B.B.C. and Baird Television

Half-Hour Experimental Transmissions

IT is announced by a British official wireless message that the British Broadcasting Corporation has set aside half-an-hour daily for the broadcasting of television on the Baird system. It is specifically announced that the transmissions are to be of an experimental nature only, and the Corporation declines to accept responsibility in the meantime for their quality or the results obtainable by receivers. The object of the demonstrations is to give wider opportunity for the development of the possibilities of the system.

This decision marks the end of a controversy which has waged in Britain for some time past. Various experimental demonstrations have been given at different times to B.B.C. officials, and in the early days were met with a negative outcome so far as the Corporation was concerned. Supporters of the Baird system, however, were not satisfied, and in consequence of private demonstrations given by the Baird Corporation, sufficient press support was forthcoming to create a public opinion insisting upon a more sympathetic attitude by the B.B.C. Finally a demonstration was given to B.B.C. officials which had the effect of convincing them that there was scientific grounds for helping, and that favourable outcome would be possible if experimental co-operation could be secured. Negotiations took place between the B.B.C. and the Baird directors, with the result now announced. It is hoped that the experimental transmissions now being undertaken will lead to rectification of such troubles as still require solution.

ONE of the most informative and concise summaries of the Baird system ever written was that recently published in the "Review of Reviews," from the pen of Major E. R. Macpherson, O.B.E., F.R.G.S., F.A.G.S. He is a Fellow of the Television Society, and wireless correspondent of the "Review of Reviews." In the interests of our readers we produce part of this article from the "Review of Reviews," as reprinted in "Television":—

"The credit of being the first man to demonstrate, publicly, true television, belongs to John Logie Baird, a brilliant young Scot.

"In order to achieve successful television the requirements may be briefly stated as follows:—(1) Means of scanning an image, so as to subdivide it into tiny sections, or elements. (2) Means of transforming the resulting picture elements, or light impulses, into electrical impulses, which can be transmitted to the distant receiver, either by wire or wireless. (3) Means of reconverting electrical impulses into light impulses, and by means similar to (1), causing them to cover, or illuminate, a screen, thus reproducing the image at the transmitter. (4) Means of synchronising the transmitter and receiver, i.e., causing them to run in step or exactly at the same speed.

"These are the requirements as Mr. Baird saw them six years ago.

"Many optical methods were already known which would fulfil (1). The selenium cell and the photo-electric cell were in existence and seemed to cover (2); and for (3) there was the neon valve. Methods of synchronism had already been developed to a high degree, and seemed to meet the requirements of (4).

"It all appeared so simple that Mr. Baird fancied there must be a catch somewhere. He soon discovered that the stumbling block lay in requirement (2), viz., the light-sensitive cell. A further difficulty lay in (4), for Mr. Baird realised that the usual methods of synchronism were quite unsuitable for television. After six months' work he was able to transmit shadowgraphs, but he found that to transmit the images of the objects themselves was a very different thing.

"It was not until October, 1925, that he had the satisfaction of seeing the doll's face (which he used for experiments) on his receiving screen not as an outline, but as a real image with shading and detail.

"On January 27, 1926, he gave a demonstration to more than forty members of the Royal Institution, the first demonstration of true television ever witnessed. This demonstration, and others which followed (including the trans-Atlantic tests), aroused considerable interest and enthusiasm. The original machine can now be seen in the South Kensington Science Museum.

The System Described.

"Since then, Mr. Baird has continually improved the technique of his instruments, and his system (an adaptation of the spot-light and scanning disc) may briefly be described as follows:—

"A light proceeding from a brilliant source is condensed into a slender beam not more than an eighth of an inch in diameter.

"By means of a revolving disc this spot of light is made to traverse the face of a sitter in such a fashion that it flies across it again and again at slightly differing levels, so as to scan the face completely in less than one-tenth of a second. In front of the sitter's face, but screened from direct light, are a number of photo-electric cells of special design. These cells gather light reflected from the part of the face which at any distance is illuminated by the spot of light.

"The photo-electric cells generate a current proportional to the intensity of the reflected ray, and this current is used at the receiver to build up an image by the aid of a neon glow lamp. At the receiving end, slotted and rotating discs then select the light from part of this glow, and deposit it on a screen in such a fashion that each patch of light occurs exactly on the part of the object from which it was reflected.

