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EVALUATION OF ALTERNATIVE  
DEVELOPMENT PLANS

March 4, 1965

DECLASS REVIEW by NIMA/DOD

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1.0 SUMMARY

25X1A [REDACTED] proposes to perform an analysis of the impact on exploitation capability which would be created by introduction of wider input material. The study will be conducted in conformance with the requirements of your letter request.

The study will consist of an evaluation of the most promising alternatives to handling such a contingency in terms of cost, time, and possible effects on quality and efficiency. The product of the study will be a report discussing significant finds and presenting recommendations for development action appropriate to each contingency.

A time and material type contract is proposed as best suited to the problem. The task is estimated to require approximately 50 man days of effort. The final report is to be delivered on or before 15 June 1965.

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## 2.0 PROBLEM DISCUSSION

The possibility exists that some future acquisition system may produce an input which exceeds 9 1/2 inches in width. It is prudent that plans for such an eventuality be made in advance. Adequate contingency plans require a thorough investigation of the impact of a wider film format on exploitation operations and an evaluation of alternative means of establishing an adequate capability.

There are a number of factors which must be considered in choosing the best approach to handling wider film. Ultimately, of course, there are the economic and lead time aspects. This involves an accurate assessment of the extent to which operations will be affected and analysis of the feasibility of modifying present equipment or developing entirely new instruments. Such would be a relatively simple task if the prospect of a new film were to be limited to a specific size. The situation is considerably complicated, however, by any uncertainty as to the exact widths which might be encountered. Rather than conduct hasty studies at each indication of a change it would appear more effective and economical to explore the affects which any wider film up to, say, 24 inches would have.

The objective of a broad approach to the problem would be to develop a contingency plan or set of plans considering alternative approaches to the whole spectrum of reasonably probable film widths. A satisfactory solution for one film width may not be the most effective for another.

### 3.0 STUDY APPROACH

The problem of how to plan for the possibility of wider film will consist of analyzing the cost and lead time consequences of several alternative equipment considerations. Intuitively, some of these alternatives appear to have quite restricted application. On the other hand, these might be the optimum solution to a specific width and cannot be simply ignored. However, since the time available in which to conduct this study may restrict its scope, some alternatives may be omitted by mutual agreement.

#### 3.1 Consideration of Alternatives

Basically there are but two alternatives to the problem. Either modify or duplicate all equipment to accommodate a wider film or develop processing equipment to convert input material in some way to be compatible with present viewing and measuring equipment. There are, however, a number of possible variations of the latter alternative with sufficient promise to warrant further investigation.

Alternative 1 - Convert all types of equipment required to exploit wider film. This would require alteration, replacement, or duplication of most of the present equipment. A major portion of the instruments now in use with 9 1/2" roll film would be affected by even a slight increase in width. Except for microstereoscopes and similar magnifying equipment and some enlargers, most of the processing, viewing, and measuring equipment would not accommodate wider film without some modification. This appears, off hand, to represent the most complete conversion required and would probably provide an upper limit on costs. The actual costs would probably be some direct function of film width.

Alternative 2 - Change the film width at the processing stage to something compatible with present equipment. At the very minimum such an approach probably requires development of new

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non-standard processing equipment. At the worst, it might also affect the efficiency of the operation or the quality of the exploitation material.

Alternative 2a - If wider film is an even multiple of one of the widths in present use, a processor could be developed to produce rolls of contact prints which can be accommodated on present equipment without modification. This choice would probably provide a least cost solution but only in the fortuitous circumstance of such a readily compatible film size.

If wider film is not an even multiple of one of the present sizes several choices are available.

Alternative 2b - Develop a processor which would produce contact positives in two or more widths which were less than the present 9 1/2" width. This would require modification of the 9 1/2" equipment to accept the smaller size film, possibly with some reduction in the efficiency of the equipment. Although development costs of the processor might be high, conversion of viewing and measuring equipment would be relatively inexpensive.

Alternative 2c - Develop a processor which would produce two or more 9 1/2" wide contact prints from the original material. If the input material were to be, for example, 18 inches there would be an area of overlap 1 inch wide. Thus, there would be duplication in viewing with attendant loss of efficiency but this might be offset by savings in utilizing present equipment.

Alternative 2d - As alternatives to either 2b or 2c develop a processor which would produce contact prints of a compatible width at 90° to the long axis of the original roll of film. The efficiency of this approach would depend upon the other dimension of the original format. The approach would have

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the advantage of producing a roll of film which would fit present equipment with no alterations although it might also result in some increase in the number of rolls to be handled.

Alternative 2e - Still another option would be consideration of optical enlargement or reduction rather than contact printing. One or more compatible widths might be produced in this manner from a single input roll. It is recognized that some loss of resolution might occur in a reduction in size. However, under some circumstances such an approach should at least be considered. For example, if a 10-11" wide input material were to appear, the slight loss in reducing to 9 1/2" might be an acceptable alternative to altering all of the other equipment!

These alternatives are meant to be illustrative rather than exhaustive. The possibility of still other options is apparent and more will be considered in the course of the study. Those discussed do, however, represent concepts to be studied in deriving development plans.

### 3.2 Conduct of Study

The evaluation of alternative approaches will consist of a review of present and projected equipment, analysis of the feasibility of modifications, and a determination of the time and cost aspects of each.

Much of the information regarding present equipment is already available as part of another study. The characteristics of equipment under development is available from internal sources.

The feasibility of modifying current and projected equipment will be determined to the extent possible from past experience. Where such guides are inappropriate and for the

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cases where entirely new equipment would be required it will be necessary to confer with equipment suppliers.

The study will be conducted in cooperation with [REDACTED]

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[REDACTED] who is particularly knowledgeable about the operational aspects.

The study effort will be about equally divided between your facility and our offices in [REDACTED]. In addition to the

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travel necessitated by the time to be spent at your office, visits with certain equipment suppliers and [REDACTED] are anticipated.

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To complete this task by mid June without unduly delaying the maintenance study a starting date in mid March is required.

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#### 4.0 COST ESTIMATE

Because of the many uncertainties, the short time schedule, and the factors not directly under the control of the contractor, this study is proposed on a time and material basis. With the anticipated splitting of time with the maintenance study, costs are included for only 2 1/2 round trips to D.C. rather than the 4 planned.

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