

File

826-5

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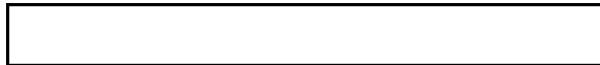


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November 10, 1965

Re: Task I, Item 1 Visitation




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Dear John:

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Enclosed are 4 copies of report on visitation to

To confirm the behavior of film in the UV,  is going to make, in the next couple of weeks, spectral transmittance measurements of step wedges of both triacetate and ester film.

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I will keep you posted.



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WAS:ws

Enclosures

Declass Review by NGA.



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November 10, 1965

HIGH RESOLUTION SCREEN

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Background

The current contract is the second phase of a unique attack on some of the limitations of rear projection viewers. In the first contract which ended in July 1965 the feasibility was investigated of using transparent phosphors excited by ultraviolet radiation to obtain screens which would

- a.) Have screen resolutions very much higher than the 10/mm of present screens.
- b.) Good brightness for off-axis viewing, preferably a true Lambertian distribution.
- c.) Low reflectivity of ambient room light so that viewers could be used in well lighted rooms.

The investigation was highly successful on all counts and screen resolution up to 450 l/mm was obtained. The current contract is a continuation in order to increase phosphor efficiency and obtain brighter screens and to improve the effectiveness of the optics and light source in the ultraviolet region.

Summary

A good analytical program is being run along with the experimental phosphor work. The mechanism of sensitizer absorption of ultraviolet, intermolecular excitation and primary phosphor visible radiation shows promise of greatly improved efficiency.

It appears that the gray scale rendition of film in the near ultraviolet is nearly identical to the gray scale rendition in the visible. To confirm, the spectral transmission of step wedges will be measured.

Discussion

At the request of the Technical Representative of the Contracting Officer, a visitation was made to [redacted]

[redacted]

The company has changed names. It is now [redacted] Although it is called a division, it still has a separate corporate structure with [redacted] as President.

A new team has taken over the technical activity and [redacted] is doing the basic phosphor work. He has initiated an analytical program to accompany his experimental program. He says that the basic mechanism of the phosphor luminescence is in some cases a two step process.

- a.) The ultraviolet radiation is absorbed by a sensitizer.
- b.) The sensitizer excites the primary phosphor which excites the visible radiation.

Apparently the primary phosphor is self quenching and it therefore appears to be desirable to utilize it in low concentrations. On the other hand, since the ultraviolet radiation is absorbed by the sensitizer a higher concentration may increase the efficiency. Ed hopes that an optimum combination can be found. Significant improvement will require long and patient lab work with a keen awareness of fundamental theory. The mechanism of absorption and radiation is affected strongly by the carrier solvent and the mechanism may not be so simple as indicated above.

The question of continuous tone performance of film in the ultraviolet region as compared to the visible region was partially covered in the final report on the original contract. Spectral transmittance curves of a number of Kodak Aerial film bases and fixed out Kodak Aerial films is shown in Figure 2-1 and Figure 2-2. For the region of interest, 0.3654 microns, absorption varies from 12% to 35% which is equivalent to a base fog density of 0.056 to 0.187. In addition the relative brightness vs. diffuse density plot of Figure 3-2 compares the gray scale rendition of the "ultraviolet using fluorescent screen" with "white light using standard rear projection screen." Note that for the diffuse densities of 0.2 to 1.0 the white light and ultraviolet light curves are coincident within a few percent. Below 0.2 density it appears there is relatively more absorption in the ultraviolet. Figure 3-2 includes the effect of the phosphor screen and therefore conclusions regarding the contrast rendition of film in the ultraviolet region are not necessarily valid.

[redacted] Model 450 Spectrophotometer with a range from 0.16 to 2.7 microns. He will measure spectral transmittance of density step wedges of triacetate and thin base estar film. These measurements will be reported in a later report.

