

11-27-63

COHERENT LIGHT ENLARGER AND SPATIAL FILTER

5th Progress Report: 11 Oct to 15 Nov 63

*JWC*  
*WMD* File

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Briefly, the project has made a great deal of progress during the past month and is on schedule in regard to all critical items. Higher priority work in the house has tied up some manpower and equipment but the schedule is such that revisions are possible without affecting the delivery date. Items of interest:

1. The basic structure, a pipe and channel weldment, has been designed to permit convenient entrance to the customer's facility (length= 9' 1 1/2") and has been released for fabrication.
2. Layout of the liquid-cell film transport area is about two thirds complete. Air knives, related air compressor equipment and special viton seals have already been ordered. Only minor auxiliary items have not yet entered the layout stage.
3. Designs of all lens cells are either in the final detailing stages or have been released for fabrication.
4. All optical designs have been completed and drawings have been released to Manufacturing. Because of the exceptional quality of surface finish required on these elements, special procedures and equipment must be devised. However, the optical shop is confident of its ability to deliver to our specifications and in agreement with our schedule.
5. The mechanical arrangement and control requirements of the enlarger are now sufficiently final so that work on the electrical schematic and packaging may begin. This is scheduled for 18 November.
6. Work on an electronic focus indicator is continuing, concurrent with design of invar rods for mechanical focus. A shipment of equipment from the vendor is expected next week and will be tested shortly.
7. Low and medium contrast test targets were received and immediately used in experimentation. Resolution in both laser and incandescent light was higher than expected, the laser light giving the better results of the two. Work on these experiments is continuing with every effort being made to provide results free of any ambiguities. Sine wave targets are also to be used to determine the transfer functions. The customer will be invited to review our results when these experiments have been completed.
8. A room has been set aside exclusively for the construction of the prototype. This room has been cleared of previous contents and is now being outfitted with assembly benches, etc.

In addition to the above, work is being done on spatial filter construction and theoretical studies of liquids, diffusers and glass quality requirements.

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Declass Review by NIMA / DoD

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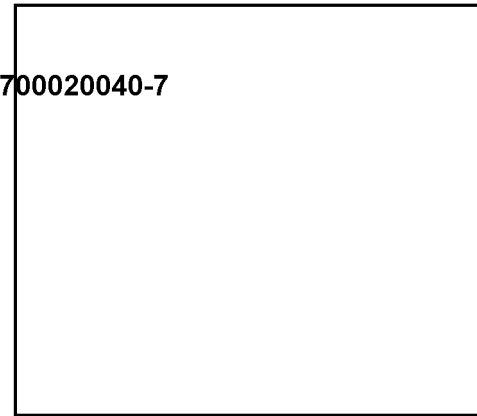
15 November 1963

MEMORANDUM FOR: WGM  
This report is good as  
a newsletter delineating  
design status - it is poor  
as a disclosure of facts  
defining performance to date.  
To me this is a fundamental  
short coming. Also there  
is no financial 3 Dec 63  
statement, (DATE)  
Bob

FOR 101 REPLACES FORM 10-101  
1 AUG 54 WHICH MAY BE USED.

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COHERENT LIGHT ENLARGER AND SPATIAL FILTER

4th Progress Report: 9 Sept to 10 Oct 63

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The engineering analysis meeting and the customer review were held in the latter part of September and at both meetings the results of our efforts, especially the breadboard experimentation, were looked upon with encouragement and helpful suggestions. Accordingly there was initiated an increased effort which was marked by the addition of one engineer and three draftsmen-designers to the previous personnel. To coordinate this effort there was a meeting held at which a tentative schedule was determined for the eleven weeks beginning 30 September. During these eleven weeks all mechanical design is to be done and all drawings released; experimentation is to continue with emphasis on diffused coherent light effects and spatial filter evaluation.

Mechanical design is at present concentrated on the liquid cell-film transport section which became the major design area when the customer stated his preference for a roll film input capability. Work is also proceeding on a system layout and a modification to the output film holder. All standard items such as power supply, electric shutter, etc., have been ordered.

An optical design of lens #2 has been completed and the elements detailed. Release is pending a check of glass supplies on hand. Designs of lens cells, mounts, and focussing arrangements are in progress.



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11 October 1963

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