AN APPEAL FOR CO-OPERATION

"BEFORE broadcasting can be developed in India on a large scale, it is necessary to obtain scientific data on a number of practical aspects in which local conditions differ in greater or lesser degree from those obtaining elsewhere."

"THE work, however, is one of great magnitude and, moreover, in a vast country like India, observations will have to be taken at a large number of centres before we can proceed on sure grounds. This is a line in which co-operation is necessary from the majority of scientific institutions and universities."

"SHORT-WAVE transmission is primarily a problem of atmospheric noise-levels, and until we have dependable data on atmospheric disturbances, it would not be justifiable to embark on an elaborate system of short-wave stations. In this connection it is hoped to obtain the help of the listening public as well as the scientific world."

The above are three extracts from an article in this issue.
THE INDIAN LISTENER
(The Official Organ of All-India Radio)
(Incorporating The Indian Radio Times)

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Our new name appears to have met with general approbation—a new experience for us, indeed! The old title of "Indian State Broadcasting Service" was certainly cumbersome. It was also liable to misinterpretation, for often have letters been sent to Station Directors asking which Indian State was actually responsible for the service. But All-India Radio, note the very appropriate initials A-I-R, clearly expresses just what we are trying to be. To us India is a united country, federalised as far as the air is concerned, and unseparated by provincial boundaries or ambitions. We recognise, of course, that in India there are various religious divisions; but those divisions, to broadcasting, are merely divisions of culture, of belief, and of social custom. All-India Radio knows nothing of political differences dictated by communal claims or desires. Our programmes are prepared on an All-India basis, built up on a recognition of the needs and wishes of the different sections of the community, appreciating and respecting the religious and moral and social views of those differing sections, but definitely seeking to give India a comprehensive and All-Indian broadcasting service.

That is why we were amused at a recent newspaper report purporting to give the suggestions of a visiting foreign expert "for the improvement of broadcasting in India." One of these suggestions was that those responsible should work "solely for the advancement of broadcasting without any regard for provincial or communal sentiments." Our visitor is certainly right in his outlook; but the admonition comes rather late. All-India Radio stands for that very principle. Indeed, it always has stood for it, even under its more cumbersome name. There have, it is true, at times been difficulties in the way of carrying out the principle to its finest detail; but those difficulties have been of India's own making, difficulties which administrators could only overcome with patience, tact, and (at times) subtlety.

We are, indeed, proud of our new name. No country in the world, we believe, has such an appropriate initialling; and in broadcasting it is the initials which count. It is not always the B. B. C.? Do we ever hear of anyone burbling about the British Broadcasting Corporation? And in America it is always the N. B. C., and not the National Broadcasting Company. Whilst in Italy the initials of their particular radio service have actually become a recognised new word, Eia. Our new name gives us a double choice. If we care to be semi-pedantic, we can use all three words, All-India Radio, and find that they are words which everyone can pronounce and understand; whilst if we like to speak in initials we can talk about our A-I-R service. And what is better than giving India real service from the air and by the A-i-r? And as for monogram possibilities, we almost feel like calling for suggestions, because few letters of the alphabet lend themselves better to a perfect monogram than those we have selected. However, no prize is offered, so do not be too eager to flood us with designs.

POPULAR SUGGESTION

Another suggestion made by an enthusiastic visitor was that broadcasting should be overhauled "in a way that would react to public suggestion. With due deference to such a proposal, we would ask, Where is "public suggestion" in India? To such a query, of course, we shall be deluged with replies from those who are our persistent critics. But that deluge will not deter us from maintaining that at the present time public opinion is so inconsistent, and public knowledge so immature, that to overhaul broadcasting along the lines of "public suggestion" in India would speedily produce chaos.

Not that we are unresponsive to useful criticism. Just the opposite. Every reference to broadcasting in the daily press is collected and sent to the Controller for consideration; every criticism is studied on its face value. Indeed, letters from listeners to the various stations are carefully read by the Station Directors. Their suggestions are examined and their complaints investigated. Our visiting expert would have public opinion control our policy; whereas for the time being, at least until the general public are more intimately acquainted with the fundamentals of broadcasting, the most that can be done is for us to let "public suggestion" guide our policy.

Incidentally, to show the difficulties (not to mention dangers) of blindly following "public suggestion," we would point out that whereas Indian public opinion for the past few months has been loudly clamouring for short-wave as the great solver of all our problems, this particular foreign visitor himself states that "the consensus of opinion is in favour of a wave-length beyond 200 metres."
June 22, 1936.

The Indian Listener

No business can thrive without a frequent investigation into the methods of sale and the extent of the "left-overs" which the public do not want to buy. Hence the annual stock-taking. Broadcasting is not an exception, and the year's stock-taking is a matter of interest to the general public, but so fickle and contradictory is the public taste, and so often do fashions in pleasure change, that frequent stock-takings are just as essential in the radio business as in any other form of activity. In India we have just had a most thorough overhaul, thanks to the co-operation of many enthusiastic radio enthusiasts, who listened to the reports of Mr. H. L. Kirke, the head of their Research Department. His report will mean a great deal to India, and although it is too early to anticipate the decisions of the Government about this point, it is certain that those who have suggested will go a long way towards setting India on the right road to successful broadcasting.

India, moreover, is also attracting the attention of other world experts, for our problems are so complex and so interesting that this country is likely to be regarded in the near future as a sort of experimental laboratory of the East. That India will welcome the suggestions of any such touring experts goes without saying, but at the same time we must point out that a hurried trip round the country, without the very essential background that can be provided by those who have been studying the problems for years and who have already learned much from their administrative experience, must not be expected to produce a golden and perfect solution of the various problems which face those now seeking to formulate a really satisfactory and comprehensive service.

It is likewise true that India can probably learn much from the experience of other tropical countries; and to that extent experts who have made a special study of tropical broadcasting problems are welcome. Yet here again we must not expect too much from a brief visit of a foreign radio specialist. That our own broadcasting administrators will utilise every opportunity to discuss India's problems with visiting experts goes without saying; but the general public must not expect miracles to be performed within a month or two of such visits. We know by experience how easy it is to generalise—just as it is easy to tell the other man how to run his job. But let us not jump to the conclusion either that our own broadcasting experts are not equally as alive to the urgency of the problems as visiting experts, or that such visitors automatically become saviours of India's broadcasting immediately they set foot on India's shores. Remember, a prophet is generally without honour in his own country.

INDIA, indeed, can learn a lesson from America in the matter of making too rapid and ambitious progress. We all know how wonderful a chain of stations has been erected in America, and how radio has become an ordinary part of everyday life. But such progress has brought broadcasting in America almost to chaos. So serious is the situation, indeed, that the United States Federal Radio Commission has been literally overwhelmed by the widespread ramifications of modern radio developments, with the result that an extraordinary conference is being held this month (June) at which the nation's radio experts will appear by scores. The subjects which are worrying them include short-wave and ultrashort-wave broadcasting, facsimile transmission, super-abundance of stations, the problems of programmes, the future of television, aircraft wireless, ship-and-land services, and many other problems resulting from Marconi's invention. The whole of the radio spectrum from 10 to 28,000 kc/s is to be explored, and it is probable that, to cope with the increasing congestion on certain wave-bands, there will be a wholesale re-allocation of waves to the various services. In the light of this conference, can the framers of India's policy be blamed for wanting to hasten slowly?

STOCK-TAKING

MANY are the indications around us that broadcasting is in its infancy in India; and not the least interesting of these indications are the questions which pour into the offices of those who are seeking to provide programmes and to organise a definite policy. Questions on points of real importance and radio topicality are, of course, always welcome, although we cannot promise that all such questions will be answered to the querist's complete satisfaction. Here, for example, is a series of questions contained in a letter received from a listener who, presumably, is having considerable difficulty with his neighbours:

"Can complaints be lodged by the subject of an Indian State with the local British authorities regarding any breach of radio rules and the Electricity Act by another radio enthusiast? If so, where is the remedy prescribed, and what is the price of the book containing the remedy?"

Such a general question as this cannot, of course, be answered in a general way, for most of the Indian States are little "countries" unto themselves, with their own laws and local rules to which only their own subjects are amenable. We presume that in this case the enquirer is referring to the possession of a license for a receiving set. If he is, then we are afraid that for the time being there is no redress. At the moment there is no fixed arrangement between the Government of India and the Indian States whereby the rules governing the possession of wireless receiving sets apply with the same force as in British India. Here is a pretty problem for the official of any such organisation were there one in existence.-judging by the variety of complaints we receive, it is probable that, to cope with the increasing congestion on certain wave-bands, there will be a wholesale re-allocation of waves to the various services.

STOCK-TAKING

Is there a rule by which the owners of the ten electric pumps in my town, as well as other wireless receiving sets, can be compelled to use suppressors to reduce interference with wireless reception?"

Here again we fear that each Indian State is a law unto itself; and presumably in our querist's region there are no rules against many things which are uncontrolled in British India. The only advice we can give is to see to it that your own pump owners will voluntarily instal condensers. More missionary work, indeed!

"Can I get a copy of the Treaty of reciprocal arrangements entered into by the States of India with the British Government regarding the protection of radio licensees?"

Our reply is: What treaty? However, if our querist turns to the end of the Post and Telegraph Guide, he will find certain useful information about this point.

"Can you oblige me with the name and address of an authorised organ or body, recognised by the Government of India, if there is any, which can consider complaints lodged by radio listeners?"

No, we cannot! And we would pity the head of any such organisation were there one in existence,—judging by the variety of complaints which verbose (and otherwise) critics send to us. However, the best possible "authorised body" to which you can take your troubles is the Station Director of the nearest transmitting station, who will welcome constructive suggestions and bona fide grievances. If, however, you think you have a really vital and all-pervading grumble, send it along to the Controller of Broadcasting, who thrives on the worries of others.
HAVING finally decided on the two lady announcers for television in England, the search still goes on for the ideal male announcer. The chief qualification, we are told, is a “photogenic” face of a masculine type,—although no details have been supplied us as to what kind of a face that is. The next best thing, however, in the matter of facial characteristics is a study of the photogenics of the lady announcers, and so we are reproducing a photographic of the two selected “wonder-girls”. One of them, Miss Bligh, is 22 years old and has had three years’ stage and film experience;—and, if you want more details, she plays tennis, golf, and squash rackets. The other one, Miss Cowell, is 23 years old, has worked as a mannequin, and has specialised in dress design and display. And there our intimate information ceases. Selected out of 1,122 applicants, these two ladies are now undergoing intensive training preparatory to the opening of the new television service in England next month, the training including, adds our intimate information ceases. Selected “wonder-girls”. One of them, Miss Bligh, is 22 years old and has had three years’ stage and film experience;—and, if you want more details, she plays tennis, golf, and squash rackets. The other one, Miss Cowell, is 23 years old, has worked as a mannequin, and has specialised in dress design and display. And there our intimate information ceases. Selected out of 1,122 applicants, these two ladies are now undergoing intensive training preparatory to the

NEW PROGRAMMES

In accordance with our promise of a few weeks ago, we have made a start in this issue with the increasing of the foreign programmes. We have added Rome to the programmes from Germany and Holland, and we hope in a short time to be able to include several others. Listeners will appreciate that it is not easy to obtain foreign programmes sufficiently ahead to be included in our paper, which is itself published several weeks ahead of the actual dates of broadcasting. By use of the air mail, however, and with the co-operation of foreign programme directors, we expect soon to be able considerably to increase the usefulness of this paper. In order to squeeze as many programmes as possible into the limited space at our disposal, we have slightly rearranged the lay-out of the paper, the foreign programmes being printed in tabulated form in one section at the end of the paper, and not, as heretofore, printed individually at the end of the regular daily Indian and B.B.C. programmes. We feel sure that listeners will appreciate the reason for this new arrangement. And if there is any lingering doubt, we would also point out that it is easier with the foreign section complete and up-to-date when printed in the new way, especially as we are dependent on the latest air mails for the details.

ANNOYANCES AGAIN

Once more would we appeal to listeners not to make their radios a nuisance to others by unnecessarily turning on their loud speakers to the full, and thereby disturbing their neighbours. As a warning of what might happen in such cases, we cite a case heard in the Madras High Court in which a Judge actually issued a restraining order prohibiting a person from operating his loud speaker except between the hours of 5 to 7 p.m. Such a drastic step as recourse to a Court order may not always be taken by an afflicted neighbour; but there is no question about the fact that selfishness and thoughtlessness manifested by blaring loud speakers are often responsible for doing more harm to the cause of broadcasting than atmospherics or faulty sets.

In this connection it is interesting to note that the loud-speaker nuisance has become such a menace in Great Britain that the Home Office has recently produced specimen legislation which may be enforced against the owner or occupier of the house through which the noise is emanating. There are at present 400 cases of this kind. Admittedly, to arrange talks several weeks ahead is a difficult task, especially in India where transfers are so frequent and where it is almost impossible to forecast which well-known people will be in a particular town at a particular time. However, by means of careful planning and intelligent anticipation, the Directors of Programmes are gradually devising means whereby the talks portion of their programmes can be strengthened. And the fact that these talks are becoming more and more topical adds both interest and zest to the day’s broadcasting.

TALKS

Without giving a long list, we would call listeners’ attention to the excellent series of talks that have been arranged by all stations. Delhi, perhaps, again sets the example in this feature of the programme. It is gratifying to see that both Bombay and Calcutta are arranging for more and more talks of a varied kind. Admittedly, to arrange talks several weeks ahead is a difficult task, especially in India where transfers are so frequent and where it is almost impossible to forecast which well-known people will be in a particular town at a particular time. However, by means of careful planning and intelligent anticipation, the Directors of Programmes are gradually devising means whereby the talks portion of their programmes can be strengthened. And the fact that these talks are becoming more and more topical adds both interest and zest to the day’s broadcasting.

OUR OLYMPIC TEAM

A particularly interesting and unique broadcast has been arranged by Bombay this month. Installing microphones on the P. and O. liner “Ranpur”, which sails on June 27th, it will be possible for the members of the Olympic team to say good-bye to India and to assure their fellow-countrymen that they will do their best to uphold India’s tradition of sportsmanship. A special “Olympic song” was composed to be sung from the ship’s deck, whilst a running dialogue with different members of the team will enable listeners all over India to appreciate that this country is truly figuring in the world’s greatest athletic and sports meeting. Dhyan Chand, the wizard of the hockey stick, modestly mentioned a special song he has composed to imbue his fellow-countrymen with the same old goal-scoring power, as he and his men seek to retain the title of World Hockey champions. Swami, our Marathon representative, whose Indian timings narrowly approach Olympic records, quietly tells India about how he will prepare for that 46-mile run; whilst Whistling-Whistler intends to talk about seconds and split seconds for the hundred metres. The wrestlers, big burly fellows who seem almost too ponderous for the microphone, talk about various holds and grips and huggings which are mysteries except to the initiated in this art of boisterous love-making; but they certainly impressed us with their possibilities.
EVERYBODY admits that it would be very difficult to make a success of Broadcasting in India if we contented ourselves with adopting in every detail a system which may have been quite satisfactory in Europe or America. The differences, however, are not merely economic. They are technical also, owing to the enormous area to be covered and the greater strength of atmospherics. Essentially the problem is one of covering the area with a dependable signal which will be sufficiently higher than the interference.

It might be worth while emphasising the importance of this ratio of signal to noise. There is not much difficulty in picking up signals as low as one microvolt per metre. In some point-to-point services such weak signals are sufficient to maintain the service, and most high-class receivers now on the market will give a fair output on signals of about 10 microvolts. The trouble is that extraneous noise, mostly from atmospherics, is well above this level in the major portion of the frequency band available, and it is the ratio of signal to noise which determines whether the signal is worth picking up or not. When Armstrong published his results on ultra-short waves, the revolutionary feature was not the ingenious use of frequency modulation and demodulation circuits, but the improvement obtained thereby in the signal to noise ratio. If Zworykin's electron-multiplier achieves unheard-of amplification within a single tube, we welcome even more the great reduction in internal noise which has been brought about by his developments.

RESEARCH ON ATMOSPHERICS

BOTH scientific and lay opinion agree that atmospherics constitute our first problem. The data available on this point is very incomplete and little work seems to have been done on the distribution of atmospherics in the frequency spectrum. What is wanted is a series of observations of the absolute strength of atmospheric noise alone at different frequencies. Diurnal and seasonal variations have also to be observed and the data tabulated before we can predict with any degree of certainty the probable service area of a station or decide the optimum band of frequencies.

The work, however, is one of great magnitude and, moreover, in a vast country like India, observations will have to be taken at a large number of centres before we can proceed on sure grounds. This is a line in which co-operation is necessary from the majority of scientific institutions and universities.

It is learned that at one of the southern universities diurnal and seasonal variations are being observed on a single frequency in the medium band. This is undoubtedly useful, but work on the complete spectrum between 100 and, say, 10,000 kilohertz would be necessary before a complete picture can be obtained. Observations will be conducted at Delhi by the Research Department, and it is requested that scientific laboratories at different centres co-operate in obtaining full data. Choice of apparatus is left to individual resources, but it is suggested that measurements be taken on the following:

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Before Broadcasting can be developed in India on a large scale it is necessary to obtain scientific data on a number of practical aspects in which local conditions differ in greater or lesser degree from those obtaining elsewhere. The accompanying appeal is addressed to scientists all over India to co-operate with the Research Department of the Broadcasting Service in determining the nature of the major factors.

UNIFORMITY ESSENTIAL

IT is possible that some institutions might not have the facilities for taking observations on all bands. But if the results are to be co-ordinated it would seem advisable to have one method throughout. It is suggested that measurements be made immediately after 7.00, 10.00, 13.00, 16.00, 19.00, and 22.00 hours, and that in each case observations be recorded of the field strength of atmospheric disturbances alone in microvolts per metre, the values being integrated over five-minute periods on each spot frequency. The above recommendations are, however, tentative and suggestions for improvement are welcomed.

At the risk of being accused of stating the obvious, it must be pointed out here that the values of noise observed will depend upon the band-width of the receiver used. It will, therefore, be necessary in the case of each set of observations for the total band-width at different frequencies to be ascertained. It is also necessary that the antenna used be non-directional. Only then will it be possible to sum up all the observations from the different centres and also calculate average values for the whole of India if such a proceeding seems justified.

HIGH FREQUENCIES

A uniform feature of all lay criticism of broadcasting policy has been the attack on the apparent neglect of the "short-waves". Bearing in mind the very weak field produced by broadcasting stations in India and, of course, the violence of atmospheric disturbances in a tropical summer, it does seem as if people have been obsessed by this "short-wave" business. It must also be remembered that even under the most favourable conditions, frequencies above 10 megacycles by day and above 7 megacycles by night have a skip distance which would negative their use within any province of India. On the other hand, the lower frequencies are not unaffected by atmospherics in summer.

Another point that is often forgotten is that what is generally aimed at in broadcasting on the medium waves is service by the ground ray; not even a keen short-wave enthusiast would be prepared to admit that the Delhi medium-wave station serves Madras or that Bihar can be served by the present transmitter at Bombay. Yet the indirect ray service is there, and on the short-waves practically all the service would be by such indirect ray.

What is true, however, is that the indirect ray on the short-waves can be amplified sufficiently to provide a service because atmospheric noise-level is low, while the indirect ray on the medium waves is drowned by the atmospheric noise.

It is, therefore, primarily a problem of atmospheric noise-levels and until we have dependable data on atmospheric disturbances, it would not be justifiable to embark on an elaborate system of short-wave stations.

Data is also necessary regarding the boundary frequencies within which local broadcasting is possible during different times of the day and different seasons of the year with the minimum of international interference. It is quite likely that these boundary frequencies change with the sunspot cycle and so on, but we should at least have a general idea of the limits.

SHORT-WAVE EXPERIMENTS

FOR this purpose it is proposed to start a short-wave experimental transmitter at Delhi as soon as funds are available. Test transmissions will be carried on at a number of frequencies and the results observed.

In this connection it is hoped to obtain the help of the listening public as well as the scientific world. The former will be requested to submit reception reports as was done by the NIROM in the Dutch East Indies, while scientific observers at different distances from Delhi will be requested to take field strength observations.
In this way it might be possible to obtain extensive correlatory curves as published by the Radio Research Board at Japan. Once these are ready, the technical foundation for a short-wave service will have been laid.

EARTH CONDUCTIVITY

As the use of high frequencies for local broadcasting has yet to be proved generally suitable, the medium frequency band is at present the main vehicle for the diffusion of broadcast programmes. One of the chief difficulties in the drawing-up of a suitable scheme of development in this line is the paucity of data on earth conductivity. Apart from any question of funds, the requirements of modern high-fidelity broadcasting and the limited interference-free channels combine to restrict the number of broadcasting stations that can be conveniently accommodated. As a consequence it is necessary not merely that each station should represent the utmost value for the investment but also the maximum utility for the space occupied on the frequency spectrum. This brings up the question of optimum frequencies in the medium band. It is well known that for a given radiated power, the direct service area would depend upon the ground conductivity. There are, however, two variable factors: first, the efficiency of the aerial, which increases with the frequency, and second, the field strength produced by the ground-wave at a distance which decreases with the frequency. Since ground-ray attenuation is a function of both frequency and ground-conductivity, it is necessary to have reliable data of soil characteristics over varying types of terrain.

