

**COLOR TELEVISION**

*-the way ahead*

*Statement of*

Frank Stanton

President of Columbia Broadcasting System, Inc.

*before the*

Federal Communications Commission

UHF Color Television Hearing

DOCKET No. 7896

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## *Foreword*

In the fall of 1945, a short time after CBS engineers had turned from war research, ultra-high frequency transmission of brilliantly clear, sharply detailed color images became a reality.

During the next eleven months television was readied for its role as a public broadcasting service. All necessary components of a complete television broadcasting system were built and tested by Columbia. The ultra-high frequencies were submitted to a more extensive survey than was made of the original low-frequency channels prior to their authorization for commercial operation of black-and-white television five years ago. During a series of demonstration broadcasts the public reaction to color television was carefully analyzed.

As the final step, on September 27, 1946, CBS petitioned the Federal Communications Commission to adopt engineering standards for color television in the ultra-high frequencies, and to authorize the operation of commercial color television stations.

The public hearing opened December 9. The vast amount of data resulting from years of extensive research in every phase of ultra-high frequency color television was presented in testimony by various members of the Columbia organization. Dr. Peter Goldmark, Director of Engineering Research and Development, described in detail the system on which the standards recommended by CBS were based. Mr. William Lodge, Director of General Engineering, presented the complete propagation data. Dr. Donald Horton, Director of Columbia's Television Audience Research Institute, described his studies of the consumer reaction to color television. The testimony of Mr. Adrian Murphy, Vice-President, pointed out the many practical advantages of color and the importance of permitting no delay in introducing color television as a public broadcasting service.

We think you will be interested in reading Mr. Stanton's testimony because it states the fundamentals of Columbia's television policy.

IN the Columbia petition filed with the Federal Communications Commission September 27, 1946, we requested that the Commission authorize the operation of commercial color television stations in the ultra-high frequencies and adopt engineering standards for this new service. At this hearing, which is being held upon that petition, other Columbia witnesses will go fully into the various pertinent technical, economic, and operating problems involved. I will confine my own testimony to a statement of Columbia's basic position, a brief review of some of the characteristics of color television and Columbia's participation therein, and a statement of our future policy.

#### *The Broadcasters' Interest in Color Television*

CBS is unique among the more active television pioneers in that it is a broadcaster not engaged in or affiliated with radio or television equipment manufacture. In this respect, our interest is identical with that of the great majority of broadcasting licensees, because our primary interest starts, instead of stops, when a purchaser buys a receiving set, whether it be a radio set or a television set.

This common interest made it inevitable that our views on television should be shared by other licensees. In resolutions submitted to the Commission, the representatives of nearly 150 independently-owned broadcast stations affiliated with CBS requested that commercial stations

From propagation and transmission surveys conducted by our Engineering staff, one of which was made in cooperation with Commission engineers, we will submit at this hearing what I believe to be the most extensive data concerning propagation characteristics of any new broadcast service thus far conducted by any engineering organization—certainly a more extensive engineering survey than was made of the channels originally authorized for commercial operation of black-and-white transmissions five years ago.

Columbia's time and effort in furthering color in the ultra-high frequencies will have been very well spent if the Commission shall promptly grant our petition allowing operation of commercial stations for this new service. We will not only have saved ourselves further heavy operating losses in black-and-white television operation, but similar losses for the great number of other broadcasters who have not yet entered the television field will also be saved. At the same time there will result a greater and speedier acceptance of television by the public, because of the inherent advantages of this new service.

### *Technological Advantages of Ultra-High Frequencies*

Television operation in the ultra-high frequencies provides certain basic advantages, quite apart from the fact that it also makes possible a satisfactory color system. In the first place, these frequencies will provide better and clearer pictures which will be virtually free of "ghosts" through employment of simple directional receiving antennas. They will be virtually free from man-made noise and natural static.

### *A Nation-Wide, Competitive Color Television Service*

The ultra-high frequencies will also permit more than twice as many television channels, with many more stations, than the present low frequencies, thereby making possible nation-wide and competitive pro-

gram services. In the low frequencies assigned to television today there is room for only 13 channels of 6 megacycles each. The band between 480 and 920 megacycles will provide room for 27 channels of 16 megacycles each. Under the present Commission standards, there are 15 Metropolitan Districts which are not assigned any metropolitan television channels in the present low frequency bands and an additional 27 Metropolitan Districts to which only one metropolitan television channel is assigned. The ultra-high frequencies will allow at least two competing television stations in substantially all Metropolitan Districts in the country, with significant increases in the availability of more channels in a large number of Metropolitan Districts.

