

SECRET

5 September 1963

MEMORANDUM FOR THE RECORD

SUBJECT: Trip Report Covering 19 Through 27 August 1963

1. A visit was made to our [redacted] on 19 August to discuss contractual actions with [redacted]. The contract for 20 viewers was finally signed with two exceptions from the agreement reached during my last visit. On the production of the first eight units under the contract, the machines will be built with the same drive unit as the 705M units now in-house. A price reduction was agreed upon due to the change of specifications. In addition, the first eight units are to be delivered on a redeterminal downward basis instead of straight fixed price. No changes were made in the penalty clause for the first eight units. The terms of the additional 12 viewers and 2 Navy readers remained unchanged.

25X1

25X1

2. On 20 August [redacted] and I visited [redacted] to review development of the new reader. Development of the reader thus far has proceeded on or ahead of schedule (for more complete details of progress refer to the 9 August monthly report and PRRF chart). The present plan calls for a demonstration and testing of the liquid gate on or about 16 September. If no unexpected difficulties arise in the breadboard liquid gate there is a definite possibility of an early delivery. For the prototype viewer however, it will be necessary to use a conventional condenser light source since considerable work is still required on the [redacted] design. To aid in the design for the condenser system, [redacted] plans to utilize the consulting services of [redacted] who has considerable experience in this field. Additional information is required by [redacted] on maximum acceptable dimensions of the machine and specifications or samples of various sizes of film spools to be used. This information will be collected and sent as soon as possible. In addition, they inquired if we had a firm requirement to view large quantities of 35mm film on the viewer. Since no 35mm systems requiring the capability of this machine are known it was decided to release them of the requirement for measuring on 35mm film. This will allow the 35mm position allocated on the vacuum caption to be used for one of the other proposed film widths and will not preclude the use of the instrument for viewing only 35mm film. They informed me that they plan to use a Model 35 [redacted] Shaft Encoder on X giving 4096 counts per revolution and a Model 27 [redacted] Shaft Encodes on Y giving 127 counts per revolution. The Model 35 will require a 4X preamp and the Model 27 a 2X preamp to give the required film movement resolution. Action has been taken to include these preamps in the [redacted] contract for the readout electronics.

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

DDR-Dupe

SECRET

Of concern to the [redacted] technicians who installed the Dual Screen Measuring Projector was our ability to keep the instrument in top operating condition. They stated that [redacted] averaged less than 15 minutes a day working with them during their last visit in August and showed little incentive to learn about the electronics. A copy of their inter-plant communications concerning the DSMP has been placed in the job file.

3. On the 21st and the morning of the 22nd of August the WESCON Conference was attended. This was one of the largest trade shows ever staged and the literature obtained will be disseminated through the staff as appropriate. Of interest was the large number of lasers on display.

4. On the afternoon of the 22nd, [redacted] and I visited the [redacted] to review their chip storage capability. This is the same group of people who worked with [redacted] on the Minicard System and have visited us here several times to discuss their Magnacard System. They now have on the market a 16mm by 32mm system that accomplishes most of the functions of Minicard, plus having additional characteristics of its own at a small fraction of the Minicard cost. Of particular interest was the fact that they are reading the chip BCD code with a light modulated bank of photocells instead of the CRT raster technique. The advantage of this system is simplicity and relatively low cost.

5. [redacted] and I also visited [redacted] on the 22nd to see the HVA/5 prior to shipment but they were not able to operate it during our brief visit.

6. On the morning of the 23rd I visited [redacted] to review the progress for the readout devices for the [redacted] reader and the [redacted] Chip Comparator. Work is progressing on schedule and they plan to meet their 14 October delivery schedule. However, they had made no provision for the preamps required by the [redacted] machine as previously described. They will look into this and report to me shortly on how they can best incorporate them in the equipment. As it now stands, each unit will consist of 3 rack drawers. A four foot cable will be provided between the control panel and the rack drawers for the [redacted] and a 6 foot cable for the [redacted]

7. The [redacted] was visited on the afternoon of the 23rd. The linear Phasolver is progressing according to schedule and a demonstration of the feasibility breadboard can be arranged anytime after the 16th of September. A complete monthly progress report for the first month's work is on file. In addition, they are looking into the possibility of connecting their telecorder to the Teletype Model 35 in response to a TDD requirement for a Flexowriter replacement.

8. On the 27th and 28th of August, [redacted] new facility in [redacted] was visited. The new plant is about twice the size of their old facility and well laid out. Additional equipment

SECRET

available at the new facility consists of a new milling machine, a larger capacity lathe and a variety of glass polishing equipment. Their manpower has been raised back up to the level it was about eight months ago when they decided to move to [redacted] and subsequently left it drop. At present they plan to hire additional personnel to increase the labor force. Of importance is the addition of an electronics engineer, [redacted] and an optical man, [redacted] to their staff. They eventually plan to set [redacted] up in a separate plant and establish an optical capability.

25X1

25X1

25X1

[redacted] spent the entire time I was there operating the mirror polishing machine and I was given no formal opportunity to discuss the viewer development with him. However, in an informal coffee break, discussion, he expressed the opinion that the optical design used in the 705 series was at best a compromise design and could never give the optimum results we desire. In his opinion a separate condenser system is required for each magnification. As yet however, he has not been given the opportunity to work on the reader or viewer design and apparently has spent most of his time with the company polishing mirrors. He has however, determined the major cause of the color fringing of the viewers in-house and has eliminated a large part of it by repositioning the two upper (smaller) condensers. This is a modification that should be eventually made to our 705M viewers.

25X1

Virtually no progress was made on the electronic readout for the readers since my last visit. However, they were able to operate the reader transport and it offers promise of being considerably superior to the 705M transport.

They are now in the process of completing 4 viewers, 3 of which are still to be delivered under [redacted] and one as a replacement for the 705V prototype we loaned them for the reader development. They plan to have these units ready for inspection by mid-September if they can get delivery of the control panel switches. In addition, they have the first four cabinets in-house for the eight rush viewers under the new contract. They plan on having these ready for shipment in early October. As of my visit they had not assigned anyone to begin work on the 12 additional units under the new contract.

25X1

While there I noticed they were using 20 gauge wire on the electronic sub-assembly to connect the external power line with the lamp and other electrical components. That is they were running the entire current used (15 amp fused) through 20 gauge wire. This may cause voltage drop to the lamp and other components thereby reducing efficiency. All machines delivered under [redacted] should be checked to see if adequate wiring has been used.

25X1

While at [redacted] a representative of [redacted] visited to discuss possible modification of the Air Force viewers. He was not aware of the design difference between the 705V and the 705M and was planning on one modification kit for both machines. Most of the proposed changes which the Air Force

25X1

requires however, are more in the field of human engineering rather than performance and may not be of interest to NPIC. The items of direct interest to us however are (1) better lamp cooling (he brought a sample of a bulb fused to the dichroic filter), (2) venting the motor housing to let the heat escape, and (3) improved film handling characteristics of the transport. We plan to get together in Washington to further discuss these changes.

In summary of [redacted] the overall performance level should improve. However, two major problems may continue to exist. These are: (1) the need for higher caliber technical personnel with the freedom to design equipment to the best of their ability. (2) Convincing [redacted] that when he accepts a contract with a firm delivery date that he is obligated to make every attempt to meet it within normal contractual practices and not slip small extra jobs in which delay delivery. Both of the above deficiencies have been apparent during my frequent visits. I feel that both of these points can be cleared up by more rigid specifications written by NPIC and firm contractual delivery commitments, involving penalty clauses if necessary.

25X1

25X1

25X1

[redacted]
Development Branch, P&DS