At present not much work has been done in this direction. Physicists undoubtedly find the ionosphere more interesting, but the practical engineer has to know the ground he stands on. It is very desirable to have a series of measurements taken at different parts of India, over ground ranging from granite and gneiss formations to the pastoral deltaic areas. This work will be undertaken by the Research Department, but co-operation from outside would be very helpful indeed. It is realised that not many institutions will be able to afford the cost of special transmitters for the purpose, especially if measurements are to be taken at fairly long ranges of about a hundred kilometres; but it is hoped that those who can will help us in this direction.

No apology seems necessary for the emphasis laid upon the practical aspects of the three problems mentioned above. There are no doubt a number of questions which offer greater interest to the physicist. There are unfortunately even more which the engineer is unable to tackle before finding satisfactory solutions to these three.

Is it too much to hope that a sufficient number of scientists and institutions will offer their aid in this matter?
IS DELHI A DUD?

Critics Must Face Plain Facts

IS Delhi a Dud?

A number of people have been assuring us in the press that it is, but it is difficult to find any justification apart from the attractions of alliteration.

From an engineering point of view, a wireless station can only be said to be a failure if the power radiated in a high-frequency form does not bear a reasonable proportion to the gross power utilised, or does not provide an accurate reproduction of the programme material.

The quality of reproduction depends on the linearity of response at different audible frequencies, the absence of harmonics, and the constancy of the carrier frequency. These are matters which can be decided by instruments, and careful measurement was carried out before the station was accepted. Apart from tests by the India Stores Department before the apparatus left England, the frequency was observed over a number of days by the courtesy of the Indian Institute of Science where apparatus is available with an accuracy of a few parts in a million. It was found that the frequency was constant within fifteen cycles per second, a variation which is certainly not observable to any but a trained ear, which is capable of receiving a broadcast programme. In fact, there is no object in having a greater constancy unless one wavelength is to be shared between two of more transmitters, a necessity which fortunately (or possibly unfortunately) is not likely to arise in India for many years.

As regards linearity of response, the instruments indicate that the over-all response between 30 and 10,000 cycles per second does not vary more than 2 decibels from that at 1,000 cycles per second. The measured harmonic content of the radiation is less than three per cent. at 90 per cent. of the power. These measurements show that the reproduction effected by the station is of a very high standard and that there are, in fact, very few receivers which can do it justice. Good quality is, however, not of much satisfaction to the distant listener if he cannot hear it, and the signal strength at any point depends on the amount of power radiated and the manner in which it is distributed in different directions. The power radiated can be deduced in various ways: from the current and height of the aerial or from the field strength at short distances.

The results regarding Delhi agree within the limits to be expected with measurements of this kind, and at five kilometres the field strength is on the average about 240 millivolts per metre, corresponding for the quarter-wave aerial used to a total radiation of about 15 kw., against an aerial input of 20 kw., which is again a satisfactory figure.

There are some peculiar features about the Delhi station. The masts are insulated from the ground and their alignment was chosen so that they could be energised in order to concentrate radiation to the North-West and South-East, that is, to the areas of greatest population. As it happens, measurements of field strength in the neighbourhood of Delhi show that this concentration is already happening without special energisation. The reason is not at present clear. It may be due to peculiarities in the site or there may be some fortuitous resonance in the aerial and earth systems. As a scientific problem this phenomenon is worth investigation, but from the practical point of view we must be grateful that nature has saved us the additional expense and complication of special directive arrangements.

There is no reason, however, to believe that the direct ray behaves in the same way, so that the fading area, where the direct and indirect rays are of the same order of intensity, is not at the same distance in all directions. This might explain some of the abnormal fading in certain directions. It may be found desirable later to modify the high-angle radiation by adding a horizontal portion to the aerial, but much more prolonged experience is necessary before the present effects can be explained or the effect of modifications predicted.

By P. J. EDMUNDS, M.A., B.Sc., DEPUTY DIRECTOR - GENERAL, POST AND TELEGRAPHS, WIRELESS BRANCH.

CONFLICTING REPORTS

O UR distant listener, however, wants to know how much of this radiated energy reaches him. The engineer cannot, of course, be held responsible for the vagaries of the wireless wave, but the public certainly has a right to ask whether the Delhi station gives the best results possible. Reports up to date are, undoubtedly, conflicting. When transmissions began, there were very few atmospherics and reports were almost universally good, particularly at great distances. At Bombay, for instance, there were complaints that Delhi was so strong as to interfere with transmissions on the East Coast. Complaints in any number have only come in recently during April and May when atmospherics are at their very worst in India and, even so, there are not wanting those who testify to the continuance of satisfactory reception at places as far distant as Lahore and Montgomery. Just a year ago an article in the "Indian Radio Times" (vide issue of 22-5-35) indicated what was expected of the Delhi station and, as far as evidence is at present available, these expectations have been borne out by experience. It is unfortunate in some respects if people have expected a 20 kw. station to give a first-class service at hundreds of miles during the whole year in India, but a very little knowledge of arrangements in other countries, where atmospheres are not as bad as in India, would have prevented this misunderstanding.

There are for instance, in England, where distances are small compared with India, nineteen transmitters of 50 kw. and one of 100 kw., and more are projected. These would certainly not have been erected if a 20 kw. could serve several hundred miles.

THE SHORT-WAVE BUBBLE

M ANY of the critics, however, do not merely complain: they suggest a remedy. In fact, they apparently knew all along that "medium waves were no good for India". There is no question of short waves. The special advantages of short waves are well known: comparatively small power can be heard over very great distances, and there is a striking reduction in atmospherics, though it should be remembered that it is only on wave-lengths of the order of 50 metres that there is any real immunity. It is true that long distance wireless communication is now carried out almost entirely with short wave-lengths, but it is interesting to remember that long waves still provide the most reliable means for ensuring simultaneous reception at a number of widely separated points. To take one example only (possessed by many others), the high-power long wave station at Rugby works almost to full capacity on this kind of service. Very great power is, of course, necessary and if short wave-lengths could serve the purpose, the saving in power and space alone would justify scrapping the long-wave plant. On the contrary, additional high power long-wave stations are under contemplation in various parts of the world. There is no need to elaborate the disadvantages of short wave-lengths which are particularly serious in the case of broadcasting; they are: extremely restricted direct ray service, skip area, fading at long distances, the necessity of different wave-lengths for different distances and times of the day and the year, expansiveness of receivers, and difficulty of adjustment.

There is also one other objection which may, perhaps, be treated in greater detail as it is one which is too often entirely forgotten, although it means that it would be impossible to supply a satisfactory broadcasting service to India. It is that India will be able to obtain in the International adjustment which must be arranged in the near future the exclusive use of a number of wave-lengths required to provide a general broadcasting service in the short wave band.

EXPERTS ARE UNANIMOUS

A LL these objections to short wave-lengths are swept aside by many self-confident critics who are not usually professional wireless engineers. But it would be extremely
unwise to dismiss summarily the fact that India has had the benefit of the advice of at least four independent professional wireless authorities, excluding the Posts and Telegraphs Department, which has considerable experience of wireless conditions in India from the general point of view. All of these authorities have agreed unanimously that short wave-lengths cannot at present supply a reliable broadcasting service to the general public, though they would be far from laying down hard and fast rules for the future, for they realised the capabilities of short-wave in providing a limited service to a very large area at a low cost.

The term short wave has been here used in its strict sense, that is, wave-lengths less than 30 metres, but the possibilities of the wave-lengths strictly called intermediate, that is, those between 30 and 200 metres, will also be investigated, though it seems unlikely that experiments will result in any reversal of the accepted view. The direct ray service on these wave-lengths is undoubtedly very restricted, though not as much in the case of short waves. Both the skip distance and the fading area are likely to be comparatively small, which is of course an advantage, and atmospherics will be less than on longer wave-lengths, though there is not likely to be the comparative immunity experienced on short wave-lengths properly so-called. On the other hand, the indirect ray, although perhaps not so variable as on short wave, will probably be a good deal weaker, except possibly at night. In fact, there is likely to be a large difference between day and night results, which in itself seriously limits the utility for broadcasting. These wave-lengths may however be defined as belonging to the longest wave-length minimum power, and no one would exclude the possibility that experiments may disclose unexpected features, particularly in a country where information is as scanty as it is in India.

In view of these facts, who will continue to cry, "Delhi is a dud"?

DEVELOPMENT OF THE EMPIRE SERVICE

By Sir NOEL ASHBRIDGE
Chief Engineer of the B.B.C.

In the first two articles of this series I dealt with the transmitting side of short-wave broadcasting, particularly with the problems of aerial design and the lay out of the aerial system which we are now building at Daventry. In this and the following talk, I am going to say something about the propagation of short waves. At the outset may I say that I am not going to attempt to deal with the physicist's point of view but I am going to try and give you an idea in simple language how the waves which we send out from Daventry reach distant parts of the world.

It is generally accepted that radio waves normally travel in straight lines, and therefore, since the surface of the earth is curved, it follows that there must be some agency which causes the waves to be bent, so that they reach you instead of pursuing their direct straight-line path and becoming lost in space. It is therefore assumed that above the surface of the earth there is a region of ionised atmosphere which is capable of reflecting or bending radio waves. This region is known as the ionosphere, and its exact formation is exceedingly complex, and varies widely under the influence of the sun's rays. There are changes round the twenty-four hours following the amount of light falling on the ionosphere from the sun, as well as seasonal and other long-period changes.

THE ELECTRIFIED LAYERS

For our present purpose we can assume that there are at any rate two fairly well-defined regions, one at a height of approximately sixty miles, generally known as the Kennelly-Heaviside layer or E region, and the other at a height of 180 miles, known as the Appleton Layer, or F region. There is experimental evidence of much greater complexity than this, but it is not necessary to explore it more deeply in these talks.

The waves from a wireless station, radiated at various angles to the ground, reach the ionosphere and are then bent back and travel towards the earth. The particular property of short waves of the kind used for a long-distance broadcasting service is that they can travel for great distances in a series of "hops" in the space between the spherical earth and the ionosphere, generally passing through the lower layer, being bent back to earth by the upper region, passing through the lower layer again on the return path and repeating the process by being again reflected at the earth's surface. At each passage through the lower ionised layer, the waves suffer some loss, and this increases rapidly as the wavelength is increased. It follows therefore that—from this point of view—the shortest wavelength is the most effective.

On the other hand, the reflecting or bending properties of the upper region of the ionosphere are less for the shorter wavelengths, until a certain limit of wavelength is reached below which bending will not take place and the waves escape into space. From this other point of view, therefore, the wave must not be too short. Compromises have to be accepted and, in practice, the best wavelength to use depends on the time of day, season of the year, position in the cycle of solar activity, and other factors. As a very rough guide it may be said that shorter waves travel better in daylight and the longer ones during darkness, and that during the summer shorter waves are used than during the winter. The shortest wave available for a broadcasting service (50 metres) must be used for transmission at midnight in midwinter and the shortest wave (about 14 metres) for transmission at midday in midsummer. The compromise must further take into account the conditions obtaining over the whole of the track to be covered by the waves, since midday at Daventry in midsummer is midnight at say, Wellington, New Zealand, in midsummer.

Generally speaking, we try to give a programme from Daventry to the different parts of the Empire at the most suitable listening time, which is naturally the evening hours at the point of reception, and our wave-lengths are chosen accordingly. It follows that for transmission to places east of Daventry, we are usually working from daylight at the transmitter, through twilight into darkness at the receiver, whereas for transmission to places west of Daventry we are transmitting from darkness at the transmitter to darkness or twilight at the point of reception.

For transmissions to Canada, for instance, where both transmitter and receiver lie in the Northern Hemisphere, the Great Circle path that is to say the shortest path—from Daventry is relatively much more in darkness in the northern winter than in the northern summer. For transmission to, say, New Zealand, on the other hand, the transmission path always crosses light and darkness—summer and winter.

Experience shows that conditions are generally much more reliable on transmission paths which run north and south, for example, Daventry to South Africa, and Daventry to South America than they are on east and west transmission paths. The greatest unreliability is experienced when the route lies in the region of the magnetic poles. It is for this reason that very variable conditions are experienced for transmission to Canada; particularly when it takes place at night and the path is all in darkness. For this reason, the wavelength has to be carefully chosen for each transmission, and it has been found that the shortest wavelength, say GSH or GSJ (approximately 14 metres) would give even better results, assuming, of course, that listeners have receivers which are equally efficient on both wavebands.

At the other extreme, let us take transmission to Canada at midnight in midwinter. The whole of the path is in darkness, and we find it...
June 22, 1936.

The Indian Listener

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Playing capacity 8 records of 10" or 12". GARRARD PICK UPS, also other ENGLISH & GERMAN make of superior quality Pick ups stocked. SONGSTERS & CLEOPATRA pick up needles, (English), playing capacity 10 records. ENGLISH & AMERICAN AERIAL materials and Radio Accessories. Write for catalogues.

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The special construction of this remarkable all-wave set (13.5—2000 metres) gives it a shortwave performance equal to that on long and medium waves. The quality of reproduction is excellent. Tuning has been greatly facilitated by a calibrated soundbar dial with shortwave station marks and a new shortwave-tuning device. All modern refinements such as visual tuning, A.V.C., etc. Go globe-trotting with Mullard X 25. . . . It's a thrilling pastime!

MAIN CHARACTERISTICS

necessary to use the longest wave we have, namely GSA or GSL approximately 50 metres. Indeed, a year or two ago in the period of minimum sunspot activity, 50 metres was not long enough, and reception often faded out completely in Canada during Transmission 5 in midwinter. A wavelength of 70-80 meters would have been of great use to us during this period, if there had been some wavelengths available for broadcasting in this part of the waveband.

The lengthening of the best received wavelength as darkness approaches will, of course, be obvious to anyone who has any considerable experience of short wave reception. The schedules of transmission from Daventry show this immediately. Transmitting to India, for example, we start in Transmission 3 at 14.00 G.M.T., with 16 meters at the equinoxes; 19 metres is used at the same time. After about an hour's transmission we take off 16 metres and put on 25 metres; in the winter time we start with 19 and 25 metres, than take off 19 and put on 31 metres. We think I ought to emphasise that the wavelengths used at Daventry are chosen with a view to give the best reception over the transmission path to the area which we are trying to serve. Listeners sometimes write to us and say that they are receiving another shortwave station on, say, 17 metres, perhaps from the other side of the world, better than Daventry on 31 metres at a certain time of day, and suggest that if we used 17 meters they would get equally good reception from Daventry. It is, of course, certain that they would not, since the path from Daventry may be in totally different conditions of light and darkness from the path between the other station and the point of reception.

A concrete example comes from South Africa, where during the evenings, a 17-metre station in the U.S.A. is well heard. It was suggested that Daventry should use 17 meters. Now the track from New York to South Africa is mostly in daylight or twilight at this time, but the path from Daventry to South Africa is in darkness, so that the wavelength of 17 metres is too short to use for Daventry.

It will follow from what I have said about the longer wavelengths being used when transmission is in darkness that transmission over a path which is partly in light and partly in darkness, partly in summer and partly in winter, will need a wavelength which is a sort of compromise.

If we consider as daylight waves 19 meters and below, and as night waves 31 metres and above, we can take it that in practice 25 metres is often suitable for transmission over paths which are neither one thing nor the other. For a large part of the year, therefore, we use 25 meters for transmission to Australia and New Zealand.

In my next article I hope to have something more to say on this interesting subject of the propagation of short waves.

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Mullard

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X Brothers

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Look out for AC/DC-X20-U

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644
**100,000,000 LISTENERS**

**SOME EUROPEAN FIGURES**

An infectious liveliness appears to be spreading over Europe as far as radio is concerned. The accompanying table shows the increase in registered or known listening families, judged either by the actual purchase of licenses or by the possession of receiving sets.

The total at the end of 1935 was 24,875,095, and assuming, according to tradition, that there are on an average four potential listeners in each home, the European broadcast programmes can now be heard by, approximately, 100,000,000 persons.

Now study the accompanying table, for it reveals some most interesting facts about a peaceful side of European activity of which we hear very little.

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* No Licences.
† Incomplete Information.

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**7th and 22nd of each month.**

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Copy for the issue of the 22nd to be sent to Printers not later than the 12th. After receipt of Proof Advertisers must return same not later than the 16th of each month.

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ROHERIKA REJIM. In light songs.
KHALIL ALI NISSA KHAN
BANGLE SAMBAR NAM MARCH
THOMS LAY MIBA
RAJ SUVA NAI AYE
TOTA DING DING
MUKE DING KINA
FINTO DAYTOOR IN INDEED HIT.
C. M. LANDRE IN MARATHI SONG.

1-0 p.m. Available Market Rates.

Lunch Hour Selection.
By Jules Cream and His Quiet.
Relayed from Taj Mahal Hotel
(By kind permission of the Management).

11-30 a.m. 
ATTI JIN BAHA.

1-0 p.m. All you need to know.
By kind permission of Madam.

11-30 a.m. 
GUJARATI SONG.
TAMEHIAL PRAJAG BALSAM.

12-0 p.m. Exposition of Gatha.

30-0 p.m. Commercial News and News in Hindi.

9-30 p.m. Light Classical Music.

30-0 p.m. News in Hindi.

4-30 p.m. Time Signal.

30-0 p.m. Talk: "History and Art History.
By R. V. LEVY.
(We introduce Mr. Levyday, who is known in Bombay as an Art Director).

4-10 p.m. A Violin Recital.
CRISTE SOMMER
(At the Piano Miss Patuck).

3-0 p.m. A Review of Gramophone Records.
J. W. RUSSELL.

CLOSE DOWN.

VUC 370.4 metres, 810 kc/s.

12-36 p.m. Time Signal.

SAE SB
The Grand Hotel Orchestra.
Interval: H. D. Artiste—MARJORIE VERNE—Comedienne.
Calcutta, Weather Bulletin for Ocean craft and River craft (if any).

CLOSE DOWN.

VUC 370.4 metres, 810 kc/s.

12-36 p.m. Time Signal.

SB
The Grand Hotel Orchestra.
Interval: H. D. Artiste—MARJORIE VERNE—Comedienne.
Calcutta, Weather Bulletin for Ocean craft and River craft (if any).

CLOSE DOWN.

B. B. C.

TRANSMISSION 5.

The following frequencies will be used:
GSP 15.51 Mc/ (39.60 m), GSP 15.14 Mc/ (31.92 m), GSP 9.58 Mc/ (31.82).

4-30 a.m. Big Ben, "Curlew Plus Two," a sentimental interlude on the Dumbeldone Golf Links.


6-10 a.m. The News and Announcements.

7-30 a.m. Time Signal.

CLOSE DOWN.

TRANSMISSION 6.

The following frequencies will be used:
GSP 11.27 Mc/ (35.33 m), GSP 9.58 Mc/ (31.82 m).

7-30 a.m. Big Ben. Mabel Contadorus and Partner in sketches, songs, and humour, and Jack Clarke (Snakepit Pianist).
<table>
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<tr>
<th>Time</th>
<th>Program</th>
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<tr>
<td>6:30 p.m.</td>
<td>The News and Announcements.</td>
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<tr>
<td>6:50 p.m.</td>
<td>Variety.</td>
</tr>
<tr>
<td>7:5-8 p.m.</td>
<td>Streichquartett (Schumann)</td>
</tr>
<tr>
<td>7-8 p.m.</td>
<td>Gresser and his orchestra, from Claridge's Hotel, London.</td>
</tr>
<tr>
<td>9-10 p.m.</td>
<td>Big Ben.</td>
</tr>
<tr>
<td>10-11 p.m.</td>
<td>The News and Announcements.</td>
</tr>
<tr>
<td>11-12 p.m.</td>
<td>Close down.</td>
</tr>
</tbody>
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**TRANSMISSION 1.**

The following frequencies will be used:

- GSF 21.47 Mc/s (19.82 m.)
- GSF 3.9 Mc/s (31.5 m.)
- GSF 15.14 Mc/s (28.82 m.)
- GSF 11.75 Mc/s (25.53 m.)

**TRANSMISSION 2.**

The following frequencies will be used:

- GSF 21.47 Mc/s (19.82 m.)
- GSF 15.14 Mc/s (28.82 m.)
- GSF 11.75 Mc/s (25.53 m.)

**TRANSMISSION 3.**

The following frequencies will be used:

- GSF 21.47 Mc/s (19.82 m.)
- GSF 15.14 Mc/s (28.82 m.)
- GSF 11.75 Mc/s (25.53 m.)

**TRANSMISSION 4.**

Three of the following frequencies will be used:

- GSF 11.75 Mc/s (25.53 m.)
- GSF 15.14 Mc/s (28.82 m.)
- GSF 21.47 Mc/s (19.82 m.)

