

**BROADCASTING
FROM WITHIN**

BY

C. A. LEWIS

BROADCASTING FROM WITHIN

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ORGANISER OF
PROGRAMMES
B.B.C.



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DEDICATION :

TO

J. C. W. REITH

MANAGING DIRECTOR OF THE
BRITISH BROADCASTING CO.

WITHOUT WHOSE AID THIS BOOK WOULD NEVER
HAVE BEEN WRITTEN
IN RESPECT AND ADMIRATION

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Photo

Maurice Beck and Helen Macgregor.

*Caractacus
Arens.*

BROADCASTING
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PREFACE

I AM glad that Mr. Lewis has placed on record, whilst impressions are fresh in his mind, the history of British broadcasting during its very first year. I commend the perusal of the following pages to all those who are interested in wireless broadcasting. The book will be a revelation to many listeners who have, hitherto, not realised the organisation and work in connection with programme production.

I feel sure the publication of this book will be also welcomed by the wireless broadcasting industry, which is still in its infancy, and will help to expand the business as well as add increased interest to those who study its development and progress.

The value of this work is increased by the fact that it is written by a popular officer of the British Broadcasting Company whose zeal and love for broadcasting is apparent in every page, and I feel sure this volume will not only be valued by those who have taken an interest in the birth and progress of the B.B.C. during its first year, but by those who will watch its future growth and development.

Gauford

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FOREWORD

WHO would hear the story of a year's pioneering? A rare enough thing in these days, when all the ground seems to have been gone over again and again, and all the walks of life seem to have been explored and exploited.

The philosophers tell us there is nothing new under the sun, but that, of course, does not imply that there is nothing new on earth.

This is a book about a new thing; a thing that has never been done before. It has all the spice and excitement of adventure about it and all the hard work, difficulty, and disappointment pertaining to such adventures.

Columbus discovered America. But we all forget the difficulties he faced, the shortage of food, the threatened mutiny, the heavy storms, before he reached the goal. He discovered America—that is the only thing that matters as far as the world is concerned.

Broadcasting has had the same experiences as Columbus, and though all *you* may want to hear about is broadcasting as it is, I am going to set out to detain you for a little—just a chapter or two—to give you the log of the first year's voyage so that you may see for yourselves that pioneering is not all beer and skittles. Then we will go behind the scenes, look at the workshops where the ethereal fabric of our ever-vanishing programmes is put together, visit all the lions in their dens, and do a thorough tour of the building. It is going to be fun.

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But to hark back for a minute to our old friend Columbus. I cannot ever remember the name of his ship (I am ashamed to confess it), but our ship is the good ship *Broadcasting*.

She is a tough little craft, well manned, and well stored, and now for a year she has been forging ahead through stormy seas which have at times threatened to destroy her.

Before she left harbour, her owners were in dispute; she slipped her moorings quietly on election night a year ago, made sail, and set out into the mysterious new ocean.

At first the weather was fair. The Press blew up a great wind behind her and she sped rapidly on to conquer the unknown land—the land of sound.

Before long the wind backed to a less favourable quarter, as you will see, and heavy seas of jealousy, adversity, and scorn beset her on every side. There came pirates who plundered many sacks of good bullion from her hold, but in spite of all she held her course undeterred. She encountered other vessels, bearing fine names, which were also afloat on this great ocean of public opinion, and to them she often sent signals of friendliness and good cheer. But, alas! they were sometimes unanswered or unheeded.

I could enlarge on this theme indefinitely. I could tell you of the enemies who rose up and said, "You shall not pass, you must go back." I could tell you how they were frustrated and set at nought.

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I could tell you—but after all I am writing this book *to* tell you—so, come, let us visit the harbour where the engineers, the artisans, and the financiers are preparing the ship for her maiden voyage.

They had worked on her for many years, and she was not completed without difficulty. She teems with activity on deck and below; she can fire, so they tell me, a broadside of 6,000 concerts a year. On her bridge the tall captain peers out to the horizon, pacing up and down restlessly—he is on the look out for shoals or submarines: I am not sure which.

She is a likely-looking craft, and for aught we know before her voyage is over she may have revolutionised the ways of the world, but I am sure you are anxious to examine her more closely. Turn the page and let us set about it.

This book is not an official record of the B.B.C. It is simply the first year's work and the future possibilities seen through the eyes of one who has been intimately connected with its development.



LORD GAINFORD,
Chairman of the British Broadcasting Company.

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CHAPTER I

PAST HISTORY

It may be said that wireless telephony was made possible by the invention of the thermionic valve. Before its discovery, it was hardly possible to transmit speech through the ether, though, as a matter of fact, very crude results had been accomplished by means of arc transmission.

The two-electrode valve, invented by Dr. Fleming, was followed by the discovery of the three-electrode valve, as we know it to-day.

This talisman—Aladdin's lamp as it has been called—has opened up the way for great advances, not only in wireless telephony, but in wireless telegraphy also.

In simple language—its discovery enables sound modulations to be imposed upon a "carrier" wave, which bears them through the ether, to be picked up by any receiver which can reverse the process.

But as I know nothing about technicalities, and as Mr. Eckersley refuses to write it all for me, I had better stop before I get out of my depth!

The Marconi Company, whose work on wire-

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less telegraphy is so widely known that it has become almost a household word, were quick to seize upon the developments in telephony also, and in the early part of 1920 they had installed a powerful set at Chelmsford to carry out a series of tests. The power of the set was about 15 kilowatts, and many demonstrations and concerts were given, in one of which Madame Melba took part. To give some idea of the range of the Chelmsford station at that time, it is interesting to know that Melba's voice was clearly picked up at Sultanabad in Northern Persia, as well as in Madrid and Berlin.

In July, 1920, the Imperial Press Congress was held in Canada, and by this time there were four big stations in operation under the Marconi Company's direction.

Chelmsford was working on 20 kw., Poldhu and St. John's, Newfoundland, had a set of 6 kw. each, and the *Victorian*, a ship on which many of the delegates of the Empire Press Union crossed to Canada, had also a 3 kw. set installed.

During the voyage across the Atlantic the *Victorian* was only out of speaking distance with land for a few hours.

Mr. Arthur Burrows—our present Director of Programmes—was on board the *Victorian*, feeling, as he once told me when relating this experience, very seasick, but all the same carrying on with the numerous messages and despatches which were constantly being received from the land stations and transmitted from the ship itself.

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Throughout this same voyage Mr. Burrows edited on the ship both morning and evening papers, for which all the news was received by wireless. The later issues contained news by wireless telephony from Newfoundland and were the first papers in the world to receive news through this medium.

During this voyage, the Chelmsford station was heard talking a few miles from the Canadian coast, a distance of about 1,800 miles.

Throughout the trip the *Victorian* put on many gramophone records, and all the ships within a radius of about 800 miles began to call up excitedly in Morse, asking for these records to be repeated.

It must have been a surprising experience for a ship's operator of those days when wireless telephony was well-nigh unheard of, to be sitting with the headphones on listening to the buzzing of many sparks and suddenly to hear the homely strains of "Annie Laurie" come floating in. A pleasant change!

From the wireless telephony point of view, the voyage to America was a great success, and aroused widespread interest in its possibilities from a commercial point of view.

It was during the Imperial Congress in Canada that Mr. Arthur Burrows, in the course of a speech to the Congress, forecasted with great accuracy much of what is now established.

Thereafter many interesting transmissions took place from Chelmsford. In 1920 Dr. Graham Bell, the great inventor, spoke to

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Geneva, and the London correspondents of several Italian newspapers spoke to their head offices in Rome.

In 1922 began the first transmission from the now famous 2LO. It was a description, round by round, of the Carpentier-Lewis fight. Many other transmissions of a charitable nature followed this, and later a notable event in the shape of a speech by H.R.H. the Prince of Wales, who spoke from York House to the Boy Scouts and Cubs of Great Britain.

The question may well be asked, why was it that wireless telephony, whose possibilities were proved in late 1919 or early 1920, did not come into general use in the autumn of 1920, when things were just beginning to boom in America?

The answer lies in a sentence, "We are British."

Let others rush at the new inventions, and do the experimenting, spend the money, get the hard knocks, and buy their experience at a high price.

We British sit tight and look before we leap. So it was in this case.

We may often be behind in the early stages of a new science, but once under way, we soon catch up and generally lead the field before long.

How fortunate this national attitude or circumspection was in the case of broadcasting can be seen easily by glancing at the chaotic state of affairs on the other side of the Atlantic,

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where hundreds of transmitting stations are all giving out concerts on a narrow waveband, and no system of revenues or governmental control is yet in existence, as a result of which almost 50% have had to be closed down.

The system on which broadcasting was launched in England was far from perfect, but it did at least establish the great principle *that the concerts had to be paid for by the public, who received and derived entertainment or instruction from them.* Now that the Government Report has been issued, it looks as though broadcasting were finally established on a sound financial basis, and with this great question settled, Britain may claim to lead the world in broadcasting.

But this is all a digression. For various reasons too complex to be entered into here, broadcasting as a form of public entertainment was held up for two years, from the autumn of 1920 till that of 1922, but during this time, a small band of between 600 and 800 persons, all keen enthusiasts in wireless work, having once 'tasted blood' in receiving the speech and concerts from Chelmsford, were not to be deprived easily of their desire to continue their experimental work in telephony.

They banded together, and eventually managed to bring such pressure to bear on the Post Office, that a small station of 250 watts was authorised to transmit for half an hour every week in order that these amateurs might have

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a standard transmission on which to perfect their receiving apparatus.

In this way the famous Writtle station came into existence. Every Tuesday night it used to send out ten minutes' C.W., ten minutes' speech, and ten minutes' music. Its director was our dearly beloved Chief Engineer, P. P. Eckersley. This half-hour concert—for the Morse was soon dropped—became a Tuesday evening transmission eagerly looked forward to by every wireless enthusiast.

The Writtle station began operations in February, 1921, and discontinued early in 1923, when broadcasting had been finally launched. It was a notable year's work, with far-reaching consequences.

The memories of the Writtle half-hour concerts linger pleasantly with all of us who used to listen in those early days. Eckersley's cheery voice, his fund of wit, and his never-failing inspiration, made these transmissions very worthy forerunners to our present programmes.

Writtle was not just half an hour's first-class amusement, it was a birthplace of brain waves! The first wireless play—a scene from *Cyrano de Bergerac*—was performed, among many other diverting things, and the first wireless humorist of 2 Emma Toc proclaimed himself ahead of the times. For once, I believe he was right!

In May, 1922, permission was obtained for the Marconi Company to open the London station, 2LO. By this time it was generally

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accepted that broadcasting had come to stay. The Press started to give publicity to the activities in England, and to draw the attention of the public to the state of affairs in America, where the industry was leaping ahead in the most surprising way. People soon began to wonder when we should have broadcasting of our own.

2LO gave a number of concerts during the summer and autumn of 1922, but since broadcasting was not yet officially recognised, they were of short duration, and were usually given in aid of charity.

During the concerts in those days, the station had to close for three minutes out of every ten in order to listen for possible "SOS" calls or important messages which the Government stations might be sending; luckily this "red flag" was soon after done away with.

Mr. Burrows, who had been studying broadcasting in certain special aspects, was at Marconi House and the management and conducting of these concerts became one of his duties. Widespread public interest was aroused, and "the voice from 2LO" became a friendly one to many thousands of people. Long may it remain so!

The work soon became too heavy for him to tackle it single-handed, and Mr. L. Stanton Jefferies—our present Musical Director—joined him and took over the musical part of the concert arrangements.

It was not until the night of November 14th,

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1922, that the B.B.C. came into being officially by broadcasting the results of the election which took place on that day.

During all these months, from May to November, protracted negotiations had been taking place between the Post Office and the various firms interested in the development of broadcasting.

Mr. Kellaway, who was H.M. Postmaster-General at that time, was eager that a service should be started in England, but he was also anxious to avoid the many pitfalls into which America had fallen by precipitating herself headlong into broadcasting without any form of control whatever.

The various difficulties which confronted him and the companies who wished to set up a broadcasting service will be briefly outlined in the next chapter.

CHAPTER II

FORMATION OF THE COMPANY

By the spring of 1922 broadcasting had, as I said in my previous chapter, existed in America for nearly two years.

Although it had been held up in England, various interests besides those of the amateurs had been desirous of establishing a broadcasting service, and developing the new industry which would thus be created.

As soon as the Post Office realised that broadcasting had come to stay, they were keenly interested in the question of how the service could be run most efficiently.

On May 4th, 1922, Mr. Kellaway, the Postmaster-General at the time, announced to the House of Commons that he had decided to allow the establishment of a certain limited number of broadcasting stations and was calling a conference of the firms interested. He was disinclined to accede to requests of individual firms to set up broadcasting services, and so, on May 18th, 1922, representatives of all the interested firms met the representatives of the P.M.G.

The meeting elucidated the fact that nineteen firms wished to have transmitting licences, but after much discussion, the difficulties of independent action were realised, and at the suggestion of the Post Office, the firms interested met together to discuss proposals for the joint conduct of broadcasting.

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During the meetings of this committee, which worked extremely hard to bring the scheme into existence, it soon became evident that there was a conflicting interest between two groups of manufacturers, and when they failed to arrive at a basis for one broadcasting company, they submitted their opinion by deputation to the Postmaster-General that one company appeared impossible, but that two concerns could probably be formed which would operate independently.

The P.M.G. agreed, if necessary, to license two separate firms, but no more, and he urged the manufacturers to sink their differences and unite.

The two conflicting groups, realising that there must be agreement on points of common interest, appointed a sub-committee, consisting of Mr. Isaacs, representing one group, and Mr. McKinstry, the other.

After much discussion and protracted negotiations, this sub-committee realised that the operation of two companies would be a very difficult matter, and, to cut a long story short, they managed to report to their respective groups a satisfactory basis for the formation of a single company, which was ultimately agreed to.

This was all reported to the P.M.G., who agreed to grant the company an exclusive right to broadcast, subject to his approval of the constitution of the company.

The Postmaster-General, in return for giving this exclusive licence, naturally wished to have some guarantee that an adequate service would

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be maintained for a reasonable length of time, and the six concerns * *gave a definite undertaking to find the necessary funds for carrying on broadcasting for a period of two years.*

It will be seen that broadcasting was made physically possible by the guarantees of those six firms.

Nevertheless, although the burden was shouldered in this way by the "big six," the P.M.G. insisted—and the companies were in full agreement with him—that there should be *no monopoly.*

Any one who cares to examine the Memorandum and Articles of Association of the agreement between the B.B.C. and its constituent companies, will see quite clearly that every *bonâ fide* British manufacturer and—under the new agreement—factor of wireless apparatus can join the company on taking up a £1 share.

It is therefore obvious that the so-called "monopoly" is a pure myth, and that if there is any ground for considering it a monopoly, it is one of British manufacturers against foreigners. In these days of want and unemployment, surely such an arrangement might be received with open arms, not subjected to suspicion!

It may be asked, why did the Postmaster-General give an exclusive right to one company only to broadcast? The reason for this is a

* The companies referred to are:—British Thomson-Houston Co., General Electric Co., Marconi Co., Metropolitan Vickers Electric Co., Radio Communication Co., and Western Electric Co.

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purely physical one. Assuming the stations to be of a given power and range it is found impossible to operate more than eight stations in England, Wales and Scotland, without causing interference between them. The chaotic state of affairs in America, where a large number of stations are transmitting on a narrow band of wavelengths and no form of control exists, was an object lesson in what *not* to do, and consequently the control was put into one company's hands; but after all, if the present scheme is not satisfactory—and I do not for a moment admit it—the licence granted is only of short duration!

Let the public judge at the end of this time whether the service put out during the time does not vindicate the method employed!

The next question of interest was the provision of an adequate revenue to meet the very heavy cost of providing an efficient service.

It was decided to collect this revenue in two ways; firstly, to institute a "broadcast licence," a percentage of the fee payable by the listener to be handed over by the Post Office to the British Broadcasting Company, and secondly, the member firms of the B.B.C. to pay over a certain percentage of the selling price of their sets as royalty to the company. (This was insisted on by the P.M.G.)

It was considered that these two sources of revenue would be adequate to meet expenditure, and after much detailed negotiation and dis-

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cussion, the B.B.C. obtained a licence from the Postmaster-General which was, however, not finally ratified until January 18th, 1923, although the work of providing a service had been authorised to commence before this (November 15th, 1922).

The outstanding points in this licence are of interest to those who wish to understand the deadlock which arose later, and so for their benefit I propose to state them here :—

“ The principal features of the scheme—which was recognised as being necessarily of a provisional nature—were as follows :—

“ (a) A Company (called the British Broadcasting Company) to be formed among British manufacturers of wireless apparatus. Any such manufacturer to be entitled to join the Company on subscribing for one or more £1 shares, and on paying a deposit of £50 and entering into an agreement in the form approved by the Postmaster-General.

“ (b) The Company to establish eight broadcasting stations and to provide a regular service to the reasonable satisfaction of the Postmaster-General. The Company to pay a royalty of £50 per annum in respect of each station.

“ (c) The Post Office to issue broadcast receiving licences at a fee of 10s. a year containing a condition that the sets used, and certain parts (viz., valves, valve amplifiers, head telephones, and loud speakers), must

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bear a standard mark—‘ B.B.C.—Type approved by Postmaster-General.’

“(d) The Post Office to pay the Company a sum equal to one-half of the licence fees received in respect of broadcast and experimental receiving licences.

“(e) The sets sold by members of the Company, as a condition of bearing the ‘ B.B.C.’ mark, to be British made, to carry a payment to the Company in accordance with a tariff approved by the Postmaster-General, and to require the Postmaster-General’s approval of the type of set, such approval being confined to securing that the apparatus would not be likely to cause radiation from the receiving aerial. The tariff payments on apparatus, which were required by the Postmaster-General, could in certain circumstances be reduced by him after consultation with the Company.

“(f) No advertising or paid matter to be broadcast, and only such news as is obtained from news agencies approved by the Postmaster-General.

“(g) The Company not to pay dividends at a higher rate than $7\frac{1}{2}$ per cent. per annum.

“(h) An undertaking to be given that the requisite capital would be subscribed, that the service would be continued throughout the period of the licence, and that any deficit would be met. Six firms undertook these responsibilities and were given the

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right each to nominate a director, two additional directors being nominated by the remaining firms who might take up shares, and an independent chairman being appointed by the six firms.

“ These conditions were embodied in the licence issued to the Company on the 18th January, 1923.”*

Before the advent of broadcasting, persons who were genuinely interested in wireless experimental work were granted an “ experimenter’s licence.” It will be seen, therefore, that when the “ broadcast licence ” was issued, there were two alternatives open to any one interested in wireless—viz., to obtain an experimental licence and build up a set from *raw material*, or to purchase a set approved by the P.M.G. stamped B.B.C., and so be entitled to a broadcast licence.

Mr. Kellaway, in response to inquiries as to the position of the experimenter, stated in the House of Commons that amateurs would still be afforded facilities to build their own sets, and it had been previously agreed that the term “ experimenter ” should be interpreted literally.

Before long many thousands of experimental licences had been granted to persons whose genuine desire to experiment was, to say the least of it, open to question.

It was assumed—and here lies the crux of all the difficulties which culminated in the Government Committee—that the general public would

* Extract from Government Committee’s Report.

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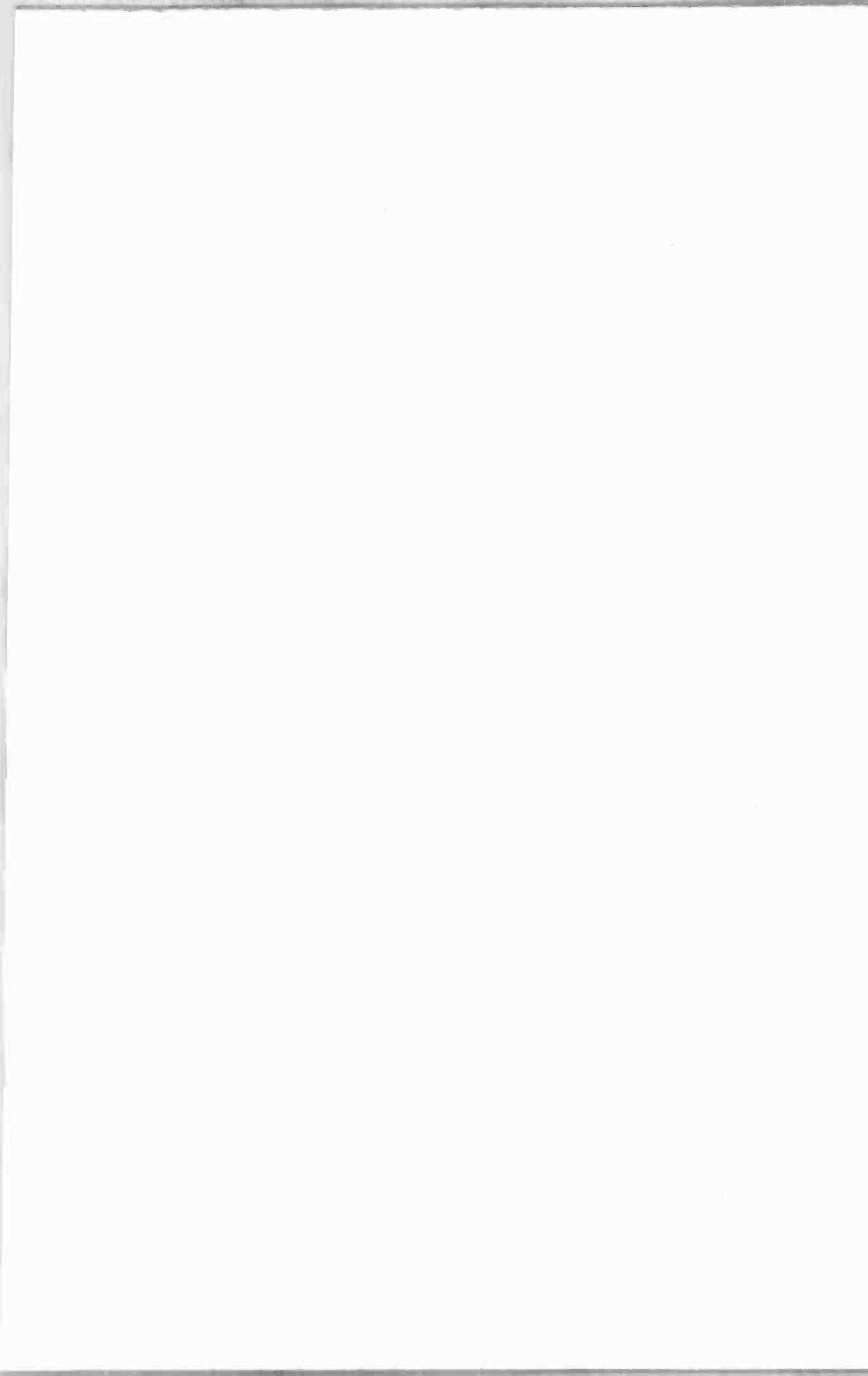
not be interested in the technical aspect of broadcasting, or inquire how or why their sets worked, but would simply look upon it as a means of obtaining information and amusement.

It appears that the authorities sadly underestimated the curiosity and constructive tendency of the average man when they made the above assumption.

Very soon after it was seen that wireless was not only a means of amusement for those who knew nothing about its technical aspects, but was also a fascinating hobby. The principles were not hard to master, the component parts were comparatively inexpensive and easy to assemble. Any amateur mechanic could easily put a set together, and a number of periodicals sprang up rapidly to teach him more about it.

Now the price of the ready-made approved-by-the-P.M.G. type of set was somewhat high, owing to the patent and B.B.C. royalties which had to be paid, and, with the rapid spread of elementary knowledge, a demand arose for every kind of component part. Queues were to be seen waiting at the shops where these could be obtained. The market where the member firms had expected to sell sets was at once flooded with home-constructed sets which were possibly less efficient than those stamped B.B.C., but could be made at a fraction of the cost.

It is true that these sets were not passed by the P.M.G., nor could the makers obtain a licence for them, but that was not a great





MR. J. C. W. REITH,
Managing Director of the British Broadcasting Company.

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deterrent. More and more "pirate" manufacturers came into the market and sold foreign goods at a price undercutting the British member firms.

Furthermore, those amateurs whose sole object was to listen to the broadcast concerts took advantage of Mr. Kellaway's statement in the House to demand experimenters' licences.

It began to be felt that though such licences might be issued liberally, there was a limit to this, and in response to representations made to the P.M.G. by the Broadcasting Co. the issue of licences of this type was curtailed to persons of unquestionable qualifications.

There is a nice distinction between the man who, before broadcasting began, was sufficiently interested in wireless to build a set and experiment with it, and the one who, subsequent to the establishment of broadcasting, built a set to listen to the programmes.

Things had now proceeded too far, however, for any efforts of the Post Office in enforcing their regulations to be of any avail.

The home constructor was in a position of having either to put his set on one side until the question was settled or use it without a licence. The air was full of music—and it is hardly to be wondered at that events took the course they did.

Now the revenue of the company, as we have seen, is drawn from two sources—the percentage of the licence paid to the Post Office, and the royalties on the sale of B.B.C. sets.

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The home constructor could not obtain a licence for his set, and consequently paid nothing towards the programmes in this way, and the very fact that he had constructed the set meant that no royalty on its selling price came to the B.B.C. since the royalty was payable on complete sets only.

The company were thus deprived of their revenue from both sources.

As three out of every four listeners were in this category, an intolerable state of affairs arose.

The British Broadcasting Company claimed that the Post Office were not carrying out the terms of their agreement by insisting on the enforcement of the regulations, and the Post Office insisted that it would be well-nigh impossible to enforce these regulations, and, further, that even if a home constructor wished to take out a licence, the Post Office had no licence to offer him, since he did not fulfil the conditions necessary for a broadcast licence, and had not the qualifications necessary for an experimental one.

Meanwhile the programmes had to go on, and the "illegitimate" listeners were among the most outspoken at the standard of service supplied, in spite of the fact that they were not themselves contributing a penny towards this service.

Suggestions were made from many quarters that a "constructor's" licence should be issued, and though the B.B.C. were agreeable in prin-

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principle to this (notwithstanding the fact that they need not have been so under the terms of their licence), it proved impossible for the Post Office and company to agree about the conditions of this licence.

The question having become acute, Sir William Joynson Hicks, the P.M.G., referred the whole position to a representative committee, now so familiar to every one as the Government Committee.

It will be seen how quickly this climax arose. Broadcasting only began officially on November 15th, 1922, and the committee was set up to investigate the state of affairs on April 24th, 1923, about five months later.

