

CONFIDENTIAL

NPIC/TSG/ESD/EPB-37/71  
9 December 1971

MEMORANDUM FOR THE RECORD

SUBJECT: Trip Report - [ ] 1540-4 Light Table

1. A trip was made to [ ] to assist DIA in preacceptance of the 1540-4 Light Table and to check for any maintenance problems on the prototype tracking high intensity light source. I was accompanied by [ ] RED, and [ ] DIA.

2. The preacceptance went very well. The table met all specifications but one. This spec calls for the carriage to travel 4 inches in 16 seconds. The table takes 18 seconds. DIA felt this would not cause the operator any difficulty. However, DIA as yet, has not decided to waive this spec. The added circuitry that is required to accomplish the different carriage speeds will not add any difficulty to maintaining the table.

3. The housing for the tracking light source travels on a track that is not stable. It permits the lamp to vibrate. [ ] was aware of this and will make the necessary correction. There does not appear to be any unusual maintenance problem associated with the lamp.

4. The DIA table was delivered on 8 December 1971 and is in the Test and Evaluation Branch Area on the first floor.

25X



25X

Equipment Performance Branch, ESD/TSG/  
NPIC

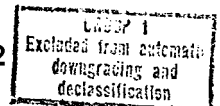
Distribution:

Original - Addressee

- 1 - DIA [ ]
- 1 - TSG/RED [ ]
- 1 - TSG/ESD
- 1 - TSG/ESD/EPB

Declass review by NGA/DoD

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Next 1 Page(s) In Document Exempt



FAULTS ON MLT 1540 / 5 LIGHT TABLES UP TO 19/10/71

- |     |                                  |                                                      |
|-----|----------------------------------|------------------------------------------------------|
| 1.  | Zoom 240 loose in holder         | Retaining clips straightened                         |
| 2.  | Perforated bands broken          | Replaced                                             |
| 3.  | do.                              | Replaced                                             |
| 4.  | Motor control s/w loose          | Tightened                                            |
| 5.  | X - Y bridge control inopp.      | Fuse F6 replaced                                     |
| 6.  | Film drive in one direction only | Film drive H.S. P.C.B. U/S<br>3 transistors replaced |
| 7.  | do.                              | Motor control board R6 adjusted for balance          |
| 8.  | Fluorescent lamp failures        | Lamp replaced                                        |
| 9.  | do.                              | Fuse on illumination control P.C.B. replaced         |
| 10. | do.                              | Transistor on illumination H.S. P.C.B. replaced      |
| 11. | Broken mode s/w                  | Replaced                                             |
| 12. | Microscope carriage innop.       | Pin sheared on top sprocket                          |
| 13. | X carriage bearing broken        | Replaced                                             |
| 14. | No illumination control          | Compensated one-shot board replaced                  |
| 15. | Main fuse blown                  | Replaced                                             |
| 16. | X-Y control knob loose           | Tightened                                            |

Expedite

TAC

P/N 105 xister on West Side  
board inadequate - many  
requests for interpretation not  
responded to by

2

25X1

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Naval Reconnaissance and Technical Support Center

Report on [ ] MLT 1540 LIGHT TABLE

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25X1  
1. The five [ ] MLT 1540 Light Tables received by NRTSC are basically the same models evaluated by NPIC in the Supplementary T&E Report, NPIC/R-14/71 of May 1971. There are many deficiencies in the NRTSC models which effect the suitability of the units for operational use. Additionally, the specifications to be met in the construction of the production units have vague technical requirements and the Operation/Maintenance Manuals have no documentation of reliability of parts.

2. In general, illumination, elevating and tilt capability, film handling system, and carriage motion meet specification requirements; however, with respect to functional performance and reliability several undesirable features must be noted:

a. The horizontal plane of the microstereoscope mount and viewing surfaces are not within the 0.015 inch parallelism spec requirement over the entire translation field of the microstereoscope mount.

b. The plane of the microstereoscope ring is also not parallel with either viewing surface.

c. There is no limit lock on the downward movement of the microstereoscope pod, thus the rhumboids are capable of being forced against the film or viewing surface when using the focus control.

d. The electrical cord on the rear of the optical bridge hinders X and Y movement of the microstereoscope mount and can be damaged or severed during prolonged operations.

e. The single bearing supporting the back plate of the microstereoscope mount is poor designed. This presents a collimation problem between the microstereoscope pod and the viewing surface. Bearings of units were broken after approximately 30 hours of light table operation.

f. Undesirable "flicker" exist in several luminaires from 140 to over 1100 foot lamberts.

g. The adjustable illumination capability is inconsistent in performance. Several lamps light up and extinguish at random.

h. During testing excessive emulsion deposits accumulated on both supply and take-up film support rollers while translating 1000 feet of 9½ inch film, emulsion up, at high speed. Fortunately the film had no real significance except for procuring the required footage to perform this test.

i. The small shoulder on the idler spindle wears and enlarges the hole in the film spool flange allowing the flange to override the shoulder and ride on the spindle arm. Prolonged use with heavy spools may shear off the spindle arm and damage spool and film, this may occur while translating film at high speeds.

j. Full spools of film (1000 feet of 9½ inch) are of sufficient weight to release the spring loaded lever on the film drive while translating

film at high speeds. This is a hazzard to anyone in the immediate area and will cause considerable damage to the film.

k. Each take-up roller is a solid rod and can cause damage to a stationary web of film while translating the other web of film in the parallel viewing mode.

l. Several malfunctions also occurred which terminated operational testing until maintenance was performed, namely:

1. The slip clutch went out of adjustment and caused the microstereoscope bridge to fall forward toward the operator while operating in the tilt mode.
2. The tachometers in both the supply and take-up film drive motors went out of adjustment creating very poor film speed control. (Excessive hesitation and jerkiness)

#### CONCLUSIONS

1. All the above discrepancies may not be inherent in every production unit. However, the observations made by this Command during testing and operational use, indicate this model is not considered the optimum equipment for use in a sustained operational production environment. Because of the above factors and other considerations, i.e. space and budget, this Command does not anticipate any future procurement of 1540 light tables.