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**WEDNESDAY, 1st JULY 1936.**

- 6:30 p.m. The News and Announcements.
- 6:50 p.m. Variety.
- 7:5-8 p.m. Streichquartett (Schumann).
- 7:5-8 p.m. Gresser and his orchestra, from Claridge's Hotel, London.
- 9-10 p.m. Big Ben.
- 10-11 p.m. The News and Announcements.
- 11-12 p.m. Close down.
Delhi
VUD 340.136 metres, 882 kc/s.

TRANSMISSION I
8-0 a.m. Time Signal.
8-10 a.m. A Musical Debate.

TRANSMISSION II
1-0 p.m. Time Signal.

TRANSMISSION III
6-0 p.m. Time Signal.
6-10 p.m. Asad Ali Khan of Agra. Sudh Malhar.
6-20 p.m. 1st News Bulletin. (Hindustani.)
6-30 p.m. 1st News Bulletin. (English.)
6-40 p.m. Ghulam Farid.

Bombay
VUD 350.9 metres, 855 kc/s. 31.36 metres, 9,565 kc/s.

1-0 p.m. Available Market Rates.

Erwin Klein and his Vinnese Orchestra.

THURSDAY, 2nd JULY 1936.

Brenda Bellamy. "Television." (English.)

11-0 p.m.

*Relaxed from our Single Studio.*

E. Vorga—the Man with a 'Cello and a Mission.

8-0 p.m. A Violoncello Recital.

By E. Vorga.

12-36 p.m.

Available Market Rates.

Erwin Klein and his Vinnese Orchestra.

9-0 p.m. A Recorded Programme.

By Commander R. G. G. Mclemont, R.I.N.

7-30 p.m. Light Classical Music.

Syd. SB

11-0 p.m.

Close down.

Calcula
VUC 370.4 metres, 810 kc/s. 49.10 metres, 6,109 kc/s.

12-36 p.m. Time Signal.

SB

Half An Hour with "Gilbert and Sullivan."

1-6 p.m. Dance Music, featuring the Latest Dance Hits.

SB A Recorded Programme.

Calcutta Weather Bulletin for Oceanscraft and Rivercraf (if any).

1-36 p.m. Kathakata by Raghunath Bhattacharya.

2-6 p.m. Usbarny—Kilrn.

2-26 p.m. Selections from Gramophone Records.

2-36 p.m. Talk: "Humour is Life.

By Bishnu Satra.

3-6 p.m.

Time Signal.

Close down.

5-6 p.m.

Time Signal.

SB

Moham Begun vs. Mohammedan Sporting.

A Running Commentary on to-day's Football Match. Relayed from the Mohun Bagan Ground.

6-6 p.m. Instrumental Music.

Violin Recital by Gangacharan Nundy—Dhak accompaniment by Paran Biswas.

All Times are given in Indian Standard Time.
THURSDAY, 2ND JULY 1936.

6-21 p.m. A Classical Programme organized by SACHIN DAS.
KODALI KAVIYUNHALA RAO
   Modern Bengal. 
BUNDURUDDU RAO
   Classical, Khari. 
RANGA PRAKASH DAS
   Modern Bengal. 
BRITISH BENGAL.
   English. 
KUMAR DESHMANH KUMAR
   Modern Bengal. 
KUMAR DAS
   Modern Bengal. 
SUKHENDRA DEY
   Modern Bengali. 
C. H. B. NAYAK
   Modern Bengali. 
GOURI KUMAR DEY
   Modern Bengali. 
KUMARI LATASHA KUMAR
   Modern Bengali. 
HARIBHOYDA DEY
   Modern Bengali. 
KUMARI KANAYA RAO
   Katar.

7.51 p.m. News in English.

8-6 p.m. Instrumental Music.
SB Orchestra, conducted by LAMOTHE SEAL.
8.6-10 p.m. Talk: “The Epic Story of Man’s War Against Diseases.” (Tel Series). By NIREN CHATTERJEE.
8.36 p.m. Instrumental Music (Cont.)
SB Orchestra, conducted by LAMOTHE SEAL.

8-30 p.m. Jack Artin and His Orchestra.
SB Musical Selections.

9.21 p.m. “Wave Lengths.”
SB A Humorous Sketch by L. du GAUBE PACH.
Characters: —
DAPHNE — Margaret Follett
REGGIE — Edward Grey.
Scene: — The beach of a Cornish holiday resort. It is a fine Summer’s day, with just enough sea to make bathing amusing.

9.36 p.m. Jack Artin and His Orchestra in more Musical Selections.

9-51 p.m. “A Matter of Course.”
SB A Humorous Sketch by L. du GAUBE PACH.
Characters: —
ANN — Edward Grey.
JEAN — Margaret Follett.
JIMMY —
Scene: — A Fashiable London Restaurant.

SB Prices, Jute and Gunny Closing Rates. (In English).

10-21 p.m. Dance Music by Jack Artin and His Orchestra.

10-36 p.m. Time Signal. Close down.

B. C. C.

TRANSMISSION 5.
The following frequencies will be used:
10, 15.31 Mc/s (19.60 m.), 17.79 Mc/s (19.82 m.),
21.47 Mc/s (13.97 m.).

6-21 p.m. A Classical Programme organized by SACHIN DAS.
KODALI KAVIYUNHALA RAO
   Modern Bengal. 
BUNDURUDDU RAO
   Classical, Khari. 
RANGA PRAKASH DAS
   Modern Bengal. 
BRITISH BENGAL.
   English. 
KUMAR DESHMANH KUMAR
   Modern Bengal. 
KUMAR DAS
   Modern Bengal. 
SUKHENDRA DEY
   Modern Bengali. 
C. H. B. NAYAK
   Modern Bengali. 
GOURI KUMAR DEY
   Modern Bengali. 
KUMARI LATASHA KUMAR
   Modern Bengali. 
HARIBHOYDA DEY
   Modern Bengali. 
KUMARI KANAYA RAO
   Katar.

7-45 a.m. A Recital by Tomasinia (Canadian Baritone).

9-25 a.m. * A message by the High Commissioner for Canada in London, the Hon. Vincent Massey.

7-30 p.m. Big Ben. “A Countryman’s Diary,” by A. G. STREET.

7-45 p.m. The Band of His Majesty’s Royal Marines Plymouth Division (By permission of Brigadier H. C. B. NAYAK). Captain F. J. Ricketts, Director of Music, Royal Marines. Frederick Harvey (Baritone), from the Abbey Dale, Plymouth.

8-30 p.m. The Arcadian Follies,” under the direction of Ernest Binns, from the South Pier, Blackpool. Arthur Jackson (Pianoforte); Bobby Vincent (Comedian) and Dancer; Cecil Frederic (Entertainer); Anita Eaton (Soprano); Ralph Humber (Baritone) and his Band; Eugene Carcoft (Soubrette); Mollie Deane (Comedienne); Max and Maide Nottis (Light Comedy Duets); Chris Worrton (Light Comedian); Harry Korriss (Baritone).

11-0 p.m. The News and Announcements.

12-0 midnight.

B. C. C.

TRANSMISSION 6.
The following frequencies will be used:
GSH 17.99 Mc/s (19.82 m.), GSH 17.79 Mc/s (19.60 m.),
GSH 15.14 Mc/s (19.82 m.).

3-25 a.m. A Recital by Marie Dare (Violinist).

3-30 a.m. * A message by the High Commissioner for Canada in London, the Hon. Vincent Massey.

3-35 p.m. Dance Music, Howard Godfrey and his Orchestra.

B. C. C.

TRANSMISSION 3.
The following frequencies will be used:
GSH 17.99 Mc/s (19.82 m.), GSH 17.79 Mc/s (19.60 m.),
GSH 15.14 Mc/s (19.82 m.).

Programme arranged in consultation with the Oswestry (Shropshire) Garrison Orchestra.

3-30 a.m. A Recital by Marie Dare (Violinist).

3-35 p.m. Dance Music, Howard Godfrey and his Orchestra.

All Times are given in Indian Standard Time.
FRIDAY, 3RD JULY 1936.

Delhi
VUD 340-136 metres, 882 kc/s.

TRANSMISSION I.
8-0 a.m. Time Signal.
Recitation from the Quran-i-Sharif.
9-10 a.m. Ghulam Najaf Khan of Ajmer. A Naat.
9-30 a.m. Nawab Bai of Bombay.
(a) Thumri Bhairon.
(b) "Huye se saam bhora asa aise umr kare na.
(b) "Huye se saam bhora asa aise umr kare na.
Haseenon ko bhi koota saath hai bhili giri dana."
(Hake Allahabadhi)
9-45 a.m. Talk (Hindustani). "Children in Switzerland.
By Dr. INDER SINGH.

9-0 a.m. Shankar Lal. Thumri Asawari.
9-10 a.m. Malang Khan. Sarangi.
9-30 a.m. P. S. Mukiherji. Sarangi.
Nawab Husain. Sarangi.

9-20 a.m. Nawab Bai of Bombay.
(a) Thumuri Denti Todii.
(b) "Tuje taski-in dil paya tuje aram-jan-paya
Nahin bhi hai to ki tuhi ko jahan dilanda wahan paysi."
(Jaunpur)

9-40 a.m. Shankar Lal. Bhajan.
9-50 a.m. Ghulam Najaf Khan. Qawwali.
10-0 a.m. Close down.

TRANSMISSION II.
1-0 p.m. Indian Recorded Music.
2-0 p.m. Close down.

TRANSMISSION III.
6-0 p.m. Time Signal.
A. I. R. Orchestra. Reza.
6-10 p.m. Shankar Lal. Bhajan Swar.
6-20 p.m. 1st News Bulletin (Hindustani).
6-30 p.m. 1st News Bulletin (English).
6-40 p.m. P. S. Mukherji. Cello.
Karrar. Organ.
Jawan. Clarinet.

6-43 p.m. Sardar. Violin.
Sarbor. Sarangi.
Haidar. Sitar.

6-46 p.m. Cello. Organ.
Clariot. Melody in Bass.
Violin. Rapture.
Sarangi. Delight.
Sitar.

6-50 p.m. Shankar Lal. Thumri.
7-0 p.m. Ghulam Najaf Khan. Qawwali.
(Ac€tised by Malang. Haidar, Karrar and Sabir)

7-20 p.m. Bai Ghulam. Dholka. Mian Ki Malhar.
7-25 p.m. Nawab Bai of Bombay. Malhar and Rossi.
7-45 p.m. "For Villagers Only.
8-45 p.m. Talk (Hindustani). "A School that Fits the Child.
By Dr. RANGABHAI MATHE.

9-0 p.m. A. I. R. Orchestra. Shukh Malhar.
9-5 p.m. Who is Singing? Guess (Every verse will be sung by a different person).
"Mukhda az shama-i-shabadat aoj par toqdir hai."
(Aj dast-i-naz man nazakat ki ek shamsi hai.)

9-15 p.m. Shankar Lal. Thumri.
9-20 p.m. Ghulam Najaf Khan. Ghazal.
9-30 p.m. Nawab Bai of Bombay. Thumri.
9-45 p.m. 2nd News Bulletin (Hindustani).
10-0 p.m. 2nd News Bulletin (English).

11-00 p.m. Close down.

*Recorded from our Studio.

Bombay
VUD 350.9 metres, 855 kc/s. 31.36 metres, 9,565 kc/s.

12-00 noon. H.M.V. Presents:
Govind Agni.
"Sakhe Vanamali Rahi"
"Madhu Marali Rava"
Usharani.
"Magam Ke Taraba Aiskota"
"Ra Khe, Mufti Ka Na Gasa"

Gharbati (Hangal).
"Pagh Derangi Palaka Na Chadhali"
"Umar Ghana Ghumrand Barase"

Gundahari.
"Daranin Ben Akhyari"
"Kahe Ladali Lah"
"Miyay Malhar"
H.M.V. Dramatic Party.
"Krisna Sadana.
"Gargi Durga.
Shankarrao Gaikwad.
"Samai Gat-Paya Kar Dhar.

1-0 p.m. Available Market Rates.
European Lunch Hour Selections.

2-0 p.m. Educational Hour.
2-30 p.m. Close down.

5-30 p.m. Light Music.
MATUBHA ISLAMUPUR.

6-30 p.m. Gujri Garba.
NIRAMA OZA.

7-15 p.m. Recitations from Holy Quor'an.
MOULIYULI MAMUN. KAMAR.

7-30 p.m. Jal Tarang Solo.
DATYAM PANCHAWARI.

8-0 p.m. Commercial News and News in Hindi.
8-25 p.m. Light Music.
ANJANIRI WADKAR.

9-30 p.m. News in English.
9-45 p.m. Talk: "Padpurpar Fair and Pahlaka."
By DR. K. A. GANDHI.

10-0 p.m. A Studio Concert. by Ghulam Jones, Entertainer and The Art Players.

10-10 p.m. Time Signal.

Calcutta
VUD 370.4 metres, 810 kc/s. 49.10 metres, 6,109 kc/s.

12-36 p.m. Musical Selections from the Studio.

12-51 p.m. Robert Pieker and His Hungarian Orchestra.
Lunch Hour Selections. Relayed from "Faro's" Restaurant.
(At your permission of the Management.)

1-36 p.m. Talk: "The Last Dialogues of Socrates.
By NICNAY CHATTERJEE.

2-6 p.m. Milady by QARI NUR HUSSEIN and Party.

2-36 p.m. Talk: "Mystery in a Laboratory.
By BISHNU SARMA.

3-0 p.m. "The Bee.

3-6 p.m. Talk.

4-0 p.m. "Who is Singing?"

5-0 p.m. Children's Hour conducted by KAMAL Boses.
Letters and Riddles.

5-16 p.m. "Silver Jubilee Shield Competition." (On Essay Writing).
The Trophy Awarded by KINAR H. M. MURTHI of Jhamapur.

5-31 p.m. Bengali Song. By KUMARI NIRMALA MITRA.

5-36 p.m. Talk: "Useful Things you can Prepare from Flowers.

5-51 p.m. A Fifteen Minutes' Vaudeville Programme.

6-0 p.m. The Grand Hotel Orchestra. A Light Instrumental Programme.
Relayed from the Palm Court of the Grand Hotel.


7-46 p.m. Indian Theatrical Night.

7-56 p.m. Sree-rup Mandu presents "Praper Dabi."
By JALADHAR CHATTERJEE, under the direction of
NIRMALBABU Boses.

8-0 p.m. "The Cast includes :
AJABHAD, MIKHERI. NIRMALBABU Boses, SATYENDRA GHOSHAL, PROHAM BHATTACHARYA, GOUR BHATTACHARYA, SISIR CHAKRABARTY, SHANKAR CHAKRABARTY, BABU RANGABHOY, SHAMBHERA, SUBRAMANIAM, RAMAN, CHERMBAL SELIMA AND SARALI.


10-21 p.m. Time Signal.

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ALL FOREIGN PROGRAMMES

on PAGES 677 and 678

Times All Times are given in Indian Standard Time.
650
FRIDAY, 3rd JULY 1936.

TRANSMISSION 1.
The following frequencies will be used:
GSD 11.75 Mc/s (31.52 m.), GSB 9.51 Mc/s (31.55 m.).

TRANSMISSION 5.
The following frequencies will be used:
GSP 15.31 Mc/s (19.80 m.), GSF 15.54 Mc/s (19.82 m.), GSC 9.58 Mc/s (31.52 m.).

TRANSMISSION 6.
The following frequencies will be used:
GSD 11.75 Mc/s (31.52 m.), GSB 9.51 Mc/s (31.55 m.).

The Indian Listener

TRANSMISSION 4.
The following frequencies will be used:
GSG 17.79 Mc/s (16.86 m.), GSG 15.26 Mc/s (19.66 m.), GSC 13.41 Mc/s (19.92 m.), GSC 9.58 Mc/s (31.52 m.).

TRANSMISSION 3.
The following frequencies will be used:
GSP 21.47 Mc/s (13.97 m.), GSG 17.79 Mc/s (16.86 m.), GSC 13.41 Mc/s (19.92 m.).

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Per V.P.P.
SATURDAY, 4TH JULY 1936.

Delhi

VUD 340.136 metres, 882 kc/s.

TRANSMISSION I.

8.0 a.m. Time Signal.

Nast By Muhammad Shafi of Delhi.


8.20 a.m. Kalso Bai of Patudi. (a) Kassab. (b) Thumri.

8.45 a.m. Talk (Hindustani): "And Spoil the Child." By Anjuman Ara Bicn.

9.0 a.m. Malang Khan. Victora Vera—Ghazal

9.10 a.m. Muhammad Shafi.

(a) Ghazal Asawri. "Man na kar ri." (Hindustani.) By ANJUMAN ARA BECUM.

(b) Ghulam Sabir. "Sadma shishe ko jo paunhch ho Sadma sharhe ko jo paunhche to sadha pauida ho." (Westk.)

(c) Ghazal Sarang. "Kallo Bai." By S. M. Haqqi.

10.0 a.m. Talk (Hindustani): "Zood Pasheman." By H. M. N. ArReb.

11.0 p.m. Close down.

TRANSMISSION II.


2.0 p.m. Close down.

TRANSMISSION III.


6.50 p.m. Kalso Bai. Khasgar Marwa. 7.00 p.m. Muhammad Shafi. Thumi Shuddh Kalyan. 7.10 p.m. Jiwan. Clarinet—Hamir Kalyan. 7.15 p.m. Aftabi-Musiqi Fayyaz Khan. (a) "Mun ne kar ri." Gond Malhar Khagal Druj Loe. (b) "Kis ko esi bat ho." Gond Malhar Khagal Drut Loe.

11.0 p.m. Close down.

Bomaby

VUB 350.9 metres, 855 kc/s. 31.36 metres, 9,565 kc/s.


5.30 p.m. Relay of Music from Regal Cinema. (By kind permission of the Management.) 6.30 p.m. Gujerati Lyric Songs. Banik T. Ven.


7.15 p.m. Talk (Hindi): "Rongo Ke Kid." By Dr. D. R. Prem.

7.30 p.m. Fashionchi Lavni in Shum M. N. Nanibekar.

8.0 p.m. Commercial News and News in Hindi.

8.25 p.m. Bhatki Songs. Anil Biswas. Anila Biswas and Anil Biswas. (In Songs with Orchestral Accompaniment.)

9.30 p.m. News in English. 9.45 p.m. Talk: "Next Witness Please." By Subab D. Vimaldalal.

10.0 p.m. General Motors Symphony Orchestra. (Under the direction of Ernco Pauer.) Emanuel Feuermann—Cellist. (A Recorded Programme.)


11.0 p.m. Close down.

Calcutta

VUC 370.4 metres, 810 kc/s. 49.10 metres, 6,109 kc/s.

12.36 p.m. Time Signal. A Studio Programme by Messrs. T. E. Bevan & Co. ("Columbia" Recording.)

Vaudeville Theatre Orchestra. The Town Talks. — Selection.


Albert Sandler and His Orchestra. "Glory's Sunday." "Vienna, City of my Dreams." "Ciro Rime's Rumbaland Muchchhons."


Calcutta Weather Bulletin for Oceanic and Rivercraft (if any).

1.36 p.m. Talk: (a) "Life of Swami Vivekananda." (b) "Things that Interest us." By BELLER HADER.

2.6 p.m. Recorded Selections.

2.36 p.m. Talk: "Child Welfare." By Shamsol Naik Marmud, of the National Council of Women in India.

3.6 p.m. Time Signal. Close down.

6.5 p.m. Close down.


6.6 p.m. Talk: "Quinine Factory at Murshidar." By JABBY KALENDRA ROY.

6.26 p.m. Light Bengali Song by AMAR Nath CHATTERJEE.

6.36 p.m. Sareegoo Solo by Chambi Misra.

6.51 p.m. Classical Vocal Music by Taradita Chakravarty.

7.21 p.m. "A Peep into old Calcutta." Written and Produced by NADIN KUMAR.

7.51 p.m. News in English.

8.6 p.m. Humorous Songs by NALINI KANTA SIRCAR.

8.21 p.m. Talk: "An Interesting Study of Old Calcutta." By BROOK BANERJEE.

8.36 p.m. Instrumental music by N. N. MAZUMDAR—Clarioncl Solo.


9.0 p.m. Orchestral Prelude (Rend d'ete) from the Studio. MAGDA GYenes—Soprano. In Popular Airs.

9.15 p.m. "Valentine Ode—Baliroom—In Dance and Folk Songs, with Guitar Accompaniment by himself.

9.36 p.m. Dance Music—By the Grand Hotel Dance Orchestra. Relayed from "Prince's" Restaurant.

All Times are given in Indian Standard Time.

The Indian Listener
SATURDAY, 4th JULY 1936.

10-6 p.m. Weather Forecast, 2nd News Bulletin, Market
SB Prices, Jute and Gunny Closing Rates. (In English).
10-21 p.m. Dance Music (Contd) from "Prince's.
SB 10-36 p.m. Time Signal. Close down.

