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To: M. Gibbs/E. Jones

Date: 26 July 1968

Subject: Bench Test Contrast Data

From: B. Siegel

There are a number of unanswered questions concerning the procedures and presented results of this test (see attached questions). However, based upon our present understanding of the data we conclude that:

1. The contrast transmission of this device is unacceptable. According to the on-axis data presented, a processing gamma of 2.73 would be required to properly view a 2:1 luminance ratio target.
2. Light scattering increases significantly off axis, thereby decreasing contrast transmission and making it impossible to simulate scene contrast across the apparent field.

The above results are not compatible with data taken in March and are not in agreement with subjective viewing of various gamma stimulus. It is vital that the contrast transmission of this device be resolved so that stimulus requirements can be defined. It is recommended that a meeting be arranged to review the results of this test.


Barry Siegel

Attachment: Questions on Contrast Transmission
Data of the Bench Test

cc: D. L. DuMond
F. F. Doppelt
J. A. Abrahamson
B. Giordano

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Attachment

QUESTIONS ON CONTRAST TRANSMISSION
DATA OF THE BENCH TEST

1. Were there three 1/32" diameter disks on the target or was there one 1/32" diameter disk that was moved to various field locations?
2. Was a microscope objective used in front of the photomultiplier? Was data taken at the target plane? Paragraph 4.1 indicates that a microscope was used at the target plane.
3. How does the calibration table shown relate target and dummy reticle background readings?
4. How was the .01" pinhole used at the target plane to reduce flare? Was it in place while taking reticle plane measurements?
5. Calculation of contrast transmission is incomprehensible. The calculated contrast transmission is almost identical to that resulting from previous data, but the data presented shows light scattering increases of 5-6 times previous data.

Reference document should be cited!

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