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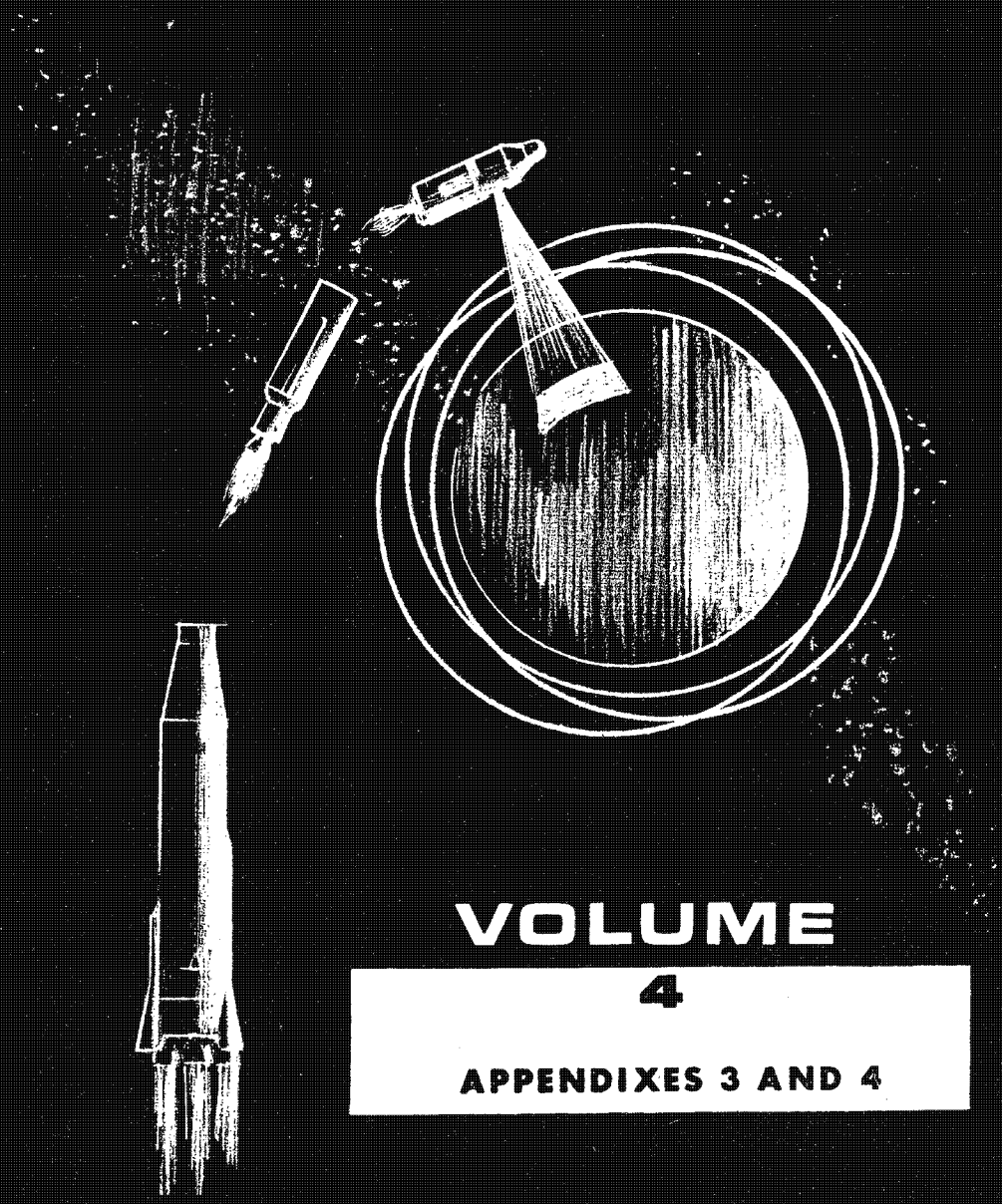
PROGRAM REPORT



VOLUME 4

APPENDIXES 3 AND 4

THIS DOCUMENT CONTAINS 281 PAGES
NOVEMBER 1967

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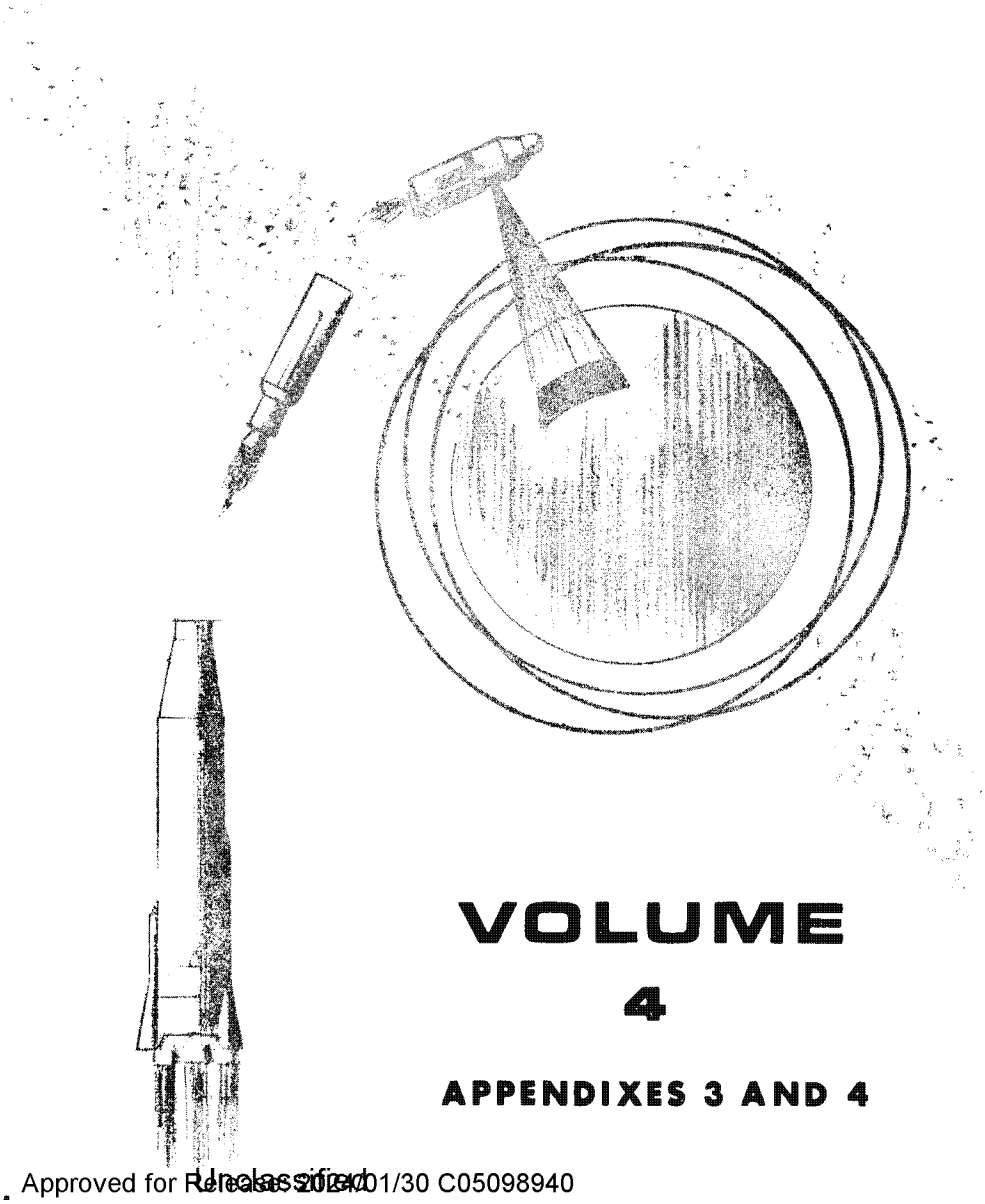
PROGRAM REPORT



VOLUME 4

APPENDIXES 3 AND 4

CONTENTS

APPENDIX 3

PAYLOAD CALIBRATION BOOK

DISTRIBUTION-

1. P.E. MURFIN
. L.K. PARSONS
3. G.W. HILL JR.
4. J.C. HEIT
5. W.E. BROOKS
6. W.E. BROOKS
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9. W.O. KUELLERTZ
10.-14. G.R. POORE
15.-27. PROJECT FILE

R-008139-KH
PAGES 73
15 FEBRUARY 1967

TO DISTRIBUTION FOR INFORMATION

FROM W. O. KUELLERTZ

SUBJECT C/P CALIBRATION BOOK FOR FM-39

REFERENCES (A) CD-9508, S-INT-5250, 23 MAY 1963
C/P CALIBRATION BOOKS

(B) R-008170-OH C/P LOG BOOK

(C) R-004002-RH (ENG. ANALYSIS REPORT)

(D) R-005930-DH (C/P SPEC. 802-153)

1. THE CALIBRATION BOOK FOR C/P FM-39 IS FORWARDED HEREWITH. THE CONTENTS ARE AS SUGGESTED IN REFERENCE (A) AND CONSIST OF PERTINENT FACTS AND FIGURES TAKEN FROM REFERENCES (B), (C), AND (D), IN ADDITION TO THE CURVES WHICH SHOW THE TLM OUTPUT VERSUS ENGINEERING UNITS FOR EACH OF THE CPL POINTS.