B. C. C.

TRANSMISSION 5.
The following frequencies will be used:
GSP 15.31 Mc/s (19.60 m), GSP 15.31 Mc/s (19.60 m).
GSC 9.58 Mc/s (31.32 m), GSC 9.58 Mc/s (31.32 m).

4-30 a.m. Big Ben. Chamber Music. The Pougnet-Morrison-Pini Trio: Jean Pougnet (Violin); Anthony Pini (Violoncello); Angus Morrison (Pianoforte), Jan Van der Gucht (Tenor).


5-20 a.m. "A Countryman's Diary," by A. G. Street.

5-35 a.m. A Folk-Song Recital by E. Marcelly Lyte (Soprano) and Basil Parson, Baritone.


6-10 a.m. The News and Announcements.

GREENWICH TIME SIGNAL AT 6-15 A.M.

6-30 a.m. Close down.

TRANSMISSION 6.
The following frequencies will be used:
GSD 11.75 Mc/s (35.53 m), GSD 9.51 Mc/s (11.55 m).


8-32 a.m. "Empire Mail Bag," No. 5. Compiled and presented in living form by Cecil Madden.
9-10 a.m. The News and Announcements.

GREENWICH TIME SIGNAL AT 9-15 A.M.

9-30 a.m. Close down.

TRANSMISSION 1.
The following frequencies will be used:
GSD 11.75 Mc/s (35.53 m), GSB 9.51 Mc/s (11.55 m).
10-0 a.m. Big Ben. Variety. Claude Hubert and Bobby Comber.

10-17 a.m. Dance Music.
10-30 a.m. "Fire at Sea," by Jerry Nunn.
10-45 a.m. The B.B.C. Empire Orchestra; leader, Daniel Melsa; conductor, Eric Fogg.


11-40 a.m. The News and Announcements.

GREENWICH TIME SIGNAL AT 11-45 A.M.

12-0 noon.

TRANSMISSION 2.
The following frequencies will be used:
GSH 21.47 Mc/s (13.97 m), GSG 17.79 Mc/s (16.86 m).
3-30 a.m. Big Ben. "To People who have Gardens.

A programme of songs and duets. Winifred Fry (Soprano), Henry Cunningham (Baritone). Presented by Douglas Macleod.

5-0 a.m. "A Countryman's Diary," by A. G. Street.

5-15 p.m. Scottish Children's hour. "Four-Footed Follies." The Aberdeen Animals present their popular Pierrot Party, with Harry Davidson. From the Commodo Theatre, Hammersmith.

6-0 p.m. The Commodore Grand Orchestra, directed by Harry Davidson. From the Commodo Theatre, Hammersmith.

GREENWICH TIME SIGNAL AT 6-30 P.M.

6-30 p.m. The News and Announcements.

6-50 p.m. All-England Lawn Tennis Club Championship Meeting. Running commentaries by Colonel H. B. T. Wakeham, From the Centre Court, Wimbledon.

5-7 p.m. Close down.

TRANSMISSION 3.
The following frequencies will be used:
GSH 21.47 Mc/s (13.97 m), GSG 17.79 Mc/s (16.86 m).
10-45 a.m. Big Ben. The Children's Hour. "How the Wireless Came to Toytown," by S. C. Holmes Beanman, with incidental music played by the B.B.C. Empire Orchestra.

GREENWICH TIME SIGNAL AT 9-30 P.M.

12-0 noon.

GREENWICH TIME SIGNAL AT 11-45 A.M.

12-0 noon.

10-30 p.m. Close down.

TRANSMISSION 4.
The following frequencies will be used:
GSH 21.47 Mc/s (13.97 m), GSG 17.79 Mc/s (16.86 m).
GSH 11.54 Mc/s (33.53 m), GSG 9.51 Mc/s (11.55 m).

10-45 a.m. Big Ben. "To People who have Gardens."

11-30 p.m. The News and Announcements.

11-50 p.m. John Reynolds with his Orchestra. Patricia Roselborn (Pianoforte), Orchestra: "Love in Araby (Haydn), Mon Bijou (Langlais), The Love Dance (Pascal), The Shepherd's Ideal (Phinches)." Phone: Down to Centre Town (Ringmeon).

12-15 a.m. "Fire at Sea," by Jerry Nunn.

12-30 a.m. A Programme of New Gramophone Records.

1-40 a.m. Variety.

2-0 a.m. A Pianoforte Interlude by Betty Ayliffe.

Doctor Gradun at Pantavad (Maryland). April: Capricorn No. 2 in F sharps. Close down.

2-10 a.m. The News and Announcements.

2-30 a.m. A Recital of Songs and Duets by Sophie Rowlands (Soprano), and Tom Kiniburn (Bass).


3-0 a.m. Henry Hall's Hour.

GREENWICH TIME SIGNAL AT 3-0 A.M.

4-0 a.m. Sereenade.

4-15 a.m. Close down.

* Electrical recording. † Gramophone records.

FOR FOREIGN PROGRAMMES
See Pages 677 and 678.

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**TRANSMISSION I.**

**Time Signal.**

3-0 a.m. Budhan Khurshid Bai. 

8-0 a.m. A. I. R. Orchestra. 

8-10 a.m. A. I. R. Orchestra. 

8-20 a.m. Fazl Ahmed Khan. 

8-45 a.m. Talk (Hindustani): "The Origin of Customs." By P. S. Mukerji. 

9-0 a.m. Afzal Husain. 

9-10 a.m. Afzal Husain. 

9-30 a.m. Afzal Husain. "Najaria lagi te re Mor." Thumri.

9-45 a.m. 2nd News Bulletin. (Hindustani).

10-0 a.m. 2nd News Bulletin. (English).


*10-30 a.m. An Orchestral Programme. By His Excellency the Viceroy’s Orchestra. (By the kind permission of His Excellency the Marquess of Linlithgow.) Directed by L. C. H. Fenner, M.B.E., L.R.A.M. Overture — "Lone Stills." By Moritz Moszkowski. Rondelle. 

(1) "Dans des Cachemires." By K. J. Frisch. 

(2) "Dans des Hindous." By K. J. Frisch. 

(3) "Dans des Cholos." By K. J. Frisch. 


(4) "In Haven." 

Eiger. 

SELECTION FROM THE OPERA "Der Meistersinger." By Wagner. 

11-30 a.m. Close down.

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**TRANSMISSION II.**

1-0 p.m. Time Signal. 

Indian Recorded Music. 

2-0 p.m. Close down.

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**TRANSMISSION III.**

3-0 p.m. Time Signal. 

A. I. R. Orchestra. 

Tembra.

6-10 a.m. Fazl Ahmed Khan. "Jazba-i-shoaq se main fitrat-i-parwana banun." 

6-20 a.m. Fazl Ahmed Khan. "Sahab uka muskurana yad hai Muskarai ke fry shaama ka dwana banun." 

6-30 a.m. 1st News Bulletin (Hindustani).

6-30 a.m. 1st News Bulletin (English).

6-40 a.m. Afzal Husain. 

6-50 a.m. Jiwan. 

Sardar. 

Violin: Vud 370.4 metres, 810 kc/s. 49.10 metres, 6,109 kc/s. SB 654. 

Tufali. 

Tabla. Gauri.

6-55 a.m. Budhan Khurshid Bai. Thumri. 

7-15 a.m. Fazl Ahmed Khan. "Zabt se jisah-i-jaun aapna chhupae na bane." 

7-5 a.m. Karrar Husain. Sitar. Malhar. 

7-10 a.m. Afzal Husain. "Subuk jita hum utna bar hum main." (Majrak). 

7-30 a.m. Budhan Khurshid Bai. (a) Khayal Bhairon. 

(b) Thumri Kharmusi. 

7-45 a.m. "For Villagers Only." 


---

**Bombay**

VUD 350.9 metres, 855 kc/s.

10-30 a.m. Light Music. 

TARABAI SARASWATI. 

With Studio Orchestra. 

Written by Late Mr. PIJAM. 

"Masino Mako." 

11-0 a.m. Bouquet of Foreign numbers — Classical. 

(1) "Pizzicato." 

(2) "Barcarolle." 

(3) "Sans souci." 

(Tarabai Saros.) 

Ballet — "Hermione." 

- "Deirdre of the Sorrows." 

TARABAI SARASWATI. 

"In their own voice." 

Djawid Alhagire. 

11-30 a.m. Close down.

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**IS DELHI • SEE PAGE 642 A DUD?**
TRANSMISSION 5.

The following frequencies will be used:
GSH 11.75 Mc/s (25.53 m.), GSB 9.51 Mc/s (31.55 m.).

8-30 a.m. Big Ben. This Tennis Racket.
9-20 a.m. Musical Interlude.
10-47 a.m. A Pianoforte Interlude by John Wills.
11-20 a.m. The Serge Krish Set.
11-40 a.m. Weekly Newsletter, Sports Summary, and Announcements.
12-00 noon. Close down.

TRANSMISSION 6.

The following frequencies will be used:
GSH 11.75 Mc/s (25.53 m.), GSB 9.51 Mc/s (31.55 m.).

8-30 a.m. Big Ben. The Salvationist Publishing and Supplies Brass Band; conductor, Captain Eric Ball.
10-25 a.m. Gramophone Records.
11-45 a.m. The News and Announcements.

TRANSMISSION 1.

The following frequencies will be used:
GSH 11.75 Mc/s (25.53 m.), GSB 9.51 Mc/s (31.55 m.).

10-00 a.m. Big Ben. A Religious Service, from the Studio. Conducted by John R. Mott, F.R.G.S., LL.D., President of the World's Alliance of the YM.C.A.
10-47 a.m. A Pianoforte Interlude by John Wills.
11-55 a.m. All-England Lawn Tennis Club Championship Meeting. Running commentaries by Colonel R. H. Brand and Captain H. B. T. Wakeham, from the Centre Court, Wimbledon.

11-40 a.m. Weekly Newsletter, Sports Summary, and Announcements.
12-00 noon. Close down.

TRANSMISSION 2.

The following frequencies will be used:
GSH 11.75 Mc/s (25.53 m.), GSB 9.51 Mc/s (31.55 m.).

5-30 a.m. Big Ben. All-England Lawn Tennis Club Championship Meeting. Running commentaries by Colonel R. H. Brand and Captain H. B. T. Wakeham, from the Centre Court, Wimbledon.
6-17 p.m. The Serge Krish Set.
6-30 p.m. Weekly Newsletter, Sports Summary, and Announcements.
7-50 p.m. Musical Interlude.
8-55 p.m. A Short Religious Service, from the Studio.

TRANSMISSION 3.

The following frequencies will be used:
GSH 11.75 Mc/s (25.53 m.), GSB 9.51 Mc/s (31.55 m.).

7-30 p.m. Big Ben. A Recital of English Songs by Anne Wood (Contralto).
8-50 p.m. The Bad Child's Book of Beasts:


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MONDAY, 6th JULY 1936.

Delhi

VUD 340.136 metres, 882 kc/s.

TRANSMISSION I.

8-0 a.m. Time Signal.
8-10 a.m. Shri Bharat Bhavan by Pandit Brij Bhushan.
8-10 a.m. A.I.R. Orchestra. Swayambar.
8-20 a.m. Allah Bandi of Hindeon.
8-20 a.m. "Abi ra uma mose bol bol." (Kashish Debhur.)
8-30 a.m. Barkat Ali Khan of Lahore.
8-30 a.m. "Ratvyaan kidhaan gauwai bhal barahji." (Thumri.
9-0 a.m. "Mother Machine." (Raghuveer.)
9-15 a.m. Pandit Brij Shushan. Dhurpad.
10-0 a.m. 1st News Bulletin. (Hindustani.)
10-30 a.m. Talk (English). "Rickshaw and Coolies." By Major W. H. Critchton, I.M.S.
11-30 a.m. A Studio Concert.

TRANSMISSION II.

1-0 p.m. Indian Recorded Music.
2-0 p.m. Close down.

TRANSMISSION III.

6-0 p.m. A.I.R. Orchestra. Bhagsudari Todi.
6-10 p.m. Pandit Brij Bhushan. Bhojan Saras.
6-20 p.m. 1st News Bulletin. (Hindustani.)
6-30 p.m. 1st News Bulletin. (English.)
6-40 p.m. Allah Bandi of Hindeon.
6-55 p.m. Barkat Ali Khan.
7-05 p.m. "Kaise karte mori suon suroor." (Nawabi.
7-5 p.m. Malang Khan. Vichitra Veena-Hor Naran.
8-15 p.m. Pandit Brij Bhushan. Dhurpad.
8-30 p.m. Allah Bandi of Hindeon.
8-45 p.m. "Guru bin kaise gun gaw." (Khalil Aiman.
8-45 p.m. P.S. Mukerji. Violin.
8-45 p.m. Tufail-
8-45 p.m. "For Villagers Only." (Solo.)
9-05 p.m. Talk (Hindustani): "Dara Shikooh (a)."
9-10 p.m. Time Signal.
9-30 p.m. Available Market Rates.
9-45 p.m. Selection of Indian Music.

Bombay

VUD 350.9 metres, 885 kc/s.

11-30 a.m. Selection of Indian Music.
1-0 p.m. Available Market Rates.
5-0 p.m. Relay of Indian Music from the Wellington Cinema.
6-0 p.m. Talk (Marathi): "Ideal of Young Men". Brahmadatta.
11-6 p.m. Light Music.
7-0 p.m. Shree Bhashwet Geeta Pravachan.
7-15 p.m. A Recital of East Indian Songs.
8-0 p.m. Commercial News and News in Hindi.
8-15 p.m. Light Music.
8-25 p.m. Sangit Bhaskar Master Varun.
9-0 p.m. Ashalata and Anil Biswas.

Calcutta

VUC 370.4 metres, 810 kc/s. 49.10 metres, 6,109 kc/s.

Time Signal.

12-36 p.m. A Light Orchestral Programme from the Studio.
1-4 p.m. The Latest Dance Music Selections.
1-36 p.m. Talk: "Exploring the Stratosphere." By Neiphen Chatterjee.
2-36 p.m. Kathakata by Ramratan Vyakaranatirtha.
3-36 p.m. Time Signal.
5-36 p.m. Musical Selections (Recorded).
6-4 p.m. Talk: "Village Welfare Competition." By Dr. J. R. Mazumdar.
6-26 p.m. Modern Bengali Song by Deiben Das.
6-36 p.m. A Musical Entertainment by the New Theatres Limited. under the direction of R.C. Boral. (To be relayed from the Tollygunge Studio, by kind permission of the Management.)
7-51 p.m. News in English.
8-55 p.m. The "Yanda Concert Party." By H. K. Mitra, and His Orchestra.
8-51 p.m. Weather Forecast, General News Bulletin.
9-45 p.m. Talk: "World Touring's Diary." By Ramnath Bose.
9-26 p.m. Vocal Music (Bengali.)

All Times are given in Indian Standard Time.

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June 22, 1936.

The Indian Listener
MONDAY, 6th JULY 1936.

9-30 p.m. BIMAPANY II—Lighr. 

9-51 p.m. Topical Talk: By Chinna Gupta.

10-4 p.m. Weather Forecast. 2nd News Bulletin. Market: SB Prices, Jute and Gunny Closing Rates. (In English)

10-21 p.m. Time Signal. Close down.

B.B.C.

TRANSMISSION 5.
The following frequencies will be used:

GSP 15.51 Mc (9960 m). GSP 5.14 Mc (19.82 m).

3-30 a.m. Big Ben. A Kathedral Recital by Henry Hunsaker (Pianoforte).

Sonata in G flat major, Op. 30 (Liszt) (2) Allegro

4-30 a.m. A Short Religious Service, from the Church of the Holy Trinity, London.

5-0 a.m. Gracious Spirit, Holy Ghost (A and M., 210).

6-15 a.m. Greenwich Time Signal at 6-15 a.m. Close down.

TRANSMISSION 6.
The following frequencies will be used:

GSP 9.58 Mc (31.55 m). GSP 5.38 Mc (13.32 m).

7-30 a.m. Big Ben. A Religious Service (Roman Catholic), from the Church of Our Lady and St. Joseph, Kensal Green.

8-23 a.m. The New Georgian Trio. 

Gavotte (F.54); Loverture, La Scala di Seta (Rossini). 

9-40 a.m. London Scenes—No. 6: The River, by James Jones.

28-45 a.m. A Recital of compositions and arrangements by Kreisler, played by Adila Fachi (Violin).

2-20 a.m. Menuet (Paderewski). Lost (Ohrman).

6-10 a.m. Weekly Newsletter, Sports Summary, and Announcements.

GSP 9.51 Mc (31.53 m).

6-30 a.m. Close down.

TRANSMISSION 1.
The following frequencies will be used:

GSP 11.75 Mc (35.53 m). GSP 5.91 Mc (12.32 m).

10-4 a.m. Big Ben. "Empire Mail-Bag," No. 5. Compiled and presented in living form by Cecil Madden.

10-40 a.m. London Scenes—No. 6: The River, by James Jones.

9-55 a.m. The New Georgian Trio (contd). 

Alla Gavotte (Sibelius). The Baya Bee (Brisa), alternative lines.

12-0 noon. The News and Announcements.

GSP 11.75 Mc (35.53 m).

12-10 a.m. Close down.

TRANSMISSION 2.
The following frequencies will be used:

GSP 11.75 Mc (35.53 m). GSP 5.91 Mc (12.32 m).

3-15 p.m. Big Ben. Tyndall Ceremony, from the Isle of Man.

4-15 p.m. Happy Day Birthday (Easter Hymn; Love Went a-Riding (Frank Bridge).

4-30 p.m. Big Ben. Yet Another Happy Day Birthday (Fanny Brice).

5-15 p.m. Big Ben. Tyndall Ceremony, from the Isle of Man.

5-45 p.m. English Humorist—10.

6-0 p.m. "Raffles of Singapore." A study in dramatic form of the man, his life, and his work. The programme written by H. F. Banner, and produced by William MacLaur

GSP 9.58 Mc (31.55 m).

6-30 p.m. The News and Announcements.

7-50 p.m. Big Ben. Salisbury and his orchestra, from the Savoy Hotel, London.

GSP 9.51 Mc (31.53 m).

7-45 p.m. Close down.

TRANSMISSION 3.
The following frequencies will be used:


7-30 p.m. Big Ben. Hampton Court Palace. A descriptive microphone visit and dramatic reconstruction. Script written by S. E. Reynolds and Cecil Midden. Produced by Pascoe Thornton.

8-30 p.m. Big Ben. The Bolsover Colliery Band. Produced by Pascoe Thornton.

9-15 p.m. Pianoforte Music.

9-25 p.m. The News and Announcements.


10-05 p.m. Kipling Reading.

10-30 p.m. Close down.

TRANSMISSION 4.

Three of the following frequencies will be used:

GSP 17.29 Mc (14.06 m). GSP 9.26 Mc (19.66 m).

GSP 17.14 Mc (20.53 m). GSP 5.91 Mc (12.32 m).

10-45 p.m. Big Ben. A Recital by Betty Humby (Pianoforte). 


11-0 p.m. Concert Party, from Blackpool.

GSP 11.75 Mc (35.53 m).

11-30 p.m. The News and Announcements.

11-50 p.m. *Empire Mail-Bag," No. 5. Compiled and presented in living form by Cecil Madden.

12-30 a.m. The B.B.C. Dance Orchestra, directed by Hall.

1-15 a.m. Tyndall Ceremony, from the Isle of Man.

1-40 a.m. Musical Interlude. 

1-45 a.m. Rawicz and Landauer.

2-0 a.m. English Humorists—10.

2-10 a.m. The News and Announcements.

3-0 a.m. A Recital by Dorothy Clark (South African Contralto).


4-0 a.m. Dance Music. Popular hits of last year.

4-15 a.m. Close down.

* Electrical recording. † Gramophone records.

FOR ALL FOREIGN PROGRAMMES

See Pages 667 and 678.

All Times are given in Indian Standard Time.

June 22, 1936.
TUESDAY, 7th JULY 1936.

**Delhi**

VUD 340.136 metres, 882 kc/s.

**TRANSMISSION I.**

8-0 a.m. Time Signal.
8-10 a.m. Arti by A.I.R. Orchestra. (Chorus.)
8-20 a.m. Karimi Hussain of Jaipur.
8-30 a.m. Gauchar Bai of Jaipur. Thumri Jogia.
9-0 a.m. Talk (Hindustani): "Success in Business." By Brahmamand.
9-10 a.m. Karimi Hussain.
9-15 a.m. Master Jiwan. (Clarinets.)—Gat Jonpuri.
9-20 a.m. Zawwar Haidar.
"Marhaba mujh ko sooji di ke wohi suhu hai. Pina hasan jiska be ghul pe wuzu hai." (Tappa Zilla)
9-40 a.m. Karimi Hussain. Saranatii Veena—Binalal.
9-45 a.m. Karimi Hussain.
"Naina lagi suli pariyon se bansi charhi ban ki kalyon se." (Tappa Zilla)
9-50 a.m. Gauchar Bai of Jaipur.
"Allah Allah ne parshadi mire Zulf-i-janan bhi hai dhwani mire." (Dagh.)
10-0 a.m. Close down.

