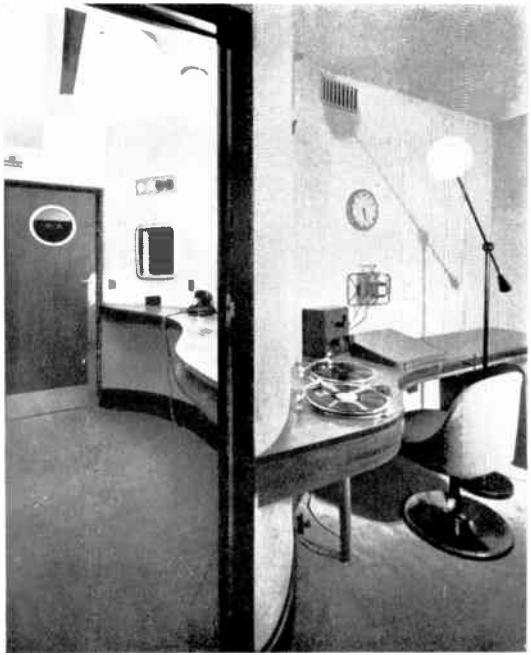
helping him with his manifold duties away from the microphone, without broadcasting a word. Then comes the first thrilling moment when the novice is allowed to try his skill with some small announcement of a sentence or two. The sort of job he would get would be the announcing of a gramophone record to fill a programme gap.

In this connection an announcer has told an amusing story of his apprentice days at the old Savoy Hill studios. He relates how, in putting on a record of a popular overture, his coat sleeve pressed the regulator over to fast, so that the tune was played at fantastic speed. His presence of mind deserted him. A more seasoned man would have stopped the instrument, uttered a polite apology, and started over again. But not the apprentice —he just let the thing whizz on at racing speed until the end. The next day an appreciative listener wrote in, complimenting the B.B.C. on the novelty of the idea, and declaring that never before had he heard anything so thrilling!

How Do You Say It?

A good deal of criticism has been written on the subject of the announcer's accents. The bulk of this criticism comes from ordinary listeners, people who are used to the accents of Wigan, or Barnstaple, or Cleethorpes, or Southend. Because the announcer did not use the same accent as Uncle Joe, or the man next door, they thought him affected and snobbish.

But criticisms are not so numerous as they used to be.



(*Photo, B.B.C.*)

News Studio 4 B, and on the left the News Editor's cubicle.

(*Photo, Barratts.*)

Mr. Arthur Burrows broadcasting from Marconi House in 1922.

Now that listeners have got over their prejudices, they are beginning to find the announcers' voices very likeable.

The aim of the B.B.C. has been to create a sort of standard accent which should be dignified, understood by every one, and strike a happy medium between all the dialects spoken in the country. An Advisory Committee has been set up to decide upon the pronunciation of difficult words. All the members of this committee speak good English, yet they can muster at least six different accents among them.

It is no easy task to decide which pronunciation is the correct one. The committee sometimes appeals to the public for suggestions and help. One of the words about which there was a doubt was " capuchin." Listeners suggested about fourteen different ways of pronouncing it.

The committee seeks to give our announcers a faultless diction, but since there is something inhuman about perfection, thousands of listeners must have hugged themselves with amusement and delight one evening when, as they awaited the news bulletin, they heard a famous " golden voice " whispering :

" How do you say this word ? "

The rule at the B.B.C. has always been that an announcer must not allow his own personality to intrude in his speech. Publicity of any sort is practically barred. For many years the public was ignorant of the names of the men whose voices were heard every day.

The rule has been relaxed a little now, but even in the era of strictest secrecy listeners felt that they knew the

announcers as well as they knew their own friends. If a man has personality and charm, the microphone is bound to reveal the fact. If, on the other hand, he has neither, the microphone deals cruelly with him.

The B.B.C. announcers come through this test with flying colours. They can handle any situation without hesitation. Every one who heard the broadcast announcement of the Gresford colliery disaster, in the autumn of 1934, must have been impressed by the manner in which it was done. It was compassionate, sincere, and wonderfully human—a pattern of announcing.

The announcer must show no bias. Whatever his opinion of the government may be, he must tell us of its actions in an even, unemotional voice, showing neither jubilation nor regret, even though he himself may hold strong opinions on the subject.

In the same way much of the bulletin may not interest him in the least, but he must not sound bored.

An announcer of long experience has admitted that he is able to read bulletins mechanically, and could not repeat them afterwards because he has not taken them in. Perhaps that accounts for the classic howler once perpetrated by a man who, announcing an eruption of Vesuvius, declared that streams of " lager " were flowing down the sides of the volcano.

When news comes in at the last minute there is no time for a preliminary run through it. This resulted in the newsroom letting the announcer down rather badly one evening. They handed him an item which ought to have been more carefully phrased before it was put into his hands. It was not until he came to the end of a

sentence that he realized with consternation that he had informed a listening multitude that :

" The London police are expected to change their combinations this winter."

It meant that the police were to be equipped with new motor-cycles.

Gathering the News

News comes to the B.B.C. newsroom through the tape machines of the four famous news agencies—Reuter's, Exchange Telegraph, Press Association, and Central News.

All day long these machines are disgorging printed sheets, most of which go into the waste-paper baskets. Fleet Street and the B.B.C. hold widely differing opinions as to what constitutes news.

Crime provides the newspaper with most of its big headlines ; but one does not hear anything about crime from the B.B.C., which has a bigger " circulation " than the most sensational newspapers. People who read only about murders, complain that the B.B.C. news bulletin is dull ; but they are not the only persons whose feelings have to be considered.

The B.B.C. and the newspaper cannot be compared. The newspaper, by reason of the amount of material which can be got into it, contains reports and features that are of interest to only a certain proportion of its readers. Those who are not interested can always pass on and find plenty to hold their attention elsewhere.

The B.B.C. has to compress a lot into a little time. It is able to give only the vital news, facts which are of concern to everybody.

The fact that a prominent footballer has contracted measles on the eve of a cup-tie may be of great interest to thousands of followers of the game, and it would certainly be reported in the newspapers. But there would be thousands of others who would never glance at the report because they would not be interested. Therefore the B.B.C. would not broadcast it.

Sometimes the B.B.C. is able to scoop the newspapers, in spite of all the restrictions that hedge it about. The best example of this was when Sir Malcolm Campbell was trying to break a land speed record at Daytona Beach. When the announcer began reading his nine o'clock bulletin it was known that Campbell had actually started, and a paragraph to that effect was put in the opening of the bulletin.