2. THE FIRST SEVEN PARAGRAPHS OF THE LIST OF PERTINENT FACTS AND FIGURES CONTAIN STL SOFTWARE INPUTS AS REQUESTED.

3. SINCE THIS IS MEANT TO BE A WORKING DOCUMENT, SEVERAL BLANK PAGES ARE PROVIDED FOR USE BY PARTICIPATING PERSONNEL.

W. O. Kuellertz

W. O. KUELLERTZ

C/P CALIBRATION BOOK

SERIAL NO FM-39

TABLE OF CONTENTS

NOTE- PARAGRAPHS ONE THROUGH SEVEN
OF PERTINENT FACTS AND FIGURES
CONTAIN STL SOFTWARE INPUTS

LIST OF PERTINENT FACTS AND FIGURES FROM C/P LOGBOOK FM-39

1. CRAB POSITION TRANSITION TIMES — CPL 14

	SEC. AVG. TIME	AVG. DELTA VOLTS	CHANGE IN PERCENT FULL SCALE
A) BETWEEN ADJACENT POSITIONS	0.80	0.563	11.26
B) BETWEEN EXTREME POSITIONS	6.50	4.050	81.00

2. STEREO POSITION TRANSITION TIMES — CPL 13

	SEC. AVG. TIME	AVG. DELTA VOLTS	CHANGE IN PERCENT FULL SCALE
A) BETWEEN ADJACENT POSITIONS	1.40	1.950	39.00
B) BETWEEN EXTREME POSITIONS	2.80	3.950	79.00

3. CPL 14 MEASURED CRAB ANGLE POSITIONS

NOMINAL DEG.	EXPECTED OUTPUT VOLTS	CPL 14 PERCENT FULL SCALE	MEASURED ANGLE DEG.	DIRECTION APPROACHING
0.0	0.520	10.40	-0.012	START 0
0.0	0.520	10.40	-0.011	DECREASING - FROM 0.5
0.0	0.520	10.40	-0.011	DECREASING - FROM 0.5
0.5	1.040	20.80	-0.460	INCREASING - FROM 0.0
0.5	1.040	20.80	-0.460	INCREASING - FROM 0.0
0.5	1.040	20.80	-0.514	DECREASING - FROM 1.0
0.5	1.040	20.80	-0.514	DECREASING - FROM 1.0
1.0	1.620	32.40	-0.958	INCREASING - FROM 0.0
1.0	1.620	32.40	-0.958	INCREASING - FROM 0.5
1.0	1.620	32.40	-1.017	DECREASING - FROM 1.5
1.0	1.620	32.40	-1.017	DECREASING - FROM 1.5
1.5	2.180	43.60	-1.449	INCREASING - FROM 0.5
1.5	2.180	43.60	-1.449	INCREASING - FROM 1.0
1.5	2.180	43.60	-1.515	DECREASING - FROM 2.0
1.5	2.180	43.60	-1.515	DECREASING - FROM 2.0
2.0	2.740	54.80	-1.951	INCREASING - FROM 1.0
2.0	2.740	54.80	-1.951	INCREASING - FROM 1.5
2.0	2.740	54.80	-2.010	DECREASING - FROM 2.5
2.0	2.740	54.80	-2.010	DECREASING - FROM 2.5

3. (CONT D)

NOMINAL DEG.	EXPECTED OUTPUT VOLTS	CPL 14 PERCENT FULL SCALE	MEASURED ANGLE DEG.	DIRECTION APPROACHING
2.5	3.300	66.00	-2.438	INCREASING - FROM 1.5
2.5	3.300	66.00	-2.438	INCREASING - FROM 2.0
2.5	3.300	66.00	-2.501	DECREASING - FROM 3.0
2.5	3.300	66.00	-2.501	DECREASING - FROM 3.0
3.0	3.870	77.40	-2.928	INCREASING - FROM 2.0
3.0	3.870	77.40	-2.928	INCREASING - FROM 2.5
3.0	3.870	77.40	-2.991	DECREASING - FROM 3.5
3.0	3.870	77.40	-2.991	DECREASING - FROM 3.5
3.5	4.460	89.20	-3.409	INCREASING - FROM 2.5
3.5	4.460	89.20	-3.411	INCREASING - FROM 3.0
3.5	4.460	89.20	-3.411	INCREASING - FROM 3.0

CRAB POSITION AVERAGES

POSITION	DEGREES
1	-0.0110
2	-0.4868
3	-0.9880
4	-1.4820
5	-1.9804
6	-2.4693
7	-2.9598
8	-3.4104

LEAST SQUARES STRAIGHT LINE FIT OF CRAB POSITION AVERAGES-

$$X(N+1) = -0.01082 - 0.48932*N$$

WHERE - X = CRAB ANGLE IN DEGREES
N = 0, 1, ...7

1 SIGMA STANDARD DEVIATION = 0.01477

4. CPL 13 MEASURED STEREO ANGLE POSITIONS

NOMINAL DEG.	EXPECTED OUTPUT VOLTS	CPL 13 PERCENT FULL SCALE	MEASURED ANGLE DEG.	DIRECTION APPROACHING
- 7 1/2	0.510	10.20	-7.375	START
- 7 1/2	0.510	10.20	-7.375	FROM 0
- 7 1/2	0.510	10.20	-7.375	FROM 0
0	2.450	49.00	-0.054	FROM - 7 1/2
0	2.450	49.00	-0.054	FROM - 7 1/2
0	2.450	49.00	0.011	FROM + 7 1/2
0	2.450	49.00	0.011	FROM + 7 1/2
+ 7 1/2	4.410	88.20	7.460	FROM - 7 1/2
+ 7 1/2	4.410	88.20	7.460	FROM 0
+ 7 1/2	4.410	88.20	7.460	FROM 0

STEREO POSITION AVERAGES

POSITION	DEGREES
1	-7.3746
2	-0.0213
3	7.4603

Note: All servo position and transition data measured with 28 volts buss voltage.

5. MEASURED MOTOR SPEED DRIVE VELOCITIES

MSD SERIAL NO. N844
CAMERA SERIAL NO. 505

NOTE - NOMINAL FILM SPEEDS ARE IN ONE (1) PERCENT INCREMENTS, AS GIVEN BY THE FOLLOWING FORMULA-

V(N)=V(1)*1.01**(N-1) WHERE - V(N) = SPEED (IN/SEC)

FOR N = 1,2,3.....64
AND V(1) = 2.4841

SPEED STEP NO.	NOMINAL FREQUENCY (CPS)	NOMINAL FILM SPEED (INCHES/SEC)	MEASURED FREQUENCY (CPS)	FILM SPEED (FROM MEASURED FREQUENCY) (INCHES/SEC)
1	290.92	2.4841	291.0	2.4828
2	293.83	2.5089	293.9	2.5076
3	296.77	2.5340	296.8	2.5323
4	299.73	2.5594	299.8	2.5579
5	302.73	2.5850	302.7	2.5826
6	305.76	2.6108	305.7	2.6082
7	308.81	2.6369	308.8	2.6347
8	311.90	2.6633	312.0	2.6620
9	315.02	2.6899	315.0	2.6876
10	318.17	2.7168	318.2	2.7149
11	321.35	2.7440	321.4	2.7422
12	324.57	2.7714	324.7	2.7703
13	327.81	2.7991	327.8	2.7968
14	331.09	2.8271	331.0	2.8241
15	334.40	2.8554	334.4	2.8531
16	337.74	2.8839	337.7	2.8813
17	341.12	2.9127	341.2	2.9111
18	344.53	2.9419	344.7	2.9410
19	347.97	2.9713	348.0	2.9691
20	351.45	3.0010	351.5	2.9990
21	354.97	3.0310	355.0	3.0289
22	358.52	3.0613	358.7	3.0604
23	362.10	3.0919	362.1	3.0894
24	365.72	3.1228	365.7	3.1202
25	369.38	3.1540	369.5	3.1526
26	373.07	3.1856	373.1	3.1833
27	376.80	3.2174	376.9	3.2157
28	380.57	3.2496	380.7	3.2481
29	384.38	3.2821	384.7	3.2823
30	388.22	3.3149	388.3	3.3130

5. (CONT D)

SPEED STEP NO.	NOMINAL FREQUENCY (CPS)	NOMINAL FILM SPEED (INCHES/SEC)	MEASURED FREQUENCY (CPS)	FILM SPEED (FROM MEASURED FREQUENCY) (INCHES/SEC)
31	392.10	3.3481	392.3	3.3471
32	396.02	3.3815	396.0	3.3787
33	399.98	3.4153	400.1	3.4137
34	403.98	3.4495	404.1	3.4478
35	408.02	3.4840	408.1	3.4819
36	412.10	3.5188	412.2	3.5169
37	416.22	3.5540	416.5	3.5536
38	420.38	3.5895	420.5	3.5877
39	424.58	3.6254	424.7	3.6235
40	428.83	3.6617	428.9	3.6594
41	433.12	3.6983	433.3	3.6969
42	437.45	3.7353	437.7	3.7345
43	441.82	3.7726	441.9	3.7703
44	446.24	3.8103	446.5	3.8095
45	450.70	3.8484	450.9	3.8471
46	455.21	3.8869	455.5	3.8863
47	459.76	3.9258	460.0	3.9247
48	464.36	3.9650	464.7	3.9648
49	469.00	4.0047	469.2	4.0032
50	473.69	4.0447	474.1	4.0450
51	478.42	4.0852	478.8	4.0851
52	483.21	4.1260	483.6	4.1261
53	488.04	4.1673	488.4	4.1670
54	492.92	4.2089	493.4	4.2097
55	497.85	4.2510	498.3	4.2515
56	502.83	4.2935	503.3	4.2942
57	507.85	4.3364	508.2	4.3360
58	512.93	4.3798	513.4	4.3803
59	518.06	4.4236	518.5	4.4238
60	523.24	4.4678	523.4	4.4656
61	528.47	4.5125	529.1	4.5143
62	533.75	4.5576	534.3	4.5586
63	539.09	4.6032	539.7	4.6047
64	544.48	4.6492	545.1	4.6508