**TRANSMISSION II.**

1-0 p.m. Indian Recorded Music.
2-0 p.m. Close down.

**TRANSMISSION III.**

6-0 p.m. Time Signal.
6-10 p.m. A.I.R. Orchestra. Dhani.
6-10 p.m. Zawwar Haidar.
"Lago mora dhian sayyana sanware salune se." (Dadra Pilu.)
6-20 p.m. 1st News Bulletin. (Hindustani.)
6-30 p.m. 1st News Bulletin. (English.)
6-40 p.m. Karimi Hussain. Gand Malhar.
6-50 p.m. Sabir. Sarangi—Sarang.
6-52 p.m. Sardar. Violin—Bhun.
6-54 p.m. Ghulam. Dilruha—Pilu.
6-56 p.m. Haidar. Sitar—Kafi.
6-58 p.m. Jiwan. Clarinet—Sindhe.
7-0 p.m. Mukerji. Sarod—Malton.
7-2 p.m. Malang. Sur Bahar—Mian Ki Todi.

**Bombay**

VUD 350.9 metres, 855 kc/s. 31.36 metres, 9565 kc/s

1-0 p.m. Available Market Rates.

2-0 p.m. A Variety.

*JAYANT SHAH, Bul-Bul-Tarang.
S. PALEKAR, Violin Solo.

3-30 p.m. Close down.

6-0 p.m. Relay of Music from Capitol Cinema.

6-30 p.m. A Light Orchestral Programme. By The Radio Quartet.

6-45 p.m. Talk: "Bombay Cracketers." By Frank Tarrant.

6-0 p.m. John Watt and Henrik Ege. Presents: "It Seems only Yesterday," Music by Harry S. Peper. (A B. C. Recorded Programme.)

9-0 p.m. News in English.

9-10 p.m. Commercial News and News in Hindi.

9-30 p.m. A Concert by Saraswatibai. (SB from V.U.B. Indian Orchestra.

**Calcutta**

VUC 370.4 metres, 810 kc/s. 49.10 metres, 6,100 kc/s

12-30 p.m. Time Signal.


Stokowski and Philadelphia Orchestra. "Toccata and Fugue in D Minor."

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TUESDAY, 7th JULY 1936.

Peter Dawson.


The Phoenix Theatre Orchestra.


The New Victoria Cinema, Bradford.

"On the Sea Beach." - Composed and directed by Henry Hall.

TRANSMISSION 3.

MUSICAL SELECTIONS.

"Imperial Affairs," by H. V. Hodson.

Light Classical Concert. Eleanor Kaufman (Mezzo-Soprano). The British String trio: Jessie Snow (Violin); Alan Bartlett (Violin); Ernest Tomlinson (Violin). The British String Trio: Trottato: introductions allegro ma non troppo; Lamento; Scherzo vivace; temas con variante: Pasada adagio-mvt alla spartito (Overtura); Elizabeth Kaufman; Sangers Trust; Scherederlerchen; provence; selections as the von der; de la Lande (Haydn Wolf); Le Calife; Les Pavillons (Chausson); The Bar of the Times: Fantasia: Allegretto arr. Andante con var x: Valse-Scherzo; Ronde Caiprise (Thomas Dubois); Ma Soeur et Moi (Seraphin).

9.25-26 p.m. The News and Announcements.

"Island Story," a fantasy on insular themes, composed by Cedric Cliff. Produced by John Penudie.


10.20 p.m. Dance Music.

10.30 p.m. Close down.

TRANSMISSION 4.

All Times are given in Indian Standard Time.

TRANSMISSION 2.

The following frequencies will be used:

GSP 15.31 Mc/s (19.60 m). GSF 15.14 Mc/s (19.82 m).

GSP 9.38 Mc/s (19.32 m).


ABC, (6) From the Strand (Green). Pastoral (Lange); Song of the Goldsmiths (Musical Box); Jingle Bells (Musical Box) (7) Golden Smilars Kiss your Eyes (Enid, arr. Cecil Dixon).

"Imperial Affairs," by H. V. Hodson.

11.15 p.m. Tyndal Ceremony,* from the Isle of Man.

11.40 a.m. The News and Announcements.

12.00 noon.

Close down.


5.00 p.m. "Ah, Ah, Ah, Ah, Ah," Final and Émperor Number of the Northern Broadcast Magazine.

5.30 p.m. British Dance Bands in British Numbers.

6.00 p.m. "Starlight," Number Ten. Interviews with famous stage people, and excerpts from their repertoire. No. 10: Edith Evans (the celebrated actress).

6.15 p.m. A Recital by Leonard Davis (Violin).

6.30 p.m. The News and Announcements.

6.30 p.m. The Birmingham Theatre Royal Orchestra; conductor, Sheridan Gordon. From the Theatre Royal, Birmingham. Selection: (1) Sinfonia Elegia (Chabrier); (2) Suite (Debussy); (3) Serenade Espagnole (Glazounov, arr. Kreisler). Serenade espagnole (Glazounov, arr. Kreisler). Praeludium and Allegro (Kreisler, Pugnani). Serenade espagnole (Glazounov, arr. Kreisler).

7.15 p.m. Close down.

* Electric recorders.

1.50 p.m. "Island Story," a fantasy on insular themes, composed by Cedric Cliff. Produced by John Penudie.

8.15 p.m. "Island Story," a fantasy on insular themes, composed by Cedric Cliff. Produced by John Penudie.

8.50 p.m. "Island Story," a fantasy on insular themes, composed by Cedric Cliff. Produced by John Penudie.
DELHI

VUD 340, 136 metres, 982 kc/s.

TRANSMISSION I.

8-0 a.m. Time Signal.
8-36 a.m. Talk (Hindustani): "The Fairs of Delhi." By SYAM SHAMBHAI ALI.
9-0 a.m. Dalip Singh Kapur.
9-30 a.m. Dalip Singh Kapur.

BOMBAY

VUB 350.9 metres, 855 kc/s.

11-30 a.m. Selections of Indian Music.

TRANSMISSION II.

1-0 p.m. Indian Recorded Music.

TRANSMISSION III.

6-0 p.m. Time Signal.
6-20 p.m. Dalip Singh Kapur.
6-30 p.m. 1st News Bulletin. (Hindustani).
7-0 p.m. Ghusal Sahib.
7-30 p.m. Radha Bai. (a) Thumri. (b) Gazal.

CALCUTTA

VUC 370.4 metres, 810 kc/s. 49.10 metres, 6,109 kc/s.

12-36 p.m. Time Signal.
12-38 p.m. Talk: "Student Welfare." By BROJENDRA NATH BHADRA of the Calcutta Corporation.
1-51 p.m. Talk: "Come along with me in the Moon." By KAMAL BOSE.
2-6 p.m. Recorded Selections.
2-38 p.m. Kathakata. By AMULYA KRISHNA BHATTACHARYA.
3-6 p.m. Time Signal. 

All Times are given in Indian Standard Time.

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The Pramashaw Motor Co.

420, LAMINGTON ROAD, BOMBAY. 'Grams: 'Pramashaw.' Phone: 40539.

WEDNESDAY, 8th JULY 1936.

10-15 p.m. Talk (English): "The Way of the World." By Dr. T. G. P. SPAR.
10-30 p.m. Aftab-ud-Din Musiqi Fayyaz Khan of Baroda.
(a) "Kahan tum rain jaye." Khayal Kamod Balanpat Law.
(b) "Mai nei lagin lagi re." Asthai Kamod Draf Law.
(c) "Kawan chhang toor usanai." Asthai Behag Balanpat.
(d) "Nadir dir dim ta na na dim." Tanura Behag.
(e) "Woh jo bechain hue dekh ke halat meri. He aoi se parson tabat meri." (Husrat Mohani.)

11-30 p.m. Close down.

* Relayed from our Semi Studio.

G. A. S. NORMAN

A Bombay Composer

See Today's Programme.

7-15 p.m. Talk (Hindi): "Be-keeping in Rural India." L. A. RAZ.
7-30 p.m. Classical Music.
KHA SAHEB VILAYAT HUSSEIN.
8-0 p.m. Commercial News and News in Hindi.
8-25 p.m. Light Music.
KHA SAHEB VILAYAT HUSSEIN.
9-30 p.m. News in English.
9-45 p.m. Talk: "Europe and Asia in Art History." By R. V. LEYDEN.
10-0 p.m. A STUDIO CONCERT.

SONATS FOR VIOLIN.

MUSICAL MENTS, Violin.
E. VERGA, Cello.
G. A. S. NORMAN, Piano.

SONATS FOR VIOLIN.

A group of Pianoforte Solos.
Sonatas for Violin and Piano in D.
(Composer G. A. S. Norman.)

11-0 p.m. Close down.

MARKET PRICES, JUTE AND GUNNY CLOSING RATES

Weather

HOOPER.

Talk: "Poems Grave and Gay." By C. F. HOOPER.

The Empress Programme

Relayed from Taj Mahal Hotel.

By kind permission of the Management.

In English.

VUB 350.9 metres, 855 kc/s.

Lunch Hour Selections.

Relayed from Taj Mahal Hotel.

By Dr. T. G. P.

Kawan dhang tora sajani."

"Nadir dir dim to na na dim. -

Kahan turn rain jage."

Khasrat Mohani."

Close down.

Ask for detailed Leaflet.

The Pramashaw Motor Co.

420, LAMINGTON ROAD, BOMBAY. 'Grams: 'Pramashaw.' Phone: 40539.

G. A. S. NORMAN

A Bombay Composer

See Today's Programme.

8-36 a.m. Rebel of Indian music from Krishna Cinema.

9-45 p.m. Talk: "Europe and Asia in Art History." By R. V. LEYDEN.
10-0 p.m. A STUDIO CONCERT.

SONATS FOR VIOLIN.

MUSICAL MENTS, Violin.
E. VERGA, Cello.
G. A. S. NORMAN, Piano.

SONATS FOR VIOLIN.

A group of Pianoforte Solos.
Sonatas for Violin and Piano in D.
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11-0 p.m. Close down.

MARKET PRICES, JUTE AND GUNNY CLOSING RATES

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Talk: "Poems Grave and Gay." By C. F. HOOPER.

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By kind permission of the Management.

In English.

VUB 350.9 metres, 855 kc/s.

Lunch Hour Selections.

Relayed from Taj Mahal Hotel.

By Dr. T. G. P.

Kawan dhang tora sajani."

"Nadir dir dim to na na dim. -

Kahan turn rain jage."

Khasrat Mohani."

Close down.

Ask for detailed Leaflet.

The Pramashaw Motor Co.

420, LAMINGTON ROAD, BOMBAY. 'Grams: 'Pramashaw.' Phone: 40539.
WEDNESDAY, 8th JULY 1936.

11-0 p.m. The B.B.C. Military Band; conductor, B. Walton O'Donnell.
  Festival March, Treadnopper (Wagner). Overture, Emotion (Beethoven).
  Study (Garrage, see Halde). Cherry Ripe (Hans, arr. Halde). Cherry Ripe (see H.)

11-30 p.m. The News and Announcements.

11-50 p.m. The Adolph Hallis Quintet with Lola Gordon.
  Melody (Mustapich, see Halde). Cherry Ripe (see H.). Cherry Ripe (see H.)

12-0 a.m. "Island Story." A fantasia on insular themes, composed by Cedric Crips. Produced by John Podney.

12-30 a.m. A Pianoforte Recital by Isobel Gray.

1-0 a.m. Stanelli's Bachelor Party.

2-0 a.m. The Leslie Bridgewater Harp Quintet.
  Three Pieces: (1) Capriccio in the Castle (Bancroft, arr. Hallis).
  (2) Marching Song (Holst). By the Tarn (Eugene Goossens).
  (3) Marching Song (Holst). By the Tarn (Eugene Goossens).

2-10 a.m. The News and Announcements.

2-30 a.m. Sydney Howard.

2-40 a.m. The B.B.C. Theatre Orchestra.
  (1) Fantasia (2) Fantasia (3) Fantasia.
  (1) Fantasia (2) Fantasia (3) Fantasia.


4-5 a.m. Serafina. A Recital by Hilda Deditcher (Pianoforte).
  (1) Fantasia (2) Fantasia (3) Fantasia.
  (1) Fantasia (2) Fantasia (3) Fantasia.

4-15 a.m. Close down.

EVENTS THIS WEEK

Talk on Agriculture
By the Rt. Hon. the Viscount Bledisloe, G.C.M.G., K.G.B.
"Raffles of Singapore" A study in dramatic form of the man, his life, and his work
Tynwald Ceremony
From the Isle of Man
"The Blue Peter" A. P. Herbert's comic opera
London Scenes, No. 6
The River, by James Jones

FOR FOREIGN PROGRAMMES

See pages 677 and 68:

EXCHANGE: Your old Radio Receiver with New Pilot, Emerson, Philips, R.C.A., Philco or any at Shunkerdas & Co.

FOR FOREIGN PROGRAMMES

MISCELLANEOUS ADVERTISEMENTS

ON NOTICE

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GUARANTEED RADIO REPAIRS:
THURSDAY, 9th JULY 1936.

Delhi

VUD 340. 136 metres, 882 kcs.

TRANSMISSION I.

8-0 a.m. Time Signal.
Shri Bhagwat Geeta by Pandit Brij Bhushan.

8-10 a.m. A.I.R. Orchestra. Kalanga.

8-20 a.m. Hamunam Parshad. Thumri. Assuri.

8-30 a.m. Rashid Ahmad of Aimer. Qawwali.

8-45 a.m. Talk (Hindustani): "Hindi Poets.ces.
By Kuntiya Kumari Jain.

9-0 a.m. Malang Khan. Vichita Vena—Malhar.

9-10 a.m. Benazir Bai of Jaipur:
(a) Thumri. (b) Ghazal.

9-30 a.m. Pandit Brij Bhushan. Bhajan.

9-40 a.m. Hamunam Parshad. Dada.

9-50 a.m. Rashid Ahmad. Ghazal.

10-0 a.m. Close down.

TRANSMISSION II.

1-0 p.m. Indian Recorded Music.

2-0 p.m. Close down.

TRANSMISSION III.

6-0 p.m. A.I.R. Orchestra. Surdasji Malhar.

6-10 p.m. Pandit Brij Bhushan. Dhrupad.

6-20 p.m. 1st News Bulletin. (Hindustani).

6-30 p.m. 1st News Bulletin. (English).

6-30 p.m. Hamunam Parshad. "It te din har sumran bin kachwet." Bhajan.


7-0 p.m. Rashid Ahmad.
(a) Thumri. (b) Ghazal. (c) Dada.

8-0 p.m. Rashid Ahmad. "Khushi na ho mujhe kiun kar Qaza ke aane ki khabar hai lish peh us be-wafa ke aane ki." (Momin).

9-30 a.m. Benazir Bai of Jaipur:
(a) Thumri. (b) Ghazal.

9-45 a.m. 2nd News Bulletin. (Hindustani).

10-0 p.m. 2nd News Bulletin. (English).

10-15 p.m. Talk (English): "Abyssian War.
By Norah Hill.

10-30 a.m. A B.B.C. Recorded "Light Variety Programme".which will include items.

CLAPHAM and DREYER. HARLEY and BARKER. JANET JESSE. HELM FERNSBACK. THE HILL BILLIES. TONY'S RED ACES.

11-30 p.m. Close down.

All Times are given in Indian Standard Time.

Bombay

VUB 350.9 metres, 855 kcs. 31.36 metres, 9,565 kcs.

1-0 p.m. Available Market Rates.

2-0 p.m. Light Music. Bhangat Kriishna of Nepal.

3-0 p.m. Fifteen Minutes with—Bai Laxumebai of Baroda. Nepalese Song. Bhangat Kriishna of Nepal.

3-30 p.m. Close down.

6-0 p.m. Relay of Music from Capitol Cinema. (By kind permission of the Management.)

6-30 p.m. Stories to Children.

7-0 p.m. Mendoza and his Orchestra.

7-15 p.m. "Have You Heard This?" By Mina Silas.

8-10 p.m. General Motors Symphony Orchestra. Conducted by Enzo Kaper. Suhanne Fisher—Soprano. (Electrically Recorded.)

9-0 p.m. News in English.

9-10 p.m. Commercial News and News in Hindi.

9-30 p.m. Light Classical Music. S. B. Hirena Barodekar, with the Studio Orchestra. Sarang, Harmonium andTabla.

11-0 p.m. Close down.

Calcutta

VUC 370.4 metres, 810 kcs. 49.10 metres, 6,109 kcs.

12-36 p.m. Signal.

1-26 p.m. SB Talk: "Dotayanti." By Shobhajit Hossain.

2-6 p.m. Vocal Music (Bengali).

2-21 p.m. Prapulalabala—Light. Vocal Recorder by Bino Kumar Chatterjee.

2-36 p.m. Talk: "Death." By Bishnu Sarma.

3-6 p.m. "John the Sailor." By Bishnu Sarma.

3-30 p.m. Close down.

4-26 p.m. Selections from Gramophone Records.

6-6 p.m. Vocal Music (Bengali).

6-21 p.m. Shobhana Chandrika Chakravarty—Ballad.

7-21 p.m. Ashalata Roy—Light Songs.

6-36 p.m. A Musical Programme under the direction of Panchanan Mukherjee.

Vocal Music:

SHOWABH BHRING—Bengali.
SIBASA BHALCHANDRA—Bengali.
GOURI RANI SEGHUPRIYA—Bengali.
KARA SHING—Bengali.
RENALU DEVI—Koran.
PESHAMI NAH GOSHAI—Classical.
JIBAN CHANDRA UPADHYAYA—Classical.
AMARENDRA NATH BAGHI—Bengali.
BAROJ KUMAR GHOSH—Bengali.
NIRMAL CHAKRABORTY—Bengali.

Instrumental Music:

BONI MADHUBHUMI—Saras Serial.

6-71 p.m. News in English.

8-51 p.m. Light Bengali Songs. By Radhabany.

9-21 p.m. Talk: "Tales from the Lives of Indian Saints." By Neerup Chatterjee.


9-6 p.m. A Studio Concert featuring:

CELIA HARLEY—Soprano.
KATHLEEN HILL—Violin.
PEARL NARAYAN—Pianoforte.
TOMMY TKUCNER—Songs at the Piano.


10-21 p.m. Dance Music (Recorded) from the Studio.

10-36 p.m. Time Signal. Close down.

B. B. C.

TRANSMISSION 5.

The following frequencies will be used:

GSP 19.31 Mc/s (19.60 m.). GS F 19.14 Mc/s (19.82 m.).

4-30 a.m. Big Ben. The Crystal Palace Band; conductor, Denis Wright.

5-0 a.m. The Crystal Palace Band (continued).

5-25 a.m. "Agriculture in the British Isles: Summing Up" by the Rt. Hon. the Viscount Bledisloe, G.C.M.G., K.B.E.

5-40 a.m. "Raffles of Singapore." A study in dramatic form of the man, his life, and his work. The programme written by H. F. Banner and produced by William MacLurg.

6-10 a.m. The News and Announcements. Greenock Time Signal at 6-15 a.m.

6-30 a.m. Close down.

TRANSMISSION 6.

The following frequencies will be used:

GSD 11.75 Mc/s (39.53 m.). GSC 9.58 Mc/s (8.32 m.).

7-30 a.m. Big Ben. A Recital of European Folk-Songs by Constance Corradiani (Contralto) and Gustave Ferrare (Tenor).

All times are given in Indian Standard Time.

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- Deen Brothers, Hyderabad, Deccan.

AGENTS WANTED IN UNREPRESENTED TERRITORIES.
Delhi
V U D 340.136 metres, 882 kc/s.

TRANSMISSION I
8-0 a.m. Time Signal.
9-0 a.m. Recitation from the Quran-i-Sharif.
8-20 a.m. Shankar Lal. Thumri Jangwari.
8-30 a.m. P S. Mukerji. Saved—Gandhari.
8-35 a.m. Budhan Khurshid Bai. Thumri Bhai Reemin.
9-0 a.m. Shankar Lal. (a) “Sanchi kahat yeh adarang.”—Thumri Deai.
(b) “Ase bedardi dard na jane.”—Thumri Bhai Reemin.
9-20 a.m. Shankar Lal. Bhajan.
9-30 a.m. Haidar Huskin. Sarawati Vaena—Sarang Mian Khan.
Mujh sa bhi na ho ko pashmen-i-tamana.”—(Hawat Mohani.)

10-0 a.m. Close down.

TRANSMISSION II
1-0 p.m. Time Signal.
2-0 p.m. Close down.