While the announcer was reading, Campbell was already zooming over the measured mile. A news-flash came into the newsroom that Campbell had smashed the record. A fresh paragraph was rushed to the announcer, and at the end of the bulletin he was able to broadcast the fact that Campbell had succeeded.

The B.B.C. rarely has anything to say about sensational crime. It is felt that it would be offensive to blurt gruesome details through loudspeakers into homes where young children, invalids, or others with more impressionable minds than the average adult may be listening. If a man chooses to buy a newspaper containing a lurid account of a crime, and then leaves it lying about the

home, it is entirely his own affair if any one else picks it up and reads it.

The only time when the B.B.C. breaks its rule is when it is requested to do so by the police. The announcement then takes the form of a special police message.

The first time that this was done was on the occasion of what came to be known as the Blazing Shed crime in 1933, when the B.B.C. broadcast a description of Furnace, the missing man, and followed that up the next night with another statement in which it was definitely announced that Furnace was wanted on a charge of wilful murder.

"Here is an S O S"

To the ordinary listener S O S and special messages are among the most dramatic items broadcast. They present vivid cameos of real life, usually tantalizingly incomplete.

The very first S O S was broadcast from 2 LO in Marconi House days, and the service owes its origin to the inspiration of an attendant at Middlesex Hospital. A woman patient was dangerously ill, and was begging for her sister. The hospital was powerless to help, for it was not known where the sister could be found. The attendant thought of the new wonder of wireless, which was just then beginning to stir people's imaginations. He asked to be allowed to leave his post, and ran to 2 LO to ask if they could not broadcast a message.

The officials were faced with a big responsibility. They knew that if they sent out this message they would

certainly receive many more requests. They decided to try the experiment, and in a few hours the sister was found.

Just as the B.B.C. had feared, the message led to a flood of requests for help. One woman wrote in and asked the B.B.C. to trace a counterpane which had "blown out of the bedroom window."

A little boy sent a pathetic letter:

"I have lost my dog Bob since Sunday, and am wondering whether you could help me to find him by broadcasting. I am thirteen, and have had him since he was a puppy. Am very worried about him, as I do not know what has become of him. He is only a mongrel, but he was the greatest of pals. Dad says he will give a reward to any one who returns him."

To send out such a message was impossible, but the B.B.C. once broadcast an appeal on behalf of the Office of Works for a pelican that had disappeared from St. James's Park.

A policeman discovered it roosting in a tree in Chelmsford, and coaxed it down with a tin of sardines.

Another day a man telephoned 2 LO to say that on arriving home he had discovered that he had left his umbrella in a tube train, and would they please broadcast an appeal for its return, as he had had the gamp for a long time and set great store by it!

An angry woman wrote in as follows:

"Will you please put it on the wireless that Mrs. A., who 'as had her dog poisened by some person who 'as thrown it over in the Yard. She 'as never been loose. Hoping that people will look after their pets. I remain,

"MRS. A."

Until September 1933, the B.B.C. was in the habit of broadcasting descriptions of missing persons at the request of the public. Such appeals were only made when there was any likelihood of the missing person coming to some harm, either because he or she was mentally deranged or in a bad state of health, or was old and feeble, or a child.

The service was discontinued because it produced poor results. Only about one appeal in five met with success. Appeals for missing persons are now only made at the request of the police.

One night listeners were thrilled to hear the following announcement :

" Will the members of the steam trawler *City of Aberdeen*, now fishing in the North Sea, and who sent to the Norwich Museum a certain substance, please throw overboard any of that substance still in their possession, as it is a very high explosive."

The message was received and acted upon. What had happened was that, on a previous trip, a lump of material, which none of the crew recognized, was hauled up in the nets. They dried it in front of the cabin fire, and sent ten pounds of it through the post from Lowestoft to the Norwich Museum. The museum authorities examined it, and discovered that it was T.N.T. ! By that time the trawler had put to sea again, so the B.B.C. agreed to broadcast a warning.

Many thrilling stories may be unearthed from the S O S files in the newsroom. You can read of the burglar who unwittingly stole from a motor car a poisoned partridge ; of a tube of deadly poisonous ointment that

was lost in the street, and might easily have been mistaken for tooth-paste by the finder ; and of many other exciting events which would provide thrilling plots for fiction writers.

Broadcast messages to ships at sea are, as a rule, made only when the vessel is not equipped with a set for receiving messages for wireless telegraphy, and when there is some possibility of the return of the person required being hastened by the reception of a message. This is not considered to be the case when a ship is on its way to a known port.

An insight into how this service works can best be given by quoting an actual instance.

The B.B.C. broadcast a request for the return of a trawler's engineer, whose daughter was dangerously ill. The vessel was not equipped with wireless, and all that was known about it was that it was somewhere in the Irish Sea.

The captain of another ship picked up the message, and at once set out in search of the trawler, in spite of the fact that a storm was raging. The trawler was located, signals were exchanged, and the two ships drew alongside each other. Above the howl of the wind the message was bawled from deck to deck.

The skipper of the trawler at once ordered the nets to be hauled in, and made for port. Within twelve hours of the message being broadcast the engineer was ashore, and on his way home.

His arrival gave the little girl new strength. By the time her father left for sea again she was on the way to renewed health.

The B.B.C. only broadcasts an S O S in a case of life and death. Requests for relatives of a sick person to be found must be accompanied by written authority from a hospital or qualified doctor.

No charge is made for this service. All the B.B.C. asks is that it shall be notified of the result.

Time and Weather

Five times a day Big Ben booms its deep notes from the loudspeakers. Those notes are heard all over the world. It has been calculated that the midnight chimes are heard by a hundred million people every night. So popular are they that at one time there was a craze in America for relaying them from theatre stages to audiences as a variety turn.

The six pips which form the official time-signal are given six times every weekday, and three times on Sundays. The pips are relayed to the B.B.C. from Greenwich Observatory. It is the final pip which marks the exact quarter, half, or full hour as the case may be, and is always correct to within a twentieth of a second.

There is a rule that " any signal except those at 10.30 a.m. and 6 p.m. is liable to suppression if superimposition on a current programme is strongly inadvisable on artistic grounds."

No one seems to be quite certain whose business it is to decide whether the pips are to be suppressed or not; but at least one thrilling drama was ruined by them.

The play was working up to a tense climax.

" He'll never do it, there isn't time ! " cried one of the actors in an anguished voice.

" Pip-pip-pip-pip-pip-pip ! " chirruped the time-signal, proving the truth of his words.

Late every afternoon a messenger leaves the Air Ministry on a journey to Broadcasting House, carrying in his leather pouch a precious typescript. Lots of people switch on their sets at six o'clock with the remark, " Let's hear the weather forecast."

