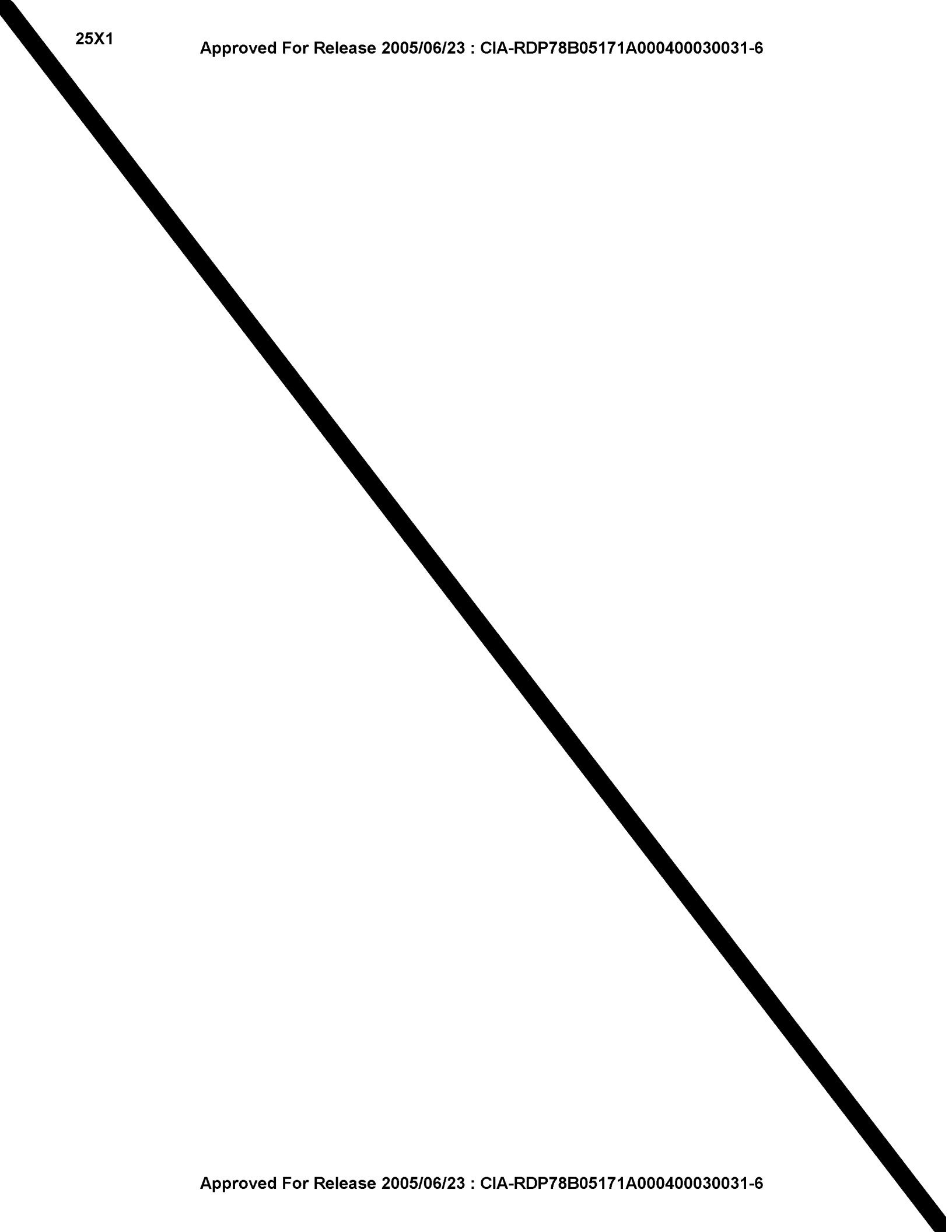


Approved For Release 2005/06/23 : CIA-RDP78B05171A000400030031-6

CLASSIFICATION

DOCUMENT NO.
ATP 600000

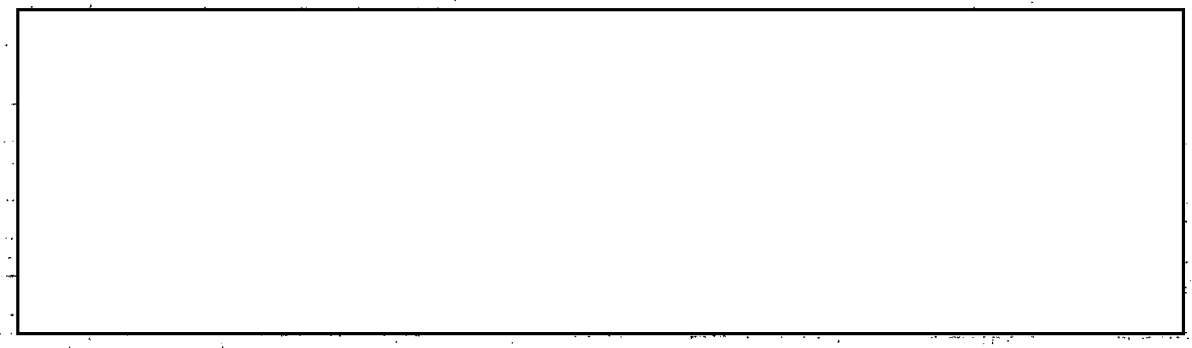
SHEET NO.

FIRST ARTICLE PRELIMINARY TEST AND ACCEPTANCE

MODULAR LIGHT TABLE SPLIT FORMAT

MLT 1540-4

S/N 021



CLASSIFICATION

DOCUMENT NO.	TP 400000
SHEET 1 OF 3	
USED ON	MLT-1540
DATE	11 October 1971
REVISION (See last sheet for record)	E

ACCEPTANCE TEST PROCEDURE FOR LIGHT TABLE MLT-1540

SERIAL NUMBER 021

TEST BY [redacted]

DATE 12-1-72

TIME WINTER - X MAS

This item has successfully performed to all of the requirements as itemized and checked in the body of this procedure.

CLASSIFICATION

ATP 600300

SHEET NO.

1.0 PURPOSE

The purpose of the Acceptance Test Procedure is to verify that the Modular Light Table, MLT-1540, meets its functional and performance requirements.

2.0 EQUIPMENT REQUIRED

2.1 MLT-1540 complete per [redacted] Drawing No. 600300 and 600100.

2.2 Test film as follows:

9.5 inch wide, 4 mil base, 1,000 foot, 1 roll

5 inch film, 1,000 foot, 2 rolls

70mm film, 1,000 foot, 2 rolls

2.3 Empty take-up spools.
(This should be commensurate with the number of films required as listed above.)

2.4 Stop watch

2.5 GFE foot lambert meter (Weston Model 759)

3.0 ACCEPTANCE TEST

Completion and verification of each of the following items shall be noted by the inspector's stamp or initials in the space provided.

3.1 Mechanical and visual inspection