TRANSMISSION III
6-0 p.m. Time Signal.
6-10 p.m. A.I.R. Orchestra. Nautch Tune.
6-20 p.m. Shankar Lal. Bhajan (Surdas).
6-30 p.m. 1st News Bulletin. (Hindustani.)
6-35 p.m. 1st News Bulletin. (English.)
7-0 p.m. Shankar Lal. Thumri Tilak Kamod.
7-0 p.m. Budhan Khurshid Bai. (a) “Kia mast nigahen mujhe dikhla gain ankhen.
Bhatkat kaon phire.” (b) “Ayea bathi mehrbani kia wafa kia.”
(Hasrat Mohani.)
7-30 p.m. Asad Ali Khan. “Jo puchhi mehrbani kia wafa kia.”
(Hasrat Mohani.)

8-0 p.m. Commercial News and News in Hindi.
8-15 p.m. Thumri Khambavati. ——(Amir Minai.)
8-20 p.m. Thumri Bhairvin. ——(Amir Minai.)
8-30 p.m. Thumri Tilak Kamod. ——(Hasrat Mohani.)
8-45 p.m. Talk : “Some Aspects of Indian Culture.” By TARA ALI BAG.
9-0 p.m. Jules Craen and His Quintet. “Mambo.”
9-30 p.m. News in English.

Delhi VU D 340.136 metres, 882 kc/s.

Bombay
V U D 350.9 metres, 855 kc/s.

12-0 noon. H M V. Presents——
Angurbaala.
“Ahote Chup Kar Naya Ra.”
“Chabro Bolo Na Bolo Tohure.”
Md. Khalil Quawal.
“Dil Me Thaana Haa.”
Kamalaa Wale Sirea.
Fakhr Alam Quawal.
“Ajniee Maqna Ke Taraf.”
“Chal Milata He Nai.”
S. G. Nevekar.
“Mst. Sita Taray Dayal.”
“Harla Tana Mane.”
G. N. Joshi and Gandhari (Hangel). “Milavam Don Givachi.”
“Goe Dona Ek Sakkaye.”
Master Manohar Barve.
“Mane Nai Stonya.”
“Chhola Dene More Banya.”
Mehabub Jaz.
“Unaki Balako” “Gazal.”
“Adoratshe Chakkar Dey” “Ghazal.”
Anandji.
“Nanara Lobhhe.”
“Ranga Raghe Rasikado.”

1-0 p.m. Available Market Rates.
2-0 p.m. European Lunch Hour Selections.
3-0 p.m. Educational Programme.
4-0 p.m. Close down.
5-0 p.m. Marathi Bhajan.
6-0 p.m. Talk (Gujarati) : “Dharm—Niti—Samsar.”
7-0 p.m. Classical Songs.
8-0 p.m. Commercial News and News in Hindi.
8-30 p.m. Talk (Gujarati) : “Bhajan—Swaraj.” By Prof. Shambu Prasad (Accompanist).
9-0 p.m. Talk : “The Blasphemy in Hindi Philosophy.”
9-30 p.m. Talk : “The Blasphemy in Hindi Philosophy.”

Bombay VU D 350.9 metres, 855 kc/s.

Calcutta
V U C 370.4 metres, 810 kc/s. —— 49.10 metres, 6,109 kc/s.

12-36 p.m. Time Signal.

12-51 p.m. Robert Pikler and his Hungarian Orchestra.

12-30 p.m. Time Signal. (By kind permission of the Management.

12-30 p.m. Time Signal.

12-36 p.m. Time Signal.

12-36 p.m. Time Signal.

12-30 p.m. Time Signal.

12-30 p.m. Time Signal.

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12-30 p.m. Time Signal.

12-30 p.m. Time Signal.

12-30 p.m. Time Signal.

12-30 p.m. Time Signal.
FRIDAY, 10TH JULY, 1936.

4-45 p.m. Talk Feature.

5-0 p.m. The B.B.C. Dance Orchestra, directed by Henry Hall.


6-20 p.m. Military Marches:
1. Garda Republican Band of France, conducted by M. G. Bazi: Marche Lorraine (Gounod), Symphonie et Marche (Ponchielli). La Perle de la Victoire (Gounod).

6-30 p.m. The News and Announcements.

7-15 p.m. Close down.

TRANSMISSION 3.
The following frequencies will be used:

- GSH 21.47 Mc/s (13.97 m.).
- GSF 15.18 Mc/s (19.76 m.).
- GSO 15.31 Mc/s (22.86 m.).
- GSS 15.55 Mc/s (25.38 m.).

- GSB 9.51 Mc/s (31.55 m.).
- GSF 9.58 Mc/s (33.55 m.).
- GSF 11.75 Mc/s (49.59 m.).
- GSFS 11.86 Mc/s (52.86 m.).
- GSF 13.14 Mc/s (65.86 m.).
- GS 17.79 Mc/s (105.55 m.).

9-00 p.m. The News and Announcements.

9-00 p.m. Close down.

TRANSMISSION 4.
The following frequencies will be used:

- GSH 21.47 Mc/s (13.97 m.).
- GSF 15.18 Mc/s (19.76 m.).
- GSO 15.31 Mc/s (22.86 m.).
- GSS 15.55 Mc/s (25.38 m.).

- GSB 9.51 Mc/s (31.55 m.).
- GSF 9.58 Mc/s (33.55 m.).
- GSF 11.75 Mc/s (49.59 m.).
- GSFS 11.86 Mc/s (52.86 m.).
- GSF 13.14 Mc/s (65.86 m.).

11-30 p.m. The News and Announcements.

11-50 p.m. The B.B.C. Dance Orchestra, directed by Henry Hall.

12-30 a.m. Concert Party.

1-0 a.m. Scottish Dance Music. The Strings of the B.B.C. Scottish Orchestra; leader, J. Moreland Begbie; conductor, Guy Warrack.

1-25 a.m. "Late Extra!" A feature programme following through the life of a London newspaper, from its origin in a timber forest to its sale as an extra edition. Directed by S. E. Ralston; produced by Pascoe Thornton.

2-10 a.m. The News and Announcements.

2-30 a.m. "Down River." T. G. M. Boumpry.


3-35 a.m. Dance Music. The Canzani Club Orchestra, directed by Charles Kent. From Canzani's Club, London.

3-58 a.m. "From the Woman's Point of View," by Jane Oliver.

4-15 a.m. Close down.

* Electrical recording. 
† Gramophone records.

WAVELENGTHS OF THE EMPIRE TRANSMITTERS.

<table>
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<tr>
<th>Frequency</th>
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<td>GSA</td>
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All Times are given in Indian Standard Time.
June 22, 1936. The Indian Listener

SATURDAY, 11th JULY 1936.

Delhi

VUC 340.135 metres, 882 kc/s.

TRANSMISSION I

8-0 a.m. Bhajan. By Dhal Singh Kapur.
8-10 a.m. A. I. R. Orchestra. Bengal Bhaion.
8-20 a.m. Karim Husain of Jaipur.
8-30 a.m. P. S. Mukerji. Savod. Aisa.
9-35 a.m. Afsal Husain of Nagesh. "Najariye lagi re more Ram." Thumri Bhairavn.
8-45 a.m. Talk (Hindustani) : "Radio a Hundred Years Hence." By Isrur Rahman.
9-0 a.m. Dhal Singh Kapur.
9-20 a.m. Kallo Bai of Pataudi.
9-30 a.m. "True to me," and "I do." By Sir John Goss and the Cathedral Male Voice Choir.
10-0 p.m. Close down.

TRANSMISSION II

1-0 p.m. Time Signal.
Mantovani and his Tipica Orchestra.
"In a Vienna Beer Garden." Parts I and 2.
The Hill Billies.
In "Yodelling Hobos.
Rene Houston and Pat Aherne.
In two sketches.
"True to me," and "I do." B. B. C. Dance Orchestra (conducted by Henry Hall).
"Viennese Memories of Lever.
Gracie Fields.
"River stay way from my Door." By Byorke and the Cathedral Male Voice Quartet.
The London Palladium Orchestra.
"The Golden Valse.
Benjamin Gigli (Tenor).
"All hail thou dwelling (from Faust)." Dajas Bela and his Orchestra.
"Die Freiheitslehr" (The Bat).
2-0 p.m. Close down.

TRANSMISSION III

6-0 p.m. A. I. R. Orchestra. Nalbandi.
6-10 p.m. Dalip Singh Kapur.
Kahna bani hameem. "Thumni Pita.
6-20 p.m. 1st News Bulletin. (Hindustani).
6-30 p.m. 1st News Bulletin. (English).
6-40 p.m. Karim Husain.
"Anokhi baten dekhi hameem piare tarihi." Asthai Puria.
6-50 p.m. Afsal Husain.
"Deekte ni maane sivam." Thumni Tilak Kamad.
7-0 p.m. K ballo Bai of Pataudi.
"Hal kia un se bare kahan No saarega aarch ham hazaar kaben." (Hassrat Mohani).

Bombay

VUC 359.9 metres, 855 kc/s.

1-0 p.m. Available Market Rates.
The Viennese Orchestra.
Overtures: "Nabokhodsarn," "John Williams," "Remembrance of Waltz." G. Verdi,
Waltz: "The Emperor." J. Strauss,
Fantasia: "Remembrance of Waltz." F. Chopin.
SOLD Fantasy Impromptu.
Vein Solo by K. S. Khan.
"Nocturne." Chopin-Sarasate.
2-0 p.m. A. Variety.
Prof. B. R. Drippons--Vocal.
S. Park--Violin Solo.
Sambatya Waddell--Vocal.
Accompanied by The V. B. U. Indian Orchestra.
By K. G. Sayyadain.
Hence." K. G. Sayyadain.
3-0 pm. Close down.

10-0 p.m. 2nd News Bulletin. (Hindustani).
9-45 p.m. 2nd News Bulletin. (English).
2-0 p.m. Close down.

11-0 p.m. Close down.

7-10 p.m. Karim Husain. Classical Music.
7-45 p.m. "For Villagers only.
8-45 p.m. Talk (Hindustani) : "Science in Modern Life." By K. G. Sayyadain.
9-0 p.m. Afsal Husain.
(Thumri."
9-20 p.m. Kallo Bai of Pataudi.
"Asha he ho kai nazar na-ashna karne lage Ham se kia dekha ke tum pas-hiya karne lage." (Hassrat Mohani).
"Ji ji kavish-gham khak charaju karte Hazar zakhum the kis kis jageh nuru karte." (Jigar).
(c) Dasha.
9-45 p.m. The Week's Sport.
By K. R. Croes.
12-0 p.m. Talk (Hindi): "Kooch Buri Adate.
By K. H. Croes.
Adapted by F. H. Croes.
11-15 p.m. Close down.

Calcutta

VUC 370.4 metres, 810 kc/s. 49.10 metres, 6,100 kc/s.

12-36 p.m. Time Signal.
SB
A Studio Recorded Programme by Messrs.
T. E. Bevan & Co., Ltd. ("Regal" Recording).
Piano Solo by Jack Wilson.
"Musical Comedy Memories.
Intro : "Tea for Two." "White Horse Inn,
Will Carter, the Yodelling Cowboy, Mildred and Dorothy Good.
"Bill Bailey Valley.
"My Cross-eyed Bear.
London Piano-Accordian Band.
"Poor Little Angelina.
"Please believe Me.
Gracie Fields.
The California Ramblers.
"Life begins when you're in Love.
"If I should Love You.
Bilby Cotton and his Concert Orchestra.
"Saddle your Blues to a Wild Mustang.
International Novelty Orchestra.
"Jolly Brothers Waltz.
Calcutta Washburn Boiler for Oceancraft and Rivercraft (if ang).
1-36 p.m. Talk : "Vainhara Literature." By Hare-Krishna Sarathyatana.
2-6 p.m. Musical Selections (Recorded).
2-36 p.m. Talks: (a) "Things that interest us.
"(b) "Abadai Bai.
By Bella Halder.
3-6 p.m. Time Signal.
SB Close down.
5-36 p.m. Time Signal.
SB Close down.
5-36 p.m. Recorded Selections.
SB
6-6 p.m. Talk : "Water Pollution." By Dr. B. C. Mukherjee.
6-26 p.m. Vocal Music (Bengali).
Saili Desha Gupta--Folk Song.
6-36 p.m. Girish Chandra Roy--Baul.
6-46 p.m. Krishna Chandra Ghose--Bhajan.
6-56 p.m. Manishalata--Light Classical.
7-36 p.m. Instrumental Music.
BETON ORCHESTRA, CONDUCTED BY TARAK NATH DEY.
7-51 p.m. News in English.
SB
8-6 p.m. Light Bengali Songs. By Kumar Sachin Deb.
8-21 p.m. Talk : "Comparative Study of Cinema SB Comedians." By Parimal Gospodrijk.
8-36 p.m. Musical Selections.
SB
CHRITIY KHAN--Savenger.
8-51 p.m. Weather Forecast, General News Bulletin, Market SB Prices, Jute and Gunny Closing Rates. (In Bengali)
9-6 p.m. Orchestra Selections (Recorded) from the SB Studio.
VALERIE OTTO--In Folk and Yodelling Songs.
SB
9-36 p.m. Dance Music by the Grand Hotel Dance SB Orchestra.
Relayed from "Prince's" Restaurant.
10-6 p.m. Weather Forecast, 2nd News Bulletin, Market SB Prices, Jute and Gunny Closing Rates. (In English)
10-21 p.m. Dance Music (Cont'd.) from "Prince's.
SB
10-36 p.m. Time Signal.
SB Close down.
All Times are given in Indian Standard Time.
B. B. C.

TRANSMISSION 5.
The following frequencies will be used:

GSP 13.51 Mc/s (19.60 m.), GSP 15.14 Mc/s (19.82 m.),
GSP 8.84 Mc/s (31.52 m.).


5-0 a.m. A Recital by Carmen Hill (Violoncello). Spagna (Paganini), (1) Allegretto (Corelli), (2) Allegretto (Corelli), (3) Allegretto (Corelli), (4) Allegretto (Corelli)." (4) Allegretto (Corelli)."

5-15 a.m. English Humorists—10.

6-15 a.m. The Children's Hour. A Summer Programme.

6-0 p.m. The Commodore Grand Orchestra, directed by Harry Davidson. From the Commodore Theatre, Harrogate.

6-0 p.m. Greenwich Time Signal at 6-15 a.m.

6-30 a.m. Close down.

TRANSMISSION 6.
The following frequencies will be used:

GSD 11.75 Mc/s (25.53 m.), GSC 9.51 Mc/s (31.32 m.).

7-30 a.m. Big Ben. Callender's Senior Band; conductor, Tom Morgan. Harry Brindle (Bass).

8-26 a.m. From the Woman's Point of View.*

8-11 a.m. Island Story.* A fantasia on insular themes, composed by Cedric Cliffe. Produced by John Fudney.

9-10 a.m. The News and Announcements.

9-30 a.m. Close down.

TRANSMISSION 1.
The following frequencies will be used:

GSD 11.75 Mc/s (25.53 m.), GSC 9.51 Mc/s (31.32 m.).

10-0 a.m. Big Ben. The Leon Wayne Sextet.

10-30 a.m. The News and Announcements.

11:00 a.m. Close down.

TRANSMISSION 2.
The following frequencies will be used:

GSC 21.47 Mc/s (13.97 m.), GSC 17.79 Mc/s (16.86 m.),
GSC 31.85 Mc/s (10.82 m.).

4-30 p.m. Big Ben. Gramophone Records.

5-0 p.m. "From the Woman's Point of View," by Jane Oliver.

5-15 p.m. The Children's Hour. A Summer Programme.

6-0 p.m. The Commodore Grand Orchestra, directed by Harry Davidson. From the Commodore Theatre, Harrogate.

6-30 p.m. The News and Announcements.

7-15 p.m. Close down.

TRANSMISSION 3.
The following frequencies will be used:

GSH 21.47 Mc/s (13.97 m.), GSG 17.79 Mc/s (16.86 m.),
GSH 8.84 Mc/s (31.52 m.).

7-30 p.m. Big Ben. Donald Thorne, at the Organ of the Granada, Tooting. Suite, Lightfoot, Landon; (2) L. In the Kew Gardens; (3) Sonatina (Street and Hyde Park); (4) morbida (Haydn). (5) Adagio (Haynes); (6) The Call of the Pipes (Murray); (7) Drat 'Em (Tulloch).

8-00 p.m. "Road House." Come on a conducted tour round a modern road house, and out to the bathing pool. From the Upper Reaches of the Thames.

8-20 p.m. Musical Interlude.*

8-25 p.m. Romance in Rhythm.*

9-25 p.m. The News and Announcements.

9-30 p.m. Commentary on the King's Cup Air Race, from Heathfield Aerodrome.

9-45 p.m. The News and Announcements (contd.).

10-00 p.m. The B.B.C. Dance Orchestra, directed by Henry Hall.

10-30 p.m. Close down.

TRANSMISSION 4.

11-00 p.m. Big Ben. The Children's Hour.* "The Adventurous Journey—No. 2: The Countess's East-Indian workers."

11-45 p.m. The News and Announcements.

12-00 a.m. Close down.

12-00 noon. The News and Announcements.

12-30 noon. Close down.

SUNDAY, 11th JULY 1936.

6-30 p.m. The News and Announcements.

6-50 p.m. Dance Music.*

7-15 p.m. Close down.

TRANSMISSION 5.
The following frequencies will be used:

GSP 21.47 Mc/s (13.97 m.), GSP 17.79 Mc/s (16.86 m.),
GSP 8.84 Mc/s (31.52 m.).

7-30 p.m. Big Ben. Donald Thorne, at the Organ of the Granada, Tooting. Suite, Lightfoot, Landon; (2) L. In the Kew Gardens; (3) Sonatina (Street and Hyde Park); (4) morbida (Haydn). (5) Adagio (Haynes); (6) The Call of the Pipes (Murray); (7) Drat 'Em (Tulloch).

8-00 p.m. "Road House." Come on a conducted tour round a modern road house, and out to the bathing pool. From the Upper Reaches of the Thames.

8-20 p.m. Musical Interlude.*

8-25 p.m. Romance in Rhythm.*

9-25 p.m. The News and Announcements.

9-30 p.m. Commentary on the King's Cup Air Race, from Heathfield Aerodrome.

9-45 p.m. The News and Announcements (contd.).

10-00 p.m. The B.B.C. Dance Orchestra, directed by Henry Hall.

10-30 p.m. Close down.

11-00 p.m. Big Ben. The Children's Hour.* "The Adventurous Journey—No. 2: The Countess's East-Indian workers."

11-45 p.m. The News and Announcements.

12-00 a.m. Close down.

12-00 noon. The News and Announcements.

12-30 noon. Close down.

SUNDAY, 11th JULY 1936.

6-30 p.m. The News and Announcements.

6-50 p.m. Dance Music.*

7-15 p.m. Close down.

6-30 p.m. The News and Announcements.

6-50 p.m. Dance Music.*

7-15 p.m. Close down.

OURS CONGRATULATIONS.

Not to everyone is given the capacity to be a good listener. Yet broadcasting is gradually reviving an art which was fast dying out, the art of letting others do the talking whilst you do the listening.

But Bombay has just discovered the country's champion listener. Indeed, he has earned the title of the world's Champion Long-Distance Listener. Not an Olympic title, indeed, but one which has at least won for him a fine 11-valve receiving set.

This new record-breaker is Mr. J. H. Dent, who has produced evidence to show that he has heard and recognised 23 different stations in each of six continents, presumably dividing America up into North and South to turn the regulation five into the half dozen.

What it meant to achieve this record can be appreciated only by those who have been turning and twiddling the knobs of their set day after day and night after night, battling with atmospherics and fading, and then triumphantly recognising yet one more foreign station.

Naturally, we offer our heartfelt congratulations to Mr. Dent on his fine achievement—and only trust that before long we shall be able to give him in India sufficient stations to keep him busy for many an evening.

As an Indian Prince said to him on making the presentation of his radio "trophy": —

"The rare distinction of being a champion listener throws light on his powers of concentration, patience, and perseverance. To be a patient listener is an arduous task, and to be a champion at it is not an enviable job. It is a role in which one cannot hit back, which becomes extremely difficult considering the usual provoking circumstances. Listening, indeed, is a lost art even as it is a lost virtue. It is a precious relic of the past which the radio is trying to revive."

A REQUEST

All subscribers, when writing to us about irregularity of receipt of the paper, or a renewal of subscription, would do us a great favour if they would quote the reference number given on the wrappers of the copies.

All Times are given in Indian Standard Time.
**Calcutta**

VUC 370.4 metres, 810 kc/s. 49.10 metres, 6,109 kc/s.

**10-15 a.m.** Time Signal.
MILNES
H. T.
EVERLASTING
BATTERY
Sets 
Your
Radio-Battery
Question!

RAINY DAYS WILL NOT GO HEAVY IF YOU HAVE A MIDWEST RADIO
Low Priced
ONLY FOR
3 MONTHS KEEP IT CAREFULLY
(THIS ADVERTISEMENT WILL NOT APPEAR AGAIN)
24 TUBE SET . . . . . . . . . . Rs. 775/-ONLY
18 TUBE SET . . . . . . . . . . Rs. 450/-ONLY
11 TUBE SET . . . . . . . . . . Rs. 275/-ONLY

WATERPROOF AND DUSTPROOF

The case is made of staybrite steel, stamped out in one piece and is enormously strong.

