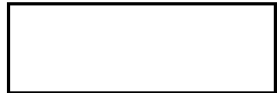


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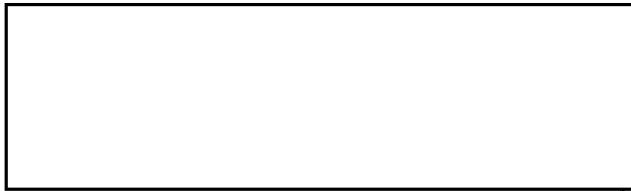


C E R T I F I E D

Ref: 552-0D-286


16 March 1966

STAT



Progress Report - February 66
Projects No. 552 and 552A

Gentlemen,

Enclosed are three (3) copies of 
Progress Report on Projects 552 and 552A for the period
February 1966.

STAT

Very truly yours,



STAT

Executive Vice President

Declass Review by
NIMA/DOD

LB/de

Enc: (3) P.R.

Cert. #205639

STAT



I'm still waiting on a briefing.

PROGRESS REPORT
For
VERSATILE, HIGH PRECISION STEREO
POINT TRANSFER DEVICE

Period Covered: February 1966
Dated: 14 March 1966
Job No.: #552, #552A
Document No.: OD-284

552 - OD-284

PROGRESS REPORT
For
VERSATILE, HIGH PRECISION STEREO
POINT TRANSFER DEVICE

Progress Report 552 & 552A for February 1966

Work during February consisted of completing assembly and adjustment motions and commencing system debugging on the Point Transfer Device. Optics and mechanisms are all operating, but require miscellaneous work to clean up system for acceptance checkout.

OBJECTIVE ASSEMBLIES

Both objective assemblies installed and all objective and system optical adjustments completed. Recently reworked beam splitters and lasers were installed and successfully marked film. However, some debugging still needed because output of laser declined after a few days use to a less than desirable level for consistent marking quality. Laser reticle drive electronics modification is almost complete. New reticle indexing device is somewhat slower, but appears to handle load well.

Laser alignment is now being checked by a short length of rigid fiber optics replacing the crystal, but some further improvement is seen to observe image accurately. The sole adjustment to be made and monitored is a prism above each laser head where an accurate image brightness and symmetry maxima has to be obtained to utilize all of laser output possible. The previously completed adjustment of the beam splitter established the optical axis through the laser relay lens and with it focus of the retical station.

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Laser output of 3 joules is seen necessary for reasonably good film marks and is highly dependent on the cavity finish, laser crystal temperatures, lamp condition and capacitor bank charge. The silver plating of the cavity became easily tarnished and has been refinished several times during the last month. A solution here seems to be a basically more reflective finish such as an evaporated aluminum film as used on front surface mirrors. Laser head cooling means appears to be inadequate for rapid recycling for maximum output. Enlarging cooling air inlet and outlet ports of laser head may help this deficiency. For the lamp condition status, we have not kept record of shots taken, therefore, we have no idea of lamp life for required output. The capacitor bank charge time for maximum possible output is around 20 seconds. Although capacitors are fully charged, full impulse is not always seen at the lamp. Insulation faults in the wiring and connectors are suspect, but are normally difficult to detect because they lack visible effects and losses are intermittent. We are replacing some capacitors in one laser power supply to eliminate large leakage currents seen in several units, preventing full charge from being obtained. The above problems, as well as completion of laser retical drive are being worked on and are expected to be improved in March.

ENCODER - COUNTER SUBSYSTEM

The switch assembly and debugging is complete with all counters and encoders operating properly. Final cabinet is expected in March and may be received for shipment with system. System tests have to be completed when system debugging is underway.

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Work for Next Period

- 1) Complete system debugging on 552 #101 in preparation for customer acceptance.
- 2) Advance, where possible on assembly and debugging on remaining 552A systems.

Attachments

- 1) Financial Report
- 2) Customer Visit Notes, Document 552A - CD-128 dated 24 February 1966.