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IAS/TA 2/69  
16 January 1969

MEMORANDUM FOR: Chief, TSSG/NPIC

ATTENTION : [ ] DED/TSSG

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SUBJECT : [ ] 1540 Split-Format Light Table (prototype)

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1. We appreciate being invited to participate in discussions at the [ ] on 10 January 1969 concerning the subject R&D contract. In return we are listing below our comments on the specific items which were considered.

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2. POWER-ASSISTED HAND CRANK MECHANISM (mock-up was available for inspection)

## a. Advantages

- (1) Hand crank conveniently located near the operator.
- (2) Film did not spill off supply spool when hand cranking was stopped.
- (3) No objectional noise was apparent.

## b. Disadvantages

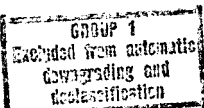
(1) Precise positioning of a particular image area (under a microscope rhomboid, for example) would probably be quite difficult. The hand crank operated almost completely free of drag and the film coasted after movement of the hand crank was stopped-requiring movement of the crank in the opposite direction to stop the film.

(2) The null position of the motor drive knob (located adjacent to the hand crank) varies with the amount of film on the take-up and supply spools. It must be readjusted when operation of the hand crank (or the motor drive) ceases, in order to keep the film from creeping. (Broadening of the null position could reduce this disadvantage somewhat.)

(3) The proposed hand crank mechanism will not provide the film movement capabilities specified in NPIC's development objectives for the 1540 light table, i.e., drive two parallel rolls of film in the same, or opposite, directions with the same hand crank.

## c. Conclusion

Although the mock-up hand crank mechanism seemed to operate satisfactorily, it appeared to offer no advantages not already available in the motor drive system. Both provide a convenient method of moving film across the light table at various

**SECRET**

SECRET

IAS/TA 2/69  
Page 2

speeds, but neither permit the fine positioning necessary to align two images in stereo. For this reason, the combination of a motor drive plus a mechanical crank (not motorized) mechanism seems to be the most logical alternative.

3. MOTORIZED ELEVATING MECHANISM (proposed- mock-up not available)

a. Advantage

(1) Would permit the height of the table to be adjusted without physical effort by the operator.

b. Disadvantages

(1) Would probably make the table more expensive.  
(2) Would make the table more difficult and costly to maintain.

c. Conclusion

Since, in IAS, elevating table heights, once adjusted by a particular user, are seldom changed, a motorized elevating capability does not appear to be either desirable or cost-effective.

4. MOTORIZED MICROSCOPE CARRIAGE (proposed by  no mock-up available)

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a. Advantages

(1) Direction of movement controlled by a switch on the microscope ring mount, thus the operator need not operate mechanical X-Y handwheels for fine positioning as on the 940 split-format table.

(2) Speed would be adjustable to keep movement across the field-of-view to about three seconds at any magnification. Manual free movement of the carriage would also be possible when desired.

b. Disadvantages

(1) Possibility of vibration from the motors.  
(2) Increased procurement and maintenance costs.

c. Conclusion

The desirability and cost-effectiveness of this capability appears doubtful.

SECRET

**SECRET**

IAS/TA 2/69  
Page 3

5. FILM SPOOL ALIGNMENT (proposed by [redacted] mock-up without visual referencing scale was available)

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The visual referencing scale described by [redacted] appeared to be adequate, but we believe a spring loaded detent would be an improvement over the type which he demonstrated.

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6. These comments are offered in the hope they will aid in developing a necessary exploitation tool whose sophistication and cost will not inhibit its procurement in adequate quantities.

[redacted]

Technical Advisor, IAS

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Distribution:

- Orig. - Addressee
- 1 - [redacted]
- 1 - TA chrono

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