6. SLIT DIMENSIONS AND RELATED INFORMATION

SLIT NO/POS		SHORT DIMENSION NOMINAL	SHORT DIMENSION ACTUAL	LONG DIMENSION INCL. YAW SLITS NOMINAL	LONG DIMENSION INCL. YAW SLITS ACTUAL	LONG DIMENSION NOT INCL. YAW SLITS NOMINAL	LONG DIMENSION NOT INCL. YAW SLITS ACTUAL
1	B	0.0085	0.0086	8.718	8.7180	8.518	8.5180
2	C	0.0169	0.0170	8.718	8.7180	8.518	8.5180
3	D	0.0338	0.0339	8.718	8.7180	8.518	8.5180

SLIT POSITION TRANSITION TIMES

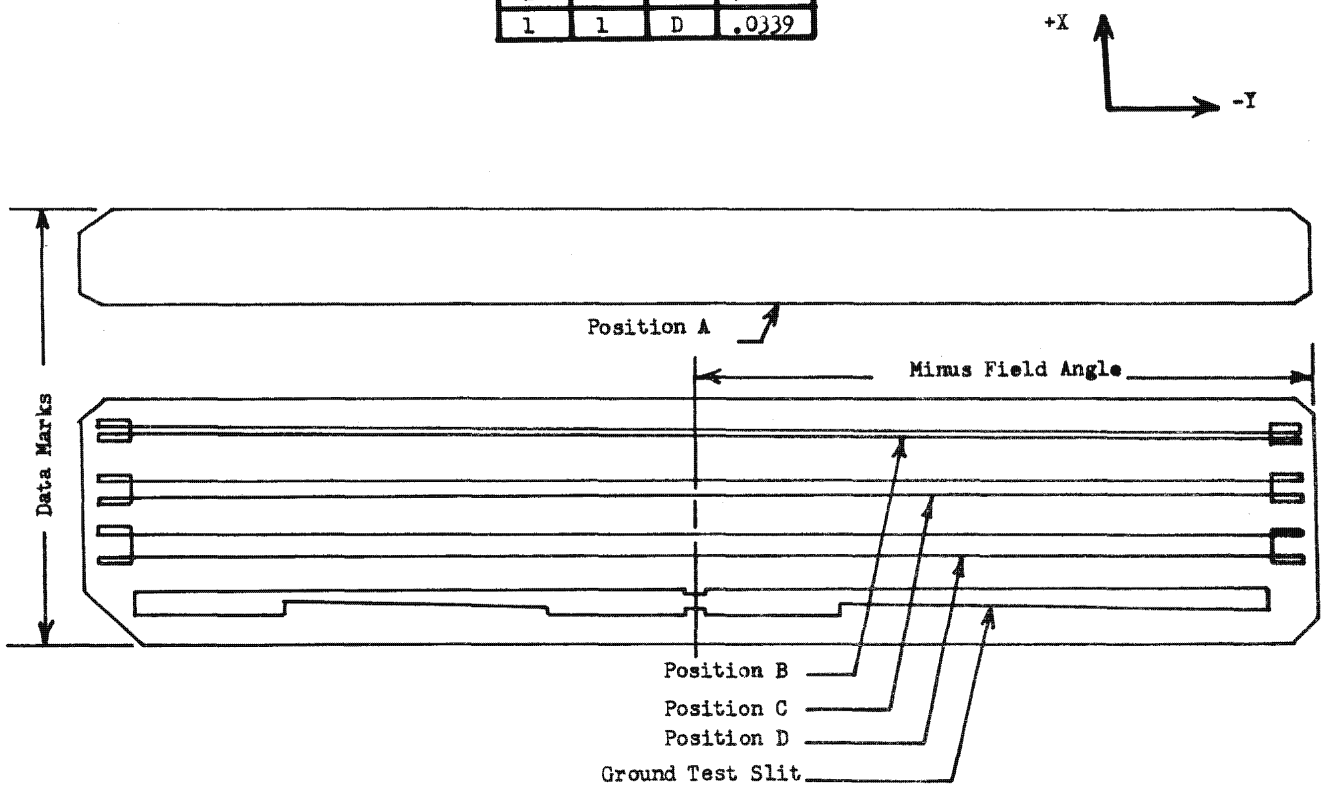
FROM POSITION	TO POSITION	TIME SECONDS
A	B	1.90
B	C	2.10
C	D	2.10
D	C	2.10
C	B	2.20
B	A	2.10
A	C	4.20
C	A	4.00
A	D	6.20
D	A	6.20

NOTE- SLIT APERTURE PLATE SERIAL NUMBER 412 504

CAMERA SERIAL NUMBER 505

SLIT APERTURE PLATE CONFIGURATION
S/N 504 AND S/N 412

CB20	CB21	Pos.	Descr.
0	0	A	BLANK
0	1	B	.0086
1	0	C	.0170
1	1	D	.0339



7. MISCELLANEOUS NOTES

A) FOCAL LENGTH = 76.905 INCHES

B) CAMERA START TRANSIENT - MAX 1.5 SECONDS FROM TURN ON TO STEADY STATE

C) CALCULATED AVERAGE TIME TO EMPTY LOOPER AT 16.5 IN/SEC T/U VEL.

1. CONTINUOUS STRIP MODE - 2.04 SECONDS (SPEED STEP 37)
2. WITHOUT CAMERA RUNNING - 1.61 SECONDS (ONE LOOPER FULL PLUS COAST)

D) DYNAMIC LOOPER CAPACITY = 26.37 INCHES

E) DISTANCE FROM FINE FILM QUANTITY SENSOR TO SLIT APERTURE IS 54 INCHES (WITH TAKE-UP SIDE OF LOOPER EMPTY).

F) DISTANCE FROM FINE FILM QUANTITY SENSOR (SUPPLY) TO COARSE FILM QUANTITY SENSOR (TAKE-UP) = 63.48 INCHES.

G) AUTO FOCUS RANGE ON COMPOSITE FOCUS DEVIATION CURVE, DENOTES THE RANGE OF READINGS OBTAINED WHEN THE FOCUS SYSTEM WAS DRIVEN IN THE AUTOMATIC FOCUS MODE DURING ACCEPTANCE TESTING.

H) CHANNEL FREQUENCIES

10 - 5.4 KC
12 - 10.5 KC
14 - 22.0 KC
15 - 30.0 KC

I) RETICLE - 10.0 LINES/MM RULING.

8. PLATEN TRAVEL TIMES AND RELATED INFORMATION

	TIME (SEC)	OPERATING VOLTS
A) FORWARD (STOP TO STOP)	78.0	27.0
REVERSE (STOP TO STOP)	79.0	27.0
FORWARD (STOP TO STOP)	62.0	32.5
REVERSE (STOP TO STOP)	63.0	32.5
FORWARD (STOP TO STOP)	77.0	28.0
REVERSE (STOP TO STOP)	76.0	28.0

B) TOTAL PLATEN TRAVEL = 0.0192 INCH

C) FORWARD
PLATEN TRAVEL RATE - 0.00031 IN/SEC AT 32.5 VOLTS
PLATEN TRAVEL RATE - 0.00025 IN/SEC AT 28.0 VOLTS
PLATEN TRAVEL RATE - 0.00025 IN/SEC at 27.0 VOLTS

REVERSE
PLATEN TRAVEL RATE - 0.00030 IN/SEC AT 32.5 VOLTS
PLATEN TRAVEL RATE - 0.00025 IN/SEC AT 28.0 VOLTS
PLATEN TRAVEL RATE - 0.00024 IN/SEC AT 27.0 VOLTS

D) DEFINITION OF PLATEN TRAVEL DIRECTIONS
PLUS = FORWARD = AWAY FROM LENS = + Z DIRECTION - RTC 11-777
MINUS = REVERSE = TOWARDS LENS = - Z DIRECTION - RTC 12-888

9. DATA ON STEREO MIRROR (FROM WT.-BAL. REPORT OF MAY 14, 1964)

WEIGHT - 226.09 LBS.

MASS - 7.0271 SLUGS

MOMENT OF INERTIA - IYY = 4.0203 SLUG FT. SQUARED
YY = AXIS OF ROTATION

10. PROCEDURE FOR PLACING FOOTAGE SCALE ON CPL 15, 16, 28 CAL CURVES.

STEP 1. S = FOOTAGE QUANTITY IN THE FORWARD RECORD STORAGE AT LAUNCH (FEET)

STEP 2. C = INITIAL CPL ---- OUTPUT (PERCENT FULL SCALE). THIS READING SHOULD BE TAKEN AFTER LAUNCH AND BEFORE C/P IS COMMANDED TO OPERATE.

STEP 3. LABEL THE ABSCISSA EQUAL TO S AT FIRST INTERSECTION OF C PERCENT WITH THE CAL CURVE.

