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NPIC/P&DS/D/6-328
8 March 1966

MEMORANDUM FOR: Chief, Production Services Division, NPIC

SUBJECT: [redacted] High Resolution Step and Repeat Printer
(Printer # 2)

1. Recently tests have been conducted at the contractor's plant by P&DS to determine the resolution capability of the breadboard for printer # 2. Using an Air Force three-bar high contrast 800 l/mm target, a series of tests were run on type 8430 film. Results varied from group 8 step 1 (317 l/mm) to group 8 step 3 (397 l/mm) giving an average of about 350 l/mm.

2. The contractor claims that by using an optically flat platen with good ultra violet transmission characteristics and better light collimation that the first model will readily achieve 400 l/mm on type 8430 film. This claim appears to be technically feasible and reasonable.

3. In essence the first model of printer # 2 will be a high resolution step and repeat printer capable of attaining 400 l/mm resolution on type 8430 film, printing frames up to 30 inches in length and up to 9 1/2 inches in width, and incorporating a frame sensing device for automatic operation. The frame sensing device has been tested successfully for printer # 1 at GENRADA.

4. The [redacted] step and repeat contact printer demonstrates the following advantages in advancing the state-of-the-art with respect to contact printing.

a. The ability to produce uniform exposure over a full 30 inch frame is accomplished by the use of a unique traveling mercury vapor light source. The traveling light source (slit) also provides automatic exposure control.

b. The unusual approach of a rolling air bag provides uniform contact between the negative and printing stock and therefore results in a higher resolution flat-bed contact printer than any previous flat-bed printers utilizing a stationary air bag.

c. It provides a significant first step in the partial automation of multi-duplication of selected exposures on a given roll.

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GROUP 1
Excluded from automatic
downgrading and
declassification

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5. To date NPIC has expended [redacted] on printer # 2 and GBRADA [redacted] on printer # 1. The funds required to complete printer # 2 are [redacted] for printer # 1. All costs related to printer # 1 will be paid by GBRADA. Before P&DS can make a final decision whether to cancel the contract for printer # 2 or approve an overrun/change in scope of [redacted] to complete the first model it would be helpful to have a definite recommendation from PSD - the ultimate user.

There are three alternatives:

(1) Cancel the contract and receive no equipment. Termination costs would probably be at least [redacted] above the [redacted] already expended.

(2) Complete the first model printer and operationally test in PSD.

(3) Complete the first model printer, and under the direction of P&DS test and de-bug at [redacted] or a commercial facility and upon demonstrated acceptable performance turn over to PSD for operational use.

6. We would appreciate your advising us as to your recommendations on the alternatives presented in paragraph 5. by 11 March in order that our contract monitor, who will be visiting [redacted] on 14 March, may initiate the proper course of action.

[redacted]
Colonel, USAF

Assistant for Plans and Development, NPIC

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NPIC/P&DS/DE? [redacted] (2 Mar 1966)

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