The questions were most involved and complex, and since the terms of reference were very wide and necessitated a vast amount of investigation, the report was not made public until October, 1923.

To sum up, the experience of the first six months' broadcasting in Great Britain proved that :

1. The original licensing regulations were inadequate to the situation which arose later.
2. The inadequacy of these regulations affected not only the quality of the service supplied, but also threatened to undermine the new industry which had been created as a result of the broadcasting service.
3. In order to establish this industry on a firm basis it was essential to exclude foreign-

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made goods, which, owing to depreciated rates of exchange, could compete successfully with British goods.

4. The existing agreement between H.M. Government and the manufacturers who had made the scheme possible must be honoured. " Mr. Kellaway, the P.M.G., made an arrangement with the Company. It may have been a good arrangement, or it may have been a bad one : the crux of it was that in Mr. Kellaway's opinion it was valid and the various firms entered into it. Those who made the agreement believed, and were entitled to believe, that the arrangement would be carried out " (Lord Birkenhead).

In Chapter IV. the way out of the difficulties recommended by the Government Committee, and the course adopted by the Postmaster-General, Sir Laming Worthington Evans is, I hope, made clear.

CHAPTER III

EARLY DAYS

BEFORE going on to discuss the recommendations of the Government committee and the state of affairs now that the new regulations have come into force, it will, perhaps, be of interest to those of you who have listened to our concerts from the beginning of things to know something of the difficult conditions under which these programmes were produced.

As I said in the last chapter, in spite of the depletion in revenue and the uncertainty of the future, owing to the inadequate licensing arrangements, programmes were put out from the London and provincial stations the quality of which improved steadily as the months went by.

If the managerial side had their anxieties and perplexities, the programme side also had a good many troubles to face.

Immediately following the formation of the company the Board of Directors* approached Lord Gainford with the request that he should assume the chairmanship. It was a matter for congratulation that he was able to consent. The General Managership was offered to Mr. J. C. W.

* The Board consisted at the outset of the following :—
Mr. Basil Binyon, Mr. John Gray, Mr. Godfrey C. Isaacs, Mr. A. N. McKinstry, Sir W. Noble, Mr. H. M. Pease, and shortly after to these six directors were added the Rt. Hon. Sir W. Bull, Bart., M.P., and Mr. W. W. Burnham. The latter were elected at a general meeting of member firms of the B.B.C.

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Reith, and, out of a host of applications, Mr. P. F. Anderson was chosen as Secretary, Mr. Arthur Burrows as Director of Programmes, and myself as deputy to him. Mr. Jefferies was appointed Director of the London station. Mr. Eckersley, the Chief Engineer, was not appointed until a few weeks later.

There we were, a round half-dozen people, with the whole company's organisation to set in motion, confronted with new and difficult problems on every side, with no precedents of past experience to go upon—and even without an office to work in!

We had been appointed guardians and attendants of the most voracious creature ever created by man—a microphone—which clamoured daily to be fed! At first it was satisfied with simple fare and a little of it, but as the days went by its appetite not only grew in the amount it wished to devour but also became fastidious in the extreme as to the quality of the repast set before it! A most terrible and insatiable monster!

Thanks to the courtesy of the General Electric Company we were soon accommodated in a large room at their fine premises in Kingsway, adjoining which was a small cubicle for the use of the General Manager.

No description I could give would convey to you the hectic existence we led in those days. In the centre of the room stood a large table, around which about ten people were frantically engaged in sorting correspondence (the mail was

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terrific), Mr. Burrows and myself shared a desk and a telephone on one side of the room, on the other sat the Secretary and his capable assistant, and dotted about in every corner were typists' desks, filing cabinets, duplicating machines, half a dozen telephones, etc.

Pandemonium reigned! The telephones never stopped ringing, the typewriters never stopped clicking, the duplicating machine duplicated for dear life, the office was bombarded from morning to night by the Press, the public, the wireless manufacturer, people of every kind and class who, for some reason or other, were interested in broadcasting.

The room was crowded to overflowing, it was physically impossible to get any more people into it, and in the midst of all this strenuous activity the policy and direction of the company were maintained.

Looking back on those days the marvel of it all seems to be that blunders and errors of all kinds were not committed, but thanks to the constant vigilance of the Chairman, Lord Gainford, the Directors, notably Sir William Noble, Mr. Isaacs, Mr. McKinstry, and Mr. Basil Binyon, and also the great ability of Mr. Reith, I think it can be said that not one serious mistake was made. Had it been otherwise, no one could have been blamed.

For weeks on end there was no time for lunch, a cup of coffee and a few sandwiches from the G.E.C. canteen would be swallowed at intervals between sorting and arranging correspondence,

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seeing countless people on as many different subjects, replying to the infinite number of queries being raised on every side.

The London, Manchester and Birmingham stations all began operations officially on the 14th, 15th and 16th of November respectively, although they were, in reality, being run by the Marconi Company, the Metropolitan Vickers Electrical Company and Western Electric Company, respectively.

As soon as it was possible the staff was taken over by the B.B.C., and the organisation for dealing with their development built up step by step as occasion demanded.

Just before Christmas, 1922, the Newcastle station was opened, and it was followed on February 13th, 1923, by Cardiff, and on March 6th by Glasgow, the remaining two stations, Aberdeen and Bournemouth, not being opened until October 9th and 17th respectively.

It will be seen that within four months six stations were rushed into existence, all of which put out a daily programme totalling about four to five hours' duration, and that within ten months the B.B.C. contract with the Post Office to erect and maintain an efficient service from eight separate stations was fully shouldered.

The head office staff in Magnet House, however, had not the monopoly either in difficulties of accommodation or in the work to be accomplished under maddening conditions, for Mr.

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Jefferies, over at Marconi House, led an equally frantic existence.

He was forced, owing to the lack of accommodation, to do all his work in one room, and that room was the studio itself !

The Marconi House studio was originally a cinematograph theatre and was situated at the top floor of the building overlooking the Strand and the river. It was a small room about 20 feet square, with a faded green carpet. The walls and ceiling were draped with thin white muslin, which in the sooty London air had soon become soiled and dingy. A few chairs, a grand piano, and a worn-out leather settee with the horsehair coming through, completed the furniture, with the exception of a small desk at which Mr. Jefferies compiled his programmes. There were also two telephones, both of which had a perfect mania for ringing, and a typist who clicked away cheerfully morning, noon and night.

But, you will say, this man was in a paradise ! A large room occupied solely by him and his typist ! Heaven !

By no means. There is a charming and fantastic class of creature, necessary to the maintenance of broadcasting—but otherwise quite superfluous—the engineer !

There were four microphones in this studio and, would you believe it, the engineers positively could not leave them alone. They tapped them, shouted at them, coaxed them, and whispered to them every minute of the day.

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They hung them here and then there, they played the piano to them, took their temperatures, measured their appetite and, in fact, treated them like a lot of spoiled children. And more than this, they insisted on silence in the room while they were doing it !

All this poor Mr. Jefferies had to put up with, and get on with his work at the same time.

This was not his only trouble either. There is another class of creature, equally charming and fantastic, equally necessary to broadcasting—the artiste ! These would-be broadcasting artistes arrived by the hundred, requesting auditions.

Three days a week they came at the rate of fifty per day to have their accomplishments tested. There was no waiting-room in which they could sit, so they were to be found crowded into the studio waiting their turn.

Now, you can imagine the state of the room ! A dozen or more artistes waiting audition, half a dozen engineers playing with microphones, two screaming telephones, a typewriter, and amid all this Mr. Jefferies, single-handed, attending to every one and producing at the end of the day a three-hour musical programme. It has always been a source of amazement to me how the thing was carried on.

This hand-to-mouth existence in programme organisation was, I suppose, inevitable in the opening stages of a fundamentally novel form of entertainment, and the tremendous strain con-

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tinued until the move over to our present offices at 2, Savoy Hill, at the end of February.

Every member of the staff worked during this time an average of twelve hours a day, and the strain became so great that I remember remarking to Mr. Reith one morning, "I shall break down if this goes on much longer." "You might let me know when you're going to do it," was his reply, "then we could arrange to take it in turns"!

The constant variety of the work, the new problems which had to be grappled with daily, and the enthusiasm with which every one tackled his job, resulted in a mushroom-like expansion, but again, thanks to the General Manager's outstanding ability, it never over-ran itself or became unwieldy.

We overcame obstacles by a mixture of self-confidence and determination, based on our firm belief in the future of broadcasting and our desire to show the public that we could provide more than a service to the "reasonable satisfaction" of the Postmaster-General.

In this I think we may claim to have been successful, for the executive work of the company received high praise in the Government Report, as the following quotation shows:—
"The evidence placed before this Committee demonstrates that the B.B.C. have shown enterprise and ability of a high order in carrying out their undertaking and have done much valuable pioneer work in the face of many difficulties. They have shown a readiness to

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accept suggestions and advice in regard to their programmes which have won and merited widespread approval."

Shortly after the company was formed, an opportunity occurred of broadcasting Opera from Covent Garden. This was much too good a chance to be missed, and, although the technicians were not sure how a microphone would transmit on a huge stage like that of Covent Garden, where the singers would be, at times, 40 or 50 feet from the footlights, every one was immensely enthusiastic. The Post Office engineers rushed in a line between Covent Garden and Marconi House, the Western Electric Company installed a special microphone and amplifier, and within a very short time it was possible to make a test.

I well remember the occasion. We all assembled in a little room on the top floor of Marconi House, where a loud speaker 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 dead silence, and was followed by two sharp raps; a second later the huge orchestra had leapt into its stride, swelled up to a great crash of brass and cymbals, which could be heard all down the corridor at Marconi House.

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Our excitement was immense. The broadcasting of opera was an assured success: that could be said after listening for a few moments. The sound of the great orchestra contrasted so forcibly with our little band of seven in the studio, that it came as a revelation of what the future of broadcasting might be. It made us more confident of success, and carried us forward to the days when we should have great conductors and orchestras in our own studios—those dreams of a year ago are slowly but surely coming true.

The public received the first opera performances with the greatest enthusiasm. Post-cards and letters up to 600 and 700 a day came flooding the office. From the Shetland Islands and Scandinavia, from Holland and Berlin down to Madrid and Malta, the letters flowed in; the sale of apparatus went up by leaps and bounds; the Press were enthusiastic, and a far greater general interest was taken in broadcasting than ever before. The British National Opera Co., whose co-operation made these transmissions possible, was well rewarded in its enterprise, for hundreds of seats were taken at Covent Garden by delighted listeners, and the season was crowded and successful in a way that had seldom been equalled.

Many people imagining opera to be a dull and dreary thing were converted in an evening; many others who had never heard or expected to hear opera as long as they lived had it brought to their hospital or bedside.

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This great success, coming hardly three months after the Company's inception, not only aroused widespread interest in broadcasting, but also public musical taste, coming into contact with something new, something it had hitherto rather sneered at, found it, on closer acquaintance, extremely stimulating and satisfying.

When the world's workers were putting on their hats to go home about six o'clock in the evening, the broadcaster was only just beginning to consider the serious work of the day—the evening programme.

All through these months we were so short-handed that every one took turns to do the conducting of the evening performance. It so happened that Mr. Burrows went out into the provinces just as the opera transmission started, and since Mr. Palmer had only just joined the company, and was a little strange to the work, the opera transmissions devolved on Mr. Jefferies and myself.

The day's work and the children's hour over, we would snatch up our hats and make for a tavern near by to discuss the evening's work while munching meringues and cream—for that was our favourite dish!

Soon after the opera started, we decided not only to give the story of the acts of the particular opera we were transmitting, but also to make some interpolation from the prompter's box at the side of the stage during the actual performance.

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This was criticised in musical quarters, but, bearing in mind that the vast majority of our listeners had never listened to opera before, and would have the greatest difficulty in following the plot, I maintained then, and I still maintain, that it was justified.

You might have seen us there, pencil and paper in hand, Mr. Jefferies with a score of the opera, making up the story of the opera by reading through the music, while I edited and wrote it down. When it was complete (and the meringues all devoured), he would repair to the stage of Covent Garden and I to the studio to deliver the story of the opera before it began.

Many people wrote in congratulating us on the clearness and conciseness of the *résumés* we gave them, and if their eyes should chance to glance through these lines, they will be interested to know that nearly all were got out over the evening meal! The days were too short, and our brief respite for dinner afforded the only possible opportunity to do this important and apparently acceptable part of the work.

Sometimes it happened that we wanted to pick certain items out of the act of an opera, or make an entrance at some special point. In these cases the procedure was as follows: Having told the public what was going to happen, I would repair to the transmitting room, where there was a direct telephone line to Mr. Jefferies at Covent Garden. I would call him up on the telephone with the switch connecting the

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opera house to the transmitting set in my hand. Think of the Engineers letting us near their switches! What would they say to us to-day?

Mr. Jefferies was following the music on the stage with his end of the telephone clapped to his ear, and when the precise moment came, he would say, "Are you ready?" "Stand by," "Shoot." In went the switch, out went the opera. "She's up," I would call back—and then, immensely pleased with ourselves, and feeling that the world really could not go on without us, we would regale each other with the gossip of the moment—how the soprano looked when she came off stage, and what the conductor said when the chorus miscued in the last act.

Great days! Already I look back on them with a certain wistfulness and regret. There is something very attractive about unorganised methods when they are handled by intelligent people! The microphone that is tied up with bits of string, the switches that are falling to pieces, and the gadgets that won't work unless they are coaxed by some one who knows how.

When things don't always work infallibly! When something goes wrong and one has to step into the breach and talk nonsense for half an hour (as I had to, one evening), but knows people will realise that in an emergency shortcomings are forgiven.

And best of all, when everything goes with a swing, because every one pulls together and will put out their last ounce to achieve success.

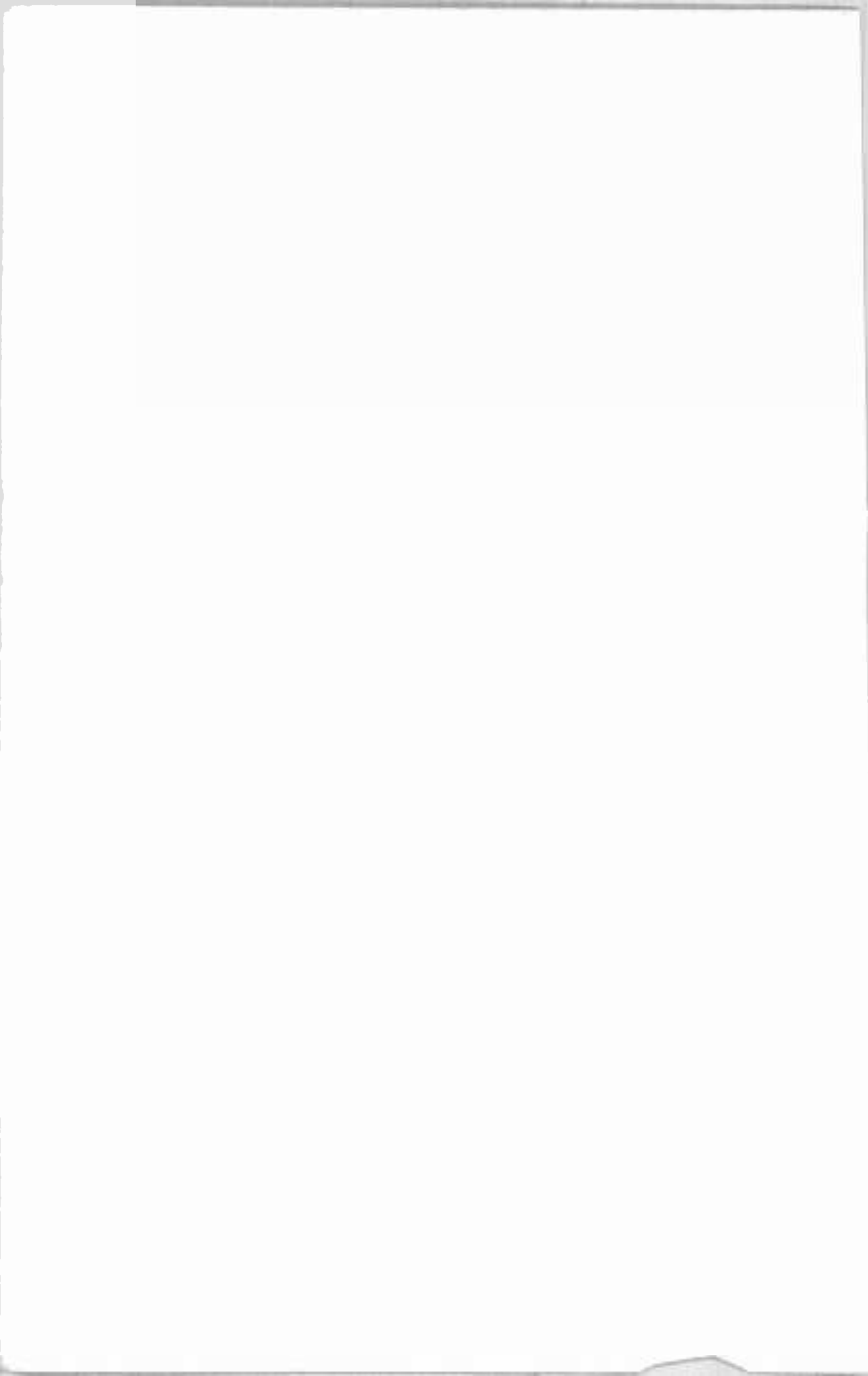
I know it's wrong. I know big things can't



Photo

MR. A. R. BURROWS,
Director of Programmes

Foulsham & Bayfield.



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go on in that way. But isn't it preferable, after all, to the watertight compartments and the petty differences that come later in the well-built organisations? "Why is so-and-so handling that?" we say. "It ought to have come to *me* first," and so on. In those days it didn't matter who handled anything, as long as it was handled and handled well. It was a democracy—short-lived, alas! A democracy of young pioneers, doomed like all the pioneering of youth to come up against the rigidity of age, discipline and experience; doomed to be swept quickly into the inexorable mills of civilisation and organisation—and forgotten.

We must content ourselves with the memory that once for a very short time it existed, that even in the heart of London, civilised and organised to death, there was a sudden flash—a gesture—made by a handful of silly young men who had, with the aid of a microphone, the ear of the world. And the irony of the situation is that the world hardly realised what they were up to!

Great days! Not easily forgotten.

After the opera season transmissions were over, other transmissions from outside sources took place. "Cinderella," "The Last Waltz," "Battling Butler" and "The Lady of the Rose," all had excerpts broadcast. In *no case* was an entire performance given on the same evening, so that broadcasting could not have satisfied the listeners, and must surely have left them with a desire to *see* as well as hear.

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further two years. They also recommended that broadcasting should not be a Government department, but should work under licence from the Government.

They were of the opinion that the experimenter's licence and the broadcast licence should be abolished and a standard universal licence at 10s. should be substituted, but of this, they considered a larger percentage (as much as 75 per cent.) should be handed over to the B.B.C.

This licence having been authorised, and a provision made in it against re-radiation, they recommended that it should be vigorously enforced by the P.M.G., whose hands should be strengthened by statute if necessary.

They agreed to the necessity for extending the waveband and the desirability of keeping this band free from interference by other services.

Further, that the restrictions on broadcasting hours should be removed, that there should be a gradual extension of news services, under proper safeguards, and that further facilities should be given for broadcasting special events without regard to the hour. (Nothing which can be considered to have a "news" value can, at present, be broadcast before 7 p.m.)

The committee recommended the appointment of a board to advise the P.M.G. on broadcasting matters, but, finally, *could not make any recommendation as to the protection of British industry against foreign competition*, since it appeared to be a part of the fiscal policy of the country to be dealt with by Parliament.

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It can be seen at once that the recommendations of the committee were such as to increase materially the scope and usefulness of the B.B.C. programmes. They represented a great advance on the original agreement with the P.M.G., and were in almost every way satisfactory, with the exception of the fact that they did not recommend the protection of the British industry which had financed the whole scheme and made broadcasting possible.

This was considered to be the keystone to the position and, therefore, although the report was signed by all the members, Mr. J. C. W. Reith, the General Manager of the B.B.C., who was a member of the committee, put in a very strong reservation on this cardinal point.

The report was submitted to the Postmaster-General, and by him to the Board of the British Broadcasting Company, who, while they were agreeable to any modifications and simplifications which would widen the scope and increase the popularity of broadcasting, could not accept the report, since it did not take care of the most crucial point at issue, namely, the protection of the British manufacturer, which was one of the fundamentals upon which the whole of the original agreement was based.

After the most careful and deliberate consideration of the whole position the P.M.G. found that it was not possible to put into operation the whole of the committee's recom-

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mendations immediately. He took, however, the points in the report which were calculated to place the company in a better position to satisfy the public taste, and made certain other decisions which were entirely favourable to the company's interests.

They were, briefly, to afford protection to British manufacturers, to extend the licence of the company to be the sole broadcasting concern until the end of 1926, and up to this date to give them the first refusal of any further stations it might be thought necessary to erect, to establish three forms of licence, the experimenter's (10s.), the constructor's (15s.), and the broadcast licence (10s.), the constructor to sign a declaration that he would not knowingly employ foreign material in his apparatus ; to establish a licence to meet the cases of those persons who had already constructed home-made sets, this licence to be called an interim licence (15s.), the amount of 7s. 6d. to be paid to the B.B.C. out of each 10s. licence and 12s. 6d. out of every 15s. licence ; to enforce the licensing regulations he had set up ; to continue at a reduced rate the royalty system payable by B.B.C. member firms until such time as the licence revenue should be adequate to meet the programme expenditure ; and to extend the membership of the B.B.C. to factors provided they would guarantee to sell only British goods.

From the foregoing it will be seen that the united efforts of the Postmaster-General and the

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Government committee succeeded in establishing the B.B.C. on what promises to be a firm financial basis.

With the prospect of an adequate revenue the programme activities of the company should be widened and improved, with the protection of British manufacturers the industry should develop and prosper, and the increased range of wavelengths available should obviate the interference between stations which has existed hitherto.

Listeners may therefore look forward with confidence to a wide and far-reaching improvement in every direction, for the new regulations will not only affect the scope of the transmissions, but, by establishing the manufacturing industry on a firm basis, they will surely help forward improved designs and increased efficiency in receiving apparatus.

Great Britain may now make a bid for the finest broadcasting system in the world. We are an island nation confined within a narrow compass, and the organisation of our trunk telephone system enables a word spoken in one corner of the country to be heard in every other part of it—a valuable asset either in time of national emergency or rejoicing. The fact that we are also the first country in the world to solve the difficult problem of how broadcasting is to be paid for, gives us that financial backing on which all experiment and research must be based, and should enable us to establish a service which from all points of view should be second to none.

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We may even be the means of establishing London once again as the musical centre of the two hemispheres.

Now that all the greatest artistes in the world are steadily migrating West in response to the compelling call of the dollar, it will be possible, perhaps, to offer a sufficient inducement to draw them back again to Europe.

This would indeed be a great achievement, but it depends for its success on public support. Make broadcasting reception as ubiquitous as the telephone, and its officials will be able to command the world's talent and maintain a standard with which no other type of organisation can ever hope to compete.

Criticism has been made, and will no doubt continue to be made, of the system of unified control commonly called "monopoly."

Monopolies are seldom successful, since, generally speaking, all things become stultified and barren without the spur of competition.

The British Broadcasting Company fully realises this fact, and has already adopted measures to bring it constantly in touch with fresh and outside points of view. Moreover, it considers that the public criticism to which it is constantly subjected, will have much the same effect as competition, since there is always in a sense a rivalry between what the B.B.C. has given, and what the man in the street wants.

We shall always pursue vainly the phantom

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of a satisfied public while it will constantly elude us, clamouring for novelty and development.

We shall always be losers matched against an ideal, and this, it seems, will prevent any relaxation of effort. In the words of the poet :

A man's reach must exceed his grasp,
Or what's a heaven for ?

But, be this as it may, the B.B.C. intends to prove to the world that unified control in broadcasting is not only the most desirable thing from technical points of view, but that it is the cheapest and most efficient way to give the country a broadcasting service of wide public utility.

CHAPTER V

A LINE OF ACTION

BROADCASTING is a new form of entertainment. This is generally accepted and frequently stated by every one who writes anything about the subject, and yet the public do not yet appear to have perceived its limitations—judging by the daily stream of letters which the programme department receive.

It attempts the impossible—to please everybody. Hence, since human nature is what it is, it can never be perfect, and the incentive to approach nearer to perfection will always inspire those who are concerned with its organisation.

Having admitted that every one cannot be pleased—the greatest good to the greatest number is obviously the next best thing.

A listener wrote to us some time ago plagiarising a well-known saying, "You can please some of the people all the time, and all of the people some of the time, but you can't please *all* the people *all* the time."

This is true, so it will perhaps be interesting to examine the essentials in which broadcasting differs completely from any other form of entertainment.

First. It is blind. The eye, in every other form of amusement, plays a most important part, and the audience are influenced and put in sympathy with the performer as much by his visible appearance as by anything else.

Second. It is—at present—handicapped by

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the fact that perfect reproduction is not possible. I expect the manufacturers will admit there is still some way to go. Certain forms of vibrations can hardly be transmitted at all, such as bass drums, or low organ notes, and, also, there is a lack of the bright tone colour (mostly overtones and harmonics) which cannot be got "over" as yet.

The orchestra in the studio and on the loud speaker in the next room are noticeably different. This, however, is one of the difficulties which will pass with the perfection both of receiving and transmitting apparatus.

Third. No other organisation attempts to put out the same *quantity* of performances as we do. I believe it has been hinted in the past, by interested and disinterested parties, that we know nothing about entertainment or what the public wants. I believe that the greatest entertainment expert in the country, had he been in our position, would have developed in just the way we have done—because there *is* no other way to develop. I do not pretend for a moment that all the avenues have been explored; they have not, but everything has been touched on. In the years to come these avenues will be developed.

Fourth. Broadcasting appeals to a range of public well nigh inconceivable. From palace to slum people are listening. It is the most democratic form of entertainment ever invented by man.

Fifth. Broadcasting is entertainment in the

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home. This in itself is a new field which has only been trodden hitherto by the player-piano and the gramophone.

Home conditions are different from any others. Public entertainment takes place where people are gathered together for the express purpose of hearing or seeing a certain thing. They are in a mood to enjoy what they receive. They go there with that end in view.

But the ghostliest of ghostly stories told in the studio with the lights out does not thrill the listener whose baby is yelling under the table.

It is nothing to create a studio atmosphere. The programme has got to get into the home atmosphere.