### *Color Fulfills the Promise of Television*

The addition of color to television is from our point of view, and from the point of view of other broadcasters and the public as well, the most important and significant feature of the type of service which the ultra-high frequencies make possible. I am sure all will agree that television can fulfill its promise only by building a large audience which is served by the best possible programs and by attracting sufficient advertising revenue to provide the broadcaster with a reasonable hope of profit.

### *Columbia's Proposed Color Standards*

I would like to make clear that our concern is to have a system of color television promptly available for the benefit of broadcasters and the public. We are much less concerned with who gets the credit for developing the system or whether it is called "all-electronic" color, "mechanical" color, or by some other name. For this reason we are proposing a *set of standards*, rather than arguing for any specific type of equipment.

### *Advertisers' Enthusiasm for Color Television*

Advertisers and advertising agencies who have seen the CBS color television demonstrations have been just as enthusiastic as the general public. Some advertisers have said that they would find it impractical to utilize any television medium other than color. While a number of advertisers have been experimenting in black-and-white, in the long run advertiser interest cannot be sustained on the basis of purchase of insurance and experience for the future; television will have to stand squarely on its own merits as an advertising medium.

### *Chain Reaction Growth of Color*

We all know that advertisers are attracted as the audience grows, and the audience grows as advertisers spend enough money to support a program service with adequate public appeal. It is readily apparent that the increased interest of the public and the increased interest of the advertiser which color television evokes will cause the chain reaction which can hasten and make certain the day of widespread television service throughout the country.

### *The Broadcaster's Choice*

The economic fate of the broadcaster is dependent in television, no less than in aural broadcasting, upon the rapid development of circulation. The broadcaster's interest in shortening the period during which he must operate necessarily at a substantial loss impels him to do everything he can to expand his audience—both in number of sets and hours of viewing.

By authorizing commercial ultra-high frequency color television broadcasting at this time the Commission will afford broadcasters the opportunity of deciding now which kind of television service they want

to go into. Having decided, the broadcaster will invest in either black-and-white or color. If, however, the Commission should not authorize commercial color television at this time, a broadcaster must go into low frequency black-and-white in order to engage in television broadcasting, or he must remain waiting on the sidelines. The way things stand today he may well decide to sit on the sidelines in order to avoid the duplicate costs and burdens which a subsequent change-over to color television would involve.

### *CBS Plans for Going Ahead*

At the present time Columbia is operating in New York City Station WCBS-TV a low frequency commercial black-and-white station, and Station W2XCS, an experimental color television station. If the Commission acts favorably on the CBS petition, we intend to convert our present extensive black-and-white operations into ultra-high frequency color television as rapidly as feasible. We are prepared to inaugurate a partial color television program schedule within a few weeks after a favorable Commission decision and to build it into a substantial, regular color television program schedule within a year. We also intend to proceed with the development of a nation-wide color television network as soon as ultra-high frequency color stations are operating and relay facilities are available.

We firmly believe that the commercial status of color television will provide the needed stimulus to large-scale color television set manufacturing so that the improved service can be brought to the public within a year.

### *Next Move Is the Commission's*

CBS has developed ultra-high frequency color television almost single-handed to this point. During this development, Columbia has brought



it out of the laboratory stage. Upon reviewing the comprehensive data to be submitted in this hearing, I am confident that the Commission will find that ultra-high frequency color television is fully ready for commercial operation and that commercial authorization at this time is wholly in the public interest. We cannot go ahead further on color television without a go-ahead signal from this Commission in the form of the promulgation of appropriate engineering standards for commercial color television and the allocation of the ultra-high frequencies for the establishment of commercial color television stations throughout the country. The next move is the Commission's.

### *Now Is the Time for Decision*

This Commission is now in the position of being able to eliminate further delay and confusion about television. This is the critical turning point in television, and if the Commission should fail to act quickly and decisively, it may soon find itself deprived, as a practical matter, of the power to act.

This Commission is in the fortunate position today that the public does not have a large investment in television receivers. The Commission may find that its power to determine the standards of nation-wide television will be locked out, if, in the period immediately ahead, a substantial number of low frequency black-and-white sets—incapable of receiving high frequency color—is purchased by the public. If, for example, a half million black-and-white sets are sold within the next year, about \$200,000,000 will have been invested by the public in black-and-white television. The Commission's freedom to act will thus lapse with the elapse of time.

This Commission now has an opportunity, perhaps its last for many years, to permit the American public to decide for itself what kind of television it wants. We hope that the Commission will not be fooled by

*The Columbia Broadcasting System*

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