[redacted]

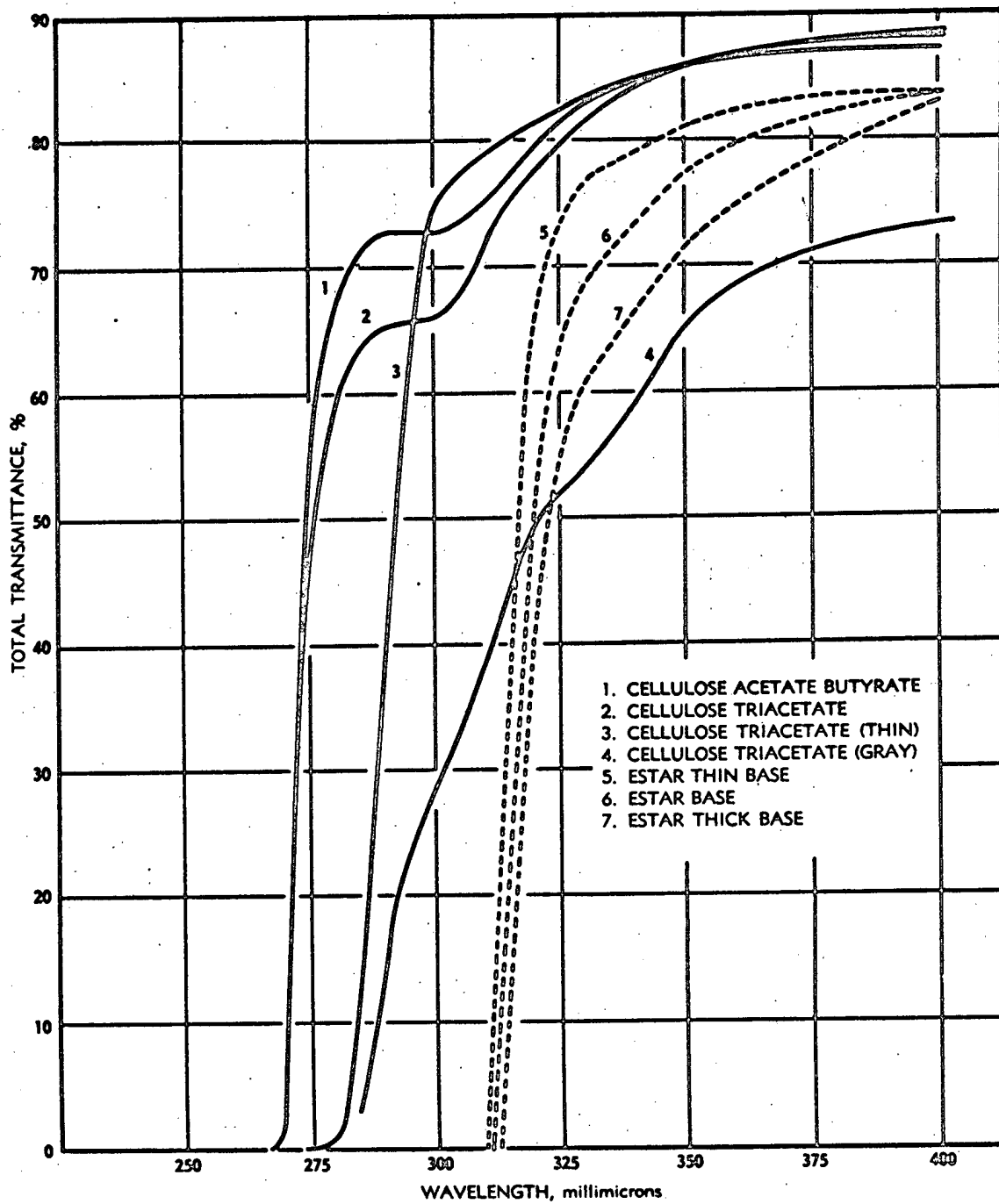


FIGURE 2-1
Spectral Transmittance of
Kodak Aerial Film Bases (Ultraviolet)