Sixth. From the point of view of the artiste or speaker, there is no audience. There is no "come back." Success or failure is indifferent to the microphone. This is the greatest discomfort for an artistic temperament, and the successful artiste has to have—like the Uncles—any amount of self-confidence, and a determination to get his personality into the ether. No easy task.

Now I think that the six points outlined above will make it perfectly clear that we have to deal with an entirely new set of circumstances, of unparalleled difficulty.

What, then, is the general policy on which our programme organisation is run?

Broadly speaking, I think it is to keep on the upper side of public taste, and to cater for the

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majority, 75 per cent. of the time, the remainder being definitely set apart for certain important minorities.

What is meant by the "upper side" of public taste? Well, we strive, as far as possible, to avoid certain things, desirable or undesirable, according to the point of view, which are as readily and more fully obtained elsewhere. Such things, for instance, as sensational murder details, or unsavoury divorce cases.

These things appeal strongly to the curiosity of certain types of people, and they can always be read in cold print. But reading, after all, is *a private thing between the reader and the matter read*. Many things, harmless-looking enough in print, sound very different read aloud.

Besides this, children may always be listening, and there seems no point in blurting out things of this kind to the young unnecessarily.

Apart from all this, what justification is there for dragging into prominence the seamy side of private life? Is any one the better for it?

Of course, we could probably increase the number of our subscribers in a few weeks by changing our policy on these things, but it would leave us open to attack from many quarters. If broadcasting is to be a permanent asset to our national life, it must at all costs avoid offence in any shape or form to the widely varying susceptibilities of the vast public which it serves.

Although under Government licence, broad-

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casting is not Governmental, it would be fatal for it to become the catspaw of any political policy. It must establish itself as an independent public body, willing to receive any point of view in debate against its adversary. Its unique position gives the public an opportunity they have never had before of hearing both sides of a question expounded by experts. This is of great general utility, for it enables the "man in the street" to take an active interest in his country's affairs. One-sidedness would be short-sighted and suicidal.

For this reason, also, it is not sectarian. Any form of religious opinion is invited provided that it will appeal to a wide section of the public, and is consistent with established fundamental facts.

Creed and dogma take a back seat in broadcast addresses; to give something helpful and inspiring to the listener is their object.

Now a word as to music.

Before the days of broadcasting how often did the man in the street hear music? It was confined, for the most part, to occasional visits to big concerts, and the rest heard at the theatre, the cinema, in the public parks, or on the gramophone.

The general musical standard was admittedly low. Broadcasting is bound to alter this.

I think few listeners have studied our problem. They write to us and say, "Why don't you give us music like such-and-such a musical comedy?"

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Something with punch in it." This music is, of course, a very small percentage of all the music written, and the fact of the matter is that this type of stuff has been played regularly at our concerts. When the orchestras have played it out, what can be done but repeat it *ad nauseam*?

Again, the fact that the average fox trot has a six-months' life, and the average musical comedy a year, shows that this music has nothing really satisfying in it. It is a drug, and when one drug fails to operate a new one must be prescribed.

In this way "Who tied the can on the old dog's tail?" lasts until "Sweet Hortense" comes along, and that, in turn, is forgotten when "Yes, we have no bananas!" arrives. That in its turn (which may Heaven send soon) will disappear to make room for another.

The present number of concerts given by the B.B.C. totals out to over 17,500 hours of transmission yearly—an average of six hours per day, per station, of which about four hours is devoted to musical programmes. Anybody who can fill these programmes with popular music every night is welcome to come and try. *It doesn't exist.* Even if it did, and were the right thing for us to do (which I do not admit), dissatisfaction would soon grow among our listeners. *This music doesn't wear.* It cannot be repeated, whereas good music lasts, mellows and gains fresh beauties at every hearing. It stands, like Shakespeare, through the centuries. No passing craze can shake it. It is the product of greatness, and greatness leaves its mark and endures.

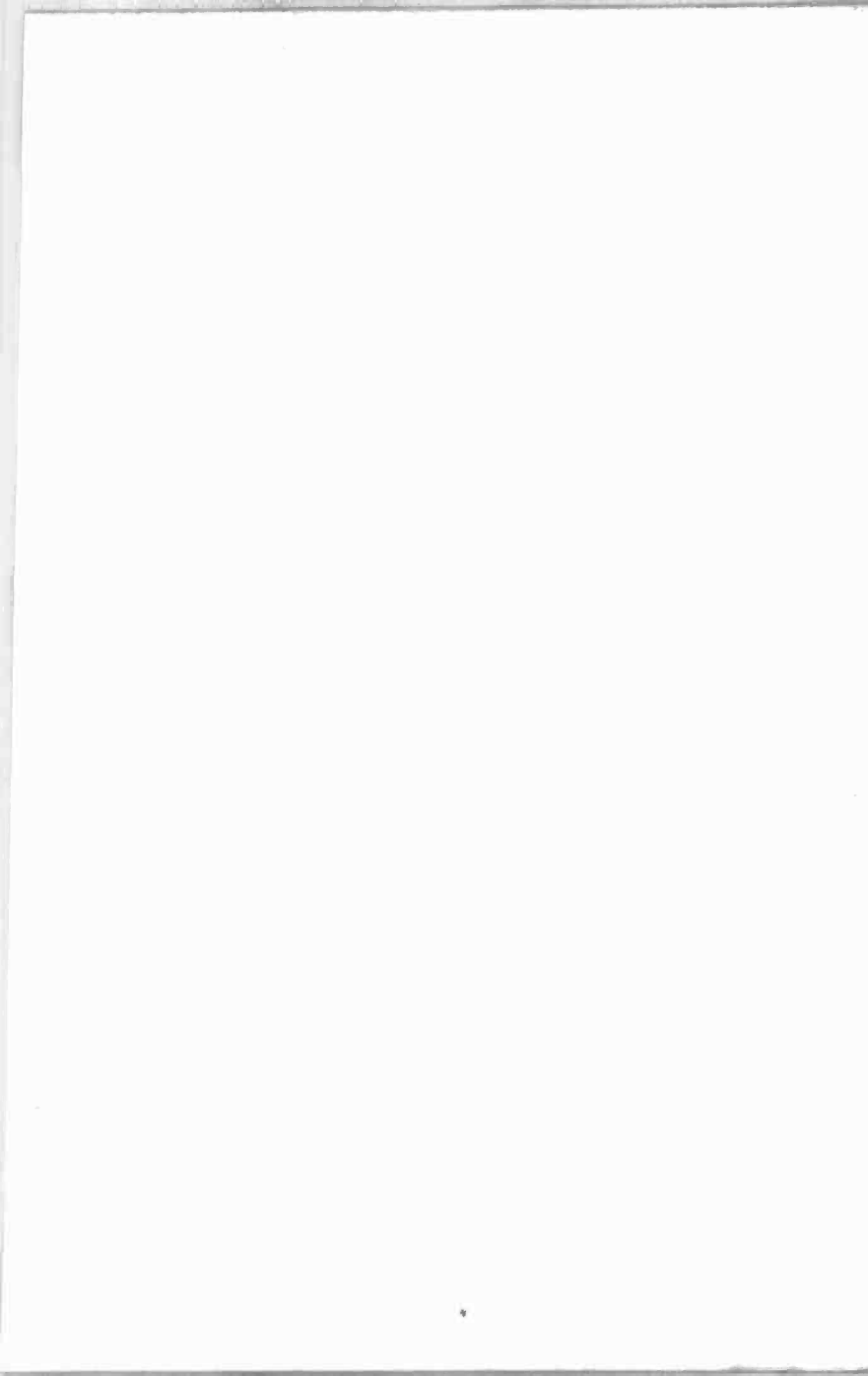
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Now, admitting that a large part of our audience have not had the opportunity of hearing good music before in any quantity, it must, of necessity, be strange to them. The first opera season proved that. Hundreds of letters received were from persons who had never heard, or intended to bother to go and hear, opera. It was something new; in many cases a revelation, the opening up of new fields of feeling and enjoyment.

But when all is said and done, we are a conservative people, and also without doubt an unmusical people. We don't like to drop our fancies or change our standards. It goes against the grain.

It would be difficult to compute the quantity of music which has been written, but at a rough guess I should say that 75 per cent. of the music that is *playable* has been performed at our concerts at one time or another. The remaining 25 per cent. either requires larger orchestras and choirs, or is too modern or difficult to be appreciated even by a small part of our audience.

Broadcasting, therefore, if only on account of the number of concerts it gives, is bound to do a lot of good music. This, in turn, is bound to stimulate the musical appreciation of listeners. Good music improves on repetition. We must repeat it willy-nilly to fill the programmes. Therefore I prophesy that ere many years have passed a Beethoven symphony or a piano concerto will be every bit as popular an item in our programmes as half-an-hour's dance music.





MR. P. P. ECKERSLEY,
Chief Engineer.

A LINE OF ACTION

Earlier in this chapter I mentioned that from time to time we deliberately played into the hands of certain minorities. This is particularly so in music and literature. We do advisedly put on programmes from time to time which we know cannot appeal to the majority. Modern chamber music concerts and Shakespearean recitals are among these. We do this because we feel that our audience is so vast that we must make a programme definitely for the "high-brow" now and then. He has paid his licence, and is just as much entitled to a concert according to his taste as any one else. If others do not like it, they can see it coming in the *Radio Times* and switch off, or spend their evening elsewhere.

A listener does not, it will be agreed, pay heavily for the 400 odd concerts he can receive from his own station, to say nothing of those from distant stations which can be heard with a long range set. He may, therefore, tolerate an occasional programme which is not to his taste.

Finally, broadcasting aims at bringing into the homes of the people *things that cannot be obtained in any other way*.

It is, perhaps, a just criticism of our programmes up to the present that we have been giving things that can all be got in other directions. Music in concert halls, drama in the theatres, news in the papers.

This is true. We have made them more readily obtainable to great numbers of people, but still the criticism remains.

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There is no great event of national importance which could not be given to the nation.

The King's speech in the House of Lords, the great ceremonies in Westminster Abbey, the proceedings of the House of Commons, all these are, as yet, inaccessible to the microphone. Sometimes it is a question of principle, sometimes one of competition.

Our intentions, though of the best, have not always been taken in the spirit in which they have been offered.

But, as the servants of a new form of communication, we have striven to give the public what, we believe, it wants, and so we shall continue. Here, as elsewhere, we need the support of our public.

During the past year, we have had enormous difficulties to contend with. It has been one long fight. In the future our great public, we hope, will on occasion express itself and replace our suggestions by its demands.

One word more. In the course of a debate some time ago, one of our adversaries said that the officials of the B.B.C. had no "vision," that they were a lot of ignorant opportunists, and much more in the same strain. He condemned our concerts wholesale (but, of course, never listened to them), and seemed to think that our days were numbered.

We have the finest publicity medium in the world, but we do not use it in attack and rarely in defence. We have endeavoured to maintain what one wireless paper termed "a consistent

A LINE OF ACTION

dignity of attitude," because we believe that this is the way to gain enduring public confidence and support.

Time will show if this is a good policy or not, but it cannot, I think, be called a shortsighted policy.

Broadcasting has spread with amazing rapidity. It is still in its infancy. The more we do, the more we are aware of our shortcomings.

We place our record daily in the ears of our public. On that let us be judged.

CHAPTER VI

GENERAL ORGANISATION

BEFORE proceeding to discuss the details of the programme work, which is, I have no doubt, what the reader is most interested in, it will be worth while to make a brief halt to examine the general organisation.

It is divided under the management into three main classes: programme, engineering and secretarial departments.

Broadly speaking the programme department is responsible for all matter to be broadcast, the engineering department is responsible that it *is* broadcast in the most faithful manner possible, and the secretarial department is responsible that it is paid for.

These three departments, and particularly the first two, have to be constantly in touch with one another. It is no good the programme staff arranging to broadcast the sparrows twittering on the top of Nelson's Column, if the engineers can't get a microphone up there. Therefore every step the programme side takes which presents technical difficulties, has to be taken hand in hand with the engineers.

Each department has, of course, its own subdivisions.

Under the programme department on the head office staff comes the direction of music, drama, talks, simultaneous broadcasting, copyright, the women's and children's hours, and preparation of programmes for the *Radio Times*,

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besides, of course, the actual station directors responsible for the executive work at each broadcasting centre, and all the detailed work arising out of programme administration.

The engineering department deals with research, simultaneous broadcasting, outside installation sub-departments, and, of course, the technical maintenance of stations, which are divided into areas, under an area engineer who is concerned with the efficiency of the apparatus at each station.

Last, the secretarial department, under which come the accountants, the collection of revenue both from the P.O. and member firms and the general conduct of all the usual multifarious matters in a big business concern. This department also deals with all legal matters, and supervises correspondence, filing, and office staff.

There will be, no doubt, additions to this staff as time goes by, but the foregoing will give some idea of the lines on which it is built.

Reorganisation in such a company as the B.B.C. is necessarily frequent, and the latest move in this direction has been to form a control board, consisting of the Controller as President and three Assistant Controllers, the heads of the departments already referred to. This control board meets weekly and discusses projected arrangements from every point of view. The Organiser of Programmes is present at these meetings and acts as the executive arm of the Control Board, putting into effect everything

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affecting programme arrangements which the Control Board desires to adopt.

The advantages of such a system are obvious. They enable opinions from every branch of the works to be correlated and they concentrate the executive responsibility into one channel.

PROGRAMMES

From time to time there have been letters received and inquiries made which show that there is a desire on the public's part to know the machinery by which their daily programme reaches them—in other words, "How the wheels go round"—and so I propose to take each phase of the programme and technical organisation and endeavour to show how it affects the finished article, though I fear that many things are interdependent, and it will be difficult to make it clear where one department ends and another begins.

In broadcasting many things are so essentially co-operative that no system of watertight departments is possible.

To take the programme side first:—

Music.—This largest and perhaps most important side of our programmes is controlled by Mr. Percy Pitt, who is most ably assisted by the well-known avuncular figure, Mr. Stanton Jeffries, as musical director.

Mr. Pitt's wide experience in musical matters and his association with the British National Opera Company have been of the greatest assistance to the company in critical days, and

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his work lies more in the direction of the policy of the musical programmes than in their actual balance and compilation. The latter work falls chiefly on the station directors.

The whole of the more detailed arrangement of the musical policy of the programmes falls on Mr. Jefferies' shoulders.

He engages those artistes who by reason of their proficiency have contracts with the company for a certain number of performances. Having engaged these artistes, it is necessary to arrange tours for them round the provincial stations, so that apart from simultaneous broadcasting, each station may have the opportunity of including in its programmes first-class London talent.

No one can have any idea how difficult these tours are to arrange.

One would think that it would be simple to start an artiste off from London, stopping him daily in turn at Birmingham, Manchester, Newcastle, and so on.

Actually it turns out that on the night he would arrive, say, in Newcastle, they have a programme of a type in which it would not be possible to include him. The day he should arrive at Glasgow is found to be one on which half the programme is an event of national importance sent from London, and so on. An endless amount of correspondence and dovetailing is necessary to make these tours a success.

Artistes are usually sent off in pairs, and any one who goes into Mr. Jefferies' office will see

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a curious chart covered with arrows and hieroglyphics denoting the route to be taken by Mr. A. when he next leaves the Metropolis.

Mr. Jefferies also plays this game of noughts and crosses with the entertainers who go touring, and I know one of them—to wit John Henry—succeeded in making a good “turn” out of it.

Perhaps some of you have wondered how it is that the stations have a constant supply of fresh orchestral music? This is made possible by a large circulating library which is despatched every month in a leather trunk and goes off on a tour of the stations.

Inside the trunk are all types of music, from Jazz to Classical, in sufficient quantities to cover the programmes for the period.

Weeks before the trunkful of music arrives, a list of what it contains has been sent off, so that the station director knows exactly what to expect on a certain date, and can arrange his programme accordingly.

When the trunkloads of music arrive home after their journey round England, much of the music is, of course, disarranged, lost, or torn. A staff is kept constantly employed in re-sorting, adding to, and preparing music for its journeys.

In addition to this, new music is always being purchased, and as the sizes of the orchestras are ever on the increase, new parts for various items are continually being purchased.

All this, as can well be imagined, needs the greatest care and accuracy concentrated upon it.

I suppose most of my readers will be blissfully

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unaware that for over 75 per cent. of the musical items broadcast from their stations, a performing royalty is paid. This is an expensive part of our programmes. Another part of the musical side of the programme department is looking after special cases in these royalty fees, finding out how much it will cost to obtain permission and rights of, say, "Hansel and Gretel," or some similar work.

In addition to all this, there is the constant stream of would-be artistes to be put through auditions—to be passed or discarded, graded according to their voice and repertoire and their suitability for certain types of programmes noted, and so forth.

All the above may not seem too much for one man to supervise, but I assure you that the strain of looking after it for nine months almost sent the Musical Director to a premature grave!

Drama.—This side of our programmes is one which, I feel, will come into much greater prominence later. Whether it takes the form of comedy, tragedy, or narrative sound-pictures, there is no doubt that a great field lies open here, as it did in the case of the cinema, waiting to be explored. I propose to go into this idea further on in the book, but since I am at present only trying to explain the working of things, I will briefly outline the process by which a play is "put on."

The first question is the play. So far, we have largely contented ourselves (I think wisely) with Shakespeare, whose amazing beauty lies almost

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entirely in the spoken word as a means of presenting character and situation. No better plays for broadcasting could have been written.

Having selected the play, the next question is to arrange it so that it can be presented as a consecutive whole in under two hours. This entails careful and intelligent arrangement, and we have been most happy in our association with Miss Cathleen Nesbitt, who has tackled this part of the work so enthusiastically. Others also have helped in the production of modern plays with considerable success.

The play arranged for broadcasting, next comes the selection of the actors. It does not follow that a well-known actor on the stage will be successful on the microphone. Extreme sensitivity of vocal colour is essential, for this, after all, is the whole thing. Clear enunciation and a certain mellowness of speech are assets, though an acutely unpleasant voice may be the making of some thankless or humorous part where the voice is not used to give pleasure, but to provoke or amuse.

The choice of voices is a thing which is still in its infancy. But that the voices chosen should contrast with each other is essential so that the listener can differentiate characters at a word.

The *cast* having assembled, the play is gone through two or three times in order to perfect cues, musical interludes, etc., and is finally listened to at the end of the amplifier on a pair of telephones in another room.

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The noises "off," knockings, bells, fights, etc., are all rehearsed as far as possible, though I should be the first to admit that we are leagues from perfection in this direction.

After all it is tantalising to find that rustling paper on the broadcast sounds like waving dried grass, and hitting broadswords together sounds like wooden walking sticks, without any metallic ring whatever! We shall one day fake noise effects as the cinema fakes pictorial effects.

In the "Merchant of Venice," Shylock dropping the scales in the trial scene was done by letting a heavy iron chain with one-inch links fall into a paint-pot! People said it was most realistic! When he sharpened his knife, the noise was done with two pieces of angle-iron, which were slowly scraped across each other!

And so, as time goes on, we shall discover the wireless equivalent for many sounds which at present give unfaithful results.

But of wireless drama, more anon.

Talks.—Approximately one-quarter of our total daily transmissions takes the form of speech. This, of course, includes the women's hour talks, children's stories, news bulletins, weather reports, and lectures on general matters.

We may put aside the weather report, which is received direct from the Air Ministry, and the news bulletins, which are sent direct from Reuter's. Reuter's is the collecting point of the four great Press agencies which supply us with a certain amount of tabloid news twice every

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evening.* This comes direct to us without any effort on our part, save that we request from time to time the inclusion of certain types of news which experience proves are of interest to our listeners.

The remaining talk, *i.e.*, women, children, and general interest, is received mainly in two ways.

Either it comes to us unasked, or we have to seek it out!

It is surprising the number of persons who are sufficiently interested in their pet subject to send in talks about it. I do not refer, of course, to the professional lecturer, or story-writer, but to the miscellaneous private individual who feels a call to speak to every one about a subject in which for various reasons he is interested.

Many of our talks, particularly on general matters, reach us in this way, others are asked for by ourselves on some set plan, such as, for instance, the various talks on criticism, the talks on careers, on our great national museums, buildings and galleries, etc.

The material for the women's hour is very carefully selected, and is given for the most part by persons who are specialists in the particular subject on which they are speaking.

The children's stories are perhaps more carefully watched than any other form of "talk," and are selected either from old and well-known sources, such as "Alice in Wonderland,"

* The four agencies are: Reuter, Press Association, Exchange Telegraph Co., and Central News.

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“Treasure Island,” etc., or adapted from the whole mine of excellent wholesome fare available. In this department also, much is offered to us, but for every acceptable story a dozen have to be refused.

There is a common factor in all the “talk” departments—that of time.

Experience has shown that the utmost the public can absorb with interest is fifteen hundred words, which takes about fifteen minutes to deliver. It is only in very special circumstances that any talk is allowed to exceed this.

The manuscript of the talk, when accepted, is next submitted to the programme department for careful reading, for there are many pitfalls to be avoided. Advertisement, libel, bad taste, anything which is likely to cause offence to any of our vast audience, is most carefully scrutinised.

It is rarely that outside speakers who are not used to our work get their manuscript through the first time. It will either be too long or too short, or it will contain some statement or statements which *might possibly* cause offence. These have to be rectified, and the talk is again returned to us for final passing, stamping, signing, and taking up to the studio to be delivered.

The speaker also agrees to confine himself to the manuscript from which he reads, without making any additions or alterations.

If anything like this should occur, the announcer on duty would immediately throw the microphone out of circuit.

From all this it can be seen how much detailed

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organisation and work is necessary before the talks which you receive day by day are put out.

Simultaneous Broadcasting and the "Radio Times."—It will no doubt appear to you that there is nothing in common between these two. Unfortunately there is. Too much.

As you can imagine, programmes are worked out in detail some weeks ahead. The London station, owing to its increased facilities for artistes and special events, has usually something in every week's programme which will be of interest to the whole country. On the other hand, provincial stations, too, have their special nights which it is worth while offering to other stations. In this way a constant interchange or "general post" is always going on, guided in questions of policy by the head office.

It is a sort of glorified "happy families" where every one is asking every one else what they have got or what they want. "Have you Mr. Bones, the Butcher?" "No, but can you give me the Savoy Orpheans at nine forty-five?" "Thank you very much. Good-bye."

For my past sins I have become the referee in this game, and when the family is not "happy," something has to be done to make it so.

A big chart hangs on the office wall which shows what every one is supposed to be doing for two months ahead. As events are offered to stations, their acceptance or refusal of them is chalked up on the chart. This should give the

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whole position at a glance, and it does in part, but the carefully-built-up fabric is often swept away by some big event coming in and swamping everything else.

Even when everything is well, it is a terrible tangle, and the closest watch has to be kept on it all the time.

What a mess we often get into ! Letters in all directions. "Glasgow takes Cardiff, 9 to 9.30," "Cardiff to London, 7.30 to 9," "London to all stations, 10 to 11, and to Birmingham, Manchester, Newcastle and Aberdeen from 7.30 onwards," "Phone the news to Bournemouth, they can't take it on the simultaneous"—and so on, every day of the week.

Anybody wanting a really maddening jigsaw to solve ought to come and try it.

How does this, you will be asking, affect the *Radio Times* ?

Well, we have to piece the jigsaw together a month in advance, see that it all dovetails in to time quite accurately, and then set out all the programmes clearly and send them off to the printers.

Between the time they have been sent off and the proofs are returned to us, some one comes along with a big special event which must go in the programme, and the whole lot have to be recast, rearranged, retyped and sent back again !

They look so simple and straightforward when they appear in print, but oh ! the tearing one's hair, the frantic telephone calls, the last-minute alterations that go on behind the scenes !

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The combination of simultaneous broadcasting and the *Radio Times*, both of which came into operation at about the same time, nearly drove us off our heads for the first few weeks. Things were easier again later, the staff having been increased to meet the extra work entailed—as indeed it has had to be a dozen times in the last year.

Simultaneous broadcasting is more than an engineering stunt. It enables a big event *anywhere* in the British Isles to be heard by the whole country, for, as every one no doubt realises by now, things can not only be sent from London to all stations, but can be received in London from the provinces and sent on to any other station, while London, if need be, continues her programme unmolested.

The other day, for instance, Newcastle sent the "Hymn of Praise" from their station to Birmingham and Glasgow. It actually came from Newcastle to London, and then all the way back again to the other two stations.

Even though the thing has now become an ordinary occurrence which people are grumbling at (as they do at everything they are used to!), it never ceases to be a marvel to me how the great symphony concerts go along the roadsides, over the hills, through the towns, brushed by trees, soaked by rain, swayed by gales, all confined to a thin, innocent-looking piece of wire, and from these narrow limits are suddenly loosed out like a gushing fountain into the homes of millions of people over the length and



MR. L. STANTON JEFFERIES,
Musical Director of the British Broadcasting
Company.



Photo

MR. R. F. PALMER,
London Station Director.

Pollard Crowther.

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breadth of the land ! It seems more incredible than broadcasting itself almost. But the whole invention is the marvel of the age.

Stations.—Now that we have considered the central programme organisation, let us go to the station and see how things are done from that end.

The station director has perhaps the most harassing job of all. This is more particularly so since the advent of simultaneous broadcasting. Before this he was more or less monarch of all he surveyed ; he arranged his programmes within certain fairly wide limits. Now he never knows but that his most carefully planned programme may not be broken into by events from London or elsewhere.

It is a harassing job. It entails any amount of patience, co-operation and good-will. Broadcasting is a question of team work all the time, and we are indeed fortunate in having a team which seems to pull better together the greater the difficulties it has to cope with.

A station director has to be a jack of all trades. He must have imagination and initiative, a knowledge of music, lecturing and education, and an ingratiating voice, and to all this a practical organising ability and a business head must be added. It is a somewhat rare combination. Music has not been commercialised to the same extent before. It has not been dealt with in such quantity. It is easy enough to put out a few good concerts here and there, but it is a

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different matter to put out a steadily high level of concerts night after night.

It requires great attention to detail to frame these three or four hour concerts—so that they are not too heavy or too inconsecutive.

Besides all this, a station director must have tact and charm to enable him to handle the diverse types of personalities who visit the station.

He has got to get on with people, often those with whom he has little in common.

It is an exacting task, more especially as it entails a certain amount of the actual announcing of the programmes themselves—in other words, day and night work.

I do not propose to deal with the detail building of a programme here, as it receives special consideration in Chapter IX., but since this chapter is devoted to “how it works,” the ingredients which the director receives from other sources and those which he adds himself may be briefly outlined.