STEP 4. LABEL ABSCISSA OF FIRST VERTICAL LINE ON CURVE EQUAL TO-

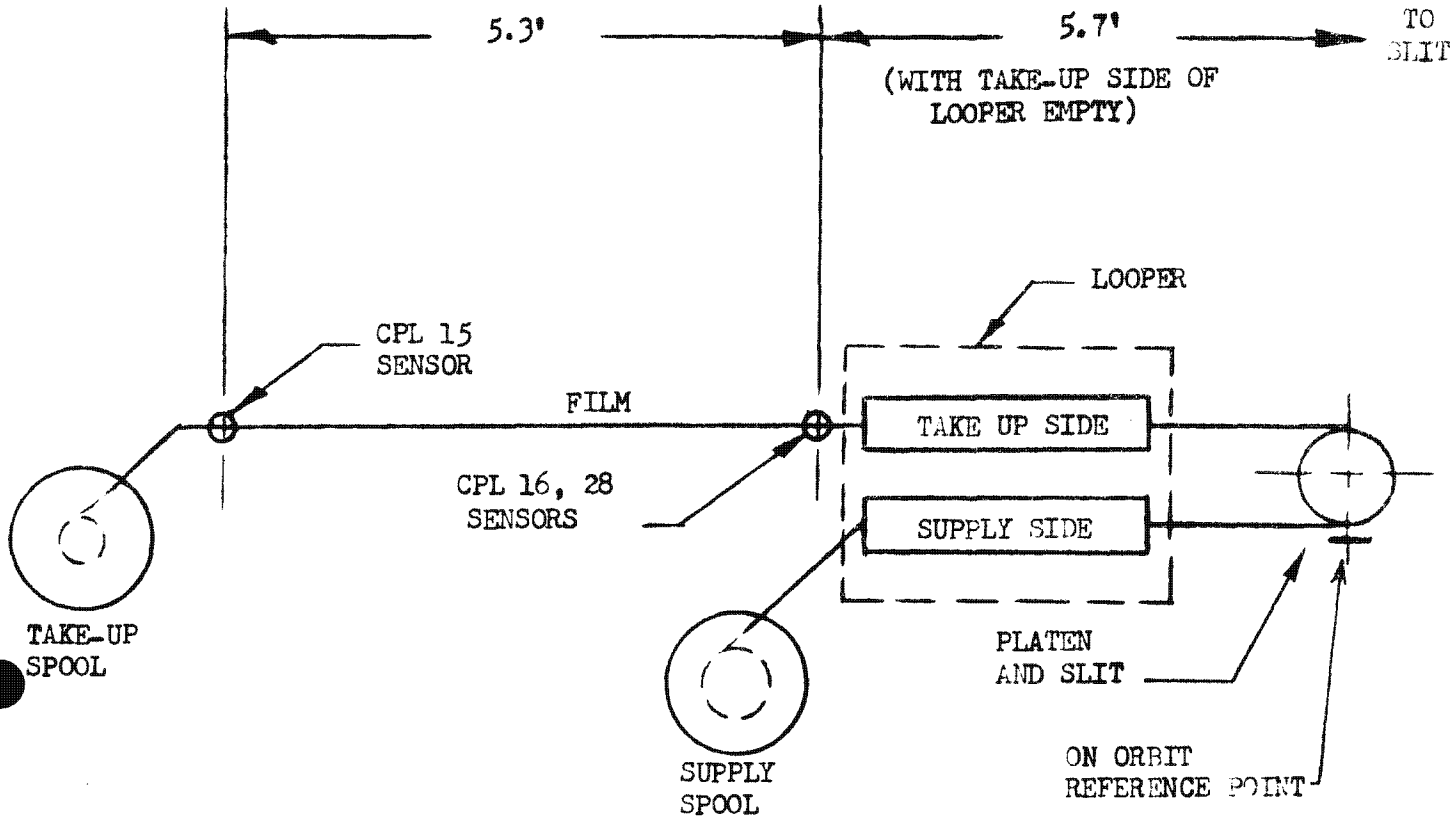
S + 1016.00 + 308.60-17.775*C 0.1283*C**2 FOR CPL 15

S + 45.12 + 5.1569 -0.5007*C FOR CPL 16

S + 282.00 + 32.1908 -3.1496*C FOR CPL 28

STEP 5. LABEL THE ABSCISSA SCALE AT SUCCEEDING VERTICAL LINES, 1016.00 FEET HIGHER THAN ITS PREDECESSOR FOR CPL 15, 45.12 FEET HIGHER THAN ITS PREDECESSOR FOR CPL 16, AND 282.00 FEET HIGHER THAN ITS PREDECESSOR FOR CPL 28.

11. **FILM HANDLING AND MONITORING SYSTEM SCHEMATIC DIAGRAM**



FILM QUANTITY SENSORS:

CPL 15 - FILM TAKE-UP QUANTITY, COARSE ,/REEL ROTATION
CPL 16 - FILM TAKE-UP QUANTITY, FINE, (SUPPLY)
CPL 28 - FILM TAKE-UP QUANTITY, MEDIUM (SUPPLY)

NOTE: DIMENSIONS ON DIAGRAM REPRESENT FILM DISTANCES.

12. FILM COAST AND SECONDS TO FILL LOOPER

CAMERA SERIAL NO. 505 * CALCULATED

STEP NO.	NET COAST INCHES	*TIME TO FILL LOOPER (SECS)	STEP NO.	NET COAST INCHES	*TIME TO FILL LOOPER (SECS)
1	-0.36	10.62	33	-0.11	7.73
2	-0.37	10.52	34	-0.08	7.65
3	-0.38	10.42	35	-0.06	7.57
4	-0.39	10.31	36	-0.03	7.50
5	-0.39	10.21	37	-0.00	7.42
6	-0.40	10.11	38	0.03	7.35
7	-0.41	10.01	39	0.05	7.28
8	-0.41	9.91	40	0.08	7.21
9	-0.41	9.81	41	0.11	7.13
10	-0.41	9.71	42	0.14	7.06
11	-0.41	9.62	43	0.17	7.00
12	-0.41	9.52	44	0.20	6.92
13	-0.41	9.43	45	0.23	6.86
14	-0.41	9.34	46	0.26	6.79
15	-0.40	9.24	47	0.29	6.72
16	-0.40	9.15	48	0.32	6.65
17	-0.39	9.06	49	0.35	6.59
18	-0.38	8.97	50	0.38	6.52
19	-0.37	8.88	51	0.41	6.46
20	-0.36	8.79	52	0.43	6.39
21	-0.35	8.71	53	0.46	6.33
22	-0.33	8.62	54	0.48	6.27
23	-0.32	8.54	55	0.50	6.20
24	-0.30	8.45	56	0.53	6.14
25	-0.29	8.37	57	0.54	6.08
26	-0.27	8.29	58	0.56	6.02
27	-0.25	8.20	59	0.57	5.96
28	-0.23	8.12	60	0.59	5.91
29	-0.21	8.04	61	0.60	5.84
30	-0.18	7.96	62	0.60	5.79
31	-0.16	7.88	63	0.60	5.73
32	-0.14	7.81	64	0.60	5.67

NOTE - EQUATION FOR COAST AS A FUNCTION OF NOMINAL SPEED,
WHERE- C = NET COAST IN INCHES
S = NOMINAL FILM DRIVE SPEED (IN/SEC)

```
C = + 1.2347E 01 - 1.1630E 01(S) + 3.3864E 00(S**2)
    - 3.0720E-01(S**3) + 0.0       (S**4)
```

STANDARD ERROR = 0.025412

13. TAKE-UP VELOCITY VERSUS SPOOL LOAD FOR 400-1486 T/U MOTOR

SPOOL LOAD (FT.)	T/U VELOCITY (IN./SEC.)	SPOOL LOAD (FT.)	T/U VELOCITY (IN./SEC.)
00.0	10.46	1550.0	17.48
50.0	10.91	1600.0	17.55
100.0	11.33	1650.0	17.61
150.0	11.73	1700.0	17.67
200.0	12.11	1750.0	17.72
250.0	12.48	1800.0	17.76
300.0	12.83	1850.0	17.80
350.0	13.16	1900.0	17.83
400.0	13.48	1950.0	17.85
450.0	13.78	2000.0	17.87
500.0	14.06	2050.0	17.88
550.0	14.34	2100.0	17.89
600.0	14.59	2150.0	17.89
650.0	14.84	2200.0	17.88
700.0	15.07	2250.0	17.86
750.0	15.29	2300.0	17.84
800.0	15.50	2350.0	17.82
850.0	15.70	2400.0	17.78
900.0	15.88	2450.0	17.74
950.0	16.06	2500.0	17.69
1000.0	16.22	2550.0	17.64
050.0	16.38	2600.0	17.57
1100.0	16.53	2650.0	17.50
1150.0	16.66	2700.0	17.42
1200.0	16.79	2750.0	17.33
1250.0	16.91	2800.0	17.23
1300.0	17.03	2850.0	17.13
1350.0	17.13	2900.0	17.01
1400.0	17.23	2950.0	16.88
1450.0	17.32	3000.0	16.75
1500.0	17.40	3050.0	16.60

NOTE 1 - TEST RUN AT 28 VOLTS, 3.0 LBS. FILM TENSION, AND ATMOSPHERIC PRESSURE.

NOTE 2 - EQUATION OF CURVE FOR TAKE-UP VELOCITY, AS A FUNCTION OF SPOOL LOAD.

