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19 September 1966

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[Redacted]

[Redacted]

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Subject: [Redacted] Progress Report -
August 1966 Project [Redacted]

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Gentlemen:

Enclosed is a copy of [Redacted] Progress Report
on Project [Redacted] for the period covered August 1966.
Also included is a copy of our Financial Report for this
period.

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Very truly yours,

[Redacted Signature]

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Encl: (1) P.R.
(2) F.R.

[Redacted]

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Declass Review by NIMA / DoD

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[Redacted]

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[REDACTED]

PROGRESS REPORT

Period Covered: August 1966

25X1

Document No.:

[REDACTED]

Dated: 16 September

PRESENT STATUS

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[REDACTED]

Instrument is complete and undergoing the test, rework, and debug phase.

The objections to the roller noise during high speed transport and lack of protective covers over the platen solenoids have been recognized and action taken. Nylon rollers have been changed to ball bearing mounted, non segmented, chrome plated rollers. Solenoid covers have been designed and are being fabricated.

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[REDACTED]

Instrument is at same stage [REDACTED] with exception of some parts on the high intensity light sources.

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PROBLEM AREAS

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[REDACTED]

In regard to those characteristics (reported last month) which the customer's representative has found to be undesirable, various steps have been taken.

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1) The noise problem is still under investigation. .

2) A design change has been investigated to change the rollers to chrome plated ones instead of the segmented nylon rollers.

3) New motors with higher horsepower ratings have been ordered.

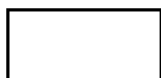
The implementation of these changes as "fixes" has not been scheduled yet, although the effect of using higher rated motors and chrome plated rollers is being investigated on the [] unit.

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There was a failure of a silicon rectified bridge which was repaired at the customer's facility [] The cause of this failure was not determined. It is assumed that it was due to a faulty component.

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Film Tracking - The film would not track in a straight line during transport. This was causing the edge of the film to be forced against the flange of the spool and would in some instances cause damage to the film. The cause of this was believed to be the complicated film path through the guide rollers and the difficulty in lining up all the roller axes. The first attempt to solve this problem was by using special care in roller alignment. A considerable amount of time and energy was expended on this, but to no avail. As a last resort, the writer decided to redesign the film path since the more involved path was necessitated only by method of film tensioning (which is no longer used [] - there is a glass pressure platen.)

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The change was made and the problem eliminated.

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The change was made only [] because the more complicated film path is still required [] which uses tensioning rollers instead of a holddown platen.

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Film Sticking - During high speed transport of the film, adhesion of the film to the underside of the glass pressure platen occurs, which overloads the capability of the transport system. This tendency to stick to the glass is not, at present, fully understood. It appears to be either an electrostatic or aerodynamic phenomenon. It is particularly severe with unprocessed film. At any rate, we believed that we have eliminated the problem by positioning the guide rollers so that the film enters closer to the center of the space between the underside of the pressure platen and the top of the glass viewing surface. However, unprocessed film still does not work.

This problem would not exist if the pressure platen could be raised more. However, since the incorporation of the pressure platen was made after the instrument had been designed and parts fabricated, the space available for this was severely limited.

Film Transport - Some difficulty has been experienced in the transmission of power through three chains that run the whole length of the instrument. To avoid possible interference with the electronic components (for power assist), which are required to be packaged integral with the mechanism, the chains are run in Teflon tubes. This has resulted in some increased friction and prevented the use of the idler sprockets.

This problem is being investigated; in all probability, the design will have to be changed somewhat to one employing shortened guide tubes (in the critical electronics area) and idler sprockets to guide and adjust the chain tension.

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Possible Damage Due to Mishandling of X Carriage



It was recognized that possible damage could be caused by an inexperienced operator, either lifting the front of the X carriage and dropping it, or by violently moving it. The design was changed to include a holddown track along the front of the instrument to prevent the carriage from being raised more than 1/64 of an inch and a stop on the rear for the same purpose. These changes are being incorporated.

Carriage Travel - It was discovered that although the design complies with the requirements of the specification, the center of the microscope would not traverse the full edge-to-edge distance when two 5 inch films were being viewed. We realized that the original Design Objectives probably intended that there be full coverage on two 5 inch films and recognized the improvement which would result by making a change. Changes in the design have been made and the equipment is being modified to provide this added travel.

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It is anticipated that the same problems will exist  Thus, as changes are made on one they are also made on the other. However, this cannot apply to the design change for the solution of the film tracking problem because the original configuration of the rollers is required for the proper operation of the film tensioning system (no pressure platen is used  because of interference with high intensity tracking light source magnets). This problem is a formidable one and is being actively investigated.

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PROJECTED WORK FOR SEPTEMBER

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[redacted] Design changes will be made, unit debugged and made ready for final inspection. A preliminary inspection will be made by the customer's representative on September 4.

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[redacted] Unit will be kept up to date [redacted] in re- 25X1
gards to changes. High intensity light source will be completed and installed. Unit should be ready for preliminary inspection before months end.

SUMMARY OF CORRESPONDENCE

Visit to customer's facility [redacted] August 17, 1966. 25X1
In response to a report from the customer's representative that one of the motors was overheating, [redacted] visited the facility 25X1
to investigate the problem. A shorted bridge rectifier in the motor controller was found to be the cause. The rectifier was replaced and the unit operated satisfactorily.

Financial Statement

A financial statement for the month of August is included.

Next 1 Page(s) In Document Exempt