London supplies him direct over the broadcast with his two news bulletins and a certain number of talks and short lectures on subjects of general interest. London also supplies him indirectly with manuscripts for use in his children's and women's hours, but to this he adds considerably out of his local stock of talent and interest.

Orchestral music, as I have said earlier in the chapter, comes round to him in batches to give him material out of which to build this part of his programme, and lastly a certain limited

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number of artistes who are under contract with the company visit his station from time to time.

This is, of course, the merest skeleton, and the clothing of it with flesh and fine raiment devolves entirely on the initiative of the station director.

Costs.—Does any one ever reflect upon the cost of transmitting our 6,000 odd concerts yearly? I am not speaking now of the current consumed by the transmitting sets or the salaries of the staff, but of the actual cost of the concerts themselves.

It is surprisingly high.

Orchestras at every station varying in numbers from fifteen to thirty-five, each man being paid around £5 a week without rehearsals, added to this artistes' fees, speakers' fees, copyright fees, the hire of music, etc.—all these added together total out to about £2,000 a week, or £104,000 a year! Now can you wonder that our programme standard was not all that it might have been in those days before the new regulations came into force? This figure may be doubled and trebled in the years to come, when more stations and relay stations have been erected, when the standard of our programmes has been raised still further, and a still larger number of programmes are being transmitted.

The increase of quality and quantity in programme work depends on public support. We may be able one day to reach three-quarters of the national population with our programmes,

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even if only short-range sets are used. This presupposes the issue of some six million licences, and when this state of affairs is reached every listener can look forward to hearing concerts, lectures and news of the first quality. It will cost them 10s. or 15s. each a year! This seems to approach about as near to "something for nothing" as any commercial undertaking has done yet.

ENGINEERS

It is commonly said that the programme staff take no account of the engineers until they are in trouble, and then they realise how foolish they look when all the best concerts are prevented from reaching their audience. Indeed, the programme standard, high though it may be, is entirely dependent on the quality of the transmission itself.

There could be, I think, no better example of complete interdependence.

The perfect programme: useless without a microphone.

The perfect microphone: useless without a concert.

Let us examine the function of the engineers during transmitting hours.

There are two main jobs to be done. The first is to watch the transmitting set itself and see that everything there is in order, and the second to control and watch over the microphone amplifier.

If Mr. Eckersley, our chief engineer, were

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writing this chapter (and I wish he were) he would tell you all the ins and outs of the job, the hundred and one little difficulties about which I, being a mere layman, know nothing.

I shall have to confine myself to a far broader and less detailed sketch of the thing as I see it.

The transmitting set is a harmless sort of creature to look at, a big framework looking rather like a cross between a parrot cage and a meat safe. It has several large electric lights, about the size of footballs, sticking out of it at intervals, connected up to enormous brass terminals by very flimsy looking bits of wire.

These are the valves, and when the current is turned on they crackle and creak a bit, as they warm up, and then develop a quiet singing note which goes on as long as the transmission is being carried out.

This is as far as I dare go in describing a transmitting set, but I feel I should tell you that on the whole it's a disappointing thing to look at; there are no signs of activity. It doesn't splutter or spark, it just glows and sings away quietly to itself—until something goes wrong!

Where, then, does the engineer come in?

The concert is ready to start. He pulls over his switches, telephones to the studio, telling them he is ready, and sits down with a pair of telephones on. He may sit for hours, days, even weeks, without anything happening to disturb the serene glowing countenance of the transmitter. Then suddenly—without a second's warning—something goes wrong. A crackle

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begins to develop. The concert becomes hopelessly distorted.

The engineer leaps to the telephone and asks them to hold up the concert. He then looks quickly over the set. There are likely points; his past experience, and the type of noise the set was making, lead him to the cause of the trouble. The insulation has broken down in one of the condensers—it is starting to “short.”

Off goes the current. A spare condenser is seized out of the store, and quickly connected up in the place of the “dud” one.

In goes the switch, the generators hum up to their load, the engineer telephones through to the studio: “Carry on, quite O.K.,” and sits down again. He watches his instruments anxiously for a few moments, and then, convinced that all is well, lights a cigarette, puts on his telephones and sits down to wait for more troubles. A quick repair!

The station was out of action for perhaps three minutes. Indeed during the total transmission time of the last year the breakdown period was equivalent to $\frac{1}{4}$ per cent. This is a great tribute both to the efficiency of the apparatus used and the staff who operate it.

The qualities necessary to the engineer are fairly easy to see. He has got to be first rate at diagnosis, to think like lightning when a fault develops, and then be a good mechanic to remedy it as soon as he has found the defect.

A responsible position, made more difficult by its long spells of inactivity and frantic bursts of energy when trouble develops.

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Let us now turn and have a look at the other engineer who controls the amplifier.

He has to have all the qualities of diagnosis and quick thinking necessary to his colleague on the set, but he has also to be constantly on the *qui vive* to control the volume of sound received by the main power valves.

The infinitesimal vibrations of the microphone diaphragm are converted into feeble electric currents, and these have to be magnified up to a good audible amplitude before they are put on to the transmitting set.

This magnification takes place in the amplifier.

Now the microphone is a most particular gentleman. He is also a bit backhanded. If you shout at him, or make too much noise for his liking, he won't say anything to *you*—not a word! He will simply stare stolidly in front of him as before, but all the time he will be swearing away like fun ("blasting" we call it) to the millions of people listening to what he says.

To keep a watch on this very disagreeable trait in his character is the job of the amplifier engineer, and he can hardly leave it for a second.

If a speaker is too weak he has to "put him up a bit"; if he is too strong he has to "cut him down a bit."

The engineer's idea, as you can see, is to have music or a voice which is giving his set a good modulation all the time. But, unfortunately, in nearly every piece of music, and in most dramatic work, there are loud and soft passages.

The tendency of the engineer controlling is

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to bring all the weak passages "up" and cut all the strong passages down. This would give a colourless and quite erroneous impression to the listener of the idea which any item was intended to convey. It would all be on the level.

The day will come when the softest of soft and the loudest of loud passages will all be equally acceptable to the transmitter, but at present the engineer has to work between two fairly wide limits. All singers, conductors, or actors are advised that they should not over-accentuate either the weak or strong passages, and should not, if it can be avoided, jump suddenly from very weak to very strong.

It will be seen that the amplifier engineer has a ticklish job. When big operas or dramatic recitals are being given in the studio, he sits with his hands on the controls and the score or book in front of him. From previous rehearsals he knows exactly when the loud or soft passages will occur and controls accordingly.

On the result of his efforts the whole performance depends for its success, technically, and the ideal man for this difficult task should combine not only technical but artistic ability and knowledge as well. The two do not often go hand in hand.

Outside Broadcasts.—Now that so many broadcasts are being done from theatres, banquets, and public places, many will no doubt be interested to know how these are carried out.

In this department of our work we are largely

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indebted to the co-operation and goodwill of the Post Office Telephone Service, whose ability to get us a line through to various public buildings at short notice has been literally astounding.

Underneath the streets of London lie vast networks of telephone lines connecting and linking up in all directions.

When it is desired to broadcast, say, the Lord Mayor's Banquet, or the Trafalgar Square meeting, the Post Office are informed, and they link through a line to the nearest point. From there to the microphone a temporary flexible cable is laid.

Between the terminal point of the Post Office line and the microphone lies the amplifier.

Both microphone and amplifier are of a portable pattern and quite small in bulk, so that they can readily be moved about or hidden out of the way.

The microphone at present in use for these transmissions is about the size of two large saucers placed face to face, and stood on end, like a large lozenge. This can easily be placed on a desk or in some flowers on the table so that it passes quite unnoticed. The amplifier controlling the speech or music functions exactly in the same way as the one at the studio, and can be similarly controlled for volume.

In addition to this, the operator of the amplifier has a direct telephone line to the control room at the transmitting end, so that any alterations or adjustments can be made while the speech or concert is in progress.

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This is the principle on which all outside broadcasts are carried out at present. They are dependent on the telephone system, and within certain limits any point to which the transmitting station can be connected by telephone is available for outside broadcasting.

Simultaneous Broadcasting.—This latest, and perhaps greatest, triumph of the engineers sounds comparatively simple in description after it has been accomplished, but innumerable difficulties, large and small, had to be encountered and overcome before all stations could be linked up to and co-operate at one and the same time from any single microphone.

Here again much of the success has been dependent on the Post Office, whose co-operation with trunk lines has contributed largely to its achievement.

It seems simple enough to have a trunk line put at one's disposal and so speak to the man at the other end, but those who are accustomed to long-range trunk calls will know how difficult it is at times to hear what is being said owing to the innumerable noises, scratches, etc., which seem bent on preventing one's conversation from reaching its destination.

How has this been overcome? It has been made possible for the most part by the most careful examination and cleaning of the lines to be used, and by avoiding all unnecessary plugging and connecting, so that a line is practically equivalent to one unbroken wire from point to point.

All these special trunk lines come into the

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control and distributing room at London, where, by a complicated system of plugs and jacks, they can be interconnected to any other station.

I well remember walking along to this now famous room one morning when the simultaneous broadcasting was still a dream of the future, unaccomplished. An engineer was disentangling dozens of different coloured wires. Above his head a row of small brown boxes hung along the wall. Now the engineer "*comme type*" is a curious, rather snappy, quick-tempered sort of an individual, and I gazed at him unravelling, and listened to his soft sibilant language for a few minutes, but at last my curiosity got the better of me.

"What are those brown things?" I asked. "Mouse traps," he snapped, quick as lightning, and I went away discomfited.

Tackling the same gentleman in a more communicative mood, I found that each was a power amplifier, and was connected to the trunk line running out to each of the provincial stations. When the concert in London had passed through the microphone, and the amplifier connected to it, it was brought along and divided out among the provincial stations, but before being finally sent off on its long journey was given an extra kick-up by the small power-amplifiers on each line.

In this way speech or music of quite considerable strength is sent off to the provinces, and this accounts in part for the clarity of its reproduction at the other end.

Each of these line amplifiers is capable of

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adjustment for volume, and careful tests are made nightly before "S.B." starts to determine the exact quantity that each station needs. Thereafter these constants remain unaltered, so that each station knows exactly the strength of signals he will receive from London.

At the provincial station there is also a shunt across the line, so that the engineer at that end can control the amount of volume placed on the main power valves of his transmitting set.

When the engineers are about to transmit music from London they telephone through to the stations concerned, telling them to stand by, for, once the switch has been put in, *no further conversation can take place.*

After this, if London should speak to the provinces by mistake, the telephone rings, and the conversation of the man on the telephone will be faithfully reproduced for the benefit of, say, the Glasgow listeners! A somewhat public conversation!

Those readers who have sometimes listened to these tests will have heard, no doubt, some conversations of this kind.

I can hear some of my readers saying, this is all very well as far as London is concerned, but what happens when the reverse process is indulged in, when, say, Newcastle transmits a concert to London and the other stations?

Every transmitting set has what are known as "modulator valves." These amplify the signal strength before they impress it on the grid of the main transmitting valve.

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When a provincial station is transmitting to London, the concert is put through these modulator valves which act as an amplifier, and it is then tapped off and put on the line to London. When the concert reaches London, it can be distributed as before.

This is a very brief and broad outline of what is one of the greatest triumphs the engineers have accomplished since broadcasting started.

It is not yet perfect. Many unknown factors are always cropping up just as the problem seems solved.

For instance, people may have noticed that Birmingham rarely transmits to other stations. This is because on the Birmingham line there is about ten miles of buried cable at the Birmingham end. (All the main trunk lines usually go above ground by the road or rail side on telegraph posts.) This buried cable has the effect of lowering the tone of the speech or music transmitted so that it becomes practically unintelligible. (This difficulty will shortly be overcome.)

Another question is that of overhearing. Many lines run parallel to one other, entering and leaving the exchanges or junction boxes. These by induction effects can overhear each other, and the broadcasting concert in this way may be given free of charge (think of that !) to some poor unsuspecting telephone subscriber on private business bent.

Again the line from London to Glasgow may be perfect, and the line from Glasgow to

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Aberdeen may be perfect, but once connect London to Aberdeen, and the most awful distortion occurs! Why? Perhaps some insignificant switch connection which only the most detailed examination will reveal is not making proper contact.

All these problems and many more like them are the daily worries of the engineers; but have no doubt, sooner or later they will be overcome, and the concerts will be transmittable from one end of the land to the other with equal clarity and volume!

Cost.—The maintenance costs on the engineering side are comparatively low compared with the programme maintenance. But unfortunately this low figure for upkeep has to be balanced against the fact that apparatus depreciates very quickly and is, moreover, heavy in first cost.

Taking no account of depreciation, the expense runs into some hundreds per week, and when it is realised that the cost of a transmission station complete is estimated at £8,000, and that the apparatus may well become obsolete and replaceable in a few years' time, it will be seen that the engineering side is expensive to maintain, particularly when the costs of the direct telephone lines to all stations from 6 p.m till 6 a.m. is taken into consideration.

CHAPTER VII

A CROP OF TROUBLES

CIVILISATION consistently refuses to recognise its great discoveries.

The greater the discovery the greater the derision that has been heaped upon it. Galileo was put on trial for his life when he dared to assert that the world was not the centre of the universe, and so in a lesser degree of more recent days have great steps in the progress of the world been belittled and held up to ridicule.

Nowadays we are more broadminded. We are prepared to accept almost anything that can be proved whether we understand it or not, but though we accept more freely new inventions as they arise, there are many pitfalls and difficulties in the path of the pioneer who tries to establish these inventions on a commercial basis.

This was true of the first steam engine, the first motor car, and the first gramophone—and it is equally true of broadcasting.

There is a large and well-established body of people in this and every other country whose living is made by entertaining the public. They employ many thousands of artistes, actors, musicians, stage hands, etc., and are known as the entertainments industry.

The very keenest competition already exists among the various branches of this industry.

The cinema, the theatre, the concert, the

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gramophone, all bid in various ways for the support of the public.

Into this very carefully adjusted situation a newcomer suddenly appears—an ugly-looking customer, capable of multiplying endlessly a single entertainment and projecting into the heart of the home.

Other forms of entertainment were not consulted beforehand about the newcomer's position, about what he should be allowed or not allowed to do. He was quietly turned loose among them all to fend for himself.

Here, right in the centre of a critically balanced organisation, a dangerous rival steps forward. He makes a lot of friendly overtures, and seems a good sort of a fellow. But some of the rivals slip their hands quickly to their dagger hilts. Here is a dangerous enemy. He must be exterminated, killed, knocked out of existence, ere worse befall. Others, of a less murderous disposition, are opposed to such violent measures, but would cripple the youth by extortionate taxation; others, again, liking the cut of the young man's doublet and hose, say, "Well, here he is; how can we make the most out of him?—how can he serve us best and himself well at the same time? Better make an ally of a possible rival than an enemy."

The young fellow has his points besides. He has a persuasive voice, and more than this, he has a charm which enables him to get people to listen to him, and this is a thing that his rivals keep a furtive eye on. They will not admit

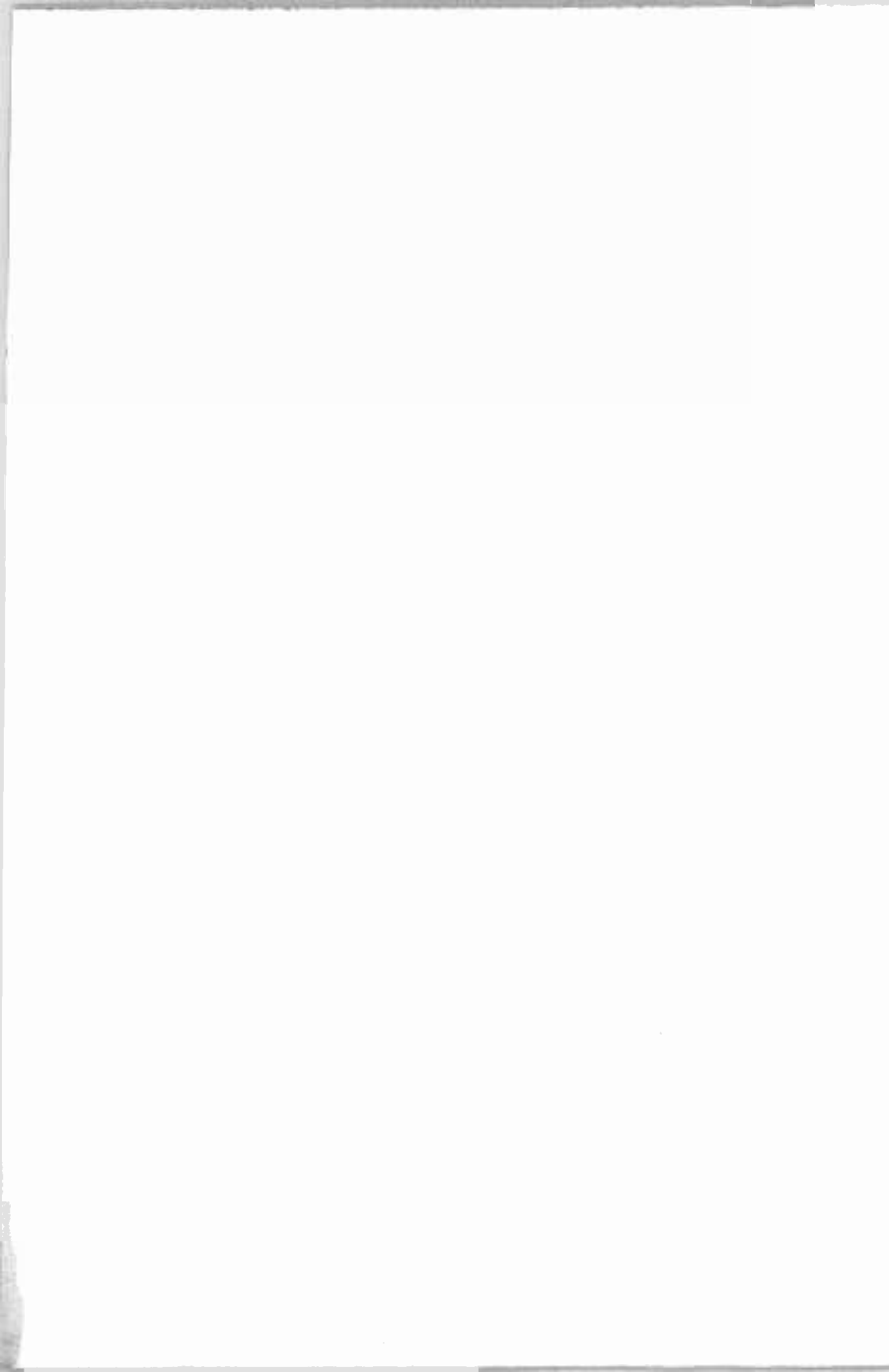


AUNTIE PHYLLIS.

Miss Phyllis Thomas and Miss Cecil Dixon, the two popular aunts at 2LO.



AUNTIE SOPHIE.



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perhaps, that they would like to have the loan of such a charm, but they often feel that if they could only use it people would long to hear more of their voices.

The youthful newcomer frankly offers them the charm once in a way to play with, but after one or two have tried it they all grow so jealous of its powers that they meet and pass a resolution never to use it. The youth is surprised at this, but he puts the jewel back in his pocket with a shrug. "You may change your mind later," he says.

One could elaborate on these lines at greater length, but to return to straight speaking, the Broadcasting Company found themselves opposed by two great rival forms of entertainment: the theatre and the concert organisations. This opposition was none of their seeking; they believed, and still believe, that they are able to benefit both these groups by a judicious use of the means at their disposal.

Let us examine both these rivals in fuller detail.

The theatre is a class of entertainment depending largely on gesture, movement, expression, colour, grouping, etc., for its effect. All these are entirely wasted on a blind man, or listener; conversation and music alone can be transmitted.

It is, therefore, obvious at first sight that very little of a theatre atmosphere can be put over by wireless. Very few plays in the field of legitimate drama could be transmitted at all, since the

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players rarely speak straight into the microphone (a very necessary consideration) and are at constantly varying distances from it. For purely technical reasons, therefore, so far as legitimate drama goes, we can surely do better in our own studio where conditions are all adapted or adaptable to our own medium.

On the other side of theatrical entertainment conditions are somewhat different. Musical plays, comedies and operas transmit well, and are very often most tantalising to the listener, by reason of the applause of the audience at some bit of funny "business," which he, being blind, cannot understand. This, one would think, should arouse his curiosity and send him to the theatre.

Now that broadcasting has been in existence for over a year, and is firmly established, we may, I think, leave past history out of the question. Whether or no the P.M.G. should have consulted the entertainment industry before broadcasting began is not the concern of the executive staff of the company. Their work has been to make the best of the position as they found it, and negotiate with the parties concerned as the occasion arose.

The fear represented to us as being that of the theatrical industry is that, having once acquiesced in the broadcasting of plays, our programmes would be filled with nothing but excerpts from them, that we should consequently be picking other people's brains to provide amusement for our listeners.

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This would be as stupid a policy on our part as it would be for a daily paper to devote all its space to theatrical matters. Our listeners have a thousand interests, a thousand tastes, and musical comedy can obviously only form a very small percentage of our total transmissions. But, assuming that this was our intention, there are at the most a dozen musical comedies or music-hall turns playing at one time which would transmit by wireless. Are we, then, to go the round of this dozen over and over again? I think our listeners would have little patience with that type of policy; they have constantly demanded variety, and I see no reason to think that they will change their demand.

It will be agreed, I submit, that the arguments of the theatrical interests do not bear close examination, and furthermore, lest you should think that we have not made every effort to obtain permission to broadcast theatres, let me add, it is not a question of payment! *We have expressed our willingness to broadcast only short excerpts from a play in any one evening's programme; we have undertaken not to do such items as these more than twice a week, and we have offered to pay for the privilege!*

These offers have never been given serious consideration.

Never once have the theatrical managers' committees come forward after we have made such offers to examine the situation more closely and seek a basis of negotiation.

In the above paragraphs I have put on one

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side entirely the unique publicity that broadcasting affords. 'Twenty minutes' broadcasting of a play that broadcasts well cannot but be an advertisement for that play. We, from our own point of view, should not put out anything which would not be a success.

How much do the theatres pay in advertisement in tubes, 'buses, or electric signs? These may catch the eye of the passer-by or they may not.

Broadcasting offers to bring the name of the play and theatre straight into the ears of a million people! It is a chance that any publicity agent would leap at. Without payment of a penny piece! More than that, *we* offer to pay for giving such an advertisement!

The argument is surely incontrovertible.

Thousands of theatre tickets have been booked as a result of broadcasting plays; the evidence of this has been carefully collected at the offices of the B.B.C. The answer of the theatres to this is "Ah! but you never can tell how many people stayed away!"

When an industry, which relies for its success on public support, and which tries every means to coax people into its auditoriums, turns down the widest and most powerful form of advertisement in the world in such phrases as "You may take it we do not admit the publicity value of broadcasting," then it is time we all studied our multiplication tables.

These are the facts. The reader may be safely left to form his own conclusion, and

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whereas we might have kept people at home listening to part of a theatrical performance to which they would go in all probability, if they were at all intrigued by it, it seems probable that we shall now develop our own dramatic technique, and perform plays of all kinds in our own studio. This will keep people at home and will leave them without the means of satisfying their curiosity about these plays at the theatre.

It would seem on the whole that the theatrical attitude is not a long-sighted or a wise one.

So much for the attitude of the theatres towards broadcasting, but before we pass on to consider other interests, it is only fair to state that there are among theatrical managers many who believe in broadcasting; these gentlemen have, in certain instances, put their belief to the test by allowing their plays to be broadcast, and I have never heard any of them suggest that it had in any way impaired their interests; on the contrary, they seem to have been one and all satisfied with the results.

The most striking instance of this is the British National Opera Company, which from the very beginning of things has shown a steadfast faith in the power of broadcasting to popularise opera.

Mr. Paget Bowman, Mr. Pitt, our own musical controller, and the artistes themselves have been wholehearted in their support, and there is little doubt that this has benefited the cause of opera enormously.

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It is many years now since opera at Covent Garden was a financial success, and yet, since the advent of broadcasting it has not only been successful, but it has been at times impossible to find place in the auditorium.

This sudden change may be due to the greater prosperity of the country and other things, but a good deal of it must, I think, be attributed to the little microphone down at the footlights which carries the great music of the world up and away over the housetops, to drop it into the homes of those who before looked upon opera as a bore and have now found out that it is one of the great, deep enjoyments of life.

They have come in their thousands to see what they have heard—and once there *they will become permanent opera goers.*

Here there has been no question of the success of broadcasting, and as to the others we can only hope that, having made a friendly effort at co-operation for many months, those who think that their interests conflict with our own, will one day adopt a more reasonable standpoint.

By so doing they will not only gain greater public support, but will benefit themselves financially.

The concert organisations have, at first sight, a very much stronger case than the theatres. Their performances appeal more directly to the ear alone, and may be imitated more successfully by the broadcasting medium. It is probable that they will change their attitude later because,

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though they cannot materially assist us, we, as I hope to show you, can assist them.

Though at our present concerts we do not employ large orchestras of a hundred or more instrumentalists, this will undoubtedly come in the future. We are limited to our present orchestras of between thirty and forty musicians owing to actual floor space available and monetary considerations, which will disappear in a few months to come.

Now the concert-going public is not a large one. It is confined to a comparatively small group of enthusiasts who are always to be seen at the same type of concert. When I speak of a small group I mean, of course, a number of people round about 20,000 to 30,000.

Symphonic concerts and opera have never appealed to the great masses of the public owing firstly to the fact that we are, on the whole, an unmusical people, and secondly, that the price has been too high.

Now there is no doubt that music appreciation can be taught. Familiarity with great musical works brings a fuller understanding of their beauties. Never before has the great body of the public had the opportunity of hearing these works. Broadcasting gives it to them. Broadcasting also does away with the other objection—that of price. No one, I think, can grumble at the cost of listening to broadcasting concerts.

The result is that in a few years' time an enormous number of people will have been brought into touch with this "good music"

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which has hitherto been "ayont their ken."

Let us admit at once the limits of the broadcasting medium. It will always leave much to be desired, chiefly because atmosphere cannot be transmitted. The magic second when the conductor's raised bâton holds the orchestra and the audience in expectant suspense, the sight of forty fiddle bows moving in unison over some grand sweeping melody, the movement, and, above all, the clarity of a *real* performance! Broadcasting cannot reproduce these. Some time will elapse before it can do so.

But the public will not sit at home and wait for us to perfect broadcasting—they will soon start out to the concert halls to hear these great musical works under their real conditions. If only 10 per cent. of our public do this it means, in London alone, 50,000 recruits for the concert halls, and that is why I think we can claim to be of real help to them.