$$V = 10.463 + .00905L - 4.164L^{2}E-06 + 1.006L^{3}E-09 - 1.303L^{4}E-13$$

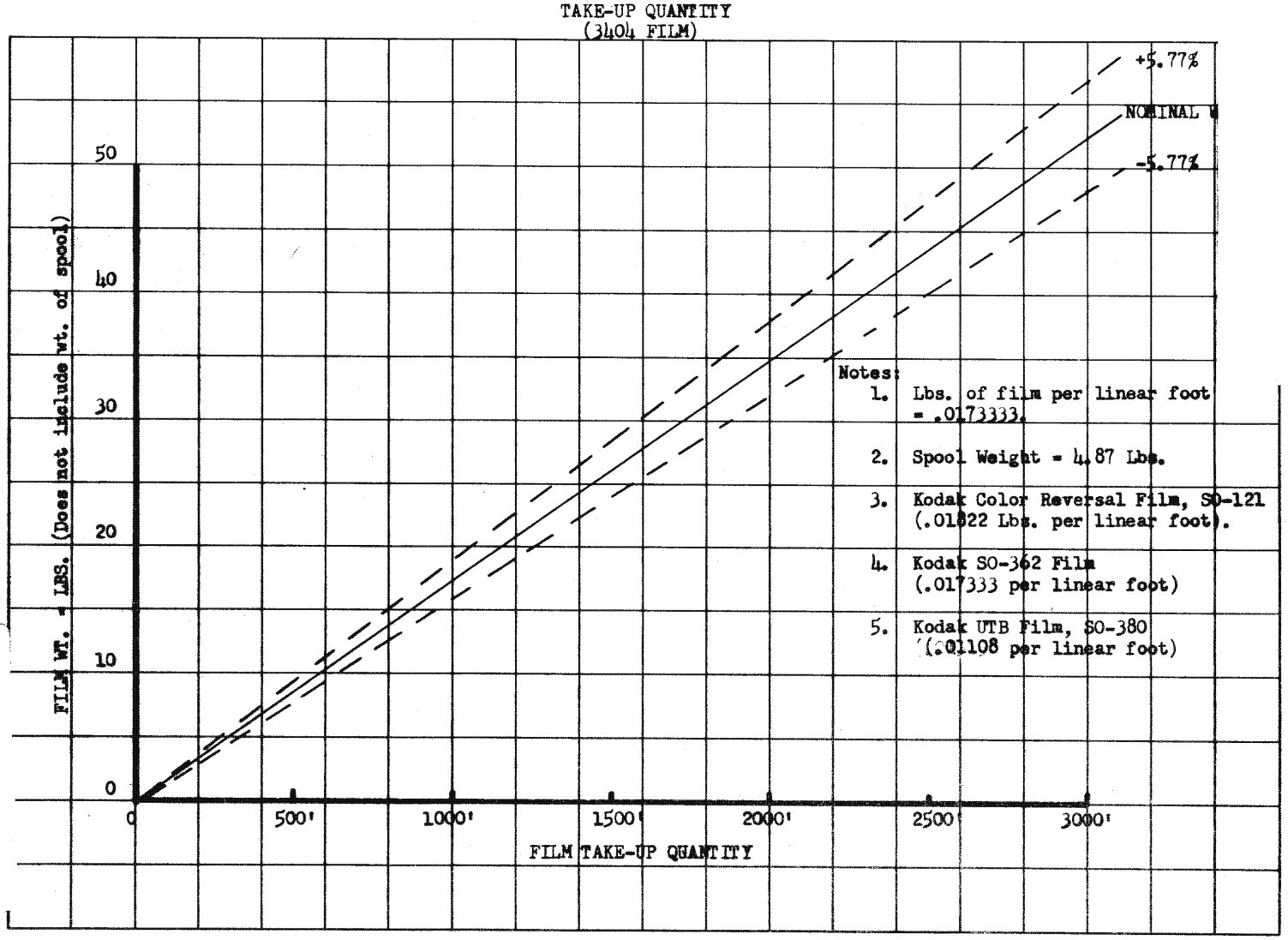
WHERE - V = T/U VELOCITY - IN./SEC.

L = SPOOL LOAD IN FEET

NOTE 3 - APPROXIMATE CHANGE IN VELOCITY WITH CHANGE IN VOLTAGE IS-

3/4 IN/SEC PER VOLT

WEIGHT OF FILM VS. FILM
TAKE-UP QUANTITY
(3404 FILM)



15. LINK, CHANNEL, PIN ASSIGNMENTS

CPL	NAME	CH	PIN	POWER SUPPLY
2	TAKE-UP CASSETTE FILM PATH TEMPERATURE	10-13,15-27		22
3	STEREO MIRROR DIFFERENTIAL TEMPERATURE	12	7	+-22
4	STEREO MIRROR TEMPERATURE	10	5	+-22
5	LENS BARREL AFT END TEMPERATURE	10	6	+-22
6	45 DEG. MIRROR TEMPERATURE	10	7	+-22
7	COMPONENT SUPPORT TUBE -Y TEMPERATURE STATION 149	10	8	+-22
8	COMPONENT SUPPORT TUBE -Y TEMPERATURE STATION 179	10	9	+-22
9	COMPONENT SUPPORT TUBE -Y TEMPERATURE STATION 198	10	10	+-22
10	REFERENCE VOLTAGE POINT, 2.48 VOLTS D.C.	10	11	22
11	COMPONENT SUPPORT TUBE -Z TEMPERATURE STATION 179	15	23	22
12	SLIT POSITION	12	6	5
13	STEREO POSITION	14	19	5
14	CRAB POSITION	14	20	5
15	FILM TAKE-UP QUANTITY, COARSE, REEL ROTATION	12	1	22
16	FILM TAKE-UP QUANTITY, FINE, (SUPPLY)	12	2	5
17	LOOPER POSITION	14	21	5
18	FILM DRIVE ELECTRONICS OUTPUT	12	4	28
19	TAKE-UP MOTOR CURRENT	14	24	28
20	PLATEN POSITION (COARSE)	14	22	5
21	FOCUS OUTPUT	14	26	+-22
22	FOCUS FORWARD CHANNEL OUTPUT	14	27	+-22
23	FOCUS REVERSE CHANNEL OUTPUT	14	28	+-22
25	PORT OPEN TELLTALE	12	11	22*
26	ENVIRONMENTAL SUPPLY	10-12,15-24		28
27	PLATEN POSITION (FINE)	14	23	5
28	FILM TAKE-UP QUANTITY, MEDIUM	15	26	5
29	AMPLIFIED DATA SIGNALS	12	3	28
33	POWER CONTROL MONITOR, STEREO SERVO	12	8	28
34	POWER CONTROL MONITOR, CRAB SERVO	12	9	28
35	OPERATIONAL SUPPLY OUTPUT	12	10	28

NOTE - ALL POINTS ARE MONITORED ON LINKS 2 AND 3, LINK 2-R/T, LINK 3-P/B

CHANNEL 15 POINTS ARE NOT AVAILABLE ON LINK 3-P/B

* ALSO REQUIRES 28 VOLTS ENVIRONMENTAL POWER

16. C/P OPERATING CURRENT PROFILE

OPERATING SUPPLY

FUNCTION	AMPERAGE
OPERATING POWER (C/P +25)	0.390
GAIN CONTROL POWER (FOCUS)	0.330
GAIN ADJUST MOTOR (PLATEN ADJUST)	0.051
SUPPLY SPOOL BRAKE TORQUE MOTOR	0.380
MOTOR SPEED DRIVE	1.060
TAKE UP MOTOR	0.340
STEREO SERVO	0.710
CRAB SERVO	0.610
SLIT POSITIONER	0.140
INSTRUMENTATION SUPPLY (FIVE VOLT)	0.003
ENVIRONMENTAL SUPPLY (ALL HEATERS ON)	2.218

NOTE- THE TOTAL OPERATING CURRENT FOR ANY MODE OF OPERATION MAY BE CALCULATED BY ADDING THE DESIRED COMBINATION OF INDIVIDUAL FUNCTION CURRENTS LISTED ABOVE.

LIST OF PERTINENT FACTS AND FIGURES
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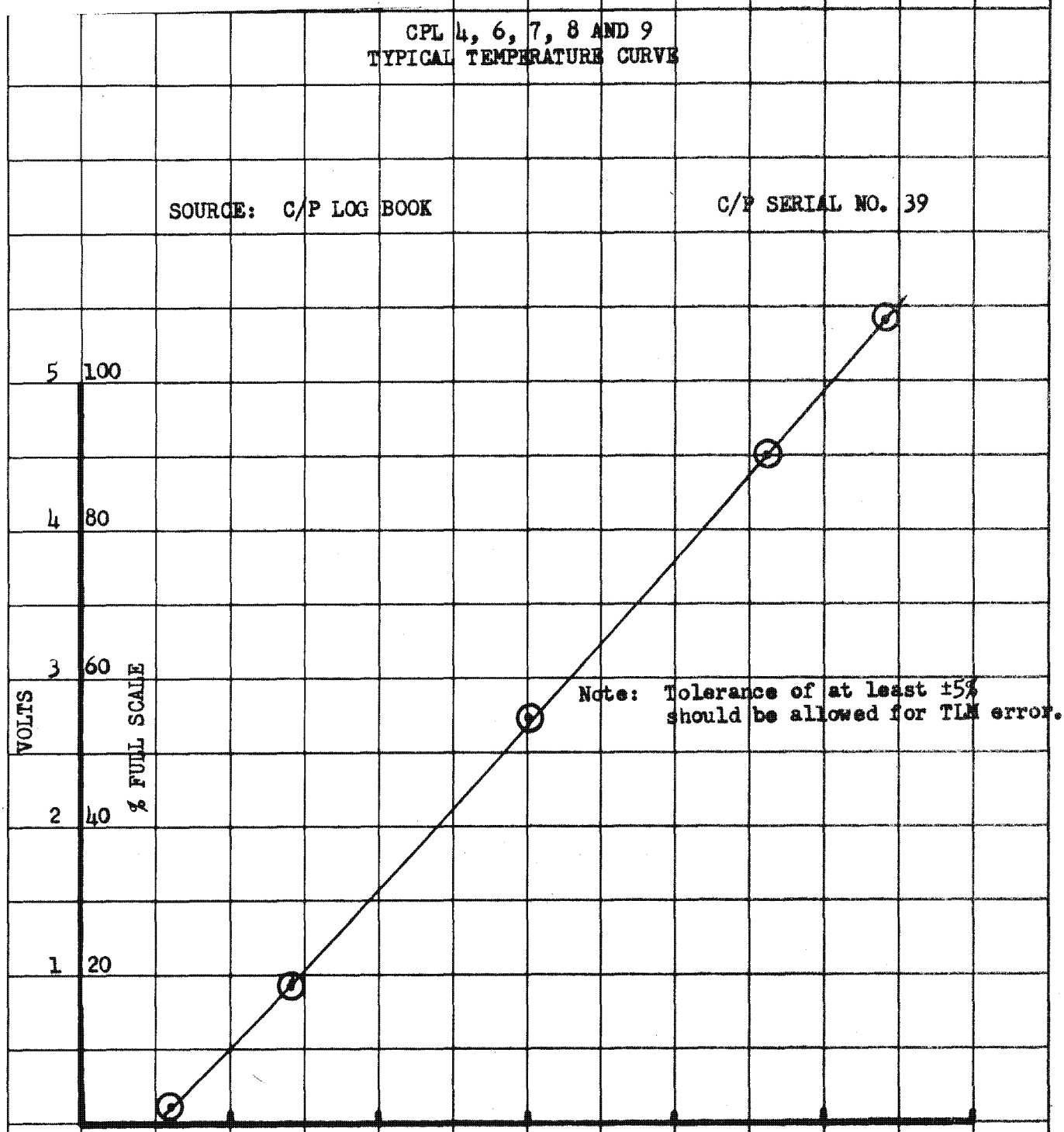
LIST OF PERTINENT FACTS AND FIGURES
(THIS PAGE BLANK)