The MLT shall be carefully examined to determine conformance to the requirements of [redacted] Drawings 600300 and 600100; Outline Drawing. Moving parts such as covers, latches and gear mechanisms shall be checked to assure proper fit and operation without sticking or binding. Quality of workmanship, proper materials and finishes, nameplate installation, etc. shall be verified. 116 V

3.2 Connect table to 117 VAC, 25 amp power source. (220 VAC for --5 configuration)

3.3 Turn lights on to maximum intensity, both sides.

a) Record time turned on.

Time on

3.4 Operate the elevating mechanism.
(Not applicable to -1 configuration)

a) Note max. and min. distance from floor.
(Max. = 40" ± 1", Min. = 22" ± 1")

3.5 Check operation of manual hand crank elevation for smoothness of operation.

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3.6A Operate carriage motion system with table horizontal, and weight of optics (~ 15 lbs). (Omit 3.6A for -4 tables).

a) Using QCI 6083 check bridge for free play and record measured amounts. X _____ Y _____ _____

b) Note force required to move carriage with motors disengaged in X and Y direction (≤ 4 lbs both axis) _____

c) With motors powered in X and Y axis and speed control set at 0, verify that 15 lbs will not move bridge. (Not applicable to -1 configuration) _____

d) Determine min consistant speed, X axis. (3" travel ≥ 60 seconds without stalling) (Not applicable to -1 and -3 configuration) _____

e) Determine min consistant speed, Y axis. (3" travel ≥ 60 seconds without stalling) (Not applicable -1 and -3 configuration) _____

f) Note that at horizontal table is level ± 1°. _____

3.6B Operate carriage motion system with table horizontal (± 1°) and weight of optics (~ 15 lbs). (Omit 3.6B for -1, -2 and -3 tables)

a) Using QCI 6084 check bridge for free play and record measured amounts.