The messenger has got it in his wallet, and is carrying it to the B.B.C. news editor. The Air Ministry is a central bureau for collecting weather information. It receives its data from observation posts as far away as Malta, Iraq, and Gibraltar, as well as from ships and aeroplanes. All this information is sifted in order to provide material for the weather forecast.

Sometimes, after the messenger has left, news comes in by wire or radio that bad weather has unexpectedly cropped up, and then the Ministry telephones the B.B.C. and dictates a report.

This service is not maintained solely for the benefit of the B.B.C. The Air Ministry's bulletins are of great importance to all sea and air traffic, and the up-to-the-minute accuracy which is maintained is a big factor in the safety of ships and aeroplanes.

CHAPTER V

PROGRAMMES FOR CHILDREN

EVER since broadcasting began there has been a Children's Hour.

Listening wasn't easy in those early days, when there were no valves, no loudspeakers. The main components of the sets were the crystal and the comically named " cat's whisker."

Earphones were used, of course, and a set that could take two pairs and still give sufficient strength of output to be audible was reckoned to be very good. If more than two people wanted to listen, it was necessary to unscrew the headphones and have one earpiece each.

Woe betide those who were not listening if they dared to rustle a newspaper, or breathe loudly, or sneeze. They were met with black looks, for the slightest noise drowned the sounds that were coming through the earphones.

If reception got too faint, the listener would take the crystal out and scrape it with a penknife, and then push it back in the holder, and wriggle the tip of the cat's whisker over it until a good " spot " was found.

Those were the days when listeners had not lost the capacity for wonder. Wireless really was a marvel to

them. It wasn't easy to get those trumpery little sets to work, and when they did one felt thrilled and grateful to the people at 2 LO who were obviously working so terrifically hard. It has taken less than fifteen years for wireless reception to grow so easy that listeners take it all as a matter of course. Almost everything has been altered out of recognition; but the Children's Hour remains.

In the early days the Children's Hour offered three hard-working men an opportunity to throw off the cares of a very arduous job for forty-five minutes, and they had a really jolly time.

There was Cecil Lewis, who was known as Uncle Caractacus; Stanton Jeffries, who was Uncle Jeff; and Rex Palmer, who was Uncle Rex.

At that time these three men and a handful of others were carrying 2 LO along by their own efforts. They got through an enormous amount of work in one room, that was studio and office combined. As the time for the Children's Hour came round they would throw aside all their worries and let things rip.

They made the programme up as they went along. Uncle Jeff would sit down at the piano and reel off tune after tune, many of them invented out of his own head while he rattled the keys. Uncle Rex would join in with songs, and Uncle Caractacus told stories of his own devising.

They had to make up all their own material simply because there was no money to buy any from outside contributors. There was no time for rehearsals. It was all very hilarious and informal.

At the end of the programme they answered the letters from correspondents, but when the daily average of letters reached a total of a hundred and fifty, it was time to call a halt.

After that they only called cheerful greetings to listeners on their birthdays, or to those who were ill.

The popular idea of calling birthdays was kept up until 1934, although for some time before that, in order to keep the numbers down, it had been confined to members of the Radio Circle. Even then it took ten minutes or more of top-speed reading of names and addresses, and so much programme time was taken up that it had to be discontinued.

The charity appeals, which have continued to be a feature of the Children's Hour, were also started in the early days. The first was on behalf of the children's wards of Great Ormond Street Hospital. One hundred and twenty pounds were collected from London children in five months, mostly in small sums, averaging about sixpence.

The three uncles were very shortly joined by Miss Cecil Dixon, who became known as Aunt Sophie. As with the others, this was just a spare-time job for her. She was really the 2 LO official accompanist, and when there was no one to accompany she kept things going by playing solos which she herself announced.

Since those days the Children's Hour and the B.B.C. have grown together.

In 1926 C. E. Hodges, who became known to listeners as Uncle Peter, took the Hour over. To him is due most of the credit of putting the Hour on its feet. As money

was short, Mr. Hodges had to write nearly all his own material, and broadcast it as well, yet so successful was he that when he gave up his post two years later he had increased the membership of the Radio Circle from two to twenty thousand.

By this time there was a little more money at hand, and the Hour was able to pay reasonable fees to writers and artists.

Over a thousand stories and plays are now submitted to the Children's Hour every year. Three members of the staff deal with these manuscripts. Every story or play sent in is certain to be read by at least two of the three people, but nothing is accepted for broadcasting which does not meet with the approval of all three.

Programmes are planned six weeks in advance. The items broadcast in this feature are probably more varied than in any other branch, for they include talks, plays, whistling solos, story telling, mandolin solos, the Buggins Family, piano recitals, and so on. A host of people who would certainly top the bill at any adult entertainment have been drawn into the Children's Hour.

The staff of Broadcasting House, too, have been drawn into the Hour. The two chief announcers appear in it, anonymously, with songs and talks. An expert of the balance and control department is another valued artist.

There is one form of entertainment that the Children's Hour will not even consider. They rigorously exclude individual performances of any kind by children.

For one thing, it is felt that it would be unfair to adult artists, who have a living to earn; and for another,

child artists, as a rule, are not nearly so good as their doting parents think they are. They may be clever for their age, but when it comes down to brass tacks they are not nearly so capable as grown-ups, and the microphone would deal mercilessly with their failings.

To prove this, a Children's Hour official enlisted the help of one of the B.B.C.'s music officials. He obtained a gramophone record of a child who was being hailed as a boy prodigy, playing a difficult piano solo. The expert was asked to hear the record in a listening-room, so that he had no chance of learning any details about it.

After it had been played, his opinion was asked. He pulled a face.

" Frankly, it was rotten," he declared. " The playing was dreadfully mechanical. There seemed to be no sense of expression, no interpretation, and the timing was bad."

" But it was played by a boy of eleven," he was told.

" Oh well, that alters the case entirely," he admitted. " In that case it was excellently played—for a boy of eleven."

The Children's Hour wants the best, and immense pains are taken to get it. The actors themselves enter into the spirit of things. They like to do everything thoroughly. One of them, who was cast for the part of an air pilot in a play, happened to be an enthusiastic airman, and owned a machine. The author of the play admitted that he was not sure what it would sound like if a pilot were talking to his observer while a machine was in flight, as was required in the play.

The enthusiastic actor immediately carried the author

off to the aerodrome and took him up in his own 'plane, so that they were able to rehearse the scene in the air.

It is a matter of speculation whether the bulk of listeners to the Children's Hour are children or adults. It is quite certain that a large number of adults do listen to it, as is proved by the correspondence received.

A well-known and frequent broadcaster in the Hour took his small son out to tea with some friends one afternoon. The lad was asked whether he listened to the Children's Hour.