CPL 4, 6, 7, 8 AND 9
TYPICAL TEMPERATURE CURVE

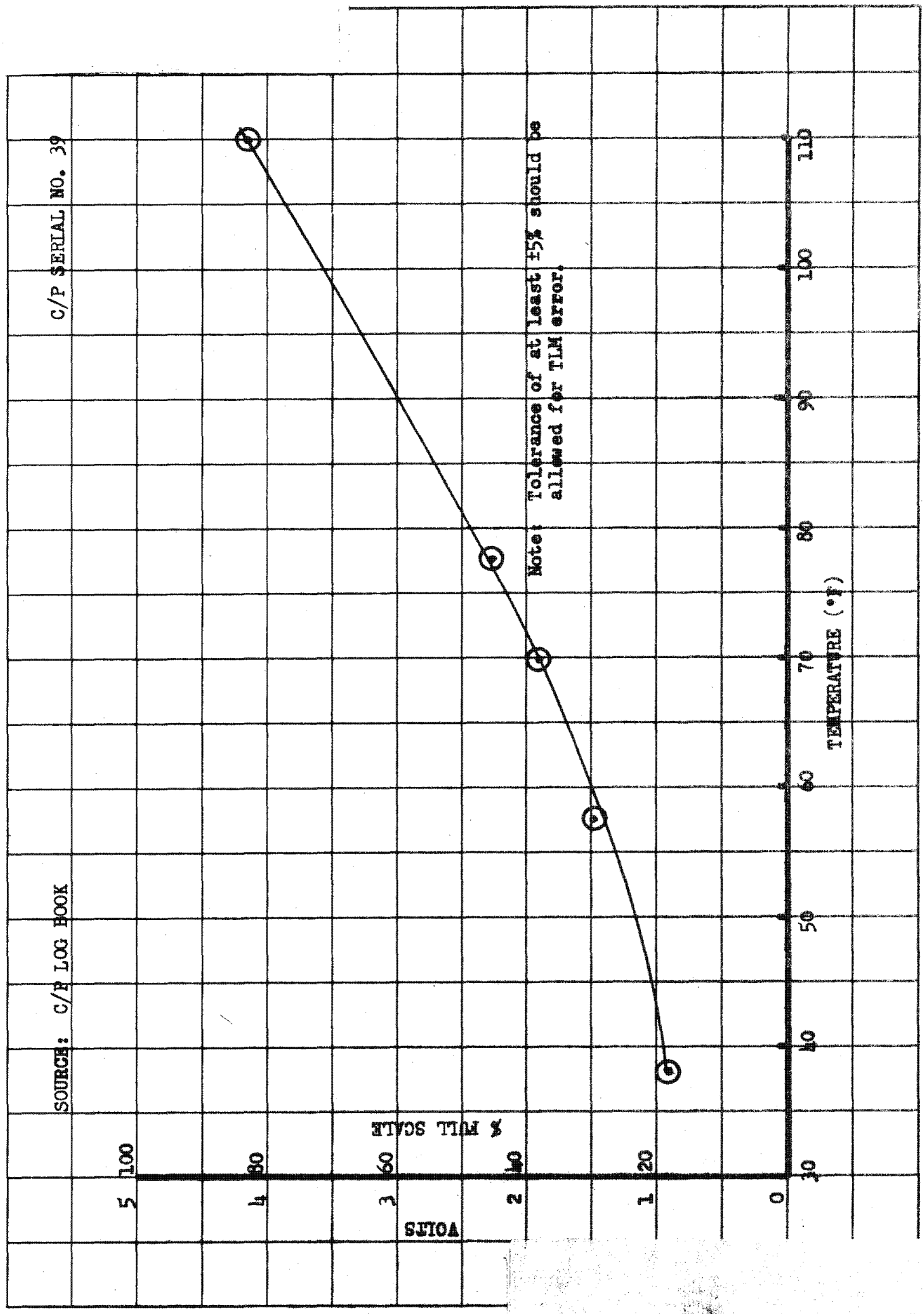
SOURCE: C/P LOG BOOK

C/P SERIAL NO. 39



Note: Tolerance of at least ±5% should be allowed for TLM error.

CPL 2 AND 11
TYPICAL TEMPERATURE CURVE



C/P SERIAL NUMBER FM-39

SOURCE - C/P LOG BOOK

CPL POINT	PROBE DESIGNATION	PROBE S/N
2	A-603	B634
4	A-904	K223
6	A-901	L814
7	A-905	9146
8	A-906	8511
9	A-907	9123
11	A-909	9132

FM-39 CPL 2 2 OR 3-10-13

TAKE UP CASSETTE FILM PATH TEMPERATURE
DIGITAL LISTING OF CAL. CURVE

PERCENT	DEGREES(F)	PERCENT	DEGREES(F)
19.	39.56	52.	84.22
20.	41.60	53.	85.07
21.	43.58	54.	85.91
22.	45.52	55.	86.73
23.	47.39	56.	87.54
24.	49.22	57.	88.33
25.	51.00	58.	89.12
26.	52.72	59.	89.90
27.	54.40	60.	90.67
28.	56.03	61.	91.43
29.	57.61	62.	92.19
30.	59.15	63.	92.94
31.	60.65	64.	93.69
32.	62.11	65.	94.44
33.	63.52	66.	95.19
34.	64.89	67.	95.94
35.	66.23	68.	96.69
36.	67.53	69.	97.44
37.	68.79	70.	98.20
38.	70.01	71.	98.96
39.	71.21	72.	99.73
40.	72.37	73.	100.51
41.	73.50	74.	101.30
42.	74.60	75.	102.10
43.	75.67	76.	102.91
44.	76.71	77.	103.73
45.	77.73	78.	104.56
46.	78.72	79.	105.42
47.	79.69	80.	106.28
48.	80.64	81.	107.17
49.	81.56	82.	108.07
50.	82.47	83.	109.00
51.	83.35	84.	109.94

NOTE - IF TEMPERATURE SHOULD EXCEED 90 DEGREES A TIME VS TEMPERATURE RECORD SHOULD BE MAINTAINED TO PERMIT FILM KEEPING TIME LIMITATION CALCULATION.

FM-39 CPL 4 2 OR 3-10-5

STEREO MIRROR TEMPERATURE
DIGITAL LISTING OF CAL. CURVE

PERCENT	DEGREES(F)	PERCENT	DEGREES(F)
10.	59.80	56.	70.26
11.	60.03	57.	70.48
12.	60.25	58.	70.71
13.	60.48	59.	70.94
14.	60.71	60.	71.16
15.	60.94	61.	71.39
16.	61.16	62.	71.62
17.	61.39	63.	71.85
18.	61.62	64.	72.07
19.	61.85	65.	72.30
20.	62.07	66.	72.53
21.	62.30	67.	72.76
22.	62.53	68.	72.98
23.	62.75	69.	73.21
24.	62.98	70.	73.44
25.	63.21	71.	73.67
26.	63.44	72.	73.89
27.	63.66	73.	74.12
28.	63.89	74.	74.35
29.	64.12	75.	74.57
30.	64.35	76.	74.80
31.	64.57	77.	75.03
32.	64.80	78.	75.26
33.	65.03	79.	75.48
34.	65.26	80.	75.71
35.	65.48	81.	75.94
36.	65.71	82.	76.17
37.	65.94	83.	76.39
38.	66.16	84.	76.62
39.	66.39	85.	76.85
40.	66.62	86.	77.07
41.	66.85	87.	77.30
42.	67.07	88.	77.53
43.	67.30	89.	77.76
44.	67.53	90.	77.98
45.	67.76	91.	78.21
46.	67.98	92.	78.44
47.	68.21	93.	78.67
48.	68.44	94.	78.89
49.	68.66	95.	79.12
50.	68.89	96.	79.35
51.	69.12	97.	79.58
52.	69.35	98.	79.80
53.	69.57	99.	80.03
54.	69.80	100.	80.26
55.	70.03	101.	80.48

FM-39 CPL 6 2 OR 3-10-7

45 DEGREE MIRROR TEMPERATURE
DIGITAL LISTING OF CAL. CURVE

PERCENT	DEGREES(F)	PERCENT	DEGREES(F)
10.	59.95	56.	70.49
11.	60.20	57.	70.71
12.	60.44	58.	70.93
13.	60.69	59.	71.15
14.	60.93	60.	71.37
15.	61.17	61.	71.59
16.	61.41	62.	71.81
17.	61.65	63.	72.03
18.	61.89	64.	72.25
19.	62.13	65.	72.47
20.	62.36	66.	72.69
21.	62.60	67.	72.91
22.	62.83	68.	73.13
23.	63.07	69.	73.35
24.	63.30	70.	73.57
25.	63.54	71.	73.79
26.	63.77	72.	74.01
27.	64.00	73.	74.23
28.	64.23	74.	74.46
29.	64.46	75.	74.68
30.	64.69	76.	74.90
31.	64.92	77.	75.12
32.	65.15	78.	75.35
33.	65.37	79.	75.57
34.	65.60	80.	75.80
35.	65.83	81.	76.02
36.	66.05	82.	76.25
37.	66.28	83.	76.47
38.	66.50	84.	76.70
39.	66.73	85.	76.93
40.	66.95	86.	77.15
41.	67.17	87.	77.38
42.	67.40	88.	77.61
43.	67.62	89.	77.84
44.	67.84	90.	78.07
45.	68.06	91.	78.30
46.	68.28	92.	78.54
47.	68.51	93.	78.77
48.	68.73	94.	79.00
49.	68.95	95.	79.24
50.	69.17	96.	79.47
51.	69.39	97.	79.71
52.	69.61	98.	79.94
53.	69.83	99.	80.18
54.	70.05	100.	80.42
55.	70.27	101.	80.66