	2 lb	4 lb	
X	.001	.0025	
Y	.001	.002250	OK

b) Note force required to move carriage in X direction with X motor disengaged (≤ 2 lbs) 2.0

In Y direction with Y motor disengaged (≤ 4 lbs) 4.0

and in Y direction with Y bridge drive disconnect mechanism in the disconnected mode (right & left levers pointed down). (≤ 2 lbs) 1.50

c) With motors engaged and Y bridge drive disconnect mechanism engaged (right & left levers parallel with table top) verify that 15 lbs will not move bridge. OK

d) Determine X and Y minimum running speed. Verify time to traverse .1". (5 mils per second ± 10%)

		←	→
Minimum	18.0 sec	X 19.6	19.6
Nominal	20.0 sec		
Maximum	22.0 sec	Y 20.6	21.4 OK

↓ ↑

e) Determine maximum running speed. Verify that time to traverse 4" is less than 16 sec. (> .250 inches per second)

X ← 18.2 - 18.6 → Y ↑ 18.3 20.4 ↓

25X1

f) Using a [redacted] microscope and grid paper verify that set speed is attained in less than 1.0 sec. after control actuation without noticable carriage jerk and stops within .1 sec. of control release for the following conditions

Machine set for min. speed		SPEED		
		MIN	MED	HIGH
Precondition - Stop - Restart		5 mils/sec	20 mils/sec	100 mils/sec
Direction	Direction	(200 sec/in)	(50 sec/in)	(10 sec/in)
left	left	✓	✓	✓
left	right	✓	✓	✓
right	right	✓	✓	✓
right	left	✓	✓	✓
to rear	to rear	✓	✓	✓
to rear	to front	? MARG	?	✓
to front	to front	✓	✓	✓
to front	to rear	? MARG	? ✓	✓

g) Verify that X and Y speeds are equal within 10% over control speed range. (Min. speed previously checked in 3.6B, Section d.)

MED SPEED at approximately 20 mils/sec (~ 50 sec/inch) Time to traverse 1 inch

X 58.2 Y 52.8

HIGH SPEED at approximately 100 mils/sec (~20 sec/2 inches) Time to traverse 2 inches.

X ← 20.1 - 19.4 → Y ↓ 17.8 - 19.6

MAX SPEED at approximately 250 mils/sec (~ 16 sec/4 inches) Time to traverse 4 inches

X ← 18.2 - 18.6 → Y ↑ 18.? - 20.4 ↓

h) Verify smooth operation over entire speed control range for each direction of travel

right ✓ left ✓ to rear ✓ to front ✓

3.7 Operation of tilt mechanism

a) Release Y bridge drive disconnect mechanism and verify that table tilt mechanism is inoperable. (Applies to -4 only) JE

b) Engage Y bridge drive disconnect mechanism and operate tilt mechanism. Note that full tilt provides 15° ± 1° JE

3.8A Operate carriage motion system with table tilted, and weight of optics on carriage. (Not applicable -1 & -4 configuration)

a) Check operation of "Fail-Safe" system for Y axis movement. N.A

b) Determine min. consistant speed, X axis. (3" travel ≥ 60 sec. without stalling). (Not applicable to -3 configuration). NA

c) Determine min. consistant speed, Y axis. (3" travel ≥ 60 sec. without stalling). (Not applicable to -3 configuration). NA

3.8B Operate carriage motion system with table tilted and weight of optics on carriage. (-4 only).

a) Check operation of "Fail-Safe" system JE

b) Determine X and Y minimum running speed. Verify time to traverse .1 inch. (5 mils per second ± 10%)

Minimum	18.0 sec	X ← 20.4 → 20.2
Nominal	20.0 sec	
Maximum	22.0 sec	Y ↓ 22.5 ↑ 20.5

JE

c) Determine maximum running speed. Verify that time to traverse 4" is less than 16 sec. (> .250 inches per second)

X ← 17.8 → 18.0 Y ↑ 17.0 – ↓ 19.6 JE

25X1 d) Using a [redacted] macroscope or equivalent and grid paper verify that set speed is attained in less than 1.0 sec. without noticable carriage jerk for following conditions.