But this is all for the future.

Let us examine the present position.

Some music lovers and concert goers are inclined to look upon broadcasting as a feeble reproduction of the real thing. Though this is not in the least the true position, the fact that there is always a type taking this point of view is sufficient to save the concert impresarios from the ruin they assert that broadcasting will bring about. Broadcasting fulfils more than the *rôle* of an educator. It goes a step beyond the great work already done by the pianola and

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gramophone. It familiarises people with works they seldom get the opportunity to hear at a real performance, but when this opportunity does come, they are able, as a result of their familiarity, to appreciate it more fully.

Broadcasting is a wholesale distributor. It puts people in touch with the world around them, with the great politician as well as the great artiste, with the great lecturer as well as the great preacher.

Its function is to help existing organisations, and when this is realised, it will soon come to be looked on as a blessing to them.

I called this chapter A Crop of Troubles, and so far have only dwelt upon two of the more perfect specimens in the crop.

There are many others which would not be of particular interest to most of my readers, and so I will not go into details about them here. Troubles with copyright, performing right, author's right, etc., all of which, since broadcasting is without precedent, open up new questions, often difficult of solution. Most of these, however, have already been settled, or are well on the way to settlement. Here the conciliatory attitude of those responsible for the various interests has been of the utmost help in effecting a solution.

There is, however, one question contained in almost every day's mail which will serve as a peg on which to hang another group of troubles.

The question usually takes this form :

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“ When are we going to have some Gilbert and Sullivan ? ”

Now the copyrights of Gilbert and Sullivan operas, and also those of many other well-known musical comedies, are very carefully guarded.

When a musical play has been performed in London its career is not over. It will be sent off touring the provinces, first at the big centres and later at the smaller ones. Its period of representation may extend over several years, by which time, if a really good play, it is fit for revival in London, and so the whole ground may be covered again and again.

In the case of Gilbert and Sullivan operas, which have become a national treasure, the owners go still further, and by personal supervision see to it that every performance given is up to a good standard before it is allowed to be presented to the public.

There is a well-known saying to the effect that you can have too much even of a good thing. The Gilbert and Sullivan owners realise this and they are sparing in the amount which they allow to be played, with the very natural result that the public are always clamouring for more.

As far as broadcasting goes, no pleas of publicity or a wider public appeal to them, since they are almost universally known already ; they may have had fears in the past, too, that wireless representation would not be up to the standard they have set themselves, though this is not so now.

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The B.B.C. have submitted to very protracted negotiations being carried out in this case in order that satisfactory arrangements might be made whereby complete operas could be performed, and though there has been considerable delay in reaching an arrangement, we may hope to present Gilbert and Sullivan in the near future.

The successful presentation of musical comedy is another difficult matter. The rights of many well-known comedies are vested in two or three persons, and in certain cases where one is agreeable others are not, it is often very difficult to obtain permission. Besides, apart from that, a musical comedy needs enormous rehearsal and team work to procure a good performance. Most theatres rehearse a month or six weeks before they produce a performance—this single performance, once produced, may last for months. *We have to give a new show every night.* If we concentrated all our energies on one concert for six weeks what would happen to the programmes in the meanwhile?

This is a problem which, no doubt, will be solved, in the future, but it means additional staff and expenditure which in its turn means the necessity for greater revenue before it can be undertaken successfully.

Before I close this chapter of troubles, lest you should think that broadcasting, after all, is as simple as ABC and the troubles are all magnified for the self-glorification of those who are dealing

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with them, let me remind you that every single item in all our 3,000 concerts has to be examined before it is performed to see whether it is permissible to perform it or not.

The large majority of the musical items are covered by our arrangements with the Performing Rights Society or the Music Publishers' Association, but even among these are to be found such things as songs set to Kipling's words (Rudyard Kipling has only allowed his material to be used in certain very limited cases), songs set to words copyrighted by *Punch* (for which special permission has to be asked), and others of a similar nature over which some veto exists.

In longer orchestral works, symphonies, operas, concertos, etc., which are still in copyright, a special performing fee has to be negotiated in each case, and this involves endless correspondence and work.

Aside from the music, all entertainers' items have to be most carefully scrutinised. Unless the work is written by the entertainer himself it is safe to assume that someone owns the copyright, and as, in most cases, the elocutionist or entertainer has little idea of the author, and less of the publisher, it is often extremely difficult to trace the persons to whom application should be made.

All these details, each one small enough in itself, when added together and dealt with in bulk, constitute an endless stream of queries of all kinds, and the knowledge that a slip may

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involve us in litigation makes the greatest accuracy necessary.

Many men make copyright and performing right their profession and die saying there is still a lot to be learnt about it—we have to take it as a sideshow, and the wonder of it seems to be that we have not been involved in a thousand times more trouble.

“Fools step in where angels fear to tread,” says the old adage. I have always felt that this puts the angels in rather a foolish position.

But let us leave troubles—everyone has his fill in one way or another—and turn to the lighter and more human side of broadcasting.

CHAPTER VIII

AT RANDOM

I

MY NEPHEWS AND NIECES

(Reprinted by the Courtesy of the "Evening Star")

I AM sometimes appalled by the multitude of my relations. I suppose it is quite in order for me to have 10,000 nephews and nieces, but, all the same, I feel a little bit uncomfortable about it.

You see I don't *know* any of them. That seems almost incredible, but it is true—and then they increase daily, and that seems positively impossible. But I assure you it's quite all right. All my friends tell me so. So it must be.

The advantages of being a radio uncle are manifold. To start with, you have fixed hours. Being "Uncle" is quite easy for a short time, but I have a sneaking suspicion that if I had to uncle it all the time I should be a ghastly failure.

I dreamed the other night I was playing Polar bears with all my nephews and nieces. It was on the top of Primrose Hill—a very hot day. The nephews and nieces were all Polar bears, too. They sat round in masses and looked at me, and said: "You're a fine uncle! Why, you don't even know how to hug!" And then, of course, I remembered that to be an efficient Polar bear you must hug everybody and everything.

AT RANDOM

I had to live up to my reputation, so I started hugging. Fat nephews, fat nieces, thin nephews, thin nieces, nephews aged seventy, nieces aged ninety—and I counted them as I hugged them. Nine hundred and ninety-nine, one thousand, a thousand and one—and then I collapsed. I said I didn't *want* to play Polar bears, that Polar bears were out of season. I suggested playing icebergs—I thought that would be cooler.

And then a voice out of the crowd cried "ELEPHANTS! Caractacus, you be an elephant, and give us rides." Every one cheered. They all rushed for my back—ten thousand of them. I shuddered—and woke up.

No. I couldn't be a *real* uncle to the whole ten thousand. After all, live and let live! A fair thing's a fair thing all the world over.

There are other advantages in being a radio uncle also. You can't be contradicted. You can't be asked "Why?" You can't be commanded to "Do it again."

I am told that wireless will some day enable us to speak to each other as we do on the telephone. Heaven forbid! On that day I shall reluctantly but firmly resign.

At present it's a nice cushy job—as jobs in uncling go—and there's no cupboard love about it either. The proverbial avuncular tip cannot be sent *viâ* the microphone or we should have all been broke long ago—even at a penny a time.

No. If we are loved it is for our own sakes and nothing else.

All these spring days we have had the country

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brought right into our offices by the great boxes of flowers the kiddies have sent us. Roses, bluebells, primroses, violets—till there have not been enough vases to hold them.

Cigars, cigarettes, honey, chocolates, birthday cakes, and mascots of all shapes and sizes, these are some of our gifts ; and the fact that they are sent so spontaneously leads us to believe that to some at any rate we have become real personalities. This is the ambition after which we are always striving.

Then the letters ! I wonder if there is any one in the world who has such a jolly mailbag as a broadcasting uncle ?

A little while ago we were receiving a hundred and fifty letters a day from our relations ! And day by day in every way the mail got bigger and bigger. At last we had to stop it, because answering all these letters took up too much of the precious forty-five minutes devoted to stories. Now we only call birthdays, parties, or those who are sick, and even so the mail is over fifty a day.

Letters so full of trust and confidence that it seems sometimes too great a responsibility to live up to. The trust of a child in an unknown wandering voice.

And such care has been spent in writing these precious documents. The carefully ruled paper, the laborious detail of each letter, carrying a simple message such as this :

“DEAR UNCLE CACTUS,—I like your stories very much. Tell Uncle Jeff to be funny



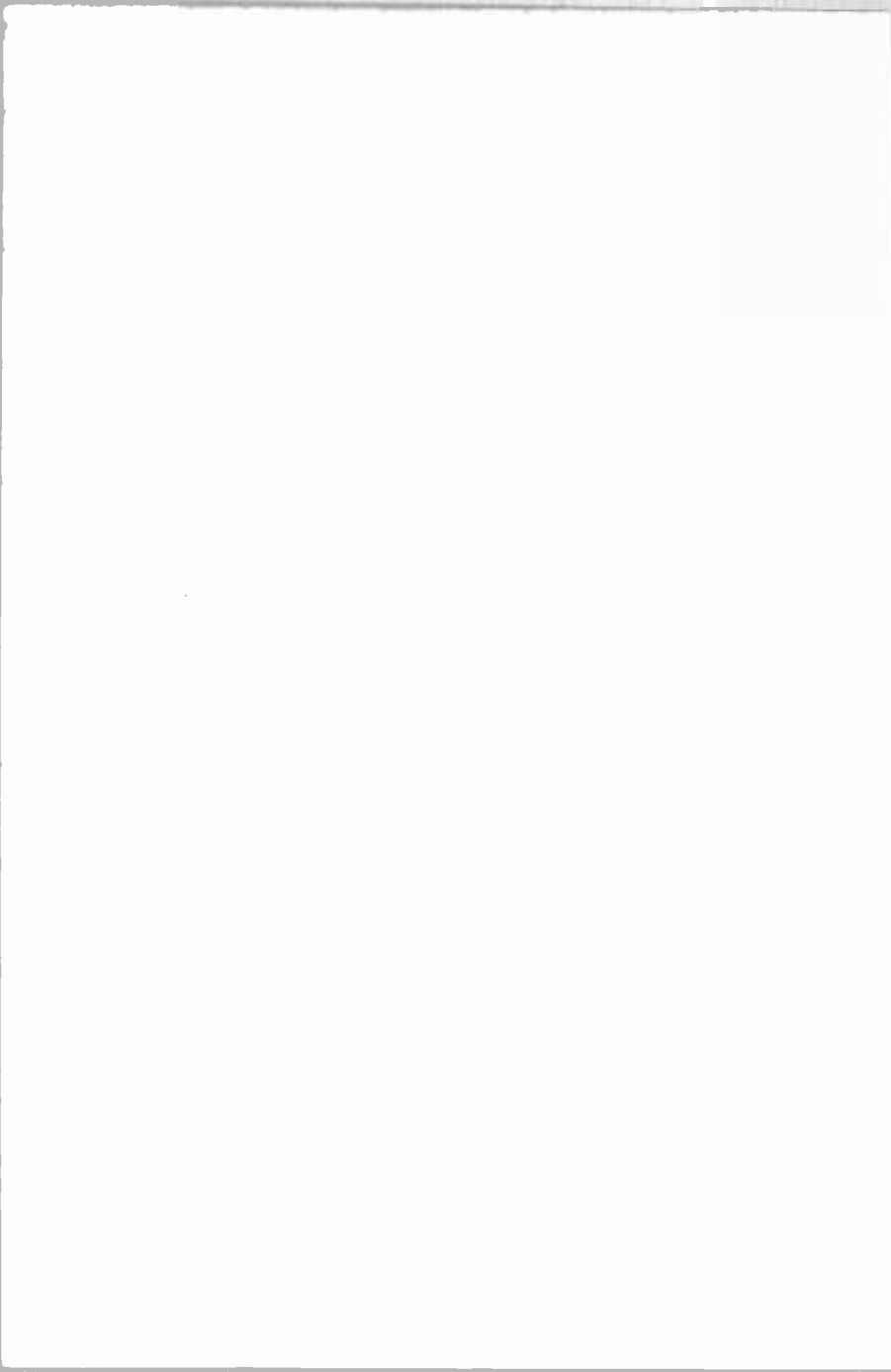
Photo

MR. BERTRAM FRYER,
Bournemouth Station Director.

Reflex Studios.



MR. PERCY EDGAR,
Birmingham Station Director.



AT RANDOM

to-morrow. It is my birthday. I am seven. Your Loving Niece."

I had a letter two days ago from a little Spanish niece :—

" DEAR UNCLE CRAKTYKUSS,—I am staying in Londres con my auntie, and I am leven yeers of old, but my familia are in Madrid, were I live. I like Ingland, but the sun is not to shine, and the cold comes much. I have listened on the wires, and I like you very very much and the other gentlemans too, are you pretty? your voice is. I can nearly spike English well. Have you seen a bull figte. I not have, but wen I am old I will. I send you much kiss. Adios con muchos abrazos, su amiga,

" CARMENCITA LOPEZ Y FERNANDEZ.

" Can I come and see you one day? Soon? Before I go to my familia? The sun is shining now."

I think we shall have to start the child's branch of the League of Nations.

The story of Great Ormond Street Hospital is an example of what the children will do when their sympathies have been aroused. In about five months we collected in London over £120 to give these sick children a wireless set. It came in in sixpences and shillings, from the money-box, from " the money Daddy gave me on my birthday," and the result is that the six great wards of Great Ormond Street, each over 75 feet long, are brightened (we hope) every day during the children's hour, and over 200 sick

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children have been helped by their more fortunate brothers and sisters.

Since then, the London Hospital has been equipped, and soon, we hope, others will be able to have installations presented by the children. I think it is one of the most useful presents a hospital can have.

So any evening at 5.30, in our blue and gold studio, you may see Uncle Jeff sitting at the piano improvising tune after tune in his own inimitable fashion. Full of fun and laughter, he is ; always a joke up his sleeve somewhere, ready for anything that will provoke a little mirth. You may see Uncle Rex—the golden-voiced—leading the songs, telling stories and doing his best to keep Uncle Jeff in order—an almost impossible task.

Our happy triumvirate ! Worried all day long by a thousand things nothing akin to the children's hour, fighting opposition, overcoming obstacles, pushing like fun for the success of the British Broadcasting Company, we join together at 5.30 to forget the quarrels, the difficulties, the vested interests, because here at least we are free of them.

The atmosphere, where one can be foolish without being called a fool, where a good story, a jolly song, or wholesome "back-chat" are taken on their face value with no *arrières pensées*—this is the atmosphere of the children's hour.

If only all the world would accept things as frankly and honestly as they do ! It would be a very different place to live in.

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When we close down, for instance, we wish our nephews and nieces pleasant dreams and a nice hot bath. Why should we not do the same thing at the close of our evening programme? Every one loves pleasant dreams, and as for a nice hot bath, well—I mean to say—well, after all, why *not*?

II

BUILDING A PROGRAMME

Many of you no doubt will wonder by what method a station director sets out to build up the ever-vanishing fabric of a daily programme.

Although he has certain definite lines laid down and certain definite limits which he cannot pass, there is sufficient scope between these limits for the employment of great ability, individuality and variety.

It is no exaggeration to say that a programme builder spends hours putting together items which will be performed in as many minutes, and the balancing of a programme requires a certain definite artistry, if it is to be successful, just as much as any other form of organisation.

To start with, there are certain periods and times of the day allotted to various well-defined subjects. Thus, the women's corner is of half-an-hour's duration, the children's corner lasts three-quarters of an hour, the news bulletins are of about ten minutes in length, and occur twice during the evening.

The actual hours at which these different

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features are broadcast vary slightly, since they are partly governed by the seasons, and are therefore later in summer than in winter ; but, generally speaking, these are the "fixed stars" about which the programme is grouped. There is only one immovable feast and that is the seven o'clock news bulletin.

It is always at seven, because we are under agreement with the Press not to broadcast any news before this time, and we wish naturally to get the news off to the outlying districts as quickly as possible.

The next question the station director must decide is where he will put his "talks." There are usually two every evening, each lasting between ten minutes and a quarter of an hour.

Generally he decides to place these talks either directly before or after his news bulletins. This has the effect of grouping the talking in the programme together and leaving longer free spaces for the musical parts of the transmission.

It is particularly necessary to group the talks round the news bulletins, since the advent of simultaneous broadcasting, for this greatly simplifies their transmission to other stations when necessary.

Having disposed of his talks in this manner, the station director will find himself with two concerts to devise, one long one, of perhaps two hours in length, between the first and second news bulletins, and one shorter one, of perhaps an hour or less, after the second bulletin.

Now there are a variety of ways in which these

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concerts can be arranged. And it is here that the real skill of the station director shows itself.

He has different orchestras, bands, artistes, both vocal and instrumental, to draw upon, and in his head certain definite ideas as to what is to be the underlying thought in any particular concert.

In order to help himself in this direction, he sets out with a regular weekly scheme, giving him a main outline of the programme "motif" for any particular night. He arranges in his mind that Monday shall be symphonic or operatic, that Tuesday shall be chamber music, that Wednesday shall be orchestral, that Thursday shall be a dramatic and dance programme mixed—and so on throughout the week.

Then comes the real test of strength. It is easy to set out a general line of action—it requires no special knowledge to decide to allot certain evenings to certain types of programmes—BUT, when it comes to filling them, not just passing the time away, but really filling them in such a way that each item is a pleasure and has an important place in the whole, that is something which needs experience and ability.

A station director has got to have a wide general knowledge of music, he has got to be just as critical in selection of his ballads for a Saturday evening as he is in selecting his quartets for classical chamber programmes, or his symphonies for some special concert to be transmitted all over Great Britain.

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It is a task in which he will need assistance and advice from experts, unless he happens to be musically expert himself.

So often the musical expert develops an idea, say, for the orchestral side of the programme, and presents it to the station director worked out in detail; meanwhile the latter has been arranging artistes to sing on the same evening, knowing perhaps only vaguely what the orchestra are doing. The result when the two are joined together is, to present an extreme case, a Wagner orchestral evening, punctuated by artistes singing the lighter type of ballad—a concert with no *ensemble* whatever.

It is easy to see the difficulties of making orchestra and singers blend together into a harmonious whole. For, besides all this, the listener does not want an entire two-hour programme by one composer alone; he needs variety, but this variety must be in a mood to harmonise with the whole.

Every programme has to be studied from this point of view, and the endless variations of programme arrangement need endless pains and study to produce a pleasing result.

Lastly, there is a bogey in the background—**EXPENSE!**

It is always necessary to cut your coat according to your cloth, and if money were no consideration whatever, programme arrangement would be somewhat simplified, though high fees do not necessarily mean correspondingly high-class results.

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At present, the station director has to estimate his expenditure for any given week, and so arrange the programme that the best use is made of the resources at his disposal.

The actual routine of selecting artistes and items is done in the following manner. Suppose a popular evening is under consideration and the orchestral items have been arranged allowing gaps in the programme for singers and entertainers, the station director goes to the large card index which stands on a table in his room, and looks through the hundreds and, in London, thousands of artistes at his disposal. He has certain contract artistes on whom he can draw, and besides these certain new artistes whose audition trial leads him to believe will make them suitable for inclusion in the programme.

A singer's value, assuming the quality of the voice to be good, lies more in the repertoire than anything else. It is extraordinary how many singers have only a limited repertoire of the most ordinary ballad type.

Variety is such a necessary thing in our programmes that a man who can sing anything and get up new items at short notice is sure to be chosen sooner than another singer whose vocal quality may in some ways be better, but who has not this ability.

Having picked out his singers, the station director goes over to the telephone and starts to book the engagement. But the singer has a previous one, is not at home, or cannot come for some other reason, and so another artiste is

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rung up in a similar way. After perhaps half-a-dozen attempts, he finds a suitable artiste, and tries to get the type of songs best suited to the programme. But the singer can only sing songs that have been sung a week before, and it takes perhaps a quarter of an hour to find the right ones. When everything is arranged, he starts on his second artiste and goes through the same rigmarole with him, and lastly the confirming letters are sent off.

It is finished. The station director looks through the programme, admires the balance and arrangement, and thinks to himself, "Well, that's complete, anyway."

No sooner has he said this than the telephone rings; to his horror he finds that some special event is to take place which knocks a whole hour out of the programme. He recasts it with difficulty, puts off one of his artistes, and, a little disturbed as to the new arrangement, hands it over to the typist for final preparation to go in the paper.

The next day the special event for some reason is cancelled, and the hour has to be filled up again! The singer who was put off has since accepted another engagement, and the director has to look elsewhere for his artiste!

So it goes on. Programme arrangements need the greatest patience, tact, and perseverance imaginable, *and do not forget that this all has to be done six weeks ahead.*

It is no easy matter to devise a good programme unhindered, but with the constant

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interruption and dislocation of the work, it is a harassing job. Ask the station director.

And yet the work is fascinating! There is always a pleasure in grappling fresh problems daily and overcoming them. When the programme at last comes before the public, it is a great satisfaction to be able to write under it (mentally), like the pavement artist, "All my own work."

THE ANNOUNCER

Having studied the difficulties in programme arrangement, let us now have a look at the actual transmission of a programme.

Do not imagine that the announcer has a simple task; it needs a good deal of stage management, and many things happen in those brief two or three-minute intervals when the switch is out and the studio is temporarily cut off from the listener.

The announcer has got to have a good voice, good pronunciation (particularly of foreign languages), good diction, the ability to read fluently at sight, and he has to have also something pleasant and ingratiating in his voice, so that the listener does not get bored with his announcements.

It is surprising how difficult these qualities are to find. Few of our regular announcers felt at home to start with; they gained in ability and confidence with practice, but in many cases weeks elapsed before proficiency was obtained.

It has often been remarked—and this is one

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of the responsibilities that are indeed heavy to carry—that the announcing voice sets a fashion in speaking to many thousands of homes and should therefore be faultlessly accurate both in diction and pronunciation.

But we are human! Suppose you were to have set in front of you a news bulletin to read, containing the names of four or five unknown Central European towns, or that of some new Japanese president, how many would get through it without faltering or mispronunciation?

It may be that the majority accept one's pronunciation, but there is always some one who has been to the town in question, and will take the trouble to point out the fault without delay.

Having to read the news bulletins at sight makes it impossible to consult dictionaries beforehand, and this is almost always the case because the news comes to the announcer straight from the news agency.

When the news bulletin has been read and the switches for simultaneous broadcasting thrown out of circuit (this is done by the engineers, not by the announcer), the concert commences.

A short interval elapses while the band come into the studio, take their places, arrange their music, and tune their instruments. When all is ready, the item is announced, and off they go.

The announcer leaves the room and listens to them in a room near by; he detects that the balance is a little incorrect, the flutes or the violins are preponderating. This must be put right before the next item.

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Then the artistes arrive—one of them has forgotten a song and wants to substitute another ; an entertainer likewise, who thinks one of his items too long and suggests alterations.

All these points having been dealt with, the orchestral item is over, and the room has to be cleared for the singer.

The microphone position has to be changed, the piano lid lifted, the singer placed in the correct position, the item announced, and off we go again.

This time a telephone call comes through. Some one has a friend lying dangerously ill and wants the relative summoned to the bedside. Particulars have to be taken, the genuineness of the case ascertained, but before all this is complete the songs are over, and the announcer is forced to return to the studio to keep the programme going. He returns to the telephone and decides not to broadcast an appeal, since the case does not seem to be so urgent as he supposed. He replaces the receiver and is about to leave the room when another call comes through.

This time there is oscillation in Belfast, which is spoiling the reception there, and the announcer is asked to broadcast a message requesting greater care in the use of receiving apparatus.

A few minutes later, some one telephones asking specially for one "request" item—and so on throughout the evening.

There are, of course, other officials on duty—

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the engineers and telephone operators ; but the onus of stage management falls on the shoulders of the announcer so often maligned by the great B.P. ! Humour him a little. He has his troubles, and it is all not so easy as it appears. Indeed a whole chapter might be written on the numerous funny, irritating, and terrible things that happen in and about the studio when the switch is out.

When the National Anthem has been played, the " Good-nights " said, and the switch is finally pulled out, the announcer may well breathe a sigh of relief. The listeners switch off their sets and go upstairs to bed while he leaves the building, thinking perhaps of the mistakes he has made that evening or of the work that has to be done to-morrow.

There is something satisfying in a life of public service. A man feels that he is fulfilling more than the personal aim of earning his bread and butter when he knows that his voice, his cheerfulness, or his wit perhaps, have been the means of bringing pleasure into thousands of homes. He feels that he is in touch with the stream of life, has hosts of unknown friends, that if he were to speak no more he would be missed ; and this feeling of intimacy with many people scattered far and wide over the land repays a thousandfold the late hours, the holiday-time work or any other little troubles to which he may be put.

As he walks home he sees the aerial posts standing like spears against the sky. Beneath

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one of them, perhaps, is a lighted window, where the family linger over the fire before turning in

“ I have been talking to you,” he thinks, meditating, as well he may, on the strangeness of it all.

He passes on, a solitary figure, known to none of those to whom he speaks, lonely even in the midst of those who call him friend at their fire-side, unheeded and unrecognised by face or figure, shrunk to the little measure of a mortal save when a miracle lends his voice wings and bears it to the ends of the earth.

Shakespeare in his dream play wrote an epitaph for us and all our work :—

Our revels now are ended : these our actors,
As I foretold you, were all spirits, and
Are melted into air, into thin air :
And, like the baseless fabric of this vision,
The cloud-capp'd towers, the gorgeous palaces,
The solemn temples, the great globe itself,
Yea, all which it inherit, shall dissolve,
And, like this insubstantial pageant faded,
Leave not a wrack behind. We are such stuff
As dreams are made on, and our little life
Is rounded with a sleep.

The Tempest, Act IV., Sc. 1.

HOW TO LISTEN

The enthusiast is always optimistic about a new invention. He thinks that it will supersede everything of a similar nature which has gone before, and will establish itself as the “ be all and end all ” of existence in its own particular line.

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The truth is, of course, that every new thing that swims into our ken takes up a place in life proportionate to its merits, and fulfils a function contributory to the whole.

I have often felt that the devotees of wireless expect too much of it. They look upon broadcasting as something which is there to amuse them each and every night of the year.

Surely this is asking too much! Leaving the question of the price they pay for the odd 400 concerts per station yearly, is it not beyond human possibility to please a vast number of people, each with a different temperament, by a single daily concert?

It must be so. And yet our mail shows us that many people expect this.