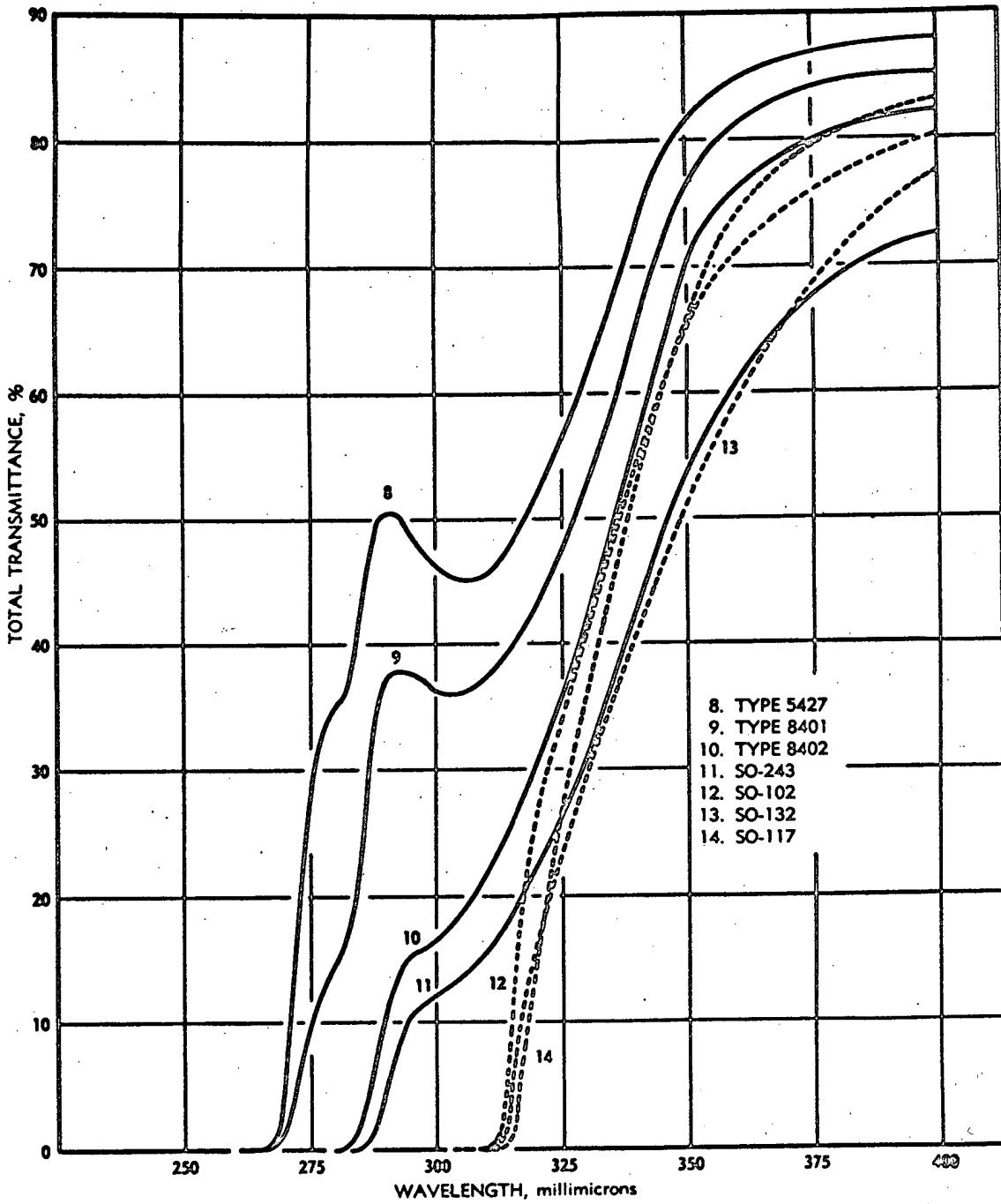


FIGURE 2-2
Spectral Transmittance of
Fixed Out Kodak Aerial Films (Ultraviolet)