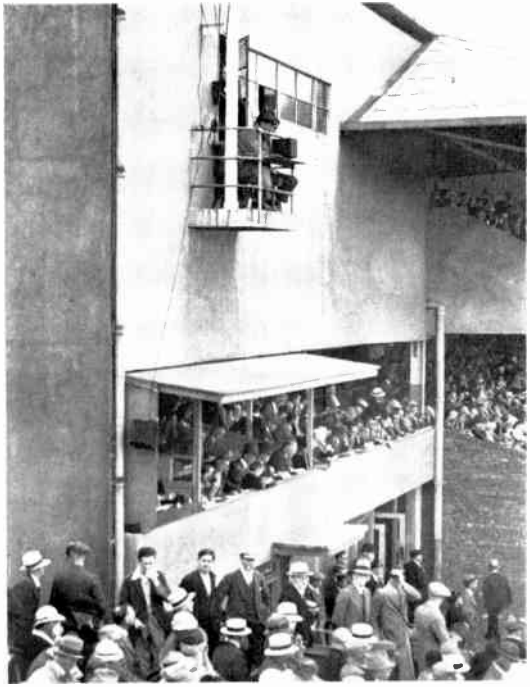
" Yes, usually," he replied, " unless Dad happens to be on, and then I listen to Henry Hall."

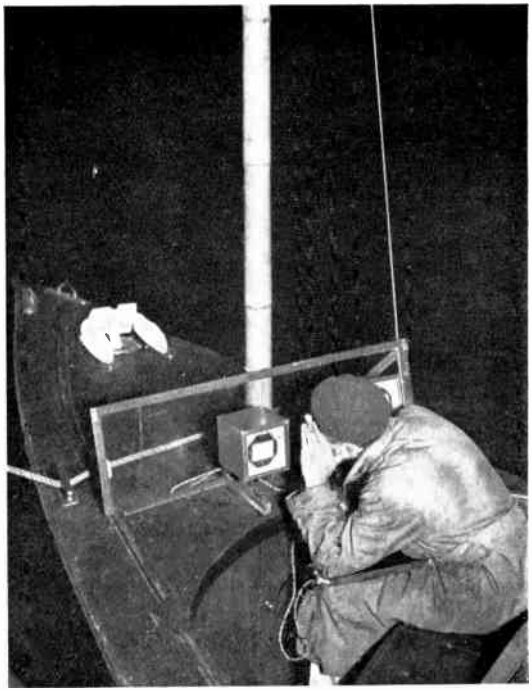
Twice a year listeners to the Hour are asked to send in on a post card a list of the six items they have enjoyed most during the past six months. From the thousands of cards received the programmes for Request Week are made up.

The most popular items are dialogue stories—that is to say, stories told by a narrator, but with characters speaking in their own voices. The Toy Town stories by the late S. G. Hulme Beaman were among the biggest successes in this class. Plays and talks on almost any subject are also very popular.

Another very popular item is the Zoo broadcast. This provides work for the outside broadcast department. About a month before each broadcast is due to take place a team of engineers invades the Zoological Gardens to install microphones in the various animal houses whose inmates have been selected as radio entertainers.

The microphones are wired-up to a snake-house, which is used as a temporary control room, and the engineers





(Photos, B.B.C.)

Outside broadcasting by day and by night.

The Commentator's Box at a Test Match.

A River broadcast at night.

hold an informal rehearsal to make sure that everything is in working order.

A broadcast of this type might end in a fiasco if the commentators were not fairly certain of getting the animals to perform. Fortunately the keepers know how to induce their charges to " talk."

The bear makes grumbling noises in his throat, indicating gratitude, if he is given a spoonful of condensed milk. The laughing hyena is coaxed to vocalism by offering him a juicy steak of horse flesh.

A bellow through a megaphone will set the lions roaring back a challenge of defiance, and by just clapping his hands outside the cage the keeper can practically send the laughing jackass into hysterics !

There is a clause in the B.B.C. charter which stipulates that a certain proportion of the daily programme must be educative. Accordingly, the B.B.C. has placed time and resources at the disposal of a body known as the Central Council for School Broadcasting, to organize broadcasts to schools.

The council appoints committees, consisting mainly of teachers, to arrange details of the various courses. The information is then circulated in a series of pamphlets. The aim of the council is not to do away with teachers, but to help them in their work by providing what cinema advertisers might call " an addition to the programme."

Since a loudspeaker cannot hand out impositions or wield a cane, it can only keep the attention of its pupils by the sheer interest of the material which it offers. The most successful method, so far, has been in connection with the history broadcasts. The B.B.C. teaches

history by presenting it in the form of " Dramatic Interludes."

If the committee decides on the subject of the coronation of William the Conqueror, or the landing of Captain Cook, a dramatic play, complete with dialogue and characters, is worked out with the strictest historic accuracy, yet presented in the form of a story.

Unfortunately, the number of schools taking these broadcasts remains small. In 1934, when the B.B.C. made a thorough inquiry into the subject, it was found that 2,251 elementary schools, and only 258 secondary schools, were using one or more subjects in the series.

The chief reason for this state of affairs is lack of funds. School authorities cannot afford to install sets, and many of the schools that do enjoy the broadcasts have to thank the teachers themselves, who have unselfishly dipped into their own pockets to find the money to buy the receivers.

CHAPTER VI

THE MICROPHONE GOES WANDERING

At Christmas-time the B.B.C. outside broadcast department gets its annual severe testing, and comes through with flying colours, for Christmas Day is the occasion of the Empire Exchange programme, and the King's broadcast to the Empire.

Work on this programme begins in the summer, when the Director of Outside Broadcasts works out a detailed programme which will enable the Empire tour to be made, and a slice of Christmas Day life in many countries picked up and brought to the control panel at Broadcasting House by land line and radio telephone, to be retransmitted all over the world.

According to the strictly formal manner in which the B.B.C. is run, the outside broadcast director cannot make inquiries himself. He has to notify the overseas director, and work through him.

Compiling the programme and timing it is complicated by the fact that when it is noon at Greenwich it is 5 p.m. in Delhi, 10 p.m. in Canberra, and only 7 o'clock in the morning in Ottawa.

The programme is varied each year, and some magnificent effects have been obtained, including the thunder

of Niagara Falls, the sound of Indian temple bells, and the massed army of South African natives thundering out a special salute on their drums.

When the programme has been devised, it is submitted to the Lord Chamberlain for approval. After that there are rehearsals on a grand scale.

About thirty hours of rehearsal are involved in producing this one-hour programme. Interest in this ambitious and imaginative broadcast is world-wide. Most European countries relay it. Japan has also done so, and it is taken by both the American systems.