Let me put in a plea for broadcasting. Don't expect it to entertain you all the time. Consult your own periodical, the *Radio Times*, and look through the week's programmes, choosing out of them those which you can see are going to amuse you, and make your arrangements accordingly. After all, there are many other diversions! The theatre, the cinema, the music hall, these are all waiting for you—not so cheap perhaps—but excellent in their own line. We would far rather you listened to a few concerts per week and were satisfied, than that you listened to them all and then wrote saying how hopeless they were. Familiarity breeds contempt. Too heavy a crown would make an angel weep.

I will admit that in the old days every one had

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an excuse for listening regularly. They had no means of knowing the programmes more than a day ahead, broadcasting was a new thing, and between these two they listened often and expected much.

But now the early and enthusiastic days are over. Broadcasting has ceased to be a "nine days' wonder" and, though still one of the great marvels of the age, it is becoming more and more a regular adjunct to everyday life.

No doubt I have prevailed upon you by the eloquence of the foregoing paragraphs to listen only when there is something you particularly want to hear; now let me persuade you to other things.

Don't get excited if an item is a minute or two late in coming on. Reflect on the organisation required to produce 64 concerts a week, and remember many things may prevent a programme being timed to the minute.

The announcer is doing his best to keep to schedule, but, like you, he is human.

Next, give the concert to which you are listening a chance. The home atmosphere is so different from the studio atmosphere, that the least the listener can do is to try and take in what the artiste or speaker is giving.

I have often sat in a room with a loud speaker. People listen for a little quite attentively, and then some one makes a remark and conversation begins. After this, if Solomon himself were broadcasting he would be ignored, shouted down by a babble of small talk. After half an hour or

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so the guests depart, and once safely outside they remark : " That terrible wireless ! I couldn't hear a word the thing was saying ! It is an over-rated pastime." While the host and hostess, drawing closer to the fire, say : " That wretched Mrs. —, she talks so much I never heard a word to-night. I shan't ask her to listen again ! "

Thus much harm is done to Mrs. —'s conversation and the great cause of broadcasting. Both conversation and broadcasting, in their way, are good, but unfortunately they don't blend.

A listener, therefore, who has the interests of wireless propaganda at heart will not treat his guests to a solid half-hour in this way. Far better give them one or two items, and then switch off the set.

More damage is done to wireless by bad reception than by any other means. The best artiste on a bad set will sound like a fishwife. With the increase in popularity of broadcasting the quality of reception will improve all round ; but there are still some terrible things to be heard on the home-made set or one which has been hastily flung together.

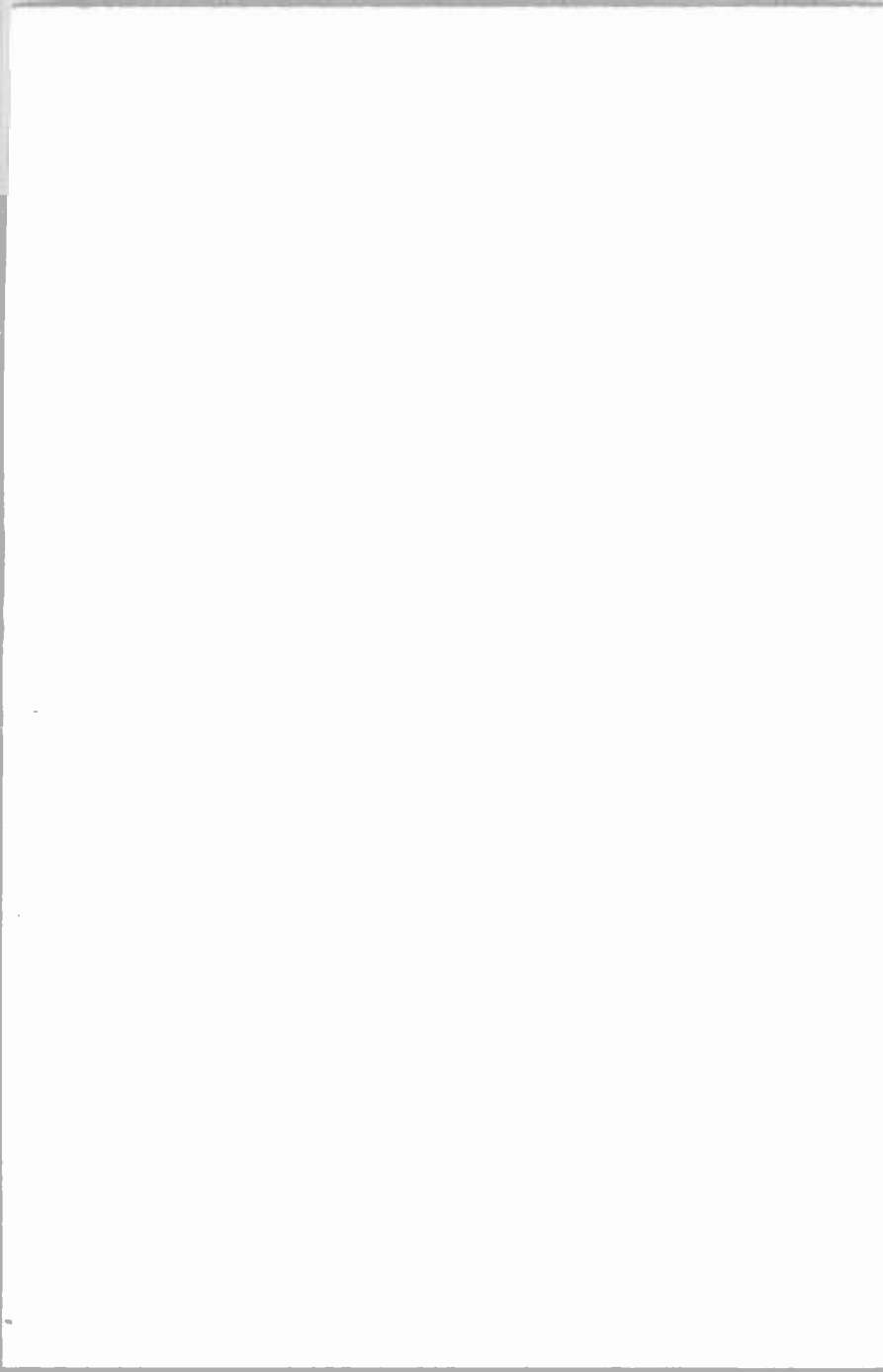
Bad news travels fast. A man with an open mind, who happens to hear a terrible set for the first time, goes away poisoning all his friends against taking up wireless. On the other hand, a good reception converts him at once, and his friends in due course.

Essential simplicity should be the aim of the



STUDIO INTERIOR.

The Studio at 2LO. The room is padded behind the hangings with five spaced layers of sacking, and the roof has been similarly treated. There is no echo. Note the control room with its glass windows at the back.



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manufacturer of wireless apparatus. It may be true that adjustable filaments, tuned transformers, variable leaks on the L.F. transformer secondaries, etc., make for more efficient reception. They do—in the hands of one who knows something about it. In the hands of the man in the street they are certain to be ignorantly mishandled. Result : people get a bad impression of broadcasting.

• Let a wireless set have filaments that switch on (as many manufacturers have already), the controls reduced to one and one only, so that there is no question of bad adjustment ; let it all be foolproof, and then we may hope for a wider, more universal acceptance of the service and industry we are concerned with. The man who wants to fiddle will seldom buy ready-made apparatus, but the man who just wants to listen expects to get as good results from a set with one adjustment as the experimenter does with a set where everything is adjustable.

Now that the manufacturers are producing self-contained dry battery sets that can be used anywhere by any one, broadcast reception will soon become ubiquitous.

There remains for them only one great problem—the loud speaker. It is the sociable way to listen, and helps the illusion better than telephones do ; but nothing is more distressing than bad loud speech, and there is much of it about. More damage is done to the wireless industry by bad loud speaker demonstrations than by any other means.

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However, assuming that a listener has a good set which he knows how to work, a good loud speaker which he knows how to work also—it is still possible that he will not get the best out of the concert provided.

He must deliberately set out to put *himself* in tune with the transmitting station, just as much as his set. The programme builder has set out to produce an atmosphere. If the programme were in a hall, the atmosphere would be created almost at once, because people are ready for what they are going to hear. In the home a hundred and one distractions call the listener's attention away from the concert. The maid enters with coffee; there are no matches for his pipe, and he goes out to get them; the baby wakes up with a loud and prolonged oscillation (of the vocal chords). He must guard against these if he wishes to listen and enjoy to the full. He must help the illusion that this concert is here, in his own home, by switching out the lights and letting himself slip into the mood that is being presented to him.

Listening under such conditions is an ideal form of entertainment. Gazing into the fire, while the music recalls past scenes and old faces, quickening the pulse of memory with the thoughts of youthful days and enthusiasms—or if it be youth that listens, with dreams of worlds to be conquered and laurels to be won!

What is there after all so good as one's own hearth, an easy chair and a pipe, now that the world with its music, its great men, and its

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daily happenings is there at one's elbow, a willing guest if called upon to speak, and if not, silent as thoughts which come and go within a mind bereft of speech ?

A NEW ART

In the chapter dealing with the Crop of Troubles which have attended us during the last year, mention was made of the difficult attitude of the theatrical interests.

Broadcasting has continued, and will continue, to develop in spite of any opposition, but with or without their help, there is no doubt that this new medium for entertainment and amusement carries its own technique and will develop on its own line dramatically in just the same way that the marionette and the cinema have distinct and different means of expression in their particular media.

Dramatic recitals broadcast have so far been limited to Shakespeare and short modern plays. Some of these presentations have been partially successful, but none entirely so, because they have been written originally for quite a different form of presentation.

It is fairly safe to assume, therefore, that plays will be written specially for broadcasting which will be dependent on conversation and sound for their effects.

Blind men are notoriously cheerful and alert in spite of the loss of the visible world, and this may either be because they have received the supreme affliction, or because the world of sight

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may be not so important as that of sound. But it is curious to note also that deaf men are nearly always dull, morose, and seemingly conscious of their affliction.

From this it is at least arguable that sound is as important to the human being as sight, and just as effective a medium for registering the ebb and flow of emotion.

Thus it would appear that there is just as large a future for the broadcast play that is heard and not seen as there is for the cinema play that is seen but not heard.

There are, however, new qualities to be found in our actors, voices which can express feeling with all the delicacy of tone colour corresponding with every shade of mood.

There are new qualities to be found in the plays also. They must be short, develop quickly, each voice character being sharply contrasted in tone ; for the listener, blinded as he is, cannot concentrate indefinitely on any theme however enthralling it may be. There must be, also, a very limited number of characters or else the hearer soon becomes mazed in a whirl of voices and argument out of which he can make no sort of order or purpose.

But given this craftsmanship, which is easy to the professional playwright, there is, I believe, as vast a stage open as in the other forms of drama. Scenes can be set from one end of the world to the other. They need not all be faked either, nor performed within the studio, for wireless relay enables the microphone to transmit

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from the heart of the woods, from riverside or storm-swept hill.

That confusion of small noises which we call silence is painfully absent from a studio where the microphone is in circuit and nothing is said.

Let the announcer come to the microphone and say, "Imagine two people sitting by the banks of a stream at sunset ; the water is babbling over the pebbles, the blackbird is singing from the hawthorn."

He stops—and there is utter silence save for the faint hum of the carrier wave, and when the voices speak, they speak out of a background of dead silence. This is unnatural. It spoils all illusion. No imagination can picture the scene unless the *background of sound* is there from out of which the voices speak.

There seems no reason why this background of sound should not be supplied, and I foresee a new form of drama evolving, largely narrative in form, given in a series of sound pictures and linked up by a Voice which carries story and action forward.

Here is not the place to develop the plot of such a play, but taking scenes set in the traffic of London, in the shops of some great mechanical factory, by the side of an old mill wheel, a busy railway station, or a musical evening at some fashionable "at home," it should be possible to build up the fabric on which such a play might develop. The variations of scene and setting are infinite and the stories that could be woven into them equally numerous.

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Such a play, having been written, would depend largely for its effect on the realism of the varying atmospheres produced by the noises transmitted, and here we run into the first of many difficulties.

The microphone does not give a faithful imitation of certain noises. Strike steel against steel and it sounds like wood. Knock on a heavy door and it sounds like a hammer driving in nails. A wireless equivalent has therefore to be found for the noise required, and in this direction there is room for any amount of experiment and research.

There are many other difficulties, of which, perhaps, the greatest is that of timing.

Scene following scene is easy on a theatre stage, but when, as in wireless, one scene is in the Strand, the next in Surrey, a third, perhaps, on the beach at Bournemouth, and so on, it will tax the ingenuity of the producer to synchronise his production.

But these, after all, are only minor points. The great one is that as wireless develops the wireless drama will develop, and some unknown person in our midst is going to achieve fame as a great radio playwright.

There are other considerations, of which the chief is the fact that immense time, money, and energy will be spent on rehearsal *for a single performance*.

In the theatre these things are justified, since the theatre plays to a new audience every night; but just as an entertainer hesitates to tell stories broadcast because thereafter *every one* will have

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heard them, so the wireless play, once performed, has finished its run.

This means that wireless dramatic productions are going to be expensive to produce and some means will have to be found whereby the whole country does not get them at once.

This radio drama is certain to develop, whatever any theatrical interest may try to do to prevent it, but the most effective way to have put it off, from the theatre managers' point of view, would have been to co-operate with the B.B.C. Since this has not yet come to pass the result is that the B.B.C. will develop more quickly on the lines I have just suggested.

By their attitude they have simply precipitated a future certainty, and so, as a result, people will the sooner stay at home for the broadcast productions than go to the theatrical ones.

The position of the theatres as far as we are concerned is a lamentable one, and is none of our seeking. One day they will realise their past shortsightedness—perhaps too late!

BROADCASTING ARTISTES, PLEASE NOTE!

Since the inauguration of broadcasting a little over a year ago, thousands of artistes have been given audition at the London station alone and many hundreds of others at every other station.

Of these only a ridiculously small percentage have been worthy of performance, and many artistes write in bitter letters lamenting the fact that they have not been given a "fair chance."

Putting on one side the large number whose

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vocal quality is not up to the standard required, there still remain many others who will never obtain regular work, and I am going to take this opportunity of trying to advise all those who still aspire to broadcast as to the best means of doing it.

Remember that your audience is deprived of the visible charm of your physical presence. You have got to "get over" by voice alone.

You must therefore pay the greatest attention to finish, breath control, and enunciation.

The audience want to hear what you are singing about. *They want the words.* They may admire the voice, but lose half the point if they do not hear the poem.

After all, the poet inspired the musician to compose. Presumably, therefore, the words have a meaning and must be understood for full appreciation.

Not one artiste in a hundred has any diction worth the name. *Study your diction.* That is one of the first important points.

Next, increase your repertoire.

Every singer seems to have about two dozen fashionable ballads at his or her tongue tip and beyond that knows nothing.

We give about 6,000 concerts a year and we want a correspondingly large variety of songs.

Assuming that a singer can sing and that you can hear what he sings, he will stand or fall by his repertoire.

A singer who can sing anything within his compass or get it up at short notice, is worth

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good money at any time, and this point after all is not a hard one to conquer. It means study and application.

These are things of first importance, but there are others.

If the announcer on duty puts you in a certain position relative to the microphone, *stay there*. He knows. You may think you are too far away, but trust him. He needs your success just as much as you do.

When you have taken up your position don't walk towards the microphone on an ecstatic B flat. It may relieve *your* feelings, but it won't help your song over. Stay where you are. The engineer is controlling you and doing his best to get all you have into the aerial.

Then, don't forget or change your song at the last moment. Nothing annoys an announcer so much as this. You are announced on the programme to sing certain songs. Sing them.

In these latter points well known and reputable artistes are just as much trouble as the lesser ones.

Observe all these points, and don't forget that we are the biggest concert organisation in the country. Perhaps we may be a sideline to you now, but—who knows—we may be bread and cheese to you later.

Moreover, we have so many concerts that we have a correspondingly large amount of engagements to offer.

It's worth while to be singing for the B.B.C. Think it over.

CHAPTER IX

A GLANCE AHEAD

“We believe that in co-operation with our listeners we can bring into homes all that is best and most worth while in every department of human achievement, knowledge and endeavour.”

(*Mr. Reith, broadcast 14-11-23*).

So much has been written about the future of broadcasting, that it seems almost superfluous to try to add to it, and yet so many of us are always thinking ahead that perhaps, after all, the future *is* worth a chapter! The prophet is always a gambler, even though he may think his perspicacity has loaded the dice.

I wonder how many of these dreams will come true?

The Broadcasting Committee, when speaking of the future development of the scheme, expressed themselves in admirably general and non-committal language. They said “that broadcasting is of great value for purposes of instruction and entertainment, with great potentialities, and that it will be in the public interest to encourage its development, under adequate control, and to facilitate its use for a wide variety of services.”

Let us try to envisage the future by taking a thoroughly practical look about us, seeing exactly what we have done and what we have left undone, and so develop lines of possible growth in the years to come.

In the space of one year from the inception of

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broadcasting as a service in Great Britain, eight main stations, of about $1\frac{1}{2}$ kw. power each, have been erected, and have put out regular programmes, to alling between six and seven hours daily. These programmes have consisted of news, weather reports, market reports, lectures of various kinds, and, on the amusement side, concerts and entertainments covering the whole range of public taste.

How many persons have been receiving this service? The latest published figures at the time of writing show that over half a million licences have been issued. Assuming five to a family, this gives a listening population of only 2,500,000. But this is only approximately 5 per cent. of the population of the British Isles.

Obviously the first duty of the British Broadcasting Co. is to increase the number of their subscribers, for the additional revenue so obtained enables them to increase the attractiveness of their programmes and so attract more listeners—a vicious circle of growing popularity.

The question then becomes divided, for the means by which the whole population will be induced to listen depends on two things. The first is having something to give them which they cannot obtain so well or so cheaply elsewhere, and the second is to make the apparatus to receive these things within the financial resources of the masses.

Now the eight main stations already in existence, assuming that they have a dependable range of seventy-five miles each, cover the whole

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of England, Scotland and Wales, but to receive any one of these stations at this range needs somewhat expensive apparatus—a crystal set will not do it. There are, too, large industrial centres such as Sheffield or Liverpool, which, although they are fairly near to some of the main stations, are just too far away for crystal reception. This means that a huge working class population, to which perhaps wireless is more of a godsend than any other, are deprived of it.

To meet this difficulty smaller stations are being erected in these localities to receive by telephone wire the concerts given at the main stations and retransmit them. These smaller stations are known as relay stations, and are of about $\frac{1}{15}$ th the power of the main stations. They are, however, adequate to cover a thickly populated area of perhaps hundreds of thousands of persons. By means of these relay stations, then, vast numbers will have wireless brought within their financial resources and many, no doubt, will become subscribers.

Having made wireless potentially possible to a much larger number of people, the next thing is to discover some thing, or combination of things, that is going to interest them sufficiently for them to install receiving sets. It is a just criticism of our programmes, as I have said already, that they contain a large percentage of things which can readily be obtained elsewhere. But at the same time, with increased revenue it should be possible to bring into the homes of the people concerts and programmes of all types of

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entertainment which they would rarely be able to hear in any other manner, and certainly not at the same price.

It has been suggested that to 75 per cent. of our listeners broadcasting is an end in itself. The standard, however, must be raised high enough for the remaining 25 per cent. who have a means of comparison to take broadcasting as seriously as any other form of musical entertainment. There is little doubt that soon this will be the case.

Of late we have begun to give people certain important speeches and debates which they could not have received in any other way, and this is the foundation of the success of broadcasting as a public utility. It enables the man in the street to hear, to absorb, and to judge for himself. Hitherto most of us have our judgments prepared for us, 90 per cent. live on the opinions of other people. Here is our chance to live at first hand.

In public and political life now, many of the participants complain of misrepresentation. When they appreciate the fact that the microphone, like the camera, cannot lie, and will always bring to the people's ears what they have said, their sense of fair play will make them clamour for the public to be their judges, and the microphone will become just as important an instrument, as much to be studied and con-veniened as the camera and cinematograph are to-day.

Moreover, the people have an indisputable

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right to participate in the activities of those they have nominated to conduct their affairs, and the obvious advantages of broadcasting from other points of view are such that it is improbable that the microphone will be refused admittance to any public function in the years to come. It will come to be accepted as part of the natural course of events. Up to the present refusals to some of our requests have been largely prejudice—the difficulty that every new invention has to face, particularly in a conservative country like ours.

I look upon the broadcasting of great public events of national importance as one of the most far-reaching and important developments in the work, for remember, when there are relay stations in all important centres practically no event can take place anywhere in Great Britain beyond the reach of the microphone. (The main stations can not only transmit to the relays, but the relays, if necessary, can reverse the practice.)

It is probable also that concerts will cease to be given *in camera* in the near future. They will be put within the actual reach of listeners by being broadcast from public halls. The music lover will then be able to compare the wireless transmission with the real thing. Concerts so given would not be materially different from any others where the public pay for admission except for the announcements preceding the items.

In this way both listener and performer will benefit, the latter, having the stimulus of a real

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audience with all its enthusiasm and applause, and the former the improved rendering occasioned by this.

Moreover, there is little doubt that the public will patronise these concerts, at first, perhaps, out of curiosity, and thereafter for their intrinsic merit and the fact that they will have become converted to the habit of concert going.

The foregoing developments are already in sight—they are the logical outcome of the present service; but now let us take the thing a step further.

The greatest difficulty broadcasting has to deal with is the satisfying of a vast audience of innumerable tastes with a single concert.

It is, of course, impossible. There are many classes of people who do not listen at present because there is not enough to interest them. Quite apart from the entertainment side of broadcasting there are many other avenues of public utility which have only been lightly touched on so far, and are waiting for research and development.

With the increased facilities given by the Post Office for longer transmitting hours much can be done to amuse and instruct, to help to brighten up the factory dinner hours, and to educate widely in schools and colleges, to transmit private information by code, to assist agricultural interests; all these are imminent developments.

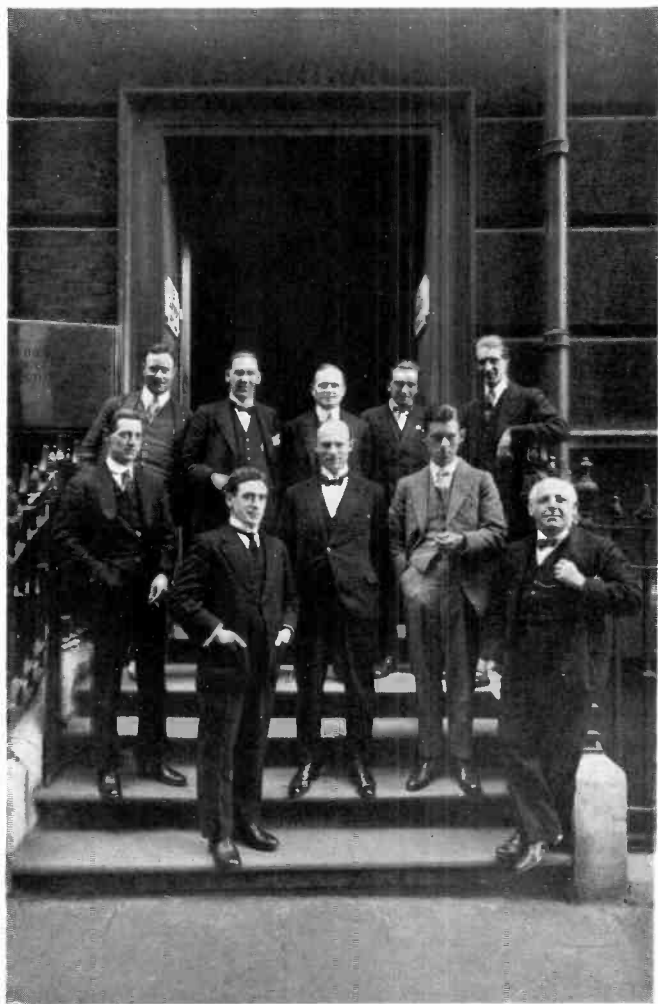
As far as entertainment goes it will not be long

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before two different types of programme are sent out from the London station at least. What form this second programme will take depends largely on the public. It may be all dance music, or perhaps the proceedings of the House of Commons, or, again, it might take the form of "highbrow" concerts, for the highbrows seem to think that they get comparatively little attention in the present service. But this, after all, is of less importance—the point is that the listener will be given *choice*, and that is a great step forward.

It is improbable, however, that the range of choice will stop here. When two services have been established a third will be added, and so on. I should imagine that five services, working fifteen to twenty hours a day, could disseminate a good deal of educational matter and entertainment. One service alone might be set aside for general news and advertisement, another for political and Governmental news, debate, and the proceedings of both Houses, a third for education and dance music, the fourth and fifth for entertainment programmes of varying types, theatrical and concert transmissions, etc. Ultimately, there seems to be little reason why everything of general interest should not be given to the world.