9-2554

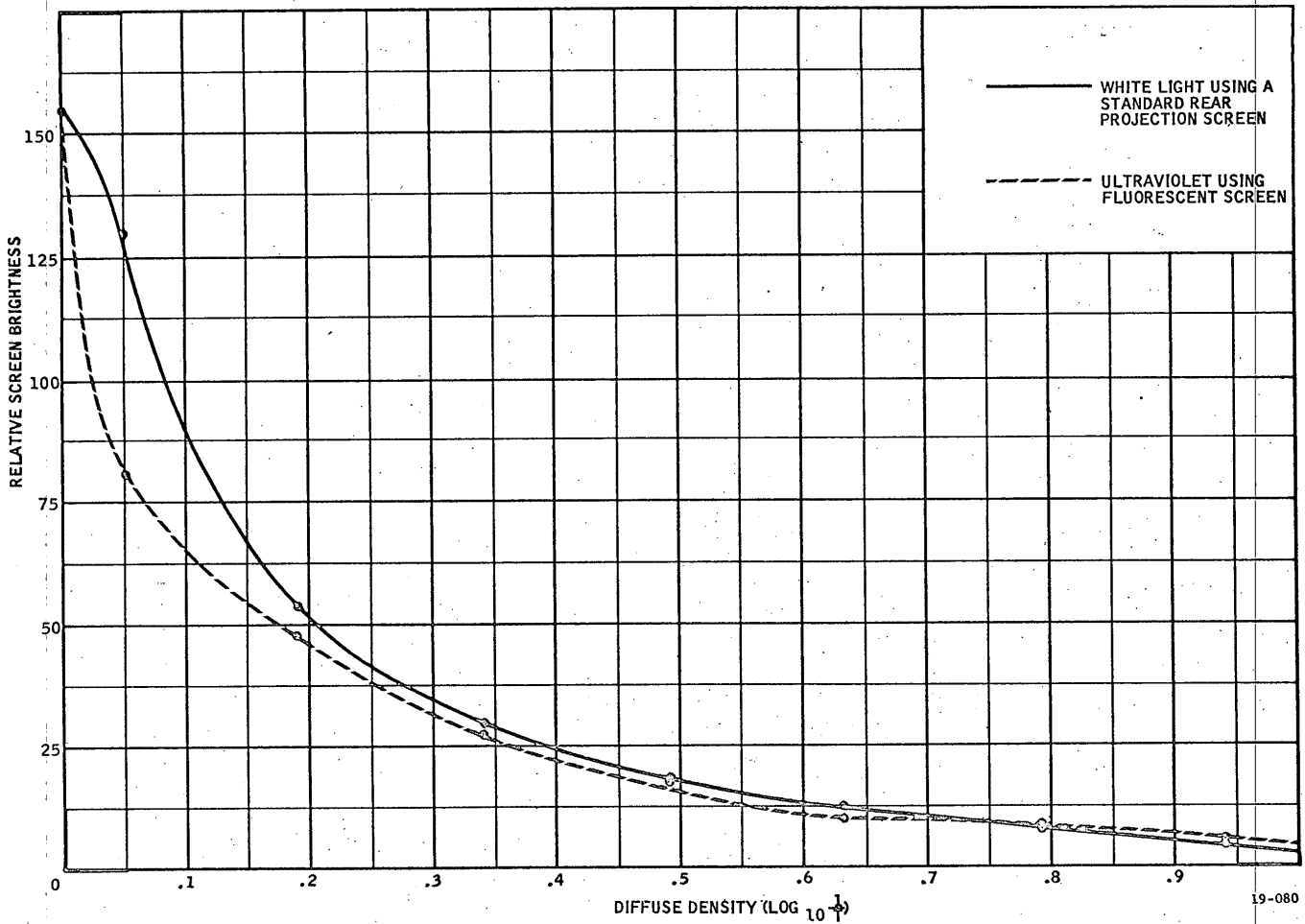


FIGURE 3-2

Diffuse Density Variation of Kodak Step Tablet #3 (404-ST-13)

3-5

19-080

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November 16, 1965

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Dear Lou,

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Enclosed is form 1841 requesting clearance for   has been on our Board of Directors since inception of the company and is now taking on the duties of Corporate Secretary Treasurer. Since he will be more intimately concerned with business activities and since the secretary must witness the Corporate Seal on contracts, I feel it is advisable to request his clearance.

STAT

John

F.V.I.

W.S.

File #26-5

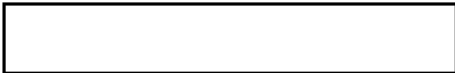
November 16, 1965

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Re: My letter of October 16 on Plastic Containers

STA



Please let me know if the quantity of containers you need is on the order of 10,000 to 12,000 or more. Enclosed is a self addressed stamped envelope.

If you find your original mold and get some more off it, is there anyway I can buy 300 for my own office use?

Chil.