While the programme is in progress the King is at Sandringham awaiting the moment when he will begin his speech. His Majesty sits alone at a gate-legged table on which are two microphones placed in cases of Tasmanian oak. A third case contains the warning lights.

The outside broadcast director is in an adjoining room, from which he controls the transmission. He wears headphones. At 3 o'clock he hears :

" Stand by, Sandringham."

" Ready, London," he replies, switching his microphone off and the King's on.

The King's voice travels the first hundred miles of its round-the-world journey by land lines from Sandringham to Broadcasting House. Two lines are used simultaneously, one going via Nottingham and the other via Norwich, to cancel out any risk of a breakdown.

Stalking the Nightingale

The work of the outside broadcast department grows heavier every year as the B.B.C. taps new programme sources.

One of the most ticklish jobs is the broadcast of the song of the nightingale, a happy idea which was first put into effect as far back as May 19, 1924.

These broadcasts are made from a wood at Pangbourne.

A telephone wire skirting the wood is tapped and connected to a cable on the luggage carrier of the engineers' car. As the car drives over a meadow and into the wood the cable is unreeled. The engineers then finish the last few hundred yards on foot. In fact, sometimes they actually go on hands and knees like Redskin scouts!

The point where they fix their concealed microphones is not chosen haphazardly. Hours of patient watching and listening on the previous night have taught the engineers just which are the bird's favourite spots.

If the nightingale shows a reluctance to sing, out comes a portable gramophone, and after one or two records have been played over, the songster responds. A whispered message into a telephone warns Broadcasting House to stand by, the late dance music is switched off, and in a few moments the nightingale is on the air.

The Boat Race

The running commentaries on the Oxford and Cambridge boat race, made from the launch *Magician*, are another popular annual feature, and deserve special mention on account of the fact that they represent a very difficult engineering feat splendidly carried out.

The launch is fitted with a short-wave transmitter with a maximum range of about twenty miles.

The greatest trouble to be coped with in this broadcast is the amount of noise going on all round. A continual hubbub from the shore mingles with the sound of the launch's motor, hooting and cheering from other vessels, and probably a capful of wind thrown in for good measure.

The microphone is fixed in an open-fronted box packed with sound-absorbing material, and is arranged so that it can be tilted up to the speaker's face.

The commentator sits in the bows. The engineers, with their transmitter, sit in the stern, and the transformers and batteries are set out near the middle, in order to distribute the weight evenly.

An aerial, slung between the launch's masts, radiates the commentary to a receiving station on the roof of Harrods' Depository at Barnes, and from there it is relayed to Broadcasting House control room.

It is not possible for Broadcasting House to communicate with the launch, so that the commentator has no idea whether things are going well, and for all he knows to the contrary no one may be hearing a single word that he says!

The outside broadcast department works under difficulties that no other B.B.C. producer is called upon to face. What it does, in effect, is to load all the component parts of a broadcasting studio and a control room into a van, and erect them wherever they may be required.

There is scarcely ever a chance to have anything resembling a rehearsal. All that can be done is to test the microphones and cables to see that they are in working order, and then leave the commentator to deal with any crisis that may arise during the actual broadcast.

Any one who makes frequent use of the telephone knows what it is for lines to get crossed. An outside broadcast engineer who tapped the wrong line treated the public to an amusing dialogue in which a stockbroker and his client were having an indignant argument about some shares which had gone wrong.

Another time Broadcasting House was amazed to find a long and detailed account of the herring-fishing industry pouring in on the land line when music was expected. It was found that they were accidentally listening to a journalist telephoning a report to his paper.

Then there was the delightful episode in which listeners heard an exasperated engineer yell :

" Corblimey, can't you hear me ? "

Football Broadcasts

Football running commentaries, both on the Rugger and Soccer codes, have now become almost routine affairs. From the engineer's point of view the job is a straight-

forward one, and difficulties rarely arise for the commentator, except when the weather is bad and the players get smothered with mud, so that it is difficult to tell who is who !

But it was not always so. In early days the commentator at the Wales versus Scotland match, at Cardiff Arms Park, was provided with a platform resting on scaffold poles. It was raining hard, and the only way of getting to the top was by means of a very steep and slippery ladder. Worse still, the whole contrivance swayed in the wind all through the game !

Commentators are now provided with a permanent box, from which they can see the whole field without much difficulty. But if the element of unexpectedness has gone out of the actual business of transmitting, there are frequently amusing asides.

At an international match a man told the commentator that he had come to see the game without informing his wife, who would be expecting him home. He knew that she would be listening-in to the match, so could he please speak a few words to her through the microphone, to let her know that he was safe !

Another time the commentator remarked to his listeners that his window was getting hazy from the condensation of his breath, so that he had to keep wiping the glass clean. Before his next broadcast an admirer sent him a tin of some patent preparation guaranteed to prevent condensation on the windows.

On the occasion of the F.A. Cup Final, between Bolton Wanderers and Portsmouth, the Football Association refused the B.B.C. permission to broadcast a running

commentary. The outside broadcast department, not to be outdone, set up a microphone in a house near the ground and recruited a team of eight commentators, who were sent to the ground as ordinary spectators, with instructions to leave one after another at fifteen-minute intervals during the course of the match, and give eye-witness accounts of the game.

Some of the men were experienced commentators, but others were unknown quantities, and there was some doubt as to what sort of a hand they would make of it.

It was a terrible job for these men to fight their way out of the packed crowd, and a good many hard things were said to them as they elbowed their way to the exits.

One of them arrived so breathless that all he could say was " They've scored." He repeated this, parrot-fashion, several times, but omitted to say which side it was that had scored. The officials at Savoy Hill—it was in the days before Portland Place—switched the inarticulate gentleman off, and thousands of eager football fans who were listening were left in a state of exquisite suspense, not knowing whether their favourite team was winning or losing !

The next man was able to give a more precise account of what had happened, so the enthusiasts were satisfied after all.

It was during another Cup Final that the transmitter went out of action. There was a silence for a full five minutes. The commentator did not know that anything was wrong, and went on talking. When the microphone came alive again the first thing that listeners heard was

the commentator's excited remark to his second-in-command :

" By Jove, that was an exciting five minutes, wasn't it ? "

Wimbledon

Tennis championship matches are among the most difficult of all sporting events for the B.B.C. to forecast, because it is impossible to time them, and it is necessary to interrupt other programmes in order to give commentaries. Listeners who are not keen on tennis wax indignant over the arrangement.

The programme department tells the outside broadcast section how much time it can have, and the list of matches is studied by the commentator, who tries to estimate roughly when the most exciting games will be in progress, and reports to Portland Place the approximate times when he wishes to break into the programmes.

