Television in America

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Mr. Scott-Taggart continues his interesting and highly informative first-hand account of television "on the other side," with his impressions of the Farnsworth and N.B.C. systems.

This Farnsworth Laboratories are a modern organisation employing about thirty engineers. They have a transmitting station and studios far away, and they are doing a good enough job to make the demonstration for me. It may seem a little strange that two of the principal television concerns in the States had nothing working without notice, but as experimental work is constantly going on and arguments being discussed, it is not so surprising after all.

Probably my advent at both places was a relief and an interference with routine work.

Dick Farnsworth is one of America's television geniuses. He was born in California where his work was done, and became employed by Farnsworth for several years in their television laboratory. He is now running his own concern in England, and is associated with Farnsworth and have a licence for working with him. The F.M.I. have the benefit of R.C.A. research, so we can in this country fairly claim to get most of the benefits of American television activity.

Warmly Welcomed

I was warmly welcomed by the Farnsworth engineers and saw both receiving equipment and, later, the transmitter and studio. The demonstration was especially interesting as it was an actual demonstration, by radio in other words, the real thing. On the general prospects of television, the view seems to be centred as everyone else has spoken to America. That is, that they do not know. I raised the question of pictures also and its associated technical problems, but here again I thought I overestimated the importance of dimensions. It should be pointed out that on a screen of size, if it can be seen, might involve a complete telescoping of present methods. But technique can be multiplied and definition television has been based, although the R.C.A. projection system worked to have saved the situation.

The broad future of television in the States is complicated by the absence of monopoly and licence fees. There is less optimism than in Britain, although there is a feeling that "it is bound to come." The business manager of Farnsworth thinks that children will be the greatest customers of television. The scope for cartoons (Mickey Mouse and Co., unlimited) will be enormous. Many children will insist on parents getting television sets. There may be something in this. Although love of pictures will certainly be a craving that a television should be able to satisfy, and American children, at any rate, get what they want, they are less imaginative. Too may have television, but if audience has his hand in on seeing the pictures, well, he'll see them.

As regards picture dimensions, Farnsworth's were ready to stretch a point, and 18 in. by 15 in. was mentioned as a good size. But their own picture as demonstrated to me was only 12 in. by 9 in. They said they were getting tubes made. As 6-in. tubes are quite common in Britain, I felt Farnsworth were being a little ahead.

They demonstrated their apparatus, but I must say the results were inferior to those of Farnsworth which I had seen the day before. The apparatus seemed to have some difficulty in keeping the eyes open, and when I went to their transmitter and found it cold, the heating lights were not surprised. But the studio was entirely different with my comment about the scarcity of the lighting. Indeed, I said one could not be expected. I was glad I didn't try.

I asked for a few tests to be made while I was at the receiving end. A newspaper was held up. The headline came out poorly and adjustments were made, but when the headlines were made clearer the white parts of the newspaper became patchy with black. The synchronicity was also indifferent.

Somewhat Disappointing

The detail I saw at Farnsworth's was considerably less than at Farn's, and I must admit to some disappointment. It is very difficult to have to make criticisms or comparisons when one is shown to have some advantages and given information. But I have in each case revealed myself in advance as a critic who proposes to compare the results he has seen.

I do not know whether the apparent inferiority of results is due to the Farnsworth camera tube, which some people are inclined to think is less effective than the $200,000 of Zwicky's, or, if it is, is it less effective than the telescope, or Zwicky's. But, apart from this possibility, one is at a loss to explain differences between systems. There is obviously much common ground, and Farnsworth has so obviously and admirably contributed to the progress of television that one cannot at all critically of a hastily arranged demonstration may give a false idea of its work. There is no doubt that there is no other television engineer in America than Farnsworth.