Guaranteed stainless, rustless and perspiration proof. The back is fitted in a special manner so that it becomes absolutely watertight and dust-tight. The case is practically hermetically sealed and the watch can even be immersed in water without damage.

SHOCKPROOF

The 'Vincit' incorporates a patented device known as the "Incabloc" which renders the watch absolutely shock-proof and practically unbreakable. Yet precision is not sacrificed to strength... the 'Vincit' has the time keeping accuracy and dependability of a delicate watch.

FAVRE-LEUBA & Co.
BOMBAY Ltd. CALCUTTA

THE DAZZLE ELECTRIC WORKS,
SANYOGITAGANJ, INDORE C.I.
**Delhi**

VUD 340.156 metres, 882 kc/s.

**TRANSMISSION I.**

8-0 a.m. 
Time Signal.

Naat by Muhammad Hashim.

8-10 a.m. 
A.I.R. Orchestra. 
Pancham.

9-20 a.m. 
Muhammad Shafi. 
Thumri—Jhamma.

9-30 a.m. 
Malang Khan. 
Vichitra Veena—Blubas.

8-45 a.m. 
Talk (Hindustani): 
"A 19th Century Salon III.

By Agra Shahe.

9-0 a.m. 
Muhammad Hashim. 
"Har kuli kabhi hai khal teri diwane se 
Dekhi niki hai par saj ke parikhane se."

(Amir Minai.)

9-10 a.m. 
Gaohar Bai of Jaipur. 
(a) "Bheer kaam milan bahilwa." Khayal. 
Joopuri.

(6) Thumri Bhaiwir.

9-30 a.m. 
Ghulam Sabir. 
Sarangi—Shudh Sarang.

9-40 a.m. 
Muhammad Shafi. 
"Jaiwah to aake raho ka mavi chhami-tar men baj 
Shadab-i-bahar ka aman nazar men hai."

(Jigar.)

9-50 a.m. 
Gaohar Bai of Jaipur. 
"Ik apan dui khuwsh se ubhra chhami-i-hairan 
men Samandar ho gye pada khayalat-i-parishan men."

(Engahr.)

10-0 a.m. 
Close down.

**TRANSMISSION II.**

1-0 p.m. 
Time Signal.

Indian Recorded Music.

2-0 p.m. 
Close down.

**TRANSMISSION III.**

6-0 p.m. 
Time Signal.

A.I.R. Orchestra. 
Ramdas Madhur.

10-1 p.m. 
Muhammad Shafi. 
"Main ra' ke aha karuna jahan rehne na rehne 
Zamir rahe na rehne aamna rahe na rahe."

(Amir Minai.)

6-20 p.m. 
1st News Bulletin. (Hindustani.)

6-30 p.m. 
1st News Bulletin. (English.)

4-40 p.m. 
Muhammad Shafi. 
(a) "Kaya ka pindra deke re ik sans ka panchhi bole." 
(Bhojpur.)

(b) "Je zul-i-zumbar kikar jaaj 
Muntar do alas ko kar jaaj." 
Naat.

7-0 p.m. 
Abdul Waheed Khan Chisti Sabri of Kariana. 
Classical Music.

7-35 p.m. 
Gaohar Bai of Jaipur. 
Ghazal.

7-45 p.m. 
"For Villagers only." 
Talk (Hindustani). 
"Film Fans." 
By Kishwa Ahmed Abbas.

9-0 p.m. 
Abdul Wahid Khan Chisti Sabri of Kariana. 
Classical Music.

9-35 p.m. 
Gaohar Bai of Jaipur. 
Ghazal.

9-45 p.m. 
2nd News Bulletin. (Hindustani.)

10-0 p.m. 
2nd News Bulletin. (English.) 
"A 15th Talk (English): 
"Tagore Speaks." 
By K. M. Sandak.

10-30 p.m. 
A Studio Concert. 
Freda Franklin. 
Pianoforte. 
Saraswati-Vihaar, 
D. Philips.

"Wahin o dildaar 
Humne dukaan 
Freda Franklin."

All Times are given in Indian Standard Time.
Listening in has become a pleasure to Mr. W. G. Bourne, Commander, R.N., F.R.G.S., A.I.N.A.

Just one of the many RCA owners who have about their pound possessions.

Now take a look at the model illustrated here. It is typical of the great RCA line, and you see at once that it is a fine piece of apparatus. These amazing new receivers enable you to meet the demand for 'UNIVERSAL' models of the better kind. Note their beautiful cabinets, their complement of metal tubes. Hear them and you will be amazed at their tonal purity, their power, the way they pull in stations from near and far. Their prices make them tremendous values. These are additional proofs that RCA gives you the kind of Radios that never fail to entertain you.

again all we ask is that you be the judge

You've seen beautiful cabinets, but never one with such grace of veneering line and proportion. You've seen radios that bring in many different types of programmes—but never one reproduces them so well. The new RCA receivers are at once a revelation of achievement and a revolution in superb home entertainment value.

AC Model T6-1: Six tube Superhet with metal tubes, 540 to 10,000 kcs.—8" speaker—4¼ watts output.

AC Model T7-5: Junior Magic Brain,—The New Junior Magic Brain unit is a feature for better reception, as are RCA Metal Tubes. Reception from 440-18,000 kcs. 7 tubes, 8" speaker.

Radiogram Model D7-7: Seven tubes: Junior Magic Brain Radio-gramophone. The joy of local and foreign programmes and recorded music. Here, at low price, is an all-electric radio-phonograph with many new features, promising high radio value for every rupee spent.

Radiogram Model D9-19: Nine tubes: New Magic Brain radio-gramophone with Magic Eye and Metal tubes, 140-410, 540-1,800 and 6,000-18,000 kcs. X band, foreign reception and recorded music reproduction.

Battery Model BT 7-8: A seven tube, 2 band Superhet with tuning range of 540 to 1,720 and 5,400 to 18,000 kcs. Local and foreign programmes, 8" speaker 2.2 watts output. Tone control. Batteries three 45-v. B., three 4½ v. C., and one air cell.
**TUESDAY, 14th JULY 1936.**

**Delhi**

**TRANSMISSION I.**

8-0 a.m. Time Signal.

8-10 a.m. A. I. R. Orchestra. Ahoer Bhaiio.

8-20 a.m. Nawab Bai of Bombay. Khayal Latif.

8-30 a.m. P. S. Mukerji. Sareed—Asa.

8-35 a.m. Ghulam Farid.

Beloh abasa mere ghar jo wob a jate hain
Ekswari daw-daw pha kha jate hain. (Amir Minai).

8-45 a.m. Talk (Hindustani): "Train Thieves."

By SYED WAZIR ALI SHAH.

9-0 a.m. Ghulam Sabir. Sarangi. Bhairoin.

9-10 a.m. Ghulam Farid. Qawwali.

9-20 a.m. Nawab Bai of Bombay.

(a) Thumri Desi.

(b) Ghazal.

(c) Dodra.


(Asisted by A.I.R. Orchestra.)

10-0 a.m. Close down.

**TRANSMISSION II.**

1-0 p.m. Time Signal.

2-0 p.m. Indian Recorded Music.

Close down.

**TRANSMISSION III.**

6-0 p.m. Time Signal. A. I. R. Orchestra. Anda.

6-10 p.m. Ghulam Farid. "Dil-i-purz istiab ne mera
Isi khana khareb ne mera."

(Dayib).

6-20 p.m. 1st News Bulletin. (Hindustani).

6-30 p.m. 1st News Bulletin. (English).


Tufail. Tufail.

6-50 p.m. Nawab Bai of Bombay. Thumri Pili.

7-0 p.m. Haider Husain. Sarsawati Veena. Jalt Kayan.


7-20 p.m. "For Villagers Only."

8-35 p.m. Talk (Hindustani): "Chakbast."

By Al-Ahmad Saroo.

9-0 p.m. Nawab Bai of Bombay. Ghazal.


9-45 p.m. 2nd News Bulletin. (Hindustani).

10-0 p.m. 2nd News Bulletin. (English).

*10-15 p.m. Talk (English): "The Andamans—a Penal Paradise."

By L. V. DEAN.

Mr. Deane, who is now Superintendent of Police at Simla, was Assistant Commissioner of the Andaman Islands from 1930 to 1935.

*10-30 p.m. Dance Music.

By Peter Mendoza and His Band.

FOR TROT: "I love to take orders from you!" Written by: Warren. Arranged by: Mihay.

SING: It's a sin to tell a lie. Arranged by: Mihay.


FOR TROT: "I've got my fingers crossed."

SING: You have there that Extra something. Arranged by: Mihay.

*FOR TROT: "You'll remember that..."

FOR TROT: "Merry Christmas!"

11-30 p.m. Close down.

*Released from our Simla Studio.

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**Bombay**

**TRANSMISSION I.**

2-0 p.m. Available Market Rates. European Lunch Hour Selections. (French music).

2-0 p.m. Talk: "Origin of Monsieur and its Movements."

Dr. K. R. RAMANATHAN. Relay from Rotary Club.

2-30 p.m. The V. U. B. Indian Orchestra.

3-0 p.m. Light Music. AFAZAL of Basset.

4-0 p.m. Close down.

6-0 p.m. Relay of Music from Capitol Cinema. (By kind permission of the Management).

6-30 p.m. Talk: "Bhavai's Solution of the Economic Problem."

By SHIRIN FOZDAR.


Vagabond Lover.

As Long As Our Hearts Are Young."

Just a Vagabond Lover."

Paul Whiteman and His Orchestra. "When Day Is Done."

Manhattan Serenade. Comedy Harmonists. "Barcarolle."

Hungarian Dance No. 5."

Vivian Ellis (Piano). "Public Nuisance No. 1."

Eddie Duchin and His Orchestra. "How Do I Rate With You."

You Took My Breath Away."

Barnabas Von Gecry and His Orchestra. "Putzah."

Forgit it, and Smile."

Light Opera Co. "Neapolitan Nights."

Parts 1 and 2.

Sydney Gurdast. "Nada."

Funeral March of a Marionette."

Marek Weber and His Orchestra. "Leo Fall Potpourri."

Parts 1 and 2.

8-0 p.m. A Programme of French Music. By The Viennese Orchestra. (Under Erwin Klein).

"Parlophone Presents" Alfredo's Orchestra.

"My Shawl."

"My S halted."

"Wedding Dance Waltz."

Vocal Music. "Remove.

Benson." By AL-E-AHMAD SAROOR.

Mr. Deane, who is now Superintendent of Police at Simla, was Assistant Commissioner of the Andaman Islands from 1930 to 1935.

*10-30 p.m. Dance Music.

By Peter Mendoza and His Band.

FOR TROT: "I love to take orders from you!" Written by: Warren. Arranged by: Mihay.

SING: It's a sin to tell a lie. Arranged by: Mihay.


FOR TROT: "I've got my fingers crossed."

SING: You have there that Extra something. Arranged by: Mihay.

*FOR TROT: "You'll remember that..."

FOR TROT: "Merry Christmas!"

11-30 p.m. Close down.

*Released from our Simla Studio.

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**Calcutta**

**TRANSMISSION I.**

12-36 p.m. Time Signal.


1-36 p.m. Talk: "Tuberculosis Legislation with regard to its Control and Prevention. By NIRMAL DAS GUPTA of the Tuberculosis Assn. of Bengal.

2-6 p.m. Vocal Music (Bengali). SURENDU GUPTA.

2-21 p.m. SURESH CHANDRA CHAKRABARTY II.

2-36 p.m. Talk: "An Island of Beauty. By BISHNU SARMA.

3-6 p.m. Time Signal. Close down.

5-36 p.m. Children's Hour conducted by MAJINDI. Letters and Riddles.

5-46 p.m. How to grow bulbs in Bottles.

5-56 p.m. Recitation.

6-6 p.m. Health Notes.

6-21 p.m. Short Story.

6-36 p.m. Music Training for Beginners. By P. K. MULLICK.

7-6 p.m. Vocal Music (Bengali). SERRA NAZ MAUNDAER.

7-23 p.m. HARIMAYA.

7-36 p.m. Instrumental Duets. PANNA LAL KAROU—Flute. CHAMU MISRA—Sarangi.

7-51 p.m. News in English.

8-6 p.m. Vocal Music—(Contd.). DHIRAM CHATTERJEE—Classical.

8-21 p.m. Talk: "Panorama of India."

By DIBRUPADA BHATTACHARYA.

8-36 p.m. Instrumental Music. BEAT ORCHESTRA, conducted by TABAR NATH DAS.


9-6 p.m. Pikler's Male Voice Chorus. ABINADAN DHIRAM CHATTERJEE. An Instrumental and Vocal Recital.

9-36 p.m. Half an Hour's Vaudeville, featuring: Freda Gray—Entertainer. TARKASBA RAMBAN TRO.


10-21 p.m. Dance Music (Recorded) from the Studio.

11-36 p.m. Time Signal. Close down.

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Despite our efforts to synchronise the publication of the B. B. C. programmes with our Indian programmes we still find it impossible to include the whole fortnight's B. B. C. programmes in each issue.

The B. B. C. programmes for July 12th (part), 13th, 14th and 15th will therefore appear in our next issue, whilst the B. B. C. programmes for June 28th, 29th and 30th appear on pages 674, 675 and 676.

All Times are given in Indian Standard Time.

672
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Mr. McDonald, Defence Department.
Mr. F. Austin, Telegraph Office.
Mr. C. H. Perry, Intelligence Bureau.
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STOCKISTS OF WORLD RENOWNED RADIOS

THE INDIAN LISTENER

WEDNESDAY, 15TH JULY 1936.

Delhi

VUD 340.136 metres, 882 kc/s.

TRANSMISSION I

8-0 a.m.  
Time Signal.

Arti by A. L. R. Orchestra. (Chorus.)

8-10 a.m.  
B. S. Rawat. Bhataj.

8-20 a.m.  
Rashid Ahmad of Ajmer. Ghazal.

8-30 a.m.  

8-35 a.m.  
Allah Bandi of Hindoo. Khagol Dei.

9-15 a.m.  
Talk (Hindustani) : "Children of Japan." By Chiman Lal.

9-0 a.m.  

9-50 a.m.  
Rashid Ahmad.

"Khajur bakul ye aap naqdi ko dekhte hain, 
Dil hamko dekhta hai dam dil ko dekhte hain."—(Amir Minar)

10-0 a.m.  
Close down.

TRANSMISSION II

1-0 p.m.  
Indian Recorded Music.

2-0 p.m.  
Close down.

TRANSMISSION III

6-0 p.m.  
Time Signal.


6-10 p.m.  
B. S. Rawat.

"Woh yahan ate hain kis kis naz se 
Woh yahan ate hain kis kis naz se."—(Majroh)

6-20 p.m.  
1st News Bulletin. (Hindustani.)

6-30 p.m.  
1st News Bulletin. (English.)

6-40 p.m.  
Rashid Ahmad.

"Shukri thi qayamat tiri mifans da men 
Firmon ne qadum chum liye laghishki pa men."—(Amir Minar)

6-50 p.m.  

7-0 p.m.  
B. S. Rawat. Thumri.

7-10 p.m.  
Allah Bandi of Hindoo.—(Khwaja Pura).

7-30 a.m.  
(6) Thumri Aiman. (7) Thumri Kedara.

7-35 a.m.  
Rashid Ahmad.

"Nishal dil men na ankho men ayan ho, 
Kah to meri jann shhir kahin ho."—(Zafar)

7-45 a.m.  
"For Villagers Only."

8-45 a.m.  
Talk (Hindustani) : "Toad-Stools." By Dr. Asgar A. Hyder.

9-0 a.m.  

9-35 a.m.  
Malang Khan. Vichitra Veen—Beegoshi.

9-45 a.m.  
2nd News Bulletin. (Hindustani.)

9-50 a.m.  
2nd News Bulletin. (English.)

10-15 a.m.  
Talk (English) : "Why do We Eat?" By Dr. H. C. Menkul.

10-30 a.m.  

10-45 a.m.  

11-15 a.m.  
Allah Bandi of Hindoo.——

11-15 a.m.  
(a) "Jo ab usne mein daara na hoga, 
To jina bhi shyad hamara na hoga."—(Hatifat Mohani).

(b) "Lutf ki unse ilkiya na karen 
Ham na aai kabhi kaya na karen."—(Hatifat Mohani).

11-30 a.m.  
Close down.

*Broadcast from our Sitdo Studio.

Bombay

VUB 350.9 metres, 855 kc/s. 31.36 metres, 9,565 kc/s.

11-30 a.m.  
Selections of Indian Music. Gujarati and Hindustani Songs.

1-0 p.m.  
Available Market Rates.

2-0 p.m.  
Close down.

3-30 p.m.  
Relay of Indian Music from Krishna Cinema. (By kind permission of the Management.)

4-0 p.m.  
Gujarati Songs.

5-15 p.m.  
Exposition of Gatha. Exposition of Gatha. (By kind permission of the Management.)

6-0 p.m.  
Commercial News and News in Hindi.

6-25 p.m.  
Yusuf Eftiuddin. Urdus and Hindustani Songs.

7-30 p.m.  
Been Soles. Lashkarmun Chawan.

8-0 p.m.  
Commercial News and News in Hindi.

8-25 p.m.  
Talk: "Topics of To-day." By C. P. G. Wade.

9-10 p.m.  
A Piano Recital.

9-45 p.m.  
Talk: "Topics of To-day." By C. P. G. Wade.

10-30 p.m.  
A Review of Gramophone Records.

11-0 p.m.  
Close down.

Calcutta

VUC 370.4 metres, 810 kc/s. 49.10 metres, 6,109 kc/s.

12-30 p.m.  

Calcutta Weather Bulletin, Market Prices, Jute and Gunny Closing Rates. (In English.)

3-56 p.m.  
Recorded Selections.

6-0 p.m.  
Voice Music.

6-20 p.m.  
Gopal Chandra Mukherjee—Dhrupad.

6-21 p.m.  
Soti—Light.

6-26 p.m.  
Instrumental Music.

6-46 p.m.  
"The Temple of the Universal Mother." Compiled and produced by Banti Kumar.

7-51 p.m.  
News in English. SB

8-0 p.m.  
An Orchestral and Vocal Concert from the SB Studio. (Recorded Selections.)

8-30 p.m.  
Talk: "Mughalshah and its Early History." By C. F. Hooper.

8-51 p.m.  

9-0 p.m.  
Talk: "Devils and Demonology." SB

9-21 p.m.  
Instrumental Music. SB

9-31 p.m.  
Humorous Sketch by Ajit Chatterjee. SB

9-41 p.m.  
Sukriti Prosanna Sen—Light.

9-51 p.m.  
Kashi Nath Chatterjee—Light Classical.

10-0 p.m.  

10-21 p.m.  

B.B.C. for June 28th

TRANSMISSION 5

The following frequencies will be used:

GSP 15.31 Mc/s (19.60 m.), GSB 9.51 Mc/s (31.55 m.),

GSC 14.58 Mc/s (19.88 m.), GC 9.58 Mc/s (31.32 m.),

GSD 11.75 Mc/s (25.53 m.),

GSP 15.31 Mc/s (19.60 m.), GSD 11.75 Mc/s (25.53 m.),

**TRANSMISSION 6

The following frequencies will be used:

GSD 11.75 Mc/s (25.53 m.), GSB 9.51 Mc/s (31.32 m.),

**TRANSMISSION 1

The following frequencies will be used:

GSP 15.31 Mc/s (19.60 m.), GSB 9.51 Mc/s (31.55 m.),

GSC 14.58 Mc/s (19.88 m.), GC 9.58 Mc/s (31.32 m.),
June 22, 1936.

TRANSMISSION 4.

Three of the following frequencies will be used:
GSC 17.97 Mc/s (18.66 m.), GSI 15.26 Mc/s (19.66 m.),
GSS 15.14 Mc/s (19.82 m.), GSF 15.26 Mc/s (19.66 m.),
GSD 11.75 Mc/s (25.53 m.).

10-45 p.m. Big Ben. Music by Chaplin and Debussy.

11-00 p.m. The B.B.C. Theatre Orchestra.

11-30 p.m. Weekly Newsletter, Sports Summary, and

11-50 p.m. A Recital. The Kodetoff Quartet, Helen

12-15 a.m. A Religious Service, Church of Scotland,

12-25 a.m. A Religious Service (Church of Scotland),

12-30 a.m. A Beethoven Symphony,

12-45 a.m. Albert Sandler and the Park Lane Hotel

1-00 a.m. A Recital by Joseph Shadowick (Violin).

1-15 a.m. "Everyman's Club." * A programme
designed to celebrate the twenty-first

1-30 a.m. A Beethoven Symphony.

4-00 a.m. Epilogue. * A Tale that is Told—3: "Unto

4-15 a.m. Close down.

TRANSMISSION 5.

The following frequencies will be used:
GSS 15.14 Mc/s (19.82 m.), GSI 9.58 Mc/s (31.32 m.).

