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Use of microscope on table.

X1

presented actual connection and layout drawing of proposal for separate microscope mount as an add-on fixture to table.

MB pointed out that scanning was also a problem with table. Did have provision for solving both problems of scanning as well as measurement. Requirement for tight lock primary for measurement. Bridge coasts after electrical stop. Problems with manual scan.

Discussion of proposal. MB voiced preference for mount on carriage.

Devil discussion of pros. of table - smoothness of carriage, differential in speeds w and y , smoothness

of motion at any speed.

MB will provide Zoom 240 system with 28 arms on GTE, and a Zoom 70 with 2X more.

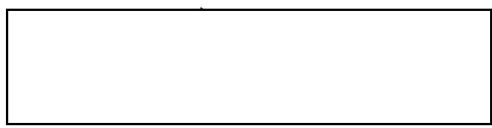
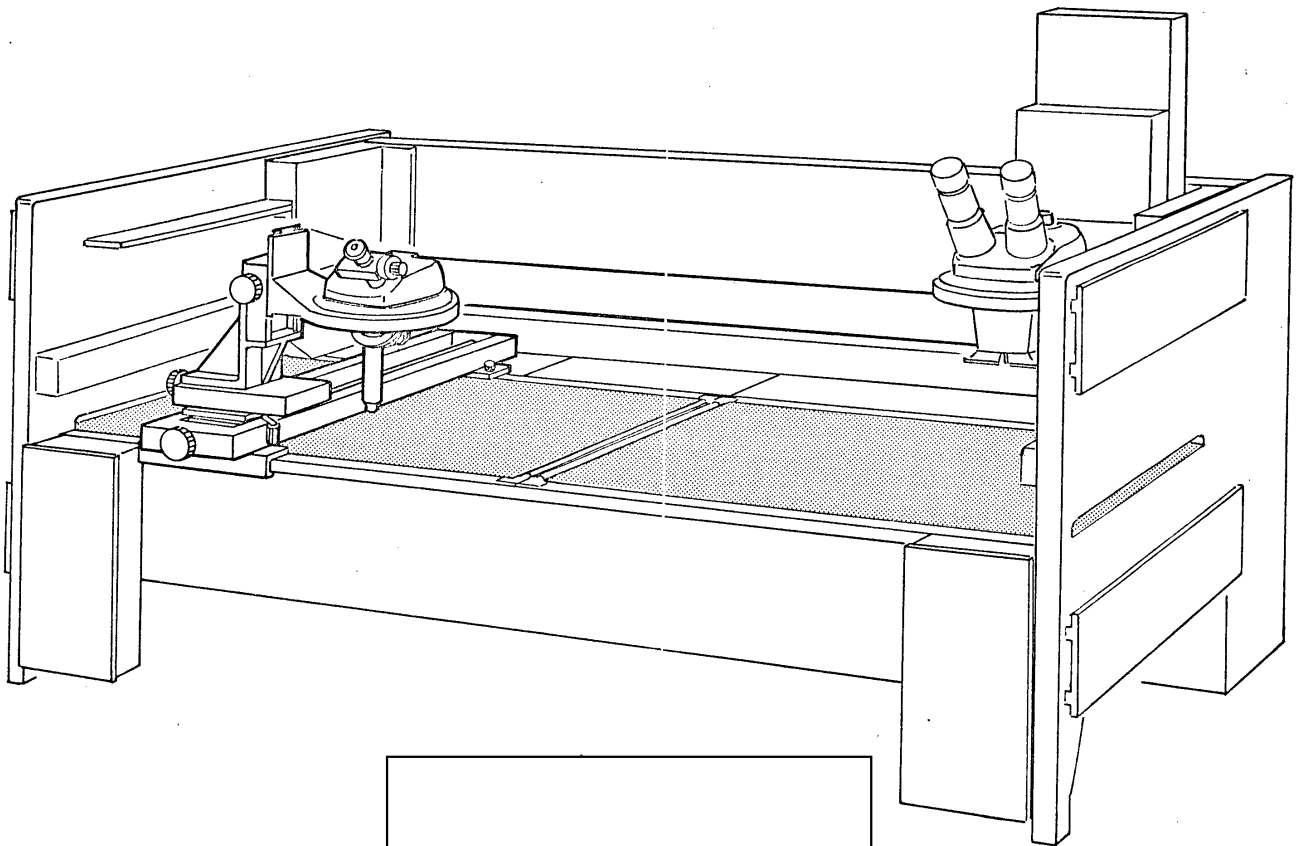
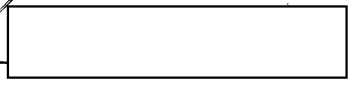
Description and discussion of measurement problem.

Restatement of problems:

- 1- Need closer x-y speed differential
- 2- Smoother carriage motion - $1/2^{\#} \pm 1/2^{\#}$
- 3- Need precise means of pointing for measurement.
- 4- Need y-lock equal to present x-lock
- 5- Preferable to mount macroscope mount on carriage with optics mount, capable of being dismounted.
- 6- Low speed breakaway (stiction) too high.

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Rec'd 27 May 71
BBA



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25X1

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Rec'd 10 June 71
BBH

25X1 The following is the understanding of the conclusions reached regarding the requirements to be added to the MLT 1540-4 light table determined at the meeting of 27 May 1971 between representatives and the U.S. Government representatives.

1. The lock of the microscope carriage in the x direction is satisfactory as presently exists.
2. The lock in the y direction of the microscope carriage is satisfactory when the cross rod is locked.
3. Less difference is required between the x and y speed when bridge is motor driven. A differential not greater than 2:1 is satisfactory.
4. A smoother movement to the bridge is required, i.e., elimination of speed variations and jerky movements.
5. An average force of $1-1/2 \pm 1/2$ lb. manual carriage movement is desired.
6. Reduction in the low speed break-away, i.e., bridge movement should start at a very low speed rather than starting with a large step.
7. A means of accurately pointing, i.e., aligning reticles with points on the film. This could be accomplished either with the motorized bridge drive, or preferably with a mechanical manual control. Trade offs between the minimum bridge motor driven speed with easily controlled manual drive may be made.
8. Quantitative requirements are listed on attached sheet.

PHYSICAL CONSTRAINTS - 1540 TABLE

25X1

1. Maximum allowable downward deflection of .0045" with two (2) pounds pressure applied to top front of optics mount.

2. Carriage lock in X and Y within following limitations:

<u>Pounds Pressure Applied</u>	<u>Allowable Movement</u>
2	.005 - .010"
4	.010 - .020"
6	.020 - .035"
6-10	.035 - .070"

3. Average force of $1\frac{1}{2}$ lbs. (+ or - $\frac{1}{2}$ lb.) required to manually move carriage in X & Y directions.

4. Electrical carriage movement (scan speed) continuously variable within the range of .002"/sec. - .250" (or greater)/sec. in both X and Y direction. Maximum allowable speed differential between X and Y direction at same speed setting is 2 times. Drive will respond at all speed settings without adjusting settings.

5. Mechanical carriage movement capable of smoothly moving optics mount in X and Y direction at minimum hand driven speeds of .001 in/sec.