FM-39 CPL 7 2 OR 3-10-8

COMPONENT SUPPORT TUBE -Y TEMPERATURE STATION 149

DIGITAL LISTING OF CAL. CURVE

PERCENT	DEGREES(F)	PERCENT	DEGREES(F)
10.	59.75	56.	70.19
11.	59.98	57.	70.41
12.	60.22	58.	70.64
13.	60.45	59.	70.86
14.	60.69	60.	71.08
15.	60.92	61.	71.30
16.	61.15	62.	71.52
17.	61.39	63.	71.74
18.	61.62	64.	71.97
19.	61.85	65.	72.19
20.	62.08	66.	72.41
21.	62.31	67.	72.63
22.	62.54	68.	72.85
23.	62.77	69.	73.07
24.	63.00	70.	73.30
25.	63.23	71.	73.52
26.	63.46	72.	73.74
27.	63.69	73.	73.96
28.	63.92	74.	74.18
29.	64.15	75.	74.41
30.	64.37	76.	74.63
31.	64.60	77.	74.85
32.	64.83	78.	75.07
33.	65.05	79.	75.30
34.	65.28	80.	75.52
35.	65.50	81.	75.74
36.	65.73	82.	75.97
37.	65.95	83.	76.19
38.	66.18	84.	76.42
39.	66.40	85.	76.64
40.	66.63	86.	76.86
41.	66.85	87.	77.09
42.	67.08	88.	77.31
43.	67.30	89.	77.54
44.	67.52	90.	77.76
45.	67.75	91.	77.99
46.	67.97	92.	78.22
47.	68.19	93.	78.44
48.	68.42	94.	78.67
49.	68.64	95.	78.90
50.	68.86	96.	79.12
51.	69.08	97.	79.35
52.	69.31	98.	79.58
53.	69.53	99.	79.81
54.	69.75	100.	80.04
55.	69.97	101.	80.27

FM-39 CPL 8 2 OR 3-10--9

COMPONENT SUPPORT TUBE -Y TEMPERATURE STATION 179

DIGITAL LISTING OF CAL. CURVE

PERCENT	DEGREES(F)	PERCENT	DEGREES(F)
10.	59.84	56.	70.43
11.	60.10	57.	70.65
12.	60.35	58.	70.86
13.	60.60	59.	71.08
14.	60.85	60.	71.30
15.	61.10	61.	71.51
16.	61.35	62.	71.73
17.	61.59	63.	71.95
18.	61.84	64.	72.16
19.	62.08	65.	72.38
20.	62.32	66.	72.60
21.	62.56	67.	72.81
22.	62.80	68.	73.03
23.	63.04	69.	73.25
24.	63.27	70.	73.47
25.	63.51	71.	73.69
26.	63.74	72.	73.91
27.	63.98	73.	74.13
28.	64.21	74.	74.35
29.	64.44	75.	74.57
30.	64.67	76.	74.79
31.	64.90	77.	75.01
32.	65.13	78.	75.23
33.	65.36	79.	75.45
34.	65.59	80.	75.68
35.	65.81	81.	75.90
36.	66.04	82.	76.12
37.	66.26	83.	76.35
38.	66.48	84.	76.58
39.	66.71	85.	76.80
40.	66.93	86.	77.03
41.	67.15	87.	77.26
42.	67.37	88.	77.49
43.	67.59	89.	77.72
44.	67.82	90.	77.95
45.	68.03	91.	78.18
46.	68.25	92.	78.42
47.	68.47	93.	78.65
48.	68.69	94.	78.89
49.	68.91	95.	79.13
50.	69.13	96.	79.36
51.	69.35	97.	79.60
52.	69.56	98.	79.84
53.	69.78	99.	80.08
54.	70.00	100.	80.33
55.	70.21	101.	80.57

FM-39 CPL 9 2 OR 3-10-10

COMPONENT SUPPORT TUBE -Y TEMPERATURE STATION 198

DIGITAL LISTING OF CAL. CURVE

P5RCENT	DEGREES(F)	PERCENT	DEGREES(F)
10.	59.64	56.	70.09
11.	59.88	57.	70.31
12.	60.11	58.	70.53
13.	60.35	59.	70.76
14.	60.59	60.	70.98
15.	60.82	61.	71.20
16.	61.06	62.	71.42
17.	61.29	63.	71.64
18.	61.52	64.	71.86
19.	61.76	65.	72.09
20.	61.99	66.	72.31
21.	62.22	67.	72.53
22.	62.45	68.	72.75
23.	62.68	69.	72.98
24.	62.91	70.	73.20
25.	63.14	71.	73.42
26.	63.37	72.	73.64
27.	63.60	73.	73.87
28.	63.83	74.	74.09
29.	64.05	75.	74.32
30.	64.28	76.	74.54
31.	64.51	77.	74.76
32.	64.73	78.	74.99
33.	64.96	79.	75.21
34.	65.19	80.	75.44
35.	65.41	81.	75.66
36.	65.64	82.	75.89
37.	65.86	83.	76.12
38.	66.09	84.	76.34
39.	66.31	85.	76.57
40.	66.53	86.	76.80
41.	66.76	87.	77.03
42.	66.98	88.	77.26
43.	67.20	89.	77.49
44.	67.43	90.	77.72
45.	67.65	91.	77.95
46.	67.87	92.	78.18
47.	68.09	93.	78.41
48.	68.32	94.	78.64
49.	68.54	95.	78.87
50.	68.76	96.	79.10
51.	68.98	97.	79.34
52.	69.20	98.	79.57
53.	69.43	99.	79.81
54.	69.65	100.	80.04
55.	69.87	101.	80.28