3-45 a.m. "Everyman's Club." * A programme
designed to celebrate the twenty-first

4-15 a.m. Close down.

TRANSMISSION 6.

The following frequencies will be used:
GSS 21.87 Mc/s (15.93 m.), GSI 17.79 Mc/s (18.66 m.).

5-00 p.m. Big Ben. The B.B.C. Empire Orchestra;

6-00 a.m. "Programme to mark the twenty-first birthday

6-15 a.m. The Time of Roses

6-30 a.m. Close down.

All Times are given in Indian Standard Time.
TRANSMISSION 3.
The following frequencies will be used:
GSH 17.97 Mc/s (16.87 m.), GSG 17.97 Mc/s (16.87 m.), GSB 17.95 Mc/s (16.92 m.).

Programmes may be interrupted for commentaries by Colonel H. F. Page, Chairman, Wimbledon on the All-England Lawn Tennis Club Championship, from the Centre Court, Wimbledon.


8-45 p.m. Roland Powell's Quintet, from the Slieve Donard Hotel, Newcastle, County Down.

8-30 p.m. "Your Programmes from Daventry." A talk by the Empire Programme Director.

9-45 p.m. "Three of the following frequencies will be used:
G S F  15.14 Mc/s (19.82 m.), GSD 11.75 Mc/s (25.53 m.), GSC 9.58 Mc/s (31.32 m.).

October 30, 1936.

TRANSMISSION 4.
Three of the following frequencies will be used:
GSH 17.97 Mc/s (16.87 m.), GSG 17.97 Mc/s (16.87 m.), GSB 17.95 Mc/s (16.92 m.).


11-15 p.m. Gramophone Records.

11-30 p.m. The News and Announcements.

12-00 noon. Close down.

1-00 p.m. A Violoncello Recital by W. H. Squire. 

1-45 p.m. Variety. Claude Hubert and Bobbie Comber.

2-00 p.m. English Humorists.-9.

2-10 a.m. The News and Announcements.

2-30 p.m. Violin Virtuosi.†

2-45 p.m. The B.B.C. Theatre Orchestra. 

Greenwich Time Signal at 2-30 a.m.

3-45 p.m. "Your Programmes from Daventry." A talk by the Empire Programme Director.

4-00 a.m. A Recital of Scotts Songs by Isobel Baillie (Soprano).

4-15 a.m. Close down.

* Electrical recordist.
† Gramophone record.

B.B.C. for June 30th

TRANSMISSION 5.
The following frequencies will be used:
GSL 35.1 (33.33 m.), GSC 35.1 (33.33 m.).

2-40 a.m. Big Ben. "Inland Story." A fantasia on insulin themes, composed by Cedric Cliffe. Produced by John Sidney.

5-00 a.m. Kipling Reading. *

5-15 a.m. The B.B.C. Empire Orchestra: leader, Daniel Mela; conductor, Eric Fogg. 


5-55 a.m. "Your Programmes from Daventry." A talk by the Empire Programme Director.

6-10 a.m. The News and Announcements.

Greenwich Time Signal at 6-15 a.m.

TRANSMISSION 6.
The following frequencies will be used:
GSD 11.75 Mc/s (25.53 m.).

7-30 a.m. Big Ben. A Pianoforte Interlude by Pamela Big Ben.

3 Chopin Polonaises; in F minor, Op. 28, No. 18; in F major, Op. 28, No. 23; in B flat minor, Op. 28, No. 16.

8-45 a.m. The Theatre Orchestra.

9-00 a.m. "Three of the following frequencies will be used:
G S P  15.31 Mc/s (19.60 m.), G S F  15.14 Mc/s (19.82 m.).

GSD 11.75 Mc/s (25.53 m.). GSC 9.58 Mc/s (31.32 m.).

GSC 9.58 Mc/s (31.32 m.).

9-15 a.m. "Your Programmes from Daventry." A talk by the Empire Programme Director.

9-30 a.m. Close down.

10-00 a.m. Big Ben. "Dance Music." Producted by John Pudney.

10-45 a.m. Violin Virtuosi. "Ah, Sweet Mystery of Life." (Herbert).

12-00 noon. Close down.

1-00 p.m. The B.B.C. Theatre Orchestra. 

Greenwich Time Signal at 1-00 p.m.

1-30 p.m. "Your Programmes from Daventry." A talk by the Empire Programme Director.

1-45 p.m. Kipling Reading.

2-00 p.m. Big Ben. "Dance Music." Producted by John Pudney.

2-15 p.m. The Theatre Orchestra.

3-00 p.m. "Three of the following frequencies will be used:
GSH 21.47 Mc/s (13.97 m.), GSG 17.79 Mc/s (16.86 m.), GSB 17.95 Mc/s (16.92 m.).

October 30, 1936.

TRANSMISSION 7.
The following frequencies will be used:
GSL 35.1 (33.33 m.), GSC 35.1 (33.33 m.).

4-00 a.m. Big Ben. "Inland Story." A fantasia on insulin themes, composed by Cedric Cliffe. Produced by John Sidney.

5-00 a.m. Kipling Reading. *

5-15 a.m. The B.B.C. Empire Orchestra: leader, Daniel Mela; conductor, Eric Fogg. 


5-55 a.m. "Your Programmes from Daventry." A talk by the Empire Programme Director.

6-10 a.m. The News and Announcements.

Greenwich Time Signal at 6-15 a.m.

TRANSMISSION 8.
The following frequencies will be used:
GSD 11.75 Mc/s (25.53 m.).

7-30 a.m. Big Ben. A Pianoforte Interlude by Pamela Big Ben.

3 Chopin Polonaises; in F minor, Op. 28, No. 18; in F major, Op. 28, No. 23; in B flat minor, Op. 28, No. 16.

8-45 a.m. The Theatre Orchestra.

9-00 a.m. "Three of the following frequencies will be used:
G S P  15.31 Mc/s (19.60 m.), G S F  15.14 Mc/s (19.82 m.).

GSD 11.75 Mc/s (25.53 m.). GSC 9.58 Mc/s (31.32 m.).

GSC 9.58 Mc/s (31.32 m.).

9-15 a.m. "Your Programmes from Daventry." A talk by the Empire Programme Director.

9-30 a.m. Close down.

10-00 a.m. Big Ben. "Dance Music." Producted by John Pudney.

10-45 a.m. Violin Virtuosi. "Ah, Sweet Mystery of Life." (Herbert).

12-00 noon. Close down.

1-00 p.m. The B.B.C. Theatre Orchestra. 

Greenwich Time Signal at 1-00 p.m.

1-30 p.m. "Your Programmes from Daventry." A talk by the Empire Programme Director.

1-45 p.m. Kipling Reading.

2-00 p.m. Big Ben. "Dance Music." Producted by John Pudney.

2-15 p.m. The Theatre Orchestra.

3-00 p.m. "Three of the following frequencies will be used:
GSH 21.47 Mc/s (13.97 m.), GSG 17.79 Mc/s (16.86 m.), GSB 17.95 Mc/s (16.92 m.).

October 30, 1936.
FOREIGN PROGRAMMES FROM JULY

GERMANY (Berlin)

WEDNESDAY, JULY 1.

2-45 p.m. Woman’s Hour : Interesting Female Professions : Women Jockeys. 2-45 p.m. New Musical Programme: Five Pieces of the Town of Quedlinburg.

3-0 p.m. News and Economic Review in English on DJN.

7-30 p.m. Concert of Light Music.

FRIDAY, JULY 3.

2-30 p.m. Shortwave Amateurs’ Hour. 2-45 p.m. Let us sing a Folk Song together. 3-0 p.m. News and Economic Review in English. 3-15 p.m. Military Concert.

7-0 p.m. Foundation of the National Institute for German History. A Talk with Prof. Walter Frank. 7-15 p.m. Wie Moboden sieht es. 7-30 p.m. Concert of Light Music. 7-45 p.m. News and Economic Review in English on DJN. 7-45 p.m. To-day in Germany. Sound Pictures. 8-0 p.m. An Evening for the New Month. 8-45 p.m. Sesideen Programme. 9-30 p.m. Close.

SUNDAY, JULY 5.

2-30 p.m. Folk Song Singing with the Hitler Youth.

3-00 p.m. News of sponsored News and the Wehrmacht. 3-00 p.m. Concert of Light Music. 3-00 p.m. News in English. 5-45 p.m. Greetings to our Listeners.

6-50 p.m. Concert of Light Music.

6-40 p.m. Greetings to our Listeners in the Near East.

7-00 p.m. Little Evening Entertainment. 7-30 p.m. News and Economic Review in English on DJN. 7-45 p.m. To-day in Germany. Sound Pictures. 8-0 p.m. “Gasparine.” 9-15 p.m. Sports Review. 9-30 p.m. Close.

TUESDAY, JULY 7.

2-30 p.m. Famous Musicians: Burchard Kaiser sings songs by Brahms and Wolf. 3-40 p.m. News and Economic Review on the Week in England. 5-45 p.m. A Re. Topical Talk. 3-30 p.m. Germans Out Yonder. 4-30 p.m. Concert of Light Music. 5-30 p.m. News in English. 6-30 p.m. Concert of Light Music.

TUESDAY, JULY 9.

2-30 p.m. Hitler Youth Programme: The Country in Summer. 3-00 p.m. News and Economic Review in English. 3-15 p.m. News in English. 3-45 p.m. Concert of Light Music. 4-30 p.m. Concert of Light Music. 5-30 p.m. News in English. 5-50 p.m. Topical Talk. 6-50 p.m. Concert of Light Music.

FRIDAY, JULY 10.

2-30 p.m. Popular Musical Programme. 3-00 p.m. News and Economic Review in English. 3-15 p.m. Hallo, girls and boys! 3-30 p.m. All, honour to Handicraft! 4-30 p.m. Concert of Light Music. 5-30 p.m. News in English. 6-50 p.m. Concert of Light Music.

SATURDAY, JULY 11.

2-30 p.m. Woman’s Hour: “The Porcelain Heart.” A Play by J. Lorey. 3-40 p.m. News and Economic Review in English. 3-15 p.m. Concert of Light Music. “Singing on the Water.” 3-45 p.m. News and Economic Review on the Week in Germany. Dr. Fritz Schweigcg. 4-40 p.m. Good-night Programme. 4-30 p.m. Concert of Light Music. 5-30 p.m. News in English. 6-45 p.m. Greetings to our Listeners. 6-50 p.m. Concert of Light Music.

TUESDAY, JULY 13.

2-30 p.m. Musical Programme: Little Compositions of three Composers of the H. 2-45 p.m. Variations for Clarinet and Piano by Carl Maria v. Weber. 3-00 p.m. News and Review of the Week in England. 3-15 p.m. Jorg tertell.” Handicraftsmen’s Songs and Jokes. 3-45 p.m. String Quartet in F major by Kurt Henssberg. The Lenzen Quarter. 4-30 p.m. Concert of Light Music. 5-30 p.m. News and Economic Review on DJN. 5-45 p.m. Greetings to our Listeners. 5-50 p.m. Concert of Light Music.

SUNDAY, JULY 12.

6-40 p.m. Greetings to our Listeners in the Near East.

7-45 p.m. To-day in Germany. Sound Pictures. 8-0 p.m. “Ween Gatt will rechter Gesund erweise... “ Music and Poetry. 8-45 p.m. Dance Music. 8-51 p.m. Sports Review. 9-30 p.m. Close.

MONDAY, JULY 10.

2-30 p.m. News in English.

5-30 p.m. News and Economic Review in English. 5-30 p.m. News in English.

6-50 p.m. Concert of Light Music.

7-15 p.m. To-day in Germany. Sound Pictures. 8-0 p.m. “Wen Gatt will rechte Gesund erweise... “ Music and Poetry. 8-45 p.m. Dance Music. 8-51 p.m. Sports Review. 9-30 p.m. Close.

SUNDAY, JULY 16.

2-30 p.m. Romantic Pieces for Violin and Piano by Dvorak. 2-45 p.m. “The German Economic Situation.” Karl Emil Weiss. 3-00 p.m. News and Economic Review in English. 3-45 p.m. News in English. 4-30 p.m. Summer night Reveries. 4-30 p.m. Concert of Light Music. 5-30 p.m. News in English. 5-45 p.m. Concert of Light Music.

THURSDAY, JULY 8.

2-30 p.m. Woman’s Consultation Hour. 2-45 p.m. A Generation’s Changes in Germany. The New Aspect of German Cities. III. Frankfurt. M. 3-00 p.m. News and Economic Review in English. 3-15 p.m. Melodies from Popular Operettas. 4-30 p.m. Concert of Light Music. 5-30 p.m. News in English. 5-45 p.m. Greetings to our Listeners. 6-50 p.m. Concert of Light Music.

FRIDAY, JULY 11.

2-30 p.m. News and Economic Review in English on DJN. 2-45 p.m. “Vor der Olympia.” 3-30 p.m. Rococo Glamour. 4-30 p.m. News and Economic Review in English on DJN. 4-30 p.m. To-day in Germany. Sound Pictures. 5-00 p.m. Chamber Concert for Harpsichord and 6 Solo Instruments by Karl Heller. 6-30 p.m. Old Operetta Times. 7-30 p.m. Close.

SUNDAY, JULY 15.

2-30 p.m. Romantic Pieces for Violin and Piano by Dvorak. 2-45 p.m. “The German Economic Situation.” Karl Emil Weiss. 3-00 p.m. News and Economic Review in English. 3-45 p.m. News in English. 4-30 p.m. Summer night Reveries. 4-30 p.m. Concert of Light Music. 5-30 p.m. News in English. 5-45 p.m. Concert of Light Music.

SO 20 p.m. Greetings to our Listeners in India. 7-00 p.m. Popular Musical Programme. 7-30 p.m. News and Economic Review in English on DJN. 7-45 p.m. To-day in Germany. Sound Pictures. 8-0 p.m. “Wen Gatt will rechte Gesund erweise... “ Music and Poetry. 8-45 p.m. Dance Music. 8-51 p.m. Sports Review. 9-30 p.m. Close.

All Times are given in Indian Standard Time.
Holland (Phohi)

Wavelength 16'88 Metres.

THURSDAY, JULY 2.

6 p.m. Opening announcement. 6-10 p.m. Music. 6-15 "Latest News from Holland." 6-20 p.m. The Broadway Serenaders. 6-50 p.m. "Cross-cross through the Netherlands." 7-5 p.m. Music. 7-20 p.m. The Broadway Serenaders. 7-40 p.m. Well-known Hollanders before the Phohi microphone. Talk. 8 p.m. Close down.

FRIDAY, JULY 3.

6 p.m. Opening announcement. 6-10 p.m. Music. 6-15 "Latest News from Holland." 6-30 p.m. Declamations. 6-50 p.m. Music. 7-10 p.m. Song recital. 7-30 p.m. Well-known Hollanders. 7-50 p.m. Dance music. 8 p.m. Close down.

SATURDAY, JULY 4.

6 p.m. Opening announcement. 6-5 p.m. "Latest News from Holland." 6-15 p.m. The Troubadours. 6-55 p.m. Microphone debates. 7-10 p.m. The Troubadours. 7-30 p.m. News Talk. 7-50 p.m. The Troubadours. 8 p.m. Close down.

SUNDAY, JULY 5.

6 p.m. Opening announcement. 6-5 p.m. "Latest News from Holland." 6-15 p.m. Broadcast by the R. Cath. Broadcast, Ass. for the Indies. March. Talk on literature. 6-25 p.m. The Roman Plectrum Orchestra. 6-30 p.m. "Meeting of the Phohi Club." 7-20 p.m. Light music. 7-40 p.m. Talk on sports. 8 p.m. Close down.

THURSDAY, JULY 9.

6 p.m. Opening announcement. 6-10 p.m. Music. 6-15 "Latest News from Holland." 6-30 p.m. Talk on music by Wouter Hutschensperger. 6-40 p.m. "Meeting of the Phohi Club." 7-20 p.m. Light music. 7-40 p.m. Talk on sports. 8 p.m. Close down.

FRIDAY, JULY 10.

6 p.m. Opening announcement. 6-10 p.m. Music. 6-15 "Latest News from Holland." 6-30 p.m. Cabaret programme. 6-50 p.m. "Cross-cross through the Netherlands." 7-35 p.m. Music. 7-20 p.m. Second part of the cabaret programme. 7-40 p.m. Talk. "We are waiting for the newspaper." 8 p.m. Close down.

SATURDAY, JULY 11.

6 p.m. Opening announcement. 6-10 p.m. Music. 6-15 "Latest News from Holland." 6-25 p.m. The Phohi Trio. 6-40 p.m. News talk. 7-6 p.m. The Phohi Trio continues the programme. 7-45 p.m. Microphone debates. 7-30 p.m. PHILIPS Radio Recital. 8 p.m. Close down.

SUNDAY, JULY 12.


MONDAY, JULY 13.

6 p.m. Opening announcement. 6-10 p.m. Music. 6-15 "Latest News from Holland." 6-30 p.m. Meeting of the Phohi Club. 6-50 p.m. "Louise." 7-40 p.m. Talk on sports. 8 p.m. Close down.

Italy (Rome)

Wavelength 25'4 Metres.

I.S.T. WEDNESDAY, July 1.

7-30 p.m. News in English. VIOLIN CONCERT. Admiral GIOVANNETTI: "We are waiting for the developments of fiction in Italy." Songs by String Quartet.

THURSDAY, July 2.

7-30 p.m. News in English. MODERN MUSIC by Trio. SYMPHONY CONCERT by the E.I.A.R. Orchestra.

FRIDAY, July 3.

7-30 p.m. News in English. Kodaly's Opera "THE MAGyar SPINNING MILL." transmited from the E.I.A.R. Studio in Turin. Short Lecture on "The Structure of Fascist Italy."

SATURDAY, July 4.

7-30 p.m. News in English. EUGENIO GIOVANNETTI: "The Italians' role in the construction of the European railway." Speeches. INTERMEZZI for Light Orchestra. DUETS.

MONDAY, July 6.

7-30 p.m. News in English. SYMPHONY CONCERT by the E.I.A.R. Studio in Rome. Address on subject of general interest. Soprano and Tenor Vocal Duets.

TUESDAY, July 7.


WEDNESDAY, July 8.

7-30 p.m. News in English. CONCERT by Cellist. GIUSEPPE BOTTAI Governor of Rome. Address on "Italian Addis Ababa's future." Songs by INTERMEZZI for Light Orchestra.

THURSDAY, July 9.

7-30 p.m. News in English. SYMPHONY CONCERT of Modern Music by E.I.A.R. Orchestra. PIANO CONCERT. VIOLIN CONCERT.

FRIDAY, July 10.

7-30 p.m. News in English. "JENUFA" transmited from the E.I.A.R. Studio.

SATURDAY, July 11.

7-30 p.m. News in English. "JENUFA" transmited from the E.I.A.R. Studio. SHORT-SELECTIONS.

MONDAY, July 13.


TUESDAY, July 14.

7-30 p.m. News in English. CONCERT of OPERATIC MUSIC by the Ababa's Orchestra. OPERATIC SONGS by Tenor and Soprano.

WEDNESDAY, July 15.

7-30 p.m. News in English. VIOLIN CONCERT. Comm. GIUSEPPE BOTTAI: "We are waiting for the developments of fiction in Italy." Songs by String Quartet.

Short-Wave Timetable

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### SELECTED SHORT-WAVE BROADCASTING STATIONS

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<td>Radio (France),</td>
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Radio-Minded . . . but can’t purchase a Set yet?

Reasons are obvious:

1. Too many makes—Numerous Models—Adjectives are exhausted in describing each Model, whether really good or bad.

2. World-Range dependable Radios are beyond the reach of middle class people.

WARDS “AIRLINE” RADIOS

have definitely solved these problems for you.

1. Just only 2 Models—7 tube & 10 tube.

2. Remarkable Radio Values impossible to duplicate.

3. Guaranteed for One Year inclusive of Spare parts’ service.

DO THESE FEATURES NOT OFFER YOU REAL VALUE FOR YOUR MONEY?

Here are Reception Reports to convince you that in Wards “Airline” you have the best in Radio.

Bombay, 17th April 1936.

“I am delighted to inform you that the 7-tube “Airline” Radio Set that I purchased from you about six months ago is giving very satisfactory results. I have heard many types of Sets, but I find the “Airline” gives very clear reception”.

Sd/- Inspecting Officer of the Indian Stores Dept.

Bombay, 30th April 1936.

“In reply to your enquiry as to the working of the Wards “Airline” 10-tube Radio Set that I purchased from you about 9 months ago, I would state that I am very satisfied indeed with its performance, and consider that it is by far the best set of the many I tried before purchasing your Set. In addition to American, Australian, English, German, French, Italian, Dutch and Russian short-wave stations, I am able to get Calcutta on medium wave. The tone of the set is excellent and I am well pleased with my choice”.

Dealers:—In Wards “Airline” franchise you obtain Permanency, Stability and Reliability.

Electric Speciality & Radio Company,
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