Precondition – Stop – Restart Direction	Direction	SPEED MIN 5 mils/sec	MED 20 mils/sec	HIGH 100 mils/sec
left	left	✓	✓	✓
left	right	✓	✓	✓
right	right	✓	✓	✓
right	left	? MARG.	✓	✓
to rear	to rear	✓	✓	✓
to rear	to front	✓	✓	✓
to front	to front	✓	✓	✓
to front	to rear	✓	✓	✓

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3.9 Return table to level position. Mount dial indicator on optics holder with weight of optics attached. Check for carriage drift. (No visible movement of dial) QE

3.10 Check parallelism of optics carriage to format surfaces with dial indicator.

a) Note max. deviation. (within .015 inches) .006

3.11 Mount two 1,000 ft. rolls of 70mm film, normal mode, emulsion up and emulsion down.

a) Note time to rewind, both rolls at same time, in opposite direction. (≤ 3 min.) 2.12

b) Note tracking characteristics QE

c) Note effect on stationary web when other moves and stops rapidly. Check both webs. (No interraction) QE

d) Verify min. speed on front roll only. (Insure smooth control from 0 to 1 inch/sec.) QE

3.12 Mount 1,000 ft. roll 9.5-inch film, normal mode, emulsion up.

a) Note time to completely rewind. (≤ 3 min.) 2.15

b) Start and stop rapidly from full speed (no take-up loop). No slack loops or excessive tension. QE

c) Operate take-up loop. Note max. capability. (≥ 76 inches) 78"

d) Scan slowly with take-up loop. Note tracking stability. QE

3.13 Mount two 1,000 ft. rolls 5-inch film, split vertical mode, emulsion up and emulsion down.

a) Operate to insure split vertical capability. QE

3.14 Maximum illumination

Mark off table surfaces with china markers to show restricted area using the plastic template.

a) Note time. Check that 30 minutes min. have elapsed since 3.3a).

b) Note illumination at left format center. (≥ 3,000 F.L.)

Max. illumination 3250 QE

c) Note illumination at right format center. (≥ 3,000 F.L.)

Max. illumination 3150 QE

d) Note difference between 3.14 b) and 3.4 c). (≥ 150 F.L.) 100 FL

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3.15 Illumination left format.

a) Set center of left format to 3,000 F.L. Verify

Set right format to minimum.

b) Note deviation from previous reading. (± 150 F.L.) Ref. 3.15 a) 100 deviation

Return right format to maximum

c) Note min. illumination over entire area 1750 entire area

d) Note min. illumination in restricted area 2250 res. area

Set left illumination at minimum.

e) Note reading at format center. (≤ 200 F.L.) 100 min. illum.

Set right illumination at minimum.

f) Note deviation from previous min. (≤ 150 F.L.) Ref. 3.15 d) 0 deviation

Return illumination, both sides, to maximum.

3.16 Illumination on right format surface.

a) Set center of right format to 3,000 F.L. Verify

Set left format to minimum

b) Note deviation from previous reeding. (± 150 F.L.) Ref. 3.16 a) 100 deviation

Return left format to maximum

c) Note minimum illumination over entire surface 1800 ent. surf

d) Note minimum illumination over restricted area. 2350 res. area

Set illumination at minimum.

e) Note reading at format center (≤ 200 F.L.) 100 min. illum.

Set left illumination at minimum.

f) Note deviation from previous min. (≤ 150 F.L.) Ref. 3.16 e). 0 deviation

3.17 Observe light sources for evidence of flicker

a) Set both at max. Verify no objectionable flicker.

b) Set both at min. Verify no objectionable flicker.

3.18 Film masking system.

a) Insure lamps extinguish in proper sequence.

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AUTHORITY

REV	SH	DESCRIPTION	DATE	AUTHORITY
A		Deleted paragraphs 3.10, 3.14 a) through d), 3.15 a), c), e). Revised paragraph 3.16 a) Reason: To eliminate destructive tests, reduce test time and for clarification.		
B		Revised entire test sequence to facilitate more efficient testing. Deleted paragraphs 3.6, 3.7, 3.8 Reason: Items are covered in 3.1 Paragraph 3.4 Added $\pm$ 1" tolerance Paragraph 3.9 Added "No visable movement of dial."		
C		Added provisions for -1, -3, -4 & -5 configurations.		
D		Paragraph 3.6 Change 10 lbs to 15 lbs Paragraph 3.6 b) Change 10 lbs to 15 lbs		
E		Added Para. 3.6B for MLT 1540-4 only		