In a men's singles final between Cochet and Borotra, the game began at 2 o'clock, and the commentator had a clear space in the programme until 4 o'clock, so that he was justified in feeling that everything would work out well.

But 4 o'clock came and the match was not over. The position was two sets all, five games all, and it was impossible even to guess who would win.

Tennis fans all over the country were on tiptoe with excitement when the official with the commentator touched him on the arm, then leaned across to the microphone and said :

"We are now leaving Wimbledon and going over to the Girls' Friendly Society concert at the Albert Hall."

The Derby

Commentaries of horse-races have always been difficult to organize, because it is hard to find an observation-point from which to see the whole course. The first broadcast from Epsom was done from the roof of the stand, and in his efforts to see everything the commentator actually spent part of the time hanging, head downwards, over the edge of the roof while an outside broadcast engineer clung to his legs!

Commentators are now provided with a less exciting but far safer position high up inside the stand.

The Aintree course, over which the Grand National is run, is another difficult location. Here it is quite impossible for one man to follow the whole race, and two commentators are provided, one in the grand stand and another on the far side of the circuit.

The Tattoos

It is impossible to deal in detail with all the activities of the outside broadcast department, and to give a list of them would serve no useful purpose, but one of the interesting events not so far mentioned is the military tattoo.

Owing to the complexity of this type of entertainment the time taken by rehearsals and actual performances is not the same. The announcer in charge of the programme

at Broadcasting House has a hectic task in bringing the previous programme to a suitable close and introducing the tattoo.

Last-minute adjustments are made by engineers, when massed bands, marching and counter-marching across the big arena, get out of suitable range for the microphone.

On a hot night at Tidworth the engineering squad turned up in white flannels. Even then it was hard to keep cool. In the middle of a thrilling scene an engineer had to dash across the arena to adjust a microphone. The searchlights picked him out, and it looked decidedly odd to see a figure in tennis kit taking part in the siege of Namur !

The next day, for an Empire recording, the engineers arrived, looking hot and uncomfortable. They were dressed in heavy military uniform. The tattoo authorities were taking no more risks, and had stipulated that the B.B.C. men would have to disguise themselves as soldiers !

A better way has since been found. The engineers are now dressed in green overalls, which do not show up against the turf.

CHAPTER VII

HALLO, EVERYBODY!

"HALLO, everybody! 2 LO calling! We have just played 'The Rustle of Spring.' Next, the soloist will sing 'Little Ships.' Stand by, everybody, while we move the piano."

Nobody saw anything funny in an announcement like that in the Crystal Set Era of 1922.

All the broadcasting was done from one room, twenty feet square, at the top of a block of offices in the Strand, London.

The room contained four microphones that looked like broken telephones. The atmosphere was hot and stuffy, for the walls were draped with muslin to make the studio sound-proof.

The furnishings consisted of a few chairs, a dingy settee with the horsehair stuffing breaking out, and a piano.

Space had also to be found for a desk for the Programmes Director, and a table for his typist.

The room was crowded with people who had come to perform, and lots of others who wanted auditions. Engineers bustled about, continually making adjustments,

and hissing a venomous " Ssh ! " to the secretary if she rattled her typewriter in the middle of a delicate operation.

Those were the days when a crystal set and a pair of headphones cost as much as a modern all-mains receiver. Tobacconists were pestered with requests for empty cigar boxes, which were used as a substitute for ebonite by enthusiasts who constructed their own sets. Rickety aerials sprouted up in back gardens until the suburbs took on the appearance of a forest that had been smitten by lightning.

" Will the craze last ? " sceptics were asking.

They have been given their answer. Take a swift journey of twelve years, and see what has happened. The one room has become a huge building with eight hundred rooms, and even that is not big enough !

It pours into the ether a stream of sound which scarcely ceases throughout the twenty-four hours of the day.

Up in the control room, under the roof, an engineer turns a knob, depresses a switch. Many floors below, down in the concert hall, the orchestra stops playing, and the performers begin to pack up their instruments.

The control room sends out fresh signals. In a small studio on the third floor an announcer addresses the microphone.

" Mr. Brown-Smith will give you the third talk in his series. . . ."

The announcer smiles reassuringly at the man at the reading-desk, and noiselessly withdraws into the adjoining listening-room.

In his office on another floor a play producer is working

out details of his next rehearsal. The telephone rings. The author of to-night's show is on the wire.

The producer takes the receiver from his secretary's hand as she whispers :

" He wants to know if you can give him some extra sound effects."

The producer listens intently.

" Yes, of course ; we can give you a background of crowd noises. All right. And then we'll cross-fade the sound of an aeroplane taking off."

He hangs up, and turns to his secretary.

" That reminds me. You had better make inquiries and find out whether that trouble over the copyright for the music in the finale has been cleared up."

In the library a variety chief is looking through the morning papers, his eyes scanning the columns for anything marked with blue pencil. He wants to see what the critics have got to say about the production he put on the ether last night.

Down in the artists' waiting-room broadcasters are scanning the huge notice boards which give details of the day's rehearsals and programmes. A subdued babel of noise penetrates from the foyer, where streams of callers pass in and out.

There is no parallel in history to the amazing speed with which broadcasting has grown.

In 1919 P. P. Eckersley was transmitting from a hut at Writtle to a mere seven hundred listeners, members of the Wireless Society.

On June 15, 1920, Dame Nellie Melba broadcast from the Marconi station at Chelmsford. It was Lord North-

cliffe who suggested this experiment, which did more than any other single event to waken the public to the great possibilities of the new discovery.

Mr. Tom Clarke, at that time news editor of the *Daily Mail*, has written about it in his diary:

"I listened-in at Blackfriars—frame aerial and headphones, not enough to go round. We listened in turns. Melba's girl secretary was there. Her eyes nearly came out of her head as she heard the nightingale voice in 'Addio,' from *La Bohème*. 'It is Melba!' she cried in astonishment. I think she had not believed it up to that moment."

Fired by this success, the Wireless Society, a group of enthusiastic amateur experimenters, petitioned the Postmaster-General to permit regular broadcasts of wireless telephony.

The outcome was that the Marconi Scientific Instrument Company was authorized to give weekly broadcasts lasting for half an hour, from its station at Writtle.

This was a very big step. At last the possibility of broadcasting entertainment was officially recognized. Up to this time progress had been slow and difficult. The great mass of the people were quite uninterested in wireless. Even the pioneers, who carried on in the teeth of ridicule and indifference, imagined that years of toil still lay ahead before wireless entertainment could be established.