"It is interesting to note that several other well-known experimenters are being converted to Mr. Baird's methods of solving the television problem. Mihaly has abandoned oscillating mirrors for discs. Professor Hans Thiring, of Vienna University, is of the same opinion as Mihaly.

"Our own leading men of science, including Sir Ambrose Fleming, have expressed their high appreciation of the Baird system.

Recent Progress.

"A few days ago I was permitted, through the courtesy of Lord Angus Kennedy, to visit the Baird Laboratories in Long Acre, where every facility was given me to see things for myself.

"I was much impressed by what I saw. The improvement in technique since the Radio Exhibition last autumn was most marked. The clarity and detail of vision were such that I easily read the time to a minute on a boldly marked watch held in front of the transmitter (the receiver was, of course, in another part of the building), and I easily recognised the faces of people whom I had seen before.

"Music and speech were almost simultaneously transmitted in perfect synchronism; and in the case of a man playing the piano the limits of the picture permitted the whole keyboard to be seen. I was informed that extended scenes had been successfully transmitted, taking in all the performers, though, of course, the figures were much smaller. They had to be compressed, as it were, into the same area as a head and shoulder view. One can sum up the Baird system in two words: "It works!'

"I was also introduced to the wonders of noctovision, where the sitter is in complete darkness, but his face is flooded with infra-red rays (which are visible to the naked eye), and the image comes out clearly on the receiving screen at the other end. One can imagine the most startling developments from this side-line of Mr. Baird's discoveries. I clearly recognised my friend's face, and all the contortions he did for the experiment, despite the fact that he was in complete darkness at the other end."

In supplementary comment, it is stated that the transmission of television does not occupy a very wide wave band, but that it can be transmitted within the 10 kilohertz band, that is, the frequency band allotted by the Geneva Convention to European broadcasting stations. Mr. Baird readily admits that finality has by no means been reached, but is confident that further progress will be made in this system if given opportunity to use one or more of the B.B.C. stations. That opportunity is now available to him, and the radio world will await the outcome with interest.

Radio Progress

Short Wave Transmission

THE following communication has been received through National Electric Engineering Company:—

As interest in the broadcasting from Schenectady by the shortwave transmitters has been increasing, the studio management has for some little time been sending out the schedules, giving complete programmes two days in advance of the actual broadcasting. In other words, on Mondays, the listeners in the foreign field received planned programes for the following Wednesday.

These programmes are sent out first by the voice, followed by the repeating in morse code. Following are the days, with wavelength and kilocycles and time of transmission. Time given is Greenwich civil time, with New Zealand time in brackets:—

Monday: W2XAF, 2140 G.C.T. (Tuesday, 9.20 a.m.); W2XAD, 2140 G.C.T. (Tuesday, 9.20 a.m.).

Tuesday: W2XAF, 2140 G.C.T. (Wednesday, 9.20 a.m.).

Wednesday: W2XAD, 2140 G.C.T. (Thursday, 9.20 a.m.).

Thursday: W2XAF, 2140 G.C.T. (Friday, 9.20 a.m.).

Friday: W2XAD, 2140 G.C.T. (Saturday, 9.20 a.m.).

Saturday: W2XAF, 2140 G.C.T. (Sunday, 9.20 a.m.); W2XAD, 2140 G.C.T. (Sunday, 9.20 a.m.).

Sunday: W2XAD, 2140 G.C.T. (Monday, 9.20 a.m.).

After September 9, the above schedule will be transmitted one hour earlier.

W2XAD is broadcast on 15,340 kilocycles and approximately 19.56 metres. W2XAF is broadcast on 9530 kilocycles with approximately 31.48 metres.

We would be greatly interested in learning as to whether this broadcasting of programme schedules in advance is of benefit or service.

The local studio is also much interested in receiving comments as to reception and the acceptance of the programmes. We do not ask detailed facts, but information only that will show us the radio public is interested and willing to co-operate in that we may plan our programmes and broadcasting, in a technical sense, that will enable us to give you more complete satisfaction in this respect throughout the foreign field.