The N.B.C. demonstration was given in New York. The National Broadcasting Corporation is associated with the R.C.A. (Radio Corporation of America), and are carrying out "live" tests for the R.C.A. Victor people who do the real research. Their position is rather similar to that of the B.B.C. relative to Marconi's. They experiment and suggest, but do not do any major research. I visited Mr. F. W. Willso, the young head of the Experimental Dept. of the N.B.C. He is automatically in charge of television. Instantly, he knocked on the head the idea that American concerns throw open their secrets and give all their technical knowledge freely to those who come to study them. He mentioned that only the previous day someone had called with the idea of studying their studio systems and acoustic technique. He had been forced to explain that the acquisition of their knowledge had cost them money and time, and that their accumulated experience was an asset they proposed to keep to themselves. Possibly all this was a hint to myself. At any rate, I was admitted to the studio and was shown around the building and formally approved before I was allowed to leave it in "Radio City." Mr. S. A. Stone, president of television from the organisation that will probably be the first to put it over when the time comes.

A Film Employed

The demonstration at this occasion was not a reception from the station on the Empire State Building, but from the green room, and the results were solely obtained from films. The film was wound on to an iconoscope which may be seen in a very simple, single-circuit affair which looks like a square, thick-skinned plate mounted in a glass box. The requisite conditions were ideal for a demonstration. The size of the picture was about 9 in. x 7 in., or, less...

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and the colour was greenish-gold. Personally, I disliked this colour very much, but the N.R.C. seemed to like it. There were large, dark shadows in patches over certainly half the picture, and though less noticeable when things were happening, they remained. On inquiry I was told it was "the usual black spot of the Iconoscope."

A Useful Comparison

I was shown a film of a school under water, the pupils wearing breathing costumes. It was a film I had already seen at the cinema, so I was able to compare results. It came through quite well. I was then shown a news reel—obviously a very recent one. An interview with the Rev. Mr. Jardine was highly topical. He was very easily recognizable from his newspaper photographs. He thought the marriage of the Duke of Windsor would be happy because it was founded on a spiritual basis. Another Roehm also came through well—undoubtedly, for the last time. There was no trace of delay or failure of synchronisation, but the general results were, in my opinion, poorer than those of the B.B.C. and worse than Philco's.

The N.R.C., however, seemed to feel that they had put over a good show and that television had definitely reached the entertainment stage. Here again, the idea that the picture was too small was reversed rather oddly, and once again I was told that you would not get any sense detail into a larger picture, and so forth.

I asked Mr. Morris what were the prospects of better television. He told me I had seen a 90 per cent. perfect picture under present conditions, and he did not see how present conditions could be altered. This was highly depressing news after what I had seen, but during the last ten years I seem to have heard equally pessimistic statements—even though Mr. Morris himself did not appear to think there was anything pessimistic in his remarks, as he believed we can do very well under the present conditions.

Already the problem of wavelengths has arisen in the U.S.A. There is the usual scramble whenever new parts of the spectrum are found useful. The agreed standard in the U.S.A. for television pictures is 64 lines and 30 pictures per second. This seems the limit that television can handle, and that only with a big effort. The band width used by the N.R.C. is 24 megacycles each side with 1 megacycle reserved for sound; a total band in the ether of 6 megacycles. No approval for this has yet been granted by the United States authorities, but it will be sought at a conference of Havana in November. Financial technique, according to the N.R.C., could not handle a wider band width even if it were allowed. In other words, we must be satisfied with 48 lines, and if this does not satisfy, then we must just resign our.

Throughout my inquiries into television in the States I found no trace of any system other than those using the orthodey tube. No mechanical system was being developed, although they had all read about the Symphonie system.

Progress Is Leisurely

The public reaction to television in America cannot be ascertained, as there is no service. Technical progress does not seem to be of a whitewash character. Everybody seemed to be keenly in their pursuit of the ultimate goal which they all seemed to feel was nearly reached. To me there seemed far too much satisfaction, and I felt glad that in England we had a public service to keep the companies on their toes and in close contact with public opinion.

No doubt a great deal of the successful elements of television in England are due to American investigators; but, nevertheless, my final reactions are that British television seems to have a better chance of success as a finished product. If in any respect we are behind the last that is available in the U.S.A., it is something we can easily put right. We are marching on the high road to a successful public service; American financial backing. For once they are going to learn from us.

J. S. T.