Assuming that this demand will be made by the public, the question becomes a purely technical one, *i.e.*, that of disseminating it from any point to every other point. That there are great physical difficulties to be over-

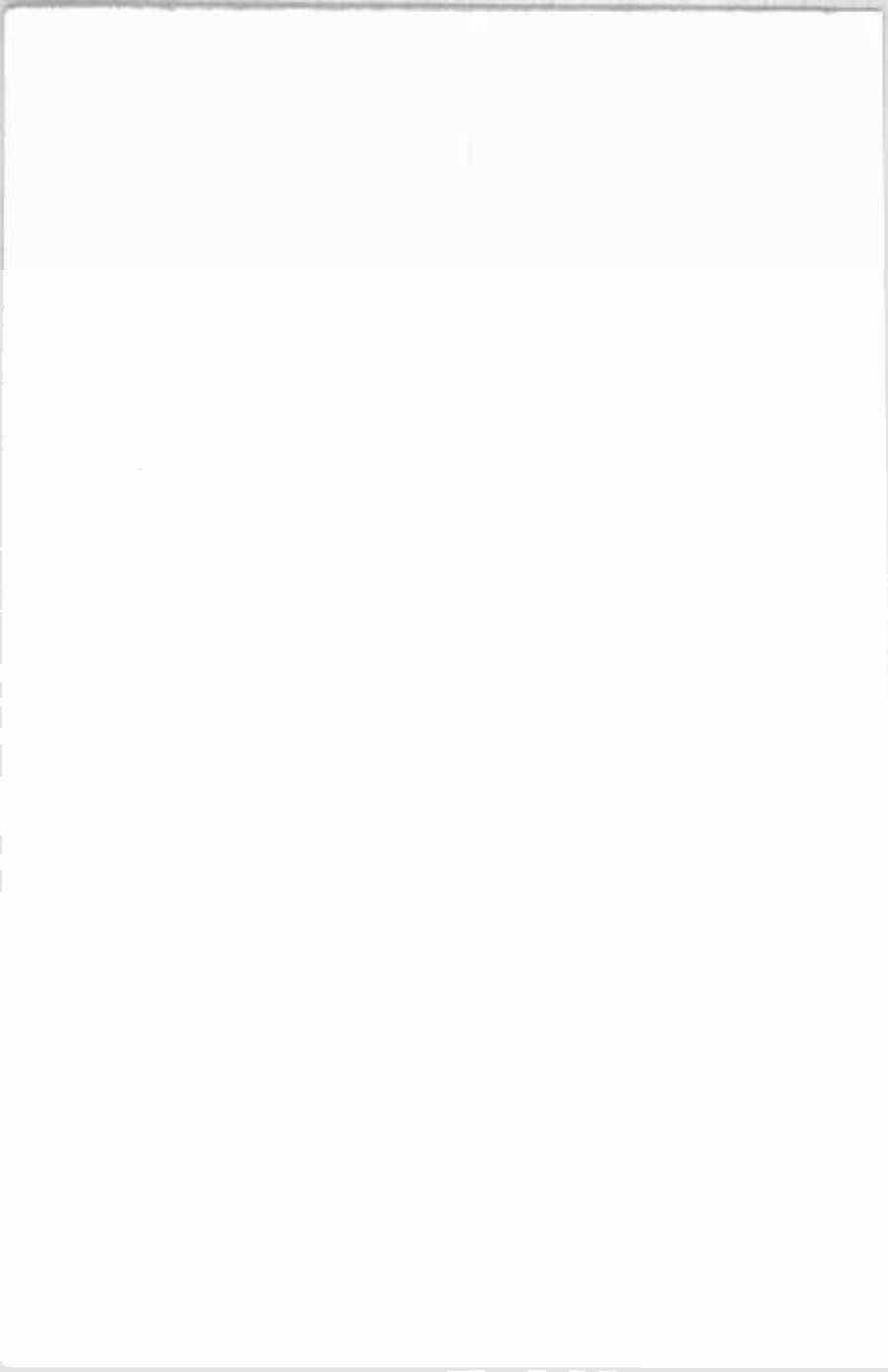


Photo

Holborn Photographic Company.

SOME OF THE STAFF.

Photographed on the steps of 2, Savoy Hill a few months ago.
From left to right: top row: D. Godfrey, H. A. Carruthers,
A. R. Burrows, Percy Edgar, the Author. Lower row:
Bertram Fryer, A. Corbett Smith, R. F. Palmer, L. S.
Jefferies, Percy Pitt.



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come before this can be accomplished, I am well aware. At the moment of writing our chief engineer considers an extra service for London, together with the seven others already existent (*i.e.*, nine in all and relay stations), the maximum which can be safely handled on the existing waveband. However, at a rough estimate I should anticipate that within five years twenty separate services will be running, assuming that adequate facilities are provided by the authorities.

Supposing for the moment that this is the state of affairs in London, what will occur in the provinces? Here the director will be very largely in the same position as the editor of a daily paper. He will have a call on all the London transmissions which will be of interest to his particular subscribers, together with a certain amount of local concerts, talks, etc., actually sent off from his own studio. His experience and ability will teach him how best to combine the material for the benefit of the public. It seems that for some time two services at a provincial station should prove sufficient to cover all the ground.

This is all a logical aggrandisement of the present scheme given suitable conditions of working a sufficient revenue. The costs of working such a scheme would be enormous. The expenditure on direct telephone lines to the various stations alone might well be up in the hundred thousands.

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There is, however, another idea on foot which might reduce this expense considerably. It is the possibility of wireless relay, as opposed to the wired relay in use at present.

It is doubtful if wired relay can ever be entirely depended on owing to the physical conditions naturally attendant on long distance transmission by overhead wires. Line noises are always possible, and the effect of this on the matter broadcast, as many of you know, is deplorable. Also, in the winter months gales and storms may destroy the lines periodically, and so the S.B. services are in constant jeopardy of breakdown while dependent on wired transmission.

On the other hand wireless relay, too, has its troubles. It may be very much cheaper, but such things as atmospherics and fading would make it very difficult for, say, Aberdeen to receive a relay direct from London.

It seems probable, however, that wireless relay is likely to supersede wired relay not only because it is cheaper, but also because it is independent of the physical conditions above mentioned, and may therefore be a more dependable method of transmission.

Wireless relay has other interesting and far-reaching possibilities. The small set necessary to transmit on a short wavelength over comparatively small distances is compact and portable. It can easily be mounted on a light car or trolley, and this means that the birds singing, the ripple of woodland streams, the sighing of the wind in

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the tree tops, the crash of the surf on shingle, and, indeed, any of the manifold noises of Nature, can be reproduced far from their native surroundings.

This may not appear to have much significance, but the wireless drama of the future will make use of effects such as these.

But apart from these somewhat fantastic uses, there are others of more obvious utility. For instance, how delightful feeding time at the Zoo would be to the children !

There are many others, but broadly by this means any interesting event taking place in the open air or beyond the reach of line communication comes within earshot of the transmitter, and innumerable are the uses to which it can be put.

There is still another method of disseminating broadcast programmes, to which considerable prominence was given in America, and which has, I believe, been experimented on to some extent in this country also, known as "wired wireless."

It consists of transmitting programmes in the form of wireless waves not by the æther but by wires ; that is, instead of using a transmitting set to energise an aerial it is used to energise a wire or system of wires.

By this means a concert put into an electric power station would become available for any one with electric light from that station in their house.

It is easy to see how widely such a system

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would be applicable, but there are many practical difficulties in the way. Alternating current, bad insulation, earths, etc., all these would effectually spoil reception, and though the idea in abstract has much to commend in it, in practice it is not, as yet, as applicable to existing conditions as the other two previously mentioned.

By one of these three methods, or a combination of them all, there is little doubt that in a few years the country will be covered with many services and programmes of various types, which will give the listener a wide latitude of choice, and each of which in its own particular way will be of the very highest class obtainable anywhere.

There is one other development which, though of quite a different character, fulfils to a certain extent the same function as a simultaneous relay system. I refer, of course, to the installation of some high-power station with such a range that it would cover the whole country.

In view of certain developments in France, where high-power stations are being erected, it appears that Great Britain for national reasons, if for none other, might follow suit.

This would give the country two services, one of low power distributed to outlying centres and retransmitted on low power (the present system) and one of high power which would cover the same area from one transmitting centre only.

This possibility has much to recommend in it as a solution of the difficulty of giving the listener a choice of entertainment.

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In quite another direction the following article will serve to show a possible development of interest in wireless telephony.

STEREOSCOPIC BROADCASTING

(Reprinted by courtesy of the "Evening Star")

Any one who has ever visited his grandmother as a child will remember with delight the "stereoscope" which made pictures stand out as if they were solid and real. This amusing toy has its secret in the fact that two slightly different photographs of the same thing, when superimposed by means of lenses, appear to stand out from their surroundings in relief—they become located in space, so to speak. A man who is blind in one eye has not got the same judgment of distances and positions in space as a man with two eyes, because these two eyes have slightly different views of the objects at which they look, and are therefore able (by simple triangulation) to locate the object in space.

So much for that.

Now, in broadcasting we have often had the complaint that a singer appeared to sing "bang into the microphone"; we have been told that the room is too large, too small, too much draped, too dead—a host of different things, most of them contradictory, but all quite certain that something was wrong.

But naturally! It is just as if you told a one-eyed man to place a row of distant objects in their relative positions, or told a man, deaf in one

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ear, to locate a sound—both could do it approximately, but neither could get it accurate.

Precisely the same thing is the case with a single microphone. Whether it is in the studio or on the stage at Covent Garden—*one* microphone collecting sound from one point of view, cannot give the same effect as *two* ears sitting in the auditorium.

This fact is at the back of a good many complaints about our transmissions.

Well, then, you say, the remedy is simple—two microphones !

No—that won't solve it ; two microphones in series with a single transmitter will give you one resultant, and this will leave you exactly in the same position as you were before.

You must go further than this. You must have two microphones, two transmitters, two wavelengths, two receiving sets, and an earpiece for each ear !! Then, when the singer turns his head, you will notice it—a man far away will have a distinct position, relative to a man near to—and so on.

This fascinating possibility, which was first suggested to me by Captain Round, the Chief of the Research Department of the Marconi Company, is full of interest, but from the public point of view it means two sets instead of one, from the transmitting point of view it means two transmitters instead of one.

Let us examine this from the practical point of view. The B.B.C. have always had at the back of their mind the idea that a single service

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could not meet the approval of everybody—two or more services on different wavelengths were essential. Supposing two services were established—not such a remote possibility—then, on certain evenings it might be decided to combine the two and give—say—a Shakespeare play, or an operatic performance. Both transmitters would be kept working on their respective wavelengths, each would be connected up to a microphone in the same studio—and our end, for stereoscopic work, would be complete. The listener who was fortunate enough to have two sets (two crystal sets don't cost *so* much) would tune each to the two wavelengths respectively and get the stereoscopic effect. But the use of one set would still get the programme on whichever wavelength he chose to tune in.

No one would lose and those with two sets would gain enormously.

There is a great field for research open here—after all, if one believes in the evolution of species—we have not got *two eyes* and *two ears* for nothing; and equally so—a more perfect form of broadcasting may evolve when we are able to use our two ears as they were meant to be used, when we tune in.

I throw this out as a possibility—not an imminent development. It would mean increased costs to us and to the listeners. There is also a great deal of research to be done before it would be perfect.

But surely this is an interesting field open to experimenters, both amateur and professional.

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So much for the development of broadcasting as it affects the British Isles. There can be little doubt of its universal growth somewhat on these lines, and, that being so, it would be well to remind the reader of another aspect of this before going further ahead.

Broadcasting is a national detonator. A spark at the microphone, in the shape of a chance word or phrase, is enough to set the whole nation aflame. A speech delivered by a great orator might produce the most far-reaching results.

The power, the force, that is being unleashed is gigantic. Its guardians, like chemists with some new high explosive, are gradually coming to understand it, they make experiments and watch the reaction, they weigh it and sift it, calculating the amount required to blow up the world and the forces necessary to hold it in check. At any moment, a false move, a risky experiment, and it may all go off, hoisting them with their own petard. That this terrific medium should ever be allowed to come into the hands of a single man or group of men, is unthinkable. That it should degenerate into becoming the mouthpiece of political party propaganda, or of any faction in the country who have axes to grind, would be to drag a great force for national education, welfare and amusement into the gutter.

It is essential that broadcasting should become a public service, on whose integrity and impartiality in all controversial matters, the public may rely absolutely. Just as, in another sphere,

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the periodical *Punch* has developed an independent point of view and a world-wide reputation for clean humour, so broadcasting in its own way should develop an independent yet unquestionable attitude in the minds of the public.

I think that when the public realise that broadcasting is their own service, made possible by their subscription and support, they will resist all attempts to alienate it from this position of impartial public utility in which it is striving to establish itself. In any case they will be well advised to do so.

Beyond the limits of these islands prophecy becomes a little shadowy. Many high-sounding phrases have been flung out at random: "The King will address the Parliaments of the Empire from the House of Lords," "The world will speak one language, have one Government, become one people"! It is apparent from this, at least, that broadcasting has some enthusiastic protagonists—may their dreams come true!

While the author believes that dreams are the inspiration of the world, it is perhaps, in this instance, more profitable to go slowly, considering by what means this universal applicability may be brought about.

Broadcasting is a wasteful way of radiating energy: so much of it goes up into the clouds, down into the earth, so little is caught on your aerials—all the rest is pure waste!

Now a method has been discovered whereby a beam of wireless waves can be transmitted

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from a generating station much in the same way that a searchlight projects a beam of light. The consequent saving of energy makes it possible to send over long distances with such a beam on comparatively low power.

In this way a concert could be transmitted from London, picked up at Land's End, and retransmitted by beam across the Atlantic to New York, where it would be radiated and perhaps (when America gets a little more order in her system) relayed over the whole of U.S.A. From this the growth to world-wide transmission is not a great one; but, as may be imagined, such great problems as these are not without commensurate technical difficulties.

There seems to be no great unknown quantity, as there is in television. These problems are largely financial and depend on the perfecting of existing inventions.

Britain may pay for her broadcast concerts, but America would not if they became available to her, and *vice versâ*.

It seems plain that there is no insuperable physical difficulty in the way of internationalising wireless telephony in much the same way as wireless telegraphy—the great issues being co-ordination of effort, control and expense.

This is the sphere of broadcasting which may be termed general utility, but there are, of course, many other uses to which wireless telephony can be put other than disseminating information and amusement to those who wish to hear it. Comparatively private conversations

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have already been held by Senatore Marconi and his assistants by means of the beam transmissions already referred to. There are other inventions developing which will go far towards giving the privacy of a telephone conversation and whereby a limited number of private individuals may be able to speak to each other by this means.

There seems to be no reason why a person with a private transmitting set should not be able to call up a telephone exchange and get himself connected to any telephone subscriber. On the other hand, there seems no more reason why a telephone subscriber should not be put in direct communication with ships at sea by a somewhat similar method.

This vast, and as yet undeveloped, aspect of wireless telephony is commercial.

It does not present the same difficulties in procuring revenue as broadcasting, since each subscriber's activities and accounts could be checked in the same way as the telephone, but it does mean great perfection of existing inventions, the discovery of one or two new ones, and an enormous organisation for its administration.

I called this chapter A Glance Ahead. Beyond these few general lines of development it is difficult to go, since dreams are ever at war with reality, and in this book the writer has only set out to deal with a few realities in which a wide circle of persons may be interested.

A veil lies over the future, and many things may come to pass in the fulness of time.

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It may be that some twist in the inventive power of man will divert these forces into other channels, it may be that some thing of limited utility at present may become of vast significance. Just as the typewriter, originally invented for the use of the blind, has become of immense general importance.

Let us take refuge in generalities and say that in the years to come no sound will be made on the face of the globe which will not be able, at the will of man, to come to the ears of every living inhabitant, no matter what his nationality or place of habitation ; that there will be no event of international importance but it will reach the ears of the nations, not at second hand in cold print, but at first hand as it is delivered.

Does not this mean a unification of language so that all may understand ? Does it not mean the breakdown of artificial national barriers and the welding of humanity into one composite whole ? Does it not mean that each is giving a chance to comprehend the significance of national and international affairs, and that all the evils of jealousy and hatred being thus displayed before the world will no longer fester, but be cleansed by the antiseptic of common understanding and common sense ?

The human voice has annihilated space. It becomes endowed with the infinite range of light, for the concerts of last year are still spreading out and on beyond the range of the visible stars. Wireless waves, like light waves, travel at an incredible speed and have greater penetration.

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Thus, when we speak it is not to the listener, or even to the world, but to the universe.

When will the day arrive on which some scientist seated on a far inhabited planet picks up the strains of strange voices and stranger music which have drifted to him veritably out of heaven? The possibility is not so fantastic and may well come to pass.

CHAPTER X

PEOPLE BEHIND THE MICROPHONE

IT may interest some of you to know a little about those whose voices reach you so often without their personal attendance, and for this reason these brief paragraphs have been penned.

They do not attempt to be great illuminating studies of character, for some of them are only seen by the author once every few months, and all are judged and spoken of on their official record and not their human one.

It is not a little difficult to speak of men who one and all seem to be endowed with great ability in their many spheres of work without constant and boring repetition, and the author offers these sketches with apologies to the characters that he has not done them greater justice, and to the public that he has not made them more living and vital.

THE MANAGEMENT

On the principle of "A cat may look at a king" I wrote two striking character studies, one of the Managing Director, Mr. J. C. W. Reith, and one of the Controller, Admiral C. D. Carpendale.

They were penetrating sketches, and would, I feel, have been most illuminating to all my readers.

But alas! when I showed these masterpieces to the officials concerned, they sternly refused to allow me to publish them. I tried to insist. I

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said it was *my* book, and this was what I thought. They said it was their character, and that was what they thought! So at last I had to give in.

Truthfully there are some people who shrink from publicity as if it were a deadly disease, and all my efforts to prove the necessity for their appearing in these pages failed to convince them.

I have the excuse, of course, that an unimportant official in the company has no right to comment on the management, but I will not take refuge behind that, because there was nothing but the highest praise in what I had written. It was a positive eulogy—truthful and deserved.

Mr. Reith has been the mainspring of the organisation from the outset, but Admiral C. D. Carpendale joined the company in the early autumn of 1923. His great qualification for the post of Controller was that he came fresh to everything, and was able to throw a new light on all problems. He arrived at a time when one and all were feeling the strain of long months of work at enormous pressure, and by simply refusing to recognise the existence of difficulties was an immense asset in reinvigorating the whole organisation.

I should like to say a little in general terms about the management, but it is harder to speak thus, and I do wish so deeply to convey to the public the enormous respect and admiration in which all the staff hold their chief.

The servers of the microphone, important as they are in their way, are the only concrete

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manifestation of the great broadcasting system ; behind them lies the administration, the direction, the policy of the organisation, with all its innumerable difficulties both political and financial.

The good ship *Broadcasting*, to which I referred in my Foreword, has had a stormy passage during these last twelve months. Incredible opposition and obstacles have been placed in her course from all quarters.

The successful growth of the company, in spite of these difficulties, speaks in itself for the tireless energy, resource, determination and tact of those directing it.

Let us boast, if we will, that there are able lieutenants ; it is true perhaps, but they would have been lost, nowhere, without their captain, who has been ever at hand in time of emergency.

I believe that Broadcasting is an instrument of public service and national importance, and when these ideals, promulgated by the chiefs, have permeated, as they have, every member of the staff, the result is a unity of feeling, an *esprit de corps* which is built on such a foundation that it must inevitably lead the broadcasting service and the whole of the wireless industry to greater success and prosperity.

G. V. RICE, M.A. (Oxon.), A.C.A.

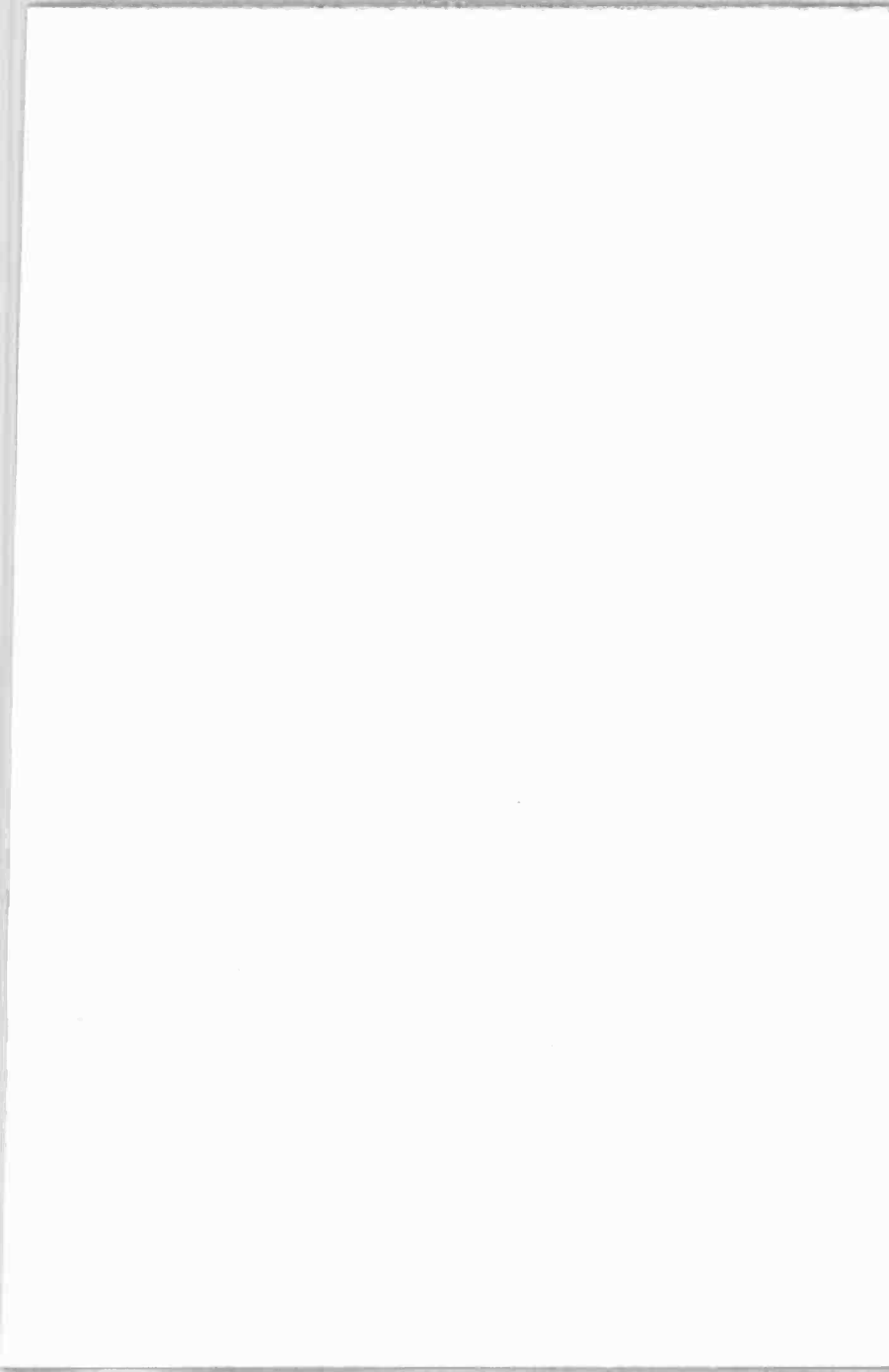
Mr. Rice, our present Secretary, joined the company in July after the resignation of Mr. P. F. Anderson, the original Secretary of the company.



MR. DAN GODFREY,
Manchester Station Director.



MR. H. A. CARRUTHERS,
Glasgow Station Director.



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The secretary of the B.B.C. has a harassing job. He has to collect a lot of money out of various people—notably the Post Office and member firms of the B.B.C.—and he has to pay out a lot of money to the artistes who take part in the performances. He has to pay out very quickly to satisfy the artistes, but it takes a little longer sometimes to pay in !

I believe the number of cheques sent off every week from the secretary's department borders on four hundred, but the strain of parting with so much money leaves Mr. Rice quite untroubled. His motto, so he tells me, is "Never let the corners of your mouth turn down."

His is the silent service. It does not come much in the public eye, but behind every company organisation lies the secretarial department upon whose efficiency the smooth working of the whole machinery depends. The large accountants' department, the stenographers, the manifold miscellaneous business matters which are always cropping up in an organisation such as ours, all come under the genial and very able direction of our secretary—to say nothing of that *sine quâ non* of existence—our salaries !

The fact that nothing ever goes wrong, but seems to get better and better as the days go by, leaves me with the impression that Mr. Rice must be very much alive to the difficulties of his job. It is notoriously easier to start an organisation than to keep it going. Mr. Rice keeps

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it all bowling along in fine style—so well, in fact, that we almost forget about it !

A. R. BURROWS, DIRECTOR OF PROGRAMMES

As the reader will have gathered from the earlier pages of this book, Mr. Burrows has been actively connected with the executive work in broadcast telephony since its inception in Great Britain. No one could have been more qualified than he to take on the arduous task of directing the provision of broadcast programmes.

As a journalist of many years' standing, Mr. Burrows has been educated into giving the public what it wants, and in the many discussions which take place in the office as to programme arrangement he is always to be found putting himself into the position of the man in the street and trying to look at things from the point of view of the masses.

As one who has worked with Mr. Burrows all through the heavy weather of this last year I feel well qualified to speak about him.

He is consistently amiable, good tempered, and courteous. His whole energy and ability is centred in his work—to provide ways and means to give the public better programmes. He takes adverse criticism to heart almost too seriously, as if it were directed against him personally. No matter how heavy the work he invariably comes up with a smile. He is absolutely frank and open in mind and manner,

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and sometimes too gentle with those who deserve rougher treatment.

He is respected, even by those who disagree with him, for his wholehearted enthusiasm in the work and his unswerving devotion to the particular ideals in which he believes.

His name, and that of "Uncle Arthur," under which he used to talk to the children until the pressure of work prevented him, are known, I suppose, better than any in connection with broadcasting, and the fact that even now, a year later, he receives letters from unknown nephews and nieces in almost the same quantity as do the regular everyday uncles, testifies to the prestige and universal recognition which his efforts have received.

Out of office hours he refuses to talk shop, and will discuss a variety of topics, such as photography, lantern-slide preparation, travelling in Norway and Sweden, etc. He has a vast memory for people, and the organisation and interest with which they are connected.

I believe that voice is a great indication of character. Everyone who has heard Mr. Burrows speaking over the broadcast will know him for the kindly, genial soul he is. Nothing I could say can add to this. Let me use the old phrase in a new significance: He speaks for himself.

P. P. ECKERSLEY, CHIEF ENGINEER

I have referred to Mr. Eckersley earlier in this book as the first wireless humorist—he is,

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perhaps, something more than a humorist, he is a wit. In the old Writtle days he exercised his ability to amuse in the most ingenious way, and his present responsibilities and heavy work have not succeeded in damping his sense of humour. It bursts out of him every moment. He cannot resist—indeed, I believe he cannot help—saying the funny thing, and his humour is all the more appreciated for the fact that it is never malicious.

I have only seen Mr. Reith helpless with uncontrolled laughter once, and that was on the famous birthday programme night when the Chief Engineer, just to show he was a man of parts, elected to conduct the orchestra.

He did so, breaking two batons, two chairs, the conductor's dais, upsetting all the music on to the floor, and finishing up with the stub end of the baton behind his ear! It was excruciatingly funny.

If he were useless as an engineer he would still be an asset to keep the whole of the office in a good frame of mind, but he adds to his waggery the most incredible efficiency.

He never seems to be doing much, never hurries, slouches about pipe in mouth, and yet the job always seems to be done.

When one considers the mushroom-like growth of the B.B.C., the speed at which the various stations have been got under weigh, one must give to him a great deal of the credit. The installation of wireless transmitters is not child's play, but when to this is added the equip-

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ment, furnishing and arranging of studios and offices, and the settling of a multitude of small difficulties which always crop up in the opening of a new station, the undertaking becomes a heavy and responsible one. All this has come under Mr. Eckersley's control and he has discharged it with the greatest efficiency and success.

Wireless engineers are few and far between. The work is highly specialised in itself, but the Chief Engineer of the B.B.C. has got to be a tactful all-round man as well. He has to placate civic authorities, joke with telephone linesmen, swear at contractors, humour the stupidity of programme directors, etc., for on him ultimately depends the success of broadcasting from the technical aspect, and this is a great part of the whole.

