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19 November 1964

MEMORANDUM FOR THE RECORD

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PLACE :

DATE : 29 October 1964

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ATTENDEES :

SUBJECT : Model 552 Transfer Device and the Associated
552A Stereo Viewer

1. The primary purpose of this trip was to determine if the 552A Viewer was ready for pre-delivery inspection. It was not! Nevertheless, the viewer was almost fully assembled and we were able to make a number of basic operational tests with the instrument. In general, the viewer looks good but it is a fantastically complex piece of equipment and has a great deal of "debugging" and "tuning" to be done. The following is a detailed list of discrepancies noticed on the 552A viewer.

a. The inner pupiliary adjustment needs a fine motion screw for adjustment. The ports through which the inner pupiliary scale numbers are viewed are covered up at certain settings. The masking is incomplete between the eyepieces when the eyepieces are in certain positions.

b. The present head rest interferes with the inner-pupiliary setting; in addition, an ambient light shield is required.

c. The reticle is out of focus; it shows flare and color; furthermore, it has a half-moon appearance. A diffuser would help.

d. A larger crank is required on the angular attitude motion.

**Declass Review by
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GROUP 1
Excluded from automatic
downgrading and
declassification

- e. The image rotation is eccentric.
- f. The fiber bundles are not properly aligned with the apertures of the right and left eyepieces
- g. Some of the objective lenses apparently are either not par focal or out of focus.
- h. The control panel has not been tilted as was requested. [redacted] claims that this cannot be done due to costs. We must take this up with [redacted]
- i. The intensity, as exhibited over the entire exit pupil, is not uniform and the high intensity light source is not operating anywhere close to the correct color temperature.
- j. The X and Y stepping motor drives are not correct yet and the two-speed drive has not yet been installed. There are a number of inconsistencies on both drive channels.
- k. There is a very bad growling sound in the Y stepping mode of the left channel. The 6X eyepieces seem to be an improvement over the 4X eyepieces; however, they do increase the curvature of field.
- l. The approximate magnification ranges with the 4.5X eye lenses are as follows: (These are theoretical values only).
 - a. 1.33 through 5.77
 - b. 3.50 through 11.50
 - c. 9.10 through 39.0
 - d. 28.0 through 120.0
- m. Ghost reticles appear in both optical trains.
- n. The zoom motions have a tendency to drift after the control switch has been released.
- o. The channels do not track each other properly even when the "couple" switch is engaged.
- p. There is objectional curvature of field with the low power objectives.
- q. At various settings the center of the field hasn't the same plain of focus as the edges.
- r. There is unacceptable "chattering" in both X and Y axis as the photographic image is scanned.

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- s. It is impossible to see through the edge of the present plastic vacuum manifolds.
- t. There is dirt in the optical paths.
- u. There are a number of dead spots related to the joystick control motions.
- v. The vacuum holddown on the left glass plate sometimes fails.
- w. It is not possible to feed both films through the loop handling system at one time; one side is always braked; and the loop is formed much too slowly.
- x. Two of the objectives are not easily focused.
- y. The front, left hand, vacuum manifold leaks.
- z. The insides of the ocular lens tubes need coating in order to reduce interior reflections.

25X1 2. We are leaving two rolls of 70mm film and two rolls of 5" film with [redacted] on a temporary loan basis.

3. Another monitoring trip is contemplated for the 23rd of November. This trip is to assure ourselves that the discrepancies (noted above) have all been corrected. When we feel that the instrument is truly ready for inspection, a pre-delivery inspection trip will be made. At this time the operational components will be requested to send along representatives.

4. Although there are a number of problems to be worked out preliminary investigations indicate that this instrument, when completed, will have a capability and versatility far in excess of anything else now available.

25X1 5. Examples of the marks made with our laser point marking system were given to us by [redacted] and will be included along with this report for information purposes.

25X1 6. [redacted] has requested that we provide them with examples of different photographic materials that we may wish to mark with a laser beam. These samples will be given to [redacted] on our next monitoring trip.

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7. It appears that this instrument has an actual capability in access of 600 l/mm resolution; however, an improved target, superior to those now available will be required in order for us to prove it. We currently are trying to obtain such a target.



Development Branch, P&DS

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