No one foresaw the astounding strides that were destined to follow rapidly upon the starting of the half-hour weekly concerts.

Records of the first historic broadcast are scanty.

(*Photo, Barratts.*)

Control Panel in 1923.

(*Photo, B.B.C.*)

Control Room of Broadcasting House.

The millions of listeners who enjoy radio programmes to-day have never even heard of it. They are under the impression that broadcasting began with the opening of 2 LO. But the occasion still remains a vivid memory in the minds of those who took part.

The broadcast began at 7.15 in the evening of Tuesday, February 14, 1922. It consisted of songs sung by Mr. Robert Howe, a well-known baritone.

Mr. Howe has himself given me an account of his broadcast.

"The studio was a small cubicle, just big enough to hold the piano, the accompanist, and myself," he said. "The microphone into which I sang was simply an ordinary telephone mouthpiece.

"There were six people present, besides myself. They were Mr. P. P. Eckersley, the chief engineer, who had been working almost single-handed at Writtle since the end of the Great War, and who was later to formulate the regional scheme for providing all Britain with radio programmes; Mr. Stanton Jeffries, who became Musical Director of the B.B.C., and later, chief of the Balance and Control Department; Mr. Arthur Burrows, who later was appointed Programmes Director of the B.B.C., and then, three years later, took up the post of Secretary-General to the International Broadcasting Union at Geneva, and who was responsible for the formulating of the famous Lucerne Wave-Length Scheme in 1934; Miss Elsie Berry, my accompanist at the piano; an engineer whose name, I believe, was Jones; and a Dutchman who gave out announcements in English, French, and Dutch. In those days broadcasting was further advanced in

Holland than in Britain, and the Dutch were already sending out regular concerts.

" We were pioneers with scarcely any experience to go upon. The nearest thing to broadcasting, so far as the technique of sound production was concerned, was gramophone recording. I had made some hundreds of gramophone records, both in this country and abroad, and happened to possess a voice particularly suited to the work, and it was for this reason that I was asked to take part in the first of the regular series of broadcasts.

" The receiving sets then in use were very crude when compared with those of to-day. Manufactured components were hard to obtain, and very expensive. Home-made ones were much cheaper. Experimenters showed wonderful ingenuity in assembling sets built of parts made from junk rescued from the rubbish heap. Empty cocoa cans, sheets of tin foil, cardboard, nails, cotton reels, and bits of wire went to the making of these receivers, and they actually worked !

" But naturally, taken in conjunction with the primitive microphones that we used, all sounds suffered distortion in transmission when picked up by these fantastic sets. Even experienced wireless speakers tried to avoid using words with an ' s ' in them. It was therefore with a good deal of uncertainty that I began my first song, the ' Cornish Floral Dance.' I could not help wondering how it was sounding to listeners. The next morning one newspaper scathingly remarked that it sounded more like waves breaking on the Cornish coast.

" Balanced against that were enthusiastic reports that came in from listeners all over the country. In spite of

technical difficulties, and the contempt of opponents, the broadcast was a decided success.

" The first effort, in which I had the honour to play a part, definitely established the fact that regular broadcast entertainment was a practical possibility. But even so, I don't think any of us had the least idea as to what it was destined to develop into in the short space of ten years. I certainly did not."

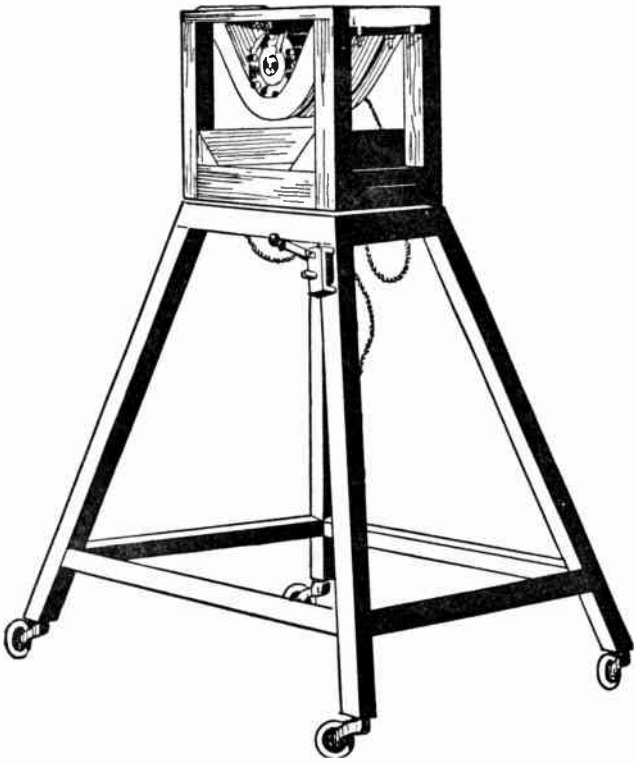
Events moved swiftly after Mr. Howe's pioneer broadcast.

In May 1922, 2 LO opened up, broadcasting from Marconi House in the Strand, London, and instead of giving programmes once a week, it gave them every day. During the early days the station had to remain silent for three minutes out of every ten, to listen for S O S and other important messages.

It must have been with a certain amount of misgiving that the pioneers accepted an opportunity to try the first outside broadcast. This was an opera, *The Magic Flute*, from Covent Garden on January 8, 1923.

This is how Mr. C. A. Lewis, the programme organizer, has described it in his book, *Broadcasting from Within* :

" We all assembled in a little room on the top floor of Marconi House, where a loudspeaker stood on the table. Suddenly, with a loud click, it was thrown into circuit, and a confused babel of noises was let loose. At first indistinguishable, it soon became apparent that we were hearing the talk and rustling of programmes in the auditorium. Finally there was a burst of clapping which died down to a dead silence, and was followed by two sharp raps ; a second later the huge orchestra had leaped



Type of microphone in use in 1924. Note comparison with that used in 1922 at Marconi House (see p. 73), and the modern style.

into its stride, swelled up to a great crash of brass and cymbals, which could be heard all down the corridor of Marconi House.

" Our excitement was immense. The broadcast was an assured success. It came as a revelation of what the future of broadcasting might be."

But even then the pioneers could scarcely have realized what vast developments lay ahead.

From 1923 to 1926 broadcasting was run by the *British Broadcasting Company*, financed and guaranteed by a group of wireless manufacturers.

