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14 February 1967
635 - OD-148

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[Redacted]

Post Office Box 8031
Southwest Station
Washington, D. C. 20024

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Subject: [Redacted] Progress Report
January 1967 - Project No. 635

Gentlemen:

In accordance with contract provisions on the above project, we are enclosing three (3) copies of [Redacted] Progress Report on Project 635 for the period January 1967.

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Also enclosed are two (2) copies of our Financial Report for this period.

Very truly yours,

[Redacted Signature]

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Executive Vice President

LHB/aw

Enc. (3) P. R.
(2) F. R.

DECLASS REVIEW by NIMA/DOD

Cert. #855547

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[Redacted]

GROUP 1
EXCLUDED FROM AUTOMATIC
DOWNGRADING AND
DECLASSIFICATION

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635 Progress Report

PERIOD COVERED: January, 1967

DOCUMENT NO.: OD-146

A. PRESENT STATUS:

The unit has been modified to include most of the changes resulting from the first inspection in late December. These changes include: (1) Motorizing the elevating table, (2) Redesign of the high intensity light sources and fabrication of new parts, (3) Elimination of various mechanical interferences, (4) Design and fabrication of gear and film drive guards.

Work on the electronics is continuing and it is expected that final electronic checkout will commence shortly.

B. PROBLEM AREAS:

1) Difficulty in viewing through microscope while in seated position. - This was discussed last month and a proposal for a change-in-scope submitted.

2) Tracking Light Sources: Redesign of the mechanism for magnetically coupling the master with the slave was completed and new parts fabricated. The new design shows some improvement in performance although there are still areas over the format where mechanical interferences cause problems. This problem is still being investigated.

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There is one possible solution to this problem which has not been investigated yet. If it were found that the image brightness was sufficient when using the microscope at high power and with the densest film material, then the separate high intensity light sources would not be required. We assume that when the brightness is checked in this manner, it will not be found to be sufficient, however, we believe that the brightness of the general illumination source can be increased considerably (2 times). This would require a change in some of the electrical components (hopefully not the lamps themselves) and the addition of blowers for cooling the lamp grids and film at the higher brightness levels. Conceivably, the blowers would not be required if the higher brightness periods were limited to a percentage of the total on time (25% for example). The light source could have two modes of operation and the higher brightness mode could be commanded by the operator only when needed (such as to pick out darker details in a density 2.0 area). The control could be a simple foot switch which would approximately double the brightness. A thermostatic interlock could be provided in the lamps to prevent higher-than-desirable temperatures if the maximum hi-brightness duty cycle were exceeded. This interlock would prevent the operator from going into the high brightness mode, however, he could still use the normal mode illumination.

We believe this approach is worth further consideration.

3) Platen Raising Polynoids - During the most recent assembly (in preparation for the customer's technical representative) some difficulty was experienced with the operation of the platen

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raising polynoids. Limit switches were shifting their position and some sliding member were exhibiting excessive friction. This, however, we do not consider a basic problem because the mechanism had been operated satisfactorily previously.

4) Delay in receipt of approval of the change-in-scope: Although the proposed eyepiece adaptor is mechanically independent of the basic table, it must be designed (from a human engineering viewpoint) and, preferably, initially checked out using the light table. Further delay of approval will become a problem because the table will be delivered before it can be used to aid in the adaptor design.

C. PROJECTED WORK FOR FEBRUARY:

Unit will be made operational including any changes necessary to make the high intensity lights perform properly.

D. FINANCIAL REPORT:

Financial report for the month of December is enclosed.

REW/maj

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