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NPIC/TDS-6-134
12 December 1966

MEMORANDUM FOR: Director, NPIC
THROUGH : Executive Director, NPIC
SUBJECT : Rejection of the Electrocolor Material Study Project by the Assistant Deputy Director for Intelligence (ADDI)

1. The attached memorandums contain the background for the rejection of the Electrocolor Material Study by [redacted] ADDI. [redacted] memorandum reflects a lack of knowledge concerning the entire scope of color photography. It is also apparent that he is not aware of the value of research and development in the collection and exploitation of imagery and has committed CIA to a rejection, for the time being, of the entire field of exploitation of color photography and has thus also disregarded the collection efforts.

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2. I feel strongly that the national mission of NPIC should be carried forward with regard to this matter and propose that as a first step, I be granted approval to take the subject project to the Department of Defense for further consideration. I believe that support from the military offices and agencies of the intelligence community is warranted at this time and that they should have a voice in this matter even though CIA has, in effect, spoken for NPIC and voted against the exploitation of color.

3. As a final note, the very purpose of undertaking the Electrocolor project was to answer questions similar to those posed by Mr. [redacted] in his last memorandum. He has apparently not understood the basic staff study and has waived aside your strong rebuttal and recommendations set forth in the memorandum of 18 November 1966.

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[redacted signature box]

Assistant for Technical Development, NPIC

Attachments: a/s

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2 - TDS/NPIC

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2 December 1966

MEMORANDUM FOR: Director, NPIC

SUBJECT : Electrocolor Material Study

1. I have reviewed your resubmission of this proposed Study, but remain unconvinced that we are on a sufficiently sound base for proceeding with it at this time. I believe we should put this proposed contract aside for now with the intention to review it again in about a year should the situation change.

2. Meanwhile, if you think it appropriate, you might take the following steps to provide information as background to this review:

a. Describe and give the results of efforts in both the collection and exploitation fields to determine the exact role and value of color for national intelligence purposes.

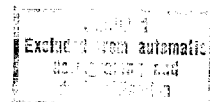
b. Describe the results of experimenting with color manipulation in the equipment used by photo-interpreters. If none has been done, discuss the feasibility of this as a primary approach.

3. Based on the above, we should be able to come to some logical conclusion as to whether we should be able to decide on whether to proceed with further color investigation.

4. If the way seems to point to further development, we could decide next year to:

a. Assess which of various lines of color investigation will most directly benefit photo-interpretation, with accompanying cost analysis to the degree feasible.

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b. Determine broad specifications for further color study or equipment development.



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Assistant Deputy Director for Intelligence

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DRE-4757-86

NPIC/D-265-66

18 JUL 1966

MEMORANDUM FOR: Deputy Director for Intelligence

SUBJECT : Resubmission of the Electrocolor Material Study Project for FY 1966

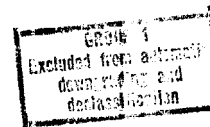
REFERENCE : Memorandum for the Director, NPIC, dated 29 July 1966, Subject: Request for Approval of the Electrocolor Systems Study Project with [redacted] from the [redacted] Acting Director for Intelligence

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1. I have reviewed the R&D project "Electrocolor Material Study" and am compelled once again to submit the project to you for further approval. Your memorandum, referenced above, cites three reasons for recommending that the proposed Electrocolor Study not be forwarded for approval and contract. I feel strongly that it is a mistake to further delay this particular project; I am somewhat more concerned about the reasons you have given for suggesting that the study be shelved; I believe these reasons are invalid in light of the comments which I set forth below.

2. Your first reason: the community has not decided on the value and role of color photography. This statement avoids the main issue. Extensive efforts are underway in both the collection and exploitation fields to determine the exact role and value. From the exploitation standpoint it is necessary to study each technique which can contribute to a complete assessment of the role and value of color photography. We strongly advocate experimentation with color processes and in particular the Electrocolor process because it is: (a) the only system to provide complete color control, (b) the only practical means for producing false color, and (c) by far the most versatile method of handling color reproduction. All of these qualities are of irreplaceable value for assaying the gamut of color's applicability to reconnaissance exploitation. It is true that only a small volume of color film has been received in the Center thus far. Recently, however, even 400 feet from [redacted] placed a strain on the Center's production facilities. Practically all new photographic collection systems, including the latest system, are designed to accommodate color; it is inconsistent not to be prepared to exploit

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color inputs. We must make substantial preparations to play our part in establishing the role and value of color; we are very late in beginning those preparations.

3. Your second reason for not forwarding the project was that methods are presently available to process the color photography scheduled for collection, even though these methods may not be ideal. In fact, there is presently no satisfactory method for fully exploiting color reconnaissance photography. Our projects relating to color are based on two primary concerns.

a. All known methods of processing color photography are inherently several times slower than those for black-and-white photography. Color film requires at least three times longer to process than black-and-white. To produce a segment of film with varied density, as is frequently done to facilitate the interpretation process, requires but a few minutes with black-and-white; it could require days with color because of the difficulty in rectifying the color balance.

b. The most effective means of extracting intelligence from color photography have not been determined. There is no evidence that a green tank is easier to identify than a black one; the resolution of color photography has to be much lower than that of black-and-white, simply because of the three emulsions involved. It is expected that a primary use



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4. The third reason for disapproval was that other NPIC R&D projects are of higher priority and that approval of the Electrocolor project might pre-empt FY 1967 funds before these higher priorities are approved. We have recently submitted a priority list and a deferral list relative to our R&D projects. In analyzing our program to draw up these lists we have been led on both occasions to the conclusion that this project is among our most important. This is not an irrevocable commitment to a system or even the building of equipment. It is a study of an existing technique to determine its applicability in the exploitation of color reconnaissance materials within NPIC. To do less than this may well place us in the position in the future of having to try to exploit exotic inputs with antiquated techniques. It is to avert this possibility that NPIC has its own R&D capability.

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5. While there can be no guarantee that Electrocolor will be successful, it is essential that we make every effort to find improved means of exploiting the color photography which NPIC is and will in all probability continue to receive. For the reasons stated in this memorandum it is recommended that the Electrocolor Material Study be approved.



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ARTHUR C. LUNDAHL

Director

National Photographic Interpretation Center

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29 July 1966

MEMORANDUM FOR: Director, NPIC

SUBJECT : Request for Approval of the
Electrocolor Systems Study
Project with [redacted]
[redacted]
from FY-1967 Funding

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1. On the basis of a review of the attached proposal and discussions with [redacted] [redacted] I recommend that this proposal not be forwarded at this time.

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2. There are several reasons for this recommendation. The community has not really reached a conclusion on the value and role of color photography in the National Reconnaissance Program. Methods for processing the color photography scheduled for collection are available, although they may not be ideal. Because the Agency's budget has not been approved by Congress, we cannot be sure of the R&D funding for NPIC. I feel that there are other NPIC projects of higher priority and that approving the Electrocolor Contract might pre-empt FY-1967 funds before these higher priority contracts are approved.

3. I think we ought to look at this again when Congress has passed our budget, and we know what funds we actually have for R&D.

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[redacted]
Acting Deputy Director for Intelligence

Attachment