How fortunate the B.B.C. is in its Chief Engineer I may leave the reader to judge.

Every member of his own staff gives him the most loyal and unswerving devotion, and the result of this is to be seen in the successful issue to which all the technical problems have been brought.

Mr. Eckersley has often told me how his department in a few months' time will be fully organised and will just run itself automatically, while he will sit back in a comfortable padded chair and watch the "wheels go round." It doesn't seem to have worked out on these lines so far. Indeed, the developments are so numerous and far reaching that I am afraid his

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will be a hectic existence for the next year or two. There are relay stations to set up, simultaneous broadcasting to be improved, wireless relay to be perfected, and two programmes out of one aerial to be started. Just a few other little armchair problems of this kind must be solved before our best beloved Chief Engineer can drop into the office for an hour on Wednesday and drift off to the country for a long week end from Thursday to the following Tuesday. It will come, no doubt, but in those days he will answer, I fear, to the short, sweet name of "Beaver."

L. STANTON JEFFERIES, A.R.C.M.,
MUSICAL DIRECTOR

If one of those charming wizards that one always reads about in the best fairy books were to come to me with the usual tale of granting me any wish I desired, even if I had to give up many things to realise it, I should say without the least hesitation, "Give me the power to improvise."

It is a whimsical and elusive talent. It comes and goes with mood ; it is always a joy to the maker and hearer because of its sudden inspiration, its surprise and its beauty. Mr. Jefferies, in addition to many other talents, has this one, I think, the luckiest and most precious of all of them.

Now, for many moons past he has sat down to the piano daily in the children's hour and drawn out of it melody after melody of his own

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conceiving, never repeating himself, and yet always expressing the same characteristic vigour, humour and full heartedness.

Mr. Jefferies is a young man. He owes his present position to his ability, but he is not one to rest on his laurels, for even in the last few months the strides he has made in conducting and musicianship are immense.

It is one of the prerogatives of musicians to look upon themselves as out of the common herd. We more practical and less visionary people often treat them with pitying condescension from our attitude of superior worldliness. But in broadcasting, music has to be treated with daily on a commercial footing; it has to be reduced to its elements, sorted into groups and classes—"popular," "symphonic," "high-brow," etc., just as in a library there are sections for "travel," "fiction" or "philosophy." But to the musician, as to the writer, this is not the criterion by which he judges. There is good music or bad music, good writing or bad writing—the subject treatment is of relatively minor importance. It is, after all, a concession to our own foibles and lack of musical taste that has caused us to appreciate the "selection" and "pot pourri." It must, therefore, be an effort for one who is truly musical to look at things from this point of view.

Mr. Jefferies has taken the bull by the horns and plunged into it. He tries to keep an evening now and then for what he calls "decent stuff," but the rest of the time you would imagine him

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to be a devotee of the musical comedy or the dance. It is only when he sits down to the piano in the children's hour that one realises he possesses an executive ability and a technique which is little short of extraordinary, since he never practises and plays except in—that minus quantity in the B.B.C.—his “ spare ” time !

He is also, as almost every listener will know, a maker of fun and mischief, a talkative nonsense man to delight the children, and at all times an honest, frank and good-humoured companion.

The strain of running the London station single handed during the first few months nearly resulted in a nervous breakdown for him, and ever since then he has been in at the death with the best of us for long hours and hard work. Listeners do not hear his voice so they do not always remember that the orchestra is being conducted three or four times a week—and that after a long day's work on the organising side of the musical work of the company.

When you next see that the London Wireless Orchestra is giving a performance of some opera or some heavy symphony programme conducted by L. Stanton Jefferies, visualise him, as we see him, going off home with all the scores under his arm, and sitting there at his own piano, working them all out in detail, marking the cues and the cuts sometimes until the early hours of the morning. The performance always goes off smoothly, does it not ? Believe me, there is more in it than meets the eye. We are fortunate in our Musical Director.

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W. C. SMITH, PRESS REPRESENTATIVE

Mr. Smith hails from Glasgow. He has certain deep-seated political convictions which have resulted in his standing twice for Parliament. When robbed of this possibility he contents himself with representing the B.B.C.'s point of view to the Press—a job which in the past year has been, as far as the need for diplomacy goes, a good training for any political career.

Mr. Smith has the native caution of the North. He has also the most persistent and yet timid way of making his point of view clear.

He joined the B.B.C. in response to an urgent telegram from Mr. Reith at a few hours' notice, carrying all his personal belongings in an attaché case ; since then until the last election he has not visited his native country.

The B.B.C. has had a delicate course to steer during these first months of its existence.

Many people, for various reasons, were ready and waiting to find fault with us upon the least provocation.

It fell to the lot of Mr. Smith to control the majority of our public utterances, and to maintain that firm yet conciliatory attitude which is the policy of the company.

All members of the Press who have met Mr. Smith will testify to his ability in this connection.

It is said of Scotsmen that they have no sense of humour. Mr. Smith is an exception to this ; he has that peculiarly dry and off-hand type of

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humour which on occasion is immensely amusing, but apart from all this he is the father confessor of the office.

If any one has a trouble from the office boys upwards, you may be sure Mr. Smith knows about it. In this way he has endeared himself to all.

He will greet you in the passage with "Weel, are ye getting things to your mind?" for this seems to be his ideal of happiness in life.

His work during the past year has been invaluable to the company, and we feel that if the great House on the river were to spirit him away we should have difficulty in finding—even from Scotland—another who would fill his place.

HERBERT PARKER, JOINT-EDITOR "RADIO
TIMES"

Preparing the *Radio Times* for press every week is almost as bad as preparing a broadcasting programme. Indeed, in some respects it is worse, for if the broadcaster is in difficulties at the last moment he can always get something to fill up, whereas an editor has to have everything cut and dried before he goes to press. There is something irrevocable about printed matter. People can always refer back to it, they can quote what the editor said on such and such an occasion, whereas the fellow at the microphone can always plead a conveniently forgetful memory.

Therefore I do not envy Mr. Parker his job.

He started life in the cotton mills of Lancashire, served as an officer during the war, after which he studied economics and literature at

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Cambridge. He then visited Burma, but came home to take up a career of journalism in London.

Mr. Parker joined the B.B.C. in May, 1923, and when the *Radio Times* was started, undertook the arduous work of preparing it for press. In this work he found Mr. Crocombe, the editor of *Tit-Bits*, a staunch ally, and the official organ of the B.B.C. is edited jointly by them.

Mr. Parker has all the habitual bluntness of a North countryman, but he tempers this with a beaming smile. He is also a demon for work, and these fortunate qualities have helped to carry his uncle, the Rt. Hon. J. R. Clynes, to a great position in the world to-day.

When you next take up the *Radio Times* and read the excellent articles in it, do not forget there *is* a B.B.C. joint editor, who is always bustling about after copy, and getting together these articles for your delectation.

He gets little credit if the articles are good—that goes to the writer, but he gets all the kicks if they are rotten. So I, for one, wouldn't change places with our admirable joint editor—not that any one is likely to be fool enough to suggest it!

R. F. PALMER, B.Sc.,
LONDON STATION DIRECTOR

Mr. Palmer joined the company about two months after its inception. He came first as assistant to Mr. Jefferies, who was then running the London station. He soon had to go off to fill a gap by running the Cardiff station for a couple of weeks.

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Soon after this Mr. Jefferies was made Musical Director of the Company and Mr. Palmer was put in charge of the London station, in which capacity he is still acting.

He is a man of parts, a Bachelor of Science, a singer of undoubted qualifications, a very capable air pilot, a friendly uncle, and a most excellent announcer ! We all seem to combine a number of jobs in the B.B.C., chiefly because up to the present, we have been working at such pressure that it was usually easier to do a thing oneself than farm it out to others who would not be so conversant with the work.

During all this year Mr. Palmer has had a job which at first sight seemed a fairly straightforward one. After all, a regular orchestra, a few good artistes, select your items, and there's the programme ! Simple ! Then you just put on your hat and coat and walk home.

A supposedly well-informed member of the public said to me the other day, " I suppose you chaps don't begin work until about six o'clock in the evening ! " Six o'clock in the morning is nearer the mark ! Programme arrangement, as I have said elsewhere, is an art, and it is a still more difficult art when it is being constantly upset by other interests. Mr. Palmer's constant patience under sometimes very trying circumstances has often been remarked upon. He is always cool and collected, invariably courteous to every one he meets—a most rare and enviable quality—he has a reason for everything he does, a most persuasive manner in argument, and a great

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tenacity of purpose. He would have done well at law, but that would not have brought him into touch with the many thousands of people who at present listen with pleasure to his delightful voice and feel that friendly personality is actually speaking to *them* personally. It is this capability of speaking to the microphone as he would to an old friend which has won recognition among such numbers of people. May the number be for ever on the increase, and the spell of the "golden voice" never be broken!

PERCY EDGAR, BIRMINGHAM STATION DIRECTOR

I cannot remember if Percy Edgar arrived at Birmingham before the B.B.C. took it on, or after, but it does not really matter. He always seems to have been there. A Birmingham institution almost by now, I suppose, and a very dearly beloved uncle as well, I believe.

He has a round face, and no one with a round face ever worried too much about life! You remember Julius Cæsar? "Let me have men about me that are fat, sleek-headed men, and such as sleep o' nights." By which do not let me give you the impression that Percy Edgar is a fat man! By no means. But he has that jovial smile and happy disposition that breeds goodwill and co-operation wherever he goes; such people are a pleasure to meet and work with.

I am told that Mr. Edgar comes from Stafford, and that he conceived the idea of going on the stage at the age of four! He was destined for a very much larger stage than he realised! But

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fortune, who mercifully hides the future from us, hid it from him long enough for him to become an adept at character study in impersonation. Particularly does he shine in Dickens's characters. I have never heard these recitals broadcast, but I heard them in the flesh at a station directors' dinner some time ago, and I can only wish Birmingham listeners had had the same opportunity, for they are things to remember.

Percy Edgar is a married man with bairns of his own, perhaps that is why he is such a successful uncle. For many months the children's letters at Birmingham have been steadily increasing, and this, no doubt, is not only due to Uncle Edgar's own personality, but also to the fact that everything at 5IT goes with a swing owing to his pervading influence of good humour and patience, and last, but not least, his very real ability in handling the responsible work with which he is entrusted.

A. CORBETT SMITH, M.A. OXON., CARDIFF
STATION DIRECTOR

Mr. A. Corbett Smith joined the staff of the B.B.C. a few weeks after the opening of the Cardiff station and was sent there to become station director. It is safe to say that his personality and determination have resulted in a high level of programmes being transmitted from that station, which have assumed a particular character somewhat different from those of other stations, owing to the wide

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experience and artistic qualifications of their director.

A man in his time plays many parts, and Mr. Corbett Smith can claim to have played more than most. Author, composer, playwright, barrister-at-law, public speaker and many other professions have come within his experience, and all of these he has turned to very able use in that all-round profession of providing broadcast entertainment.

I well remember meeting him for the first time. He arrived at the Cardiff station one evening during the progress of the concert. I was sitting in the studio, while the orchestra was playing, when he entered, a short, well-knit figure, with a very straight forehead and something vigorous and rather aggressive in face and carriage. He became at once interested in what was taking place, listened to the balance of the orchestra, and as soon as the concert was over, engaged the first violin in eager conversation as to procuring music, arranging for larger orchestras, etc.

He was not long in getting down to work and building up that special feature of the Cardiff station, a "continuity" programme.

The system of building up a programme round a central idea has much to commend in it, and while it is always important to remember that studio atmosphere may not always get over into the home atmosphere, there is no doubt that to many listeners the Cardiff station has become a source of immense enjoyment and instruction.

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Tastes vary in every area, but the satisfaction shown by Cardiff listeners at the programmes they receive is the best criterion of their success.

BERTRAM FRYER, BOURNEMOUTH STATION
DIRECTOR

Mr. Fryer is a recruit to broadcasting from the theatrical profession. He has had many years' experience as an actor, producer, and manager of theatrical entertainment. He is also a showman, and showmanship in broadcasting is an essential part of success.

Mr. Fryer commenced work in the Newcastle area under difficult conditions. The resignation of the previous station director had aroused ill feeling in certain quarters, and this had to be fought down. I happened also to be in Newcastle when Mr. Fryer arrived, and had the privilege of initiating him into the mysteries of running a broadcasting station. Under his very capable direction Newcastle soon began to go ahead.

The station director became a popular figure with the listeners in his area, as was witnessed by the great farewell which he was given when he left Newcastle to beat his own record, as he put it, at Bournemouth.

It is not an easy thing to run a station, but it is even harder to start up a station. This last effort of Mr. Fryer at Bournemouth has been a great test of his organising ability and the standard already reached by the Bournemouth



Photo

MR. R. F. JEFFREY,
Aberdeen Station Director.

Nicol Smith.



Photo

MR. L. ODHAMS,
Newcastle Station Director.

James Bacon & Sons.

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station, which will no doubt improve as the months go by, is a tribute to his untiring energy and enthusiasm.

Curiously enough, owing to the atmospheric conditions (or those of the æther) over the British Isles, Newcastle listeners say they can still hear his voice and his cheerful manner just as clearly from Bournemouth as they could when he was in Newcastle. They feel that in this way they can still keep in touch with him and I believe his departure from Newcastle sent the sale of valve sets sky high, because so many people regretted his going they added valves to their sets so as not to lose him! If this is the case we shall have to move all the station directors about the country periodically in order to increase the sale of expensive apparatus!

DAN GODFREY, A.R.A.M., MANCHESTER
STATION DIRECTOR

Mr. Godfrey is the bearer of a famous name. His illustrious father, Sir Dan Godfrey, whose work in the musical world is so widely known and highly praised, has a son who, one can see, intends to carry on the tradition of the family.

So far, at any rate, he has not let the grass grow under his feet, for, though still a young man, he possesses a wide knowledge of music and is a most able conductor.

He is happy in his appointment to direct the Manchester station, for it is widely known that Manchester is a city which insists on a high

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quality of musical performance, and here Mr. Godfrey has ample scope to indulge his musical capabilities.

He assumed control in the place of Mr. Kenneth Wright who came to join the London staff, and was not slow in getting together the "2ZY Operatic Party," the "2ZY Concert Party," etc., and in establishing a standard of musical performance of a very high order.

Mr. Godfrey has also the knack of building programmes into a harmonious whole, and achieves the same effect of unity of mood and idea as does his colleague the Cardiff station director, but by quite another method. In fact, by looking at almost any programme, those intimately connected with the work could tell exactly by whom it was compiled. This is the result of a definite plan of working which is a reflection of the station director's personality and the musical taste of his area.

Mr. Godfrey has a capacity for detail work which is an asset in any walk of life, but particularly so in broadcasting, which requires the greatest attention in this respect. He is frank, good-natured, and easy-going in manner, and seems to carry his responsibilities lightly. In these days of high-pressure work this is indeed a fortunate trait in character, and nothing is, perhaps, more irritating than to see the Manchester station director steadily putting on weight in spite of his success, while others among us, whose work is no heavier, get thinner and thinner every day!

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E. L. ODHAMS, NEWCASTLE STATION
DIRECTOR

Mr. Odhams, who succeeded Mr. Fryer at Newcastle, is of rather a different type. He is conspicuously retiring and modest in disposition, and seems rather inclined to shrink from that most public instrument the microphone. He is forty-three years of age, although to look at his photograph one would have imagined him much younger. His previous career has been chiefly concerned with journalism, both at home and abroad in India, and his interests lie largely in literary channels.

He has, however, not been slow to adapt himself to his new work, and has carried on very successfully the high standard set up by Mr. Fryer. In musical matters he has had able assistance, and in all respects the 5NO programme is second to none. The area is not an easy one to cater for. It contains a large industrial and mining population, and these folk are outspoken, as is the wont of the people in the North.

Moreover, the area is not so rich as some others in native talent, and this increases enormously the difficulty of compiling high-class programmes.

In spite of all this the Newcastle transmitting hours are as full as any in the country, and, in fact, at one time it appeared that the amount broadcast would quickly wear out the set! As soon as Mr. Eckersley heard this he snatched up his hat and leapt into the Newcastle train. Needless to say, there has been nothing wrong since.

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H. A. CARRUTHERS, GLASGOW STATION
DIRECTOR

Mr. Carruthers has been struggling to please the Glasgow listeners ever since that station opened in March last year. I say struggling because it is notorious that the Scotsman expects his money's worth. I think every Glasgow listener will acquit the station director, however, of any shortcomings in this respect. But, nevertheless, Mr. Carruthers appears to have a poor opinion of himself, and his work, for when I wrote to him to obtain some particulars of his life's work he replied, "I was born one dark and stormy night in June in the twentieth century, since when I have gone from bad to worse." I have a feeling that this must be a terminological inexactitude on the part of the station director in question, because the reverse seems to be the case.

Glasgow is a long way from London, and much has had to be left to the resource and initiative of the staff at that station, but Mr. Carruthers has been equal to every occasion, and his prestige among listeners all over the country is high.

Every one will remember the excellent organ recital which was broadcast simultaneously from Westminster Cathedral and was hailed as the best organ recital ever transmitted by the B.B.C. They will remember, too, the performance of "Rob Roy" and the immense amount of organisation required to produce this, the

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largest production that any station has yet attempted.

Mr. Carruthers has previously held important posts as organist and conductor, and his knowledge of musical matters has been of great benefit to his station; he also did valuable work in the preparations for the opening of the Aberdeen station; but his most valuable asset from the company's point of view undoubtedly lies in the fact that he realises the needs of his area and is a Scotsman working among Scotch people—the right man in the right place.

R. F. JEFFREY, ABERDEEN STATION DIRECTOR

Mr. Jeffrey is the latest addition to our staff of station directors, as his station is the latest one to open.

I confess to knowing very little about him except that prior to his appointment he was largely responsible for the theatrical and artistic side of the "Rob Roy" production in Glasgow. It was in this connection that he first came to the notice of the Managing Director, and after a very brief visit to London, left for Aberdeen to start up the station.

I have it on the highest authority (that of Mr. Reith) that Aberdeen is a place apart, and that Aberdonians generally are something more than ordinary mortals. I can only envy Mr. Jeffrey in his good fortune in being situated in such a city and at the same time hope that he will be able to maintain that very high standard

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he will be called upon to supply, and which he has no doubt set himself.

Mr. Jeffrey will have many difficulties to contend with, but judging from my very brief acquaintance with him and also from his correspondence with head office, which is always very much to the point, there is no lack on his side either of ability or endeavour to make the Aberdeen station supply a service which will wring the shekels out of the Aberdonian pockets and result in the ubiquitous installation of costly receiving sets.

THE TAME WIZARD

It is only right that in this mysterious science of wireless telephony there should be a mystery man.

There is such a mystery man connected with broadcasting. He is excessively reticent both about himself and his work, and for this reason I am not giving his photograph or even his name.

He worked equally mysteriously (and, as a consequence, without that widespread recognition he deserved) during the war, and I am told that his work with direction finding apparatus located the German fleet coming down the Kiel Canal and timed the battle of Jutland. I am told, too, that he possesses records of exactly what the Zeppelins said when they talked to each other in their raids over London—and many more interesting things of this nature.

But as far as wireless telephony goes he is one of the great brains in the country. I doubt even

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if there is any one living who knows more about the technical side of wireless than the "Tame Wizard."

We call him the "Wizard" because he is constantly helping and advising us in all our work and has an uncanny faculty of spotting defects and improving the quality of transmission. We call him "tame" because of his twinkly smile and his good-heartedness.

A year ago we were using ordinary commercial telephone microphones. They were very imperfect in the reproduction of musical sounds, and it so happened that one day the Wizard wished to get a standard transmission on which to test some receiving apparatus. He was surprised and annoyed to find that the microphones then in use could not give him this standard transmission. So, much in the same way as one would set off for a round of golf, he decided to invent a microphone. Within six months he had evolved something which rivalled anything that others had been able to produce.

He accomplished this work, not with an army of assistants, but with one or two capable helpers and his own immense knowledge, imagination, and colossal work. For months he worked fifteen and sixteen hours a day.

Enthusiastic as a school-boy over every detail, he is often to be seen slouching about with his old felt hat and his greatcoat down to his feet, a cigarette in his mouth, and a twinkle in his eye.

Wherever he goes he leaves his unmistakable traces of vaseline, cotton wool, felt and rubber

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sponge behind him. With these, I believe, he would guarantee to insulate St. Paul's Cathedral against any form of vibration.

He knows nothing about music, and even whistles "God Save the King" out of tune, but he will tell you resonant points in a microphone or loud speaker in a moment, give you the characteristic of either, and how many vibrations to the second any particular note is doing.

The Wizard is the most open-hearted, lovable creature you can imagine, utterly oblivious of everything except the work in hand, curt when he is busy, and genial when he has leisure, untiring in effort, and visionary in thought.

These are the ingredients of genius—and that I am afraid is what we shall have to call him, and forget, as we readily may, all else.

Having produced a microphone which borders on perfection, he has now turned his attention elsewhere, and we may hope to see some new marvels in the near future.

Among those who know he is recognised as a master mind, and all his assistants will do anything for the "chief."

But wireless telephony is only a side line of his activities. He will switch over from a microphone problem to consider the design of a 600 k.w. set for the Imperial chain without turning a hair, and where the ordinary technician is baffled he is only just beginning to take interest.

You, O reader, as one of the many millions of listeners in the country, will listen with

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greater appreciation when you know that the perfect 'cello tones, the bright vocal qualities, and the natural speech have largely been made possible for you by this one short, modest little man whose name you do not even know, who writes in the papers anonymously, who flies from publicity as a bat from the daylight, and who hardly ever speaks into the microphone he has perfected !

It will add a touch of romance to it all, I hope, when you realise that we noisy people with our books and our articles have to stand aside and take a back seat when it comes to technical brains.

Who is he, then, this Colossus, you ask ? Ah ! that is a secret. He is the Tame Wizard.

Space unfortunately does not permit me to enlarge upon the many other persons on our staff whose work in the past year has contributed so largely to the success of the organisation, but all will realise that in the launching of a project such as this every man has to be pulling his weight all the time. The many assistants on the head office staff, and the assistant directors at all stations, whose voices will be familiar to many of you, have much more to do than speak into a microphone, and their work, though less outstanding, perhaps, is every whit as important for success.

I must leave them, I fear, with their individual praises unsung, commending them to your remembrance, for now I am getting to the end of my tether, and it is time to conclude.

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CONCLUSION

This book has been written in the evenings after days of strenuous work, and during the brief respite of Saturdays and Sundays.

It has, therefore, all the defects of things written by one who is too close to his subject and perhaps too full of it.

It is not in the least an *official record* of all that has passed—it is simply the year's work seen through the eyes of one who has been intimately connected with it.

Many have suggested that this year has been so full of active and difficult expansion that it would be of interest to the public to know something about the inner working of a new form of entertainment in which they are highly interested.

It has been written also to set down, before the memory becomes dull with the passing of time, those early phases of historical development which, no doubt, we shall all look back to with amusement in the years to come.

There is also, let me confess it, a personal feeling that the prominence given to my avuncular activities under the name of Caractacus has left many under the impression that my work has not extended beyond the broadcast nursery. Though the importance of this part of the programmes can never be over-estimated and its organisation has been a constant interest for me, it has actually formed only a fraction of my duties. This book will perhaps dispel that impression.

As Deputy to Mr. Burrows, the Director of Programmes, with whom I have worked in the

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closest co-operation throughout the last year, my interests have been somewhat wider than this.

The children's hour has been run in London and elsewhere by groups of young enthusiasts whose real function in the organisation is a very different one to the amusing (but useful) buffoonery which has made their names so universally known.

It is probable that in the future this part of the programme will be handled by specialists, but in the meantime allow me, on behalf of every "uncle," to assure you that we have one and all other activities and responsibilities, and that this work, successful as it may have been, is not our primary function.

I have dealt elsewhere in these pages with some of the future extensions and developments of broadcasting which may take place, but perhaps a few final words on the immediate effects of the present scheme would not be out of place in this conclusion.

It would appear that the wholesale distribution of services covering almost every phase of human endeavour at a price of less than one halfpenny a day will have the effect of bringing all classes of society into closer touch with their neighbours, and so fostering that mutual trust and understanding which is essential for the well-being of a great democracy.

It would appear also that this opportunity to take part in the life of the nation, to hear great men speak of their country's affairs, to become a witness of all that is said and done, will raise

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the tone and increase the feeling of responsibility among those that are so placed on trial before their fellow men. Against this loss of privacy must be balanced the inestimable advantage of having a true and unbiased record of what has passed placed in the ears of the public, who will not be slow to recognise those who have their country's affairs truly at heart.

Moreover, it seems clear that the music and entertainment provided to so many who have hitherto had little opportunity to be in touch with these things will, of necessity, promote a healthier and more cheerful mental outlook on work and life, and that this in its turn will react on their work itself to the benefit of all concerned.

It is widely admitted that half-knowledge is a dangerous thing, but there seems to be a hope that the educational authorities of this country have grasped the significance and value of the new medium and will utilise it in such a way that the present schemes of national education can be widened and added to, so that every one may face life better equipped for the struggle.

Lastly, broadcasting means the re-discovery of the home. In these days, when house and hearth have been largely given up in favour of a multitude of other interests and activities outside, with the consequent disintegration of family ties and affections, it appears that this new persuasion may to some extent reinstate the parental roof in its old accustomed place, for all will admit that this is, or should be, one of the greatest and best influences in life.

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All these things taken into consideration with the increased facilities which have been placed, and may continue to be placed, at our disposal, point steadily to the fact that broadcasting is a rapidly growing force, which, though it rivals no other form of news distribution or entertainment, inasmuch as the medium of presentation is blind, yet is able to illuminate the one and co-operate to a mutual advantage with the other. They point also to the fundamental necessity that this force should remain the independent servant of the people, willing to accept everything in fair debate, but non-political, non-governmental and non-sectarian in control, and that it should be in some adequate manner insured against the possibility of being bribed, or bullied into partisan view on any question whatsoever.

There are many questions untouched by these brief pages ; the almost endless variety of uses to which broadcasting, in some form or other, can be put ; the technical problems, each of which is a fascinating study ; the allocation of financial resources, with all their manifold difficulties—each of these things might well form a book in itself. But alas ! I have neither the knowledge nor the ability to write them, so the field is open to each and all who care to set thought to paper.

There is little so satisfactory in life as penning the last words of a book—yet I do so with a certain regret. Much might have been better said. I trust to your imagination to remedy my shortcomings, and so—Farewell !