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11 March 1966

Declass Review by NGA

U. S. Government  
Washington, D.C.

Attention: Contracting Officer

Subject: Task Order No. 02(100,677)65R  
Basic Agreement

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Enclosure: a) Prototype Modulated - Light Film Viewing Tables -  
Monthly Narrative Report - February 1966 - Two (2)  
copies.

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Gentlemen:

forwards here-  
with Enclosure a) in accordance with the reporting requirements under  
Item 4 of subject contract task order.

By copy of this letter, we are forwarding three (3) additional copies  
the monthly report to the Technical Representative.

Should you desire further information in this matter, please feel free  
to contact the undersigned.

Very truly yours,

ORIGINAL SIGNED



Contract Representative

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cc: Technical Representative (w/encl. 3)

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PROTOTYPE MODULATED-LIGHT FILM VIEWING TABLES

CONTRACT [REDACTED] TASK ORDER NO. 02(100,677)65-R

Monthly Narrative Report - February 1966  
 (Covering the Period January 22 to February 22, 1966)

A. Current Status of Work

During operational tests of the first prototype viewing table during the middle of this monthly period, arcing took place within the kinescope and some of the phosphor flaked off the faceplate of the tube. The tube was removed from the table and examined to determine the cause of the failure. Initial examination pointed out no particular fault, but it was believed after discussion with the tube manufacturer, [REDACTED] that the voltage at which the tube had been operated was higher than the tube could stand for the period it had been used (150-200 hours). Prior to purchase of the tubes, [REDACTED] had been told that the tubes could operate at higher voltages (20-25KV) than their rated levels (12-16KV). This tube and another that had previously gassed were returned to the vendor for his examination. The first estimate as to the problem proved correct. An [REDACTED] engineer experienced in tube manufacture was sent out to discuss the problem and potential solutions with [REDACTED]. In order to get sufficient brightness on the tube faceplate, the following modifications (singularly or in combination) were agreed on for investigation:

- 1) Replace the gray glass faceplate in the current tube (55% light transmission) with a clear glass faceplate (90% transmission).
- 2) Increase the thickness of the phosphor screen and aluminum film backing behind the screen to allow for higher voltage operation.
- 3) Replace the gun in the current tube with a gun capable of higher (than 16KV) voltage operation.

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All three modifications are being investigated, but there are still problems to be resolved (as noted in Section B).

Electrical work continued on the table with a replacement tube of the same size. However, operating voltage was limited to 16KV. New measurements made at this level indicated not only lower brightness through the faceplate (about 340 foot-lamberts without the diffuser on a 9" x 12" raster and 170 foot-lamberts with the diffuser), but also only a 19:1 contrast compression ratio with the diffuser. Earlier work during the month in modifying the video feedback circuit had substantially increased the gain in the circuit which at the higher operating voltages was expected to give the desired 30:1 compression. To improve somewhat the operating capability at 16KV, additional modifications were examined. In particular, a different diffuser with less light attenuation (20-25% rather than 50%) is being examined, and a larger surface photo-multiplier to increase the light pickup in the feedback network is being substituted for the present photo-multiplier. The latter, along with improvements already made in the feedback circuit, is expected to give the desired contrast compression.

Electrical work also took place on the circuits for microscope operation. The microscope was connected and tested operationally. In particular, adjustments were made to improve the raster follow operation. This work should be completed at the beginning of the next period.

Mechanical work on the first table during this period included adjustment of the gears and shafts of the film drive and re-adjustment of the pantograph. The cover plate latch has been modified but not yet re-assembled. For the second table, the cage assembly was completed.

#### B. Problem Areas Encountered

The major problem area encountered was the tube failure described in Section A above. The solution to this problem has not yet been adequately determined. Clear glass for the faceplate may not be readily available, and there could be a delay

of two months or more before such glass could be obtained. In addition, any tube modification to allow operation at higher voltage must be well tested before any assurance of adequate life can be given. These modified tubes will also require some time, estimated at 2-4 weeks, to obtain.

C. Projected Work for the Next Month

As of March 1, 1966, [ ] has stopped all charges to this contract while awaiting a customer decision as to further action to be taken. [ ] will, during the period before that date, test out the use of a new diffuser and a layer photomultiplier on the first table. Likewise, investigations will continue with the [ ] and other vendors as to possible modifications to the type of tube presently being used or possible sources of satisfactory new tubes. Mechanical work during the period before March 1, 1966 will include pinning and installing of new film drive pintles and checking all mechanical pins on the first table and completing, if possible, the baseplate, elevation and pedestal assembly on the second table.

D. Status of Fund Expenditures to End of Month

Funds expended (and committed at bread-even level to 27 February 1966, are shown below along with a proportional share of the base fee (up to a limit of

[Empty table area]

E. Documentation of Verbal Commitments and/or Agreements During the Period

A review of the technical and financial status of the Modulated Light Table program was given to the customer on February 8, 1966 in conjunction with a more detailed review of another customer sponsored program being conducted [redacted] Specifically brought out during this meeting was the anticipated final cost of the Light Table program. It was pointed out that this cost was above the sum of the budgeted contract cost plus the costs [redacted] had agreed to absorb. Both [redacted] and the customer agreed to review the situation carefully and communicate recommendations for further action (including potential cost reductions and their effects) to the other as soon as possible. In the meantime [redacted] was advised to continue with its current work, but not to start any new activity, (e.g., operator's console repackaging or pantograph modification) that would require new cost commitments.

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