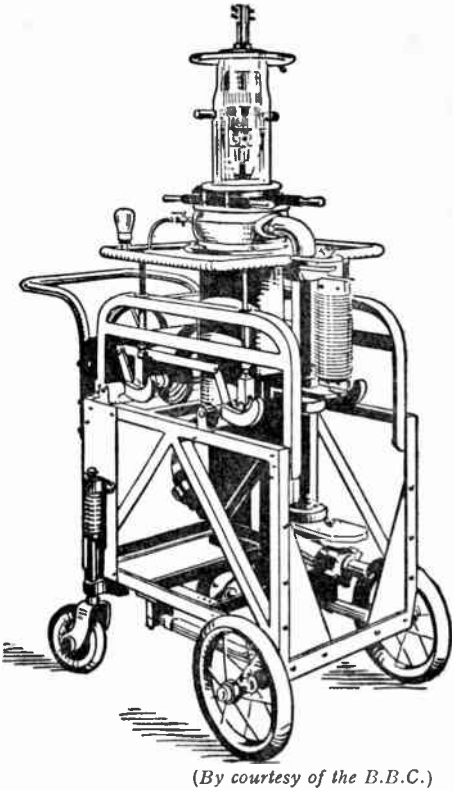
During this time Daventry 5 XX was opened.

At the end of 1926 the company was wound up. Everybody was paid off in full, and a profit shown on the four years' working. The company was supplanted by the British Broadcasting Corporation, which was granted a monopoly charter to run for ten years.

Droitwich

When the Daventry transmitter had been operating for five or six years, it was realized that it had grown out of date, so rapid had radio development been. Accordingly the Droitwich transmitter was planned, with an output of one hundred and fifty kilowatts. Just how far matters had progressed in ten years is well illustrated by the fact that the hut at Writtle had an output of one and a half kilowatts !

In Droitwich the tremendous machinery dwarfs the men who rule over it. Even the valves are so immense that they have to be wheeled about on special trolleys,



(*By courtesy of the B.B.C.*)

An output valve used at Droitwich. Note the comparative size of the ordinary receiving valve placed on the left.

and lifted into position by cranes. The generators are bedded in five-hundred-ton blocks of concrete. The masts are each seven hundred feet high, and within their lattice-work is an electric lift to carry engineers to the top. This is very necessary, for a heavy gale causes the masts to sway, and the aerials need constant supervision. The lift is a great improvement on former transmission masts, where the riggers had to climb the outside of the lattice-work in the roughest weather. Only trained steeplejacks could be employed at the task.

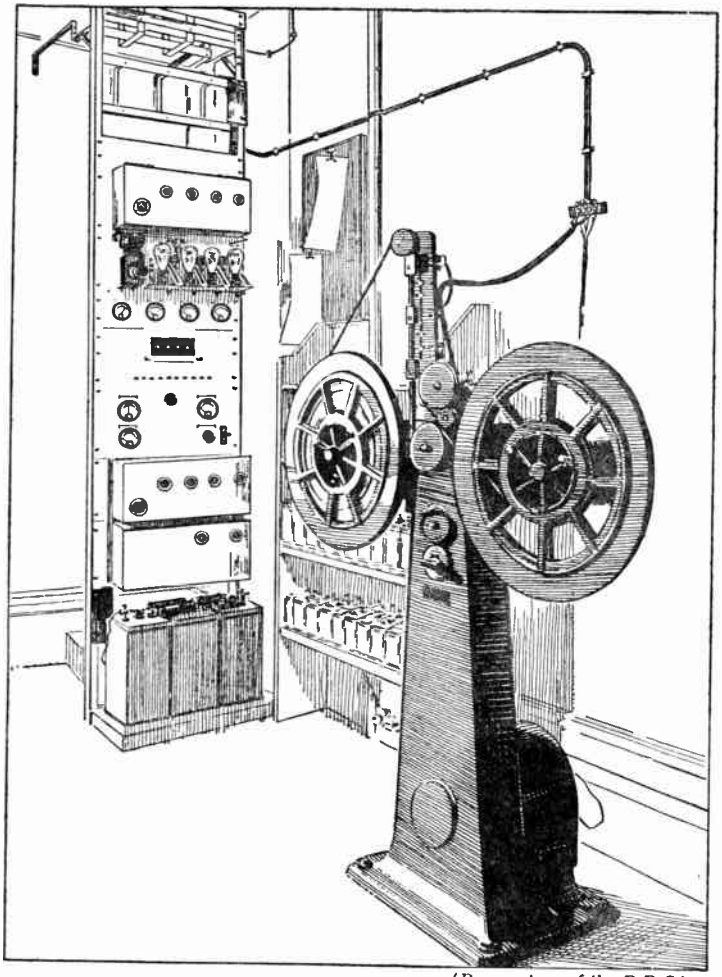
Tatsfield Listening Station

The B.B.C.'s listening station is at Tatsfield, in Surrey. This station keeps constant watch on all European stations, and sends out reports as to whether they are keeping to the wave-lengths allotted them by the International Broadcasting Union.

It also keeps a constant watch on the performance of the B.B.C.'s own transmissions.

It is Tatsfield that picks up American and European programmes that are relayed in Britain. The programmes are sent by land line to Broadcasting House, and then on by another land line to Droitwich, to be retransmitted.

Tatsfield also sends to Portland Place many foreign programmes that are not heard by British listeners. The Programme Department, knowing that Warsaw is putting on a new musical performance, and wishing to know whether it is worth giving to British listeners, asks Tatsfield to tune in Warsaw, and Broadcasting House gives a critical ear to the performance.



(*By courtesy of the B.B.C.*)

The Blattnerphone.

Radio by the Yard

Many interesting possibilities have been opened up by the invention of a recording device known as the Blattnerphone. It consists of making a sound record on steel tape by magnetizing the tape. The recording machine holds a drum of steel tape that will run for twenty minutes, and no amount of ill-treatment will spoil the tape. The reproduction obtained is as good as the best gramophone records.

Many programmes, including musical shows, talks, and running commentaries, are now recorded on the Blattnerphone for transmission in the Empire programmes.

Greater use could be made of it, but the B.B.C. believes that listeners like to feel they are hearing the "real thing," and not a mechanical reproduction—though surely all radio is mechanical reproduction ?—and so it is usual to announce that an "electrical recording" is going to be broadcast when the Blattnerphone is used.

One afternoon a class of children were listening to a talk given by a very popular speaker. At the back of the class a quiet man was watching the pupils, taking careful note of the impression that the talk was creating. He was the man whose voice was coming through the loudspeaker, for, unknown to the listeners, the whole thing had been recorded on Blattnerphone tape.

THE END.

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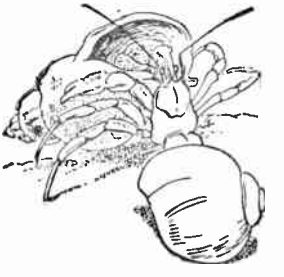

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