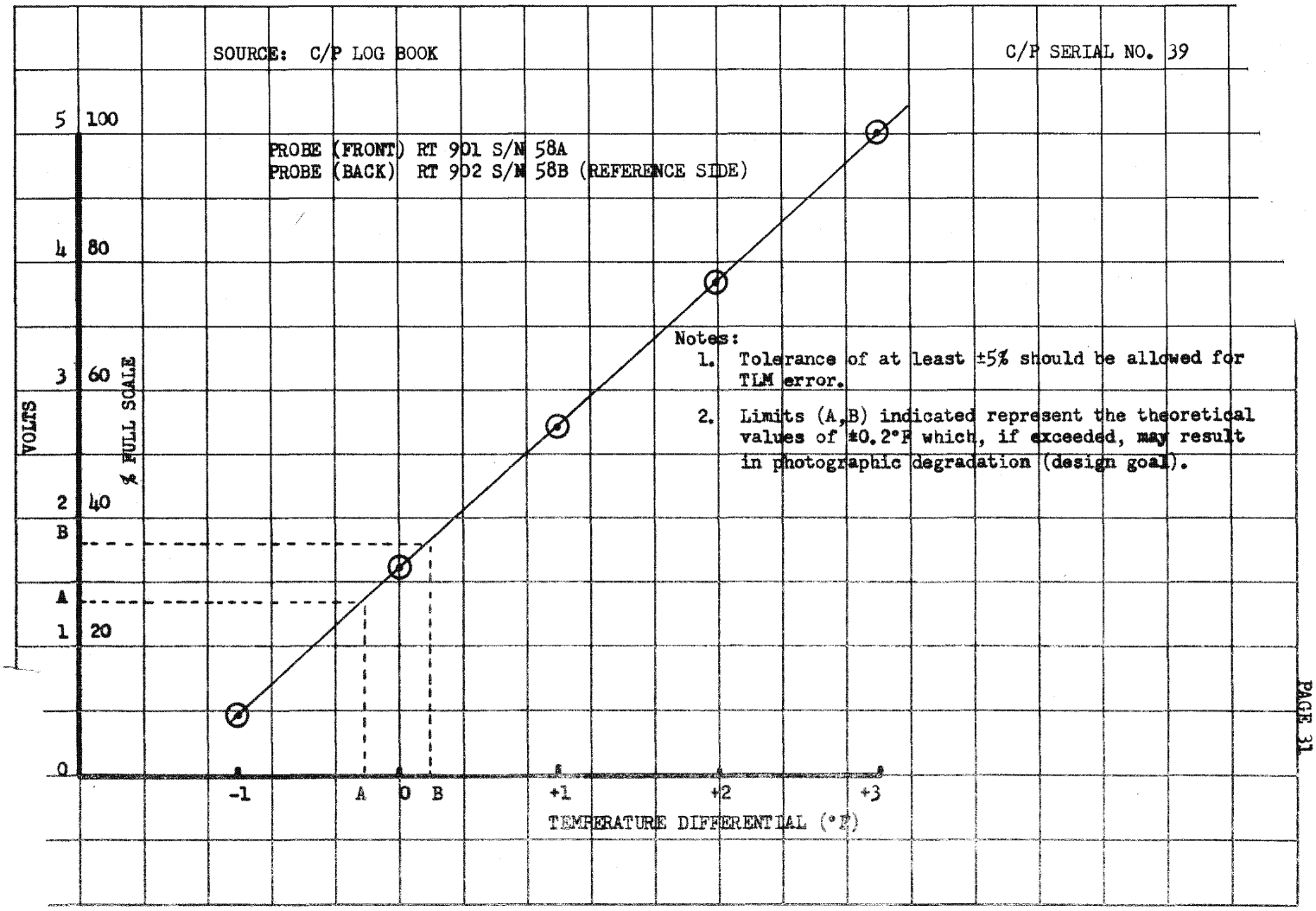
FM-39 CPL 11 2 OR 3-15-23

COMPONENT SUPPORT TUBE -Z TEMPERATURE STATION 179

DIGITAL LISTING OF CAL. CURVE

PERCENT	DEGREES(F)	PERCENT	DEGREES(F)
19.	39.40	52.	86.26
20.	41.15	53.	87.32
21.	42.89	54.	88.36
22.	44.60	55.	89.38
23.	46.29	56.	90.38
24.	47.96	57.	91.36
25.	49.62	58.	92.32
26.	51.25	59.	93.26
27.	52.85	60.	94.17
28.	54.44	61.	95.07
29.	56.01	62.	95.94
30.	57.56	63.	96.80
31.	59.08	64.	97.63
32.	60.58	65.	98.44
33.	62.07	66.	99.23
34.	63.53	67.	100.00
35.	64.97	68.	100.75
36.	66.39	69.	101.48
37.	67.79	70.	102.18
38.	69.17	71.	102.87
39.	70.52	72.	103.53
40.	71.86	73.	104.18
41.	73.18	74.	104.80
42.	74.47	75.	105.40
43.	75.74	76.	105.98
44.	76.99	77.	106.54
45.	78.23	78.	107.08
46.	79.44	79.	107.60
47.	80.63	80.	108.09
48.	81.79	81.	108.57
49.	82.94	82.	109.02
50.	84.07	83.	109.46
51.	85.17	84.	109.87

CPL 3 (GFE 1-3) (2,3-12-7)
STEREO MIRROR DIFFERENTIAL TEMPERATURE

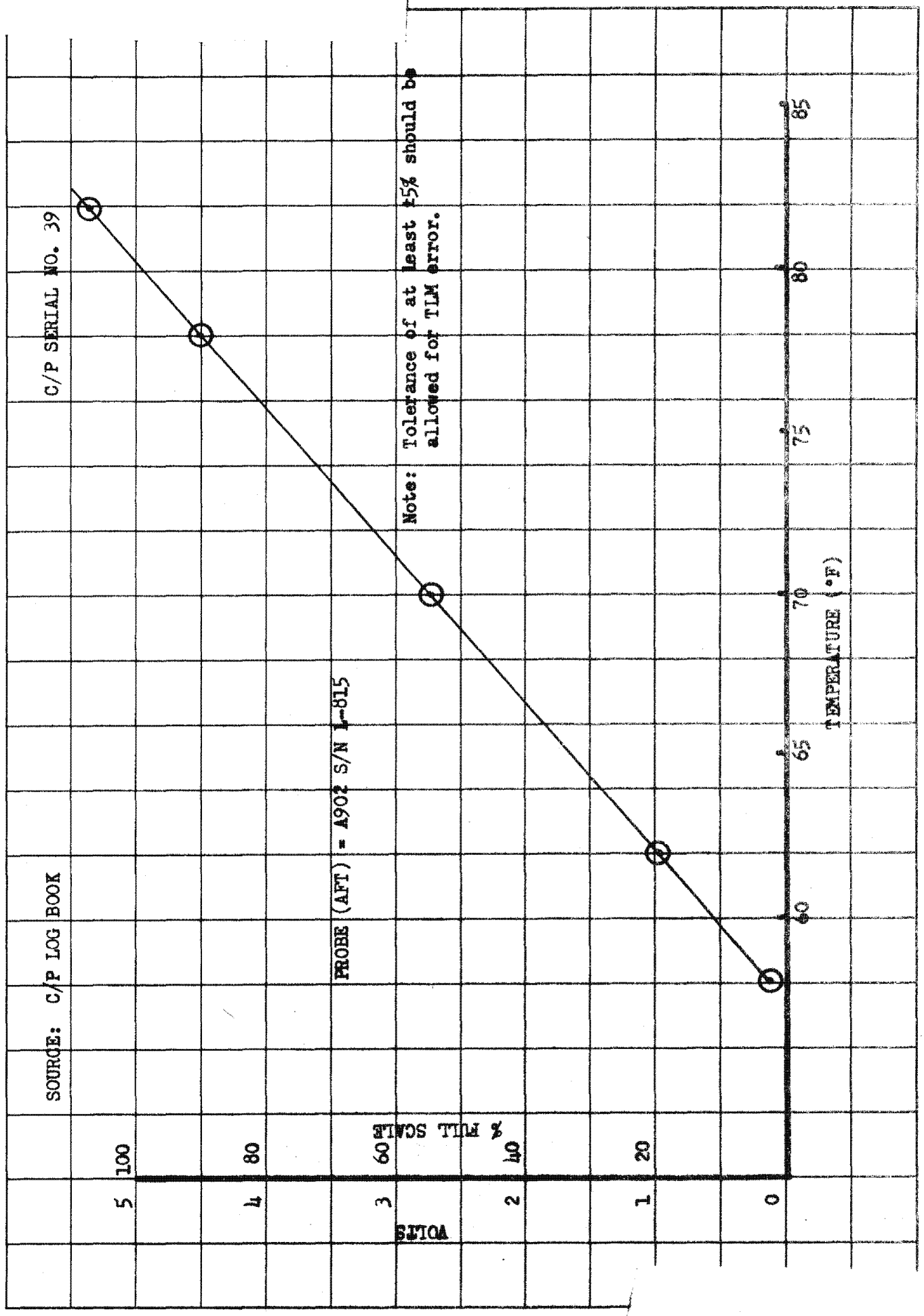


FM-39 CPL 3 2 OR 3-12-7

STEREO MIRROR DIFFERENTIAL TEMPERATURE
DIGITAL LISTING OF CAL. CURVE

PERCENT	DEG(DELTA F)	PERCENT	DEG(DELTA F)
9.	-1.03	55.	1.01
10.	-0.99	56.	1.06
11.	-0.94	57.	1.10
12.	-0.90	58.	1.14
13.	-0.85	59.	1.19
14.	-0.81	60.	1.23
15.	-0.76	61.	1.28
16.	-0.72	62.	1.32
17.	-0.67	63.	1.37
18.	-0.63	64.	1.41
19.	-0.59	65.	1.45
20.	-0.54	66.	1.50
21.	-0.50	67.	1.54
22.	-0.45	68.	1.59
23.	-0.41	69.	1.63
24.	-0.36	70.	1.68
25.	-0.32	71.	1.72
26.	-0.28	72.	1.77
27.	-0.23	73.	1.81
28.	-0.19	74.	1.85
29.	-0.14	75.	1.90
30.	-0.10	76.	1.94
31.	-0.05	77.	1.99
32.	-0.01	78.	2.03
33.	0.04	79.	2.08
34.	0.08	80.	2.12
35.	0.12	81.	2.16
36.	0.17	82.	2.21
37.	0.21	83.	2.25
38.	0.26	84.	2.30
39.	0.30	85.	2.34
40.	0.35	86.	2.39
41.	0.39	87.	2.43
42.	0.43	88.	2.48
43.	0.48	89.	2.52
44.	0.52	90.	2.56
45.	0.57	91.	2.61
46.	0.61	92.	2.65
47.	0.66	93.	2.70
48.	0.70	94.	2.74
49.	0.75	95.	2.79
50.	0.79	96.	2.83
51.	0.83	97.	2.87
52.	0.88	98.	2.92
53.	0.92	99.	2.96
54.	0.97	100.	3.01

CPL 5 (GFE 1-5)(2,3-10-6)
LENS BARREL AFT END TEMPERATURE



FM-39 CPL 5 2 OR 3-10-6

LENS BARREL AFT END TEMPERATURE
DIGITAL LISTING OF CAL. CURVE

PERCENT	DEGREES(F)	PERCENT	DEGREES(F)
10.	59.79	56.	70.28
11.	60.04	57.	70.50
12.	60.28	58.	70.72
13.	60.52	59.	70.94
14.	60.76	60.	71.16
15.	61.00	61.	71.38
16.	61.24	62.	71.60
17.	61.47	63.	71.83
18.	61.71	64.	72.05
19.	61.94	65.	72.27
20.	62.18	66.	72.49
21.	62.41	67.	72.71
22.	62.65	68.	72.93
23.	62.88	69.	73.15
24.	63.11	70.	73.37
25.	63.34	71.	73.59
26.	63.57	72.	73.82
27.	63.80	73.	74.04
28.	64.03	74.	74.26
29.	64.26	75.	74.48
30.	64.49	76.	74.71
31.	64.72	77.	74.93
32.	64.94	78.	75.15
33.	65.17	79.	75.38
34.	65.40	80.	75.60
35.	65.62	81.	75.83
36.	65.85	82.	76.05
37.	66.07	83.	76.28
38.	66.30	84.	76.51
39.	66.52	85.	76.74
40.	66.74	86.	76.96
41.	66.97	87.	77.19
42.	67.19	88.	77.42
43.	67.41	89.	77.65
44.	67.63	90.	77.88
45.	67.86	91.	78.11
46.	68.08	92.	78.34
47.	68.30	93.	78.58
48.	68.52	94.	78.81
49.	68.74	95.	79.04
50.	68.96	96.	79.28
51.	69.18	97.	79.51
52.	69.40	98.	79.75
53.	69.62	99.	79.99
54.	69.84	100.	80.22
55.	70.06	101.	80.46

CPL 10 (GFE 1-10)(2,3-10-11)

2.46 V.D.C.

(49.2% F.S.)

CPL 12 (GFE 1-12) (2,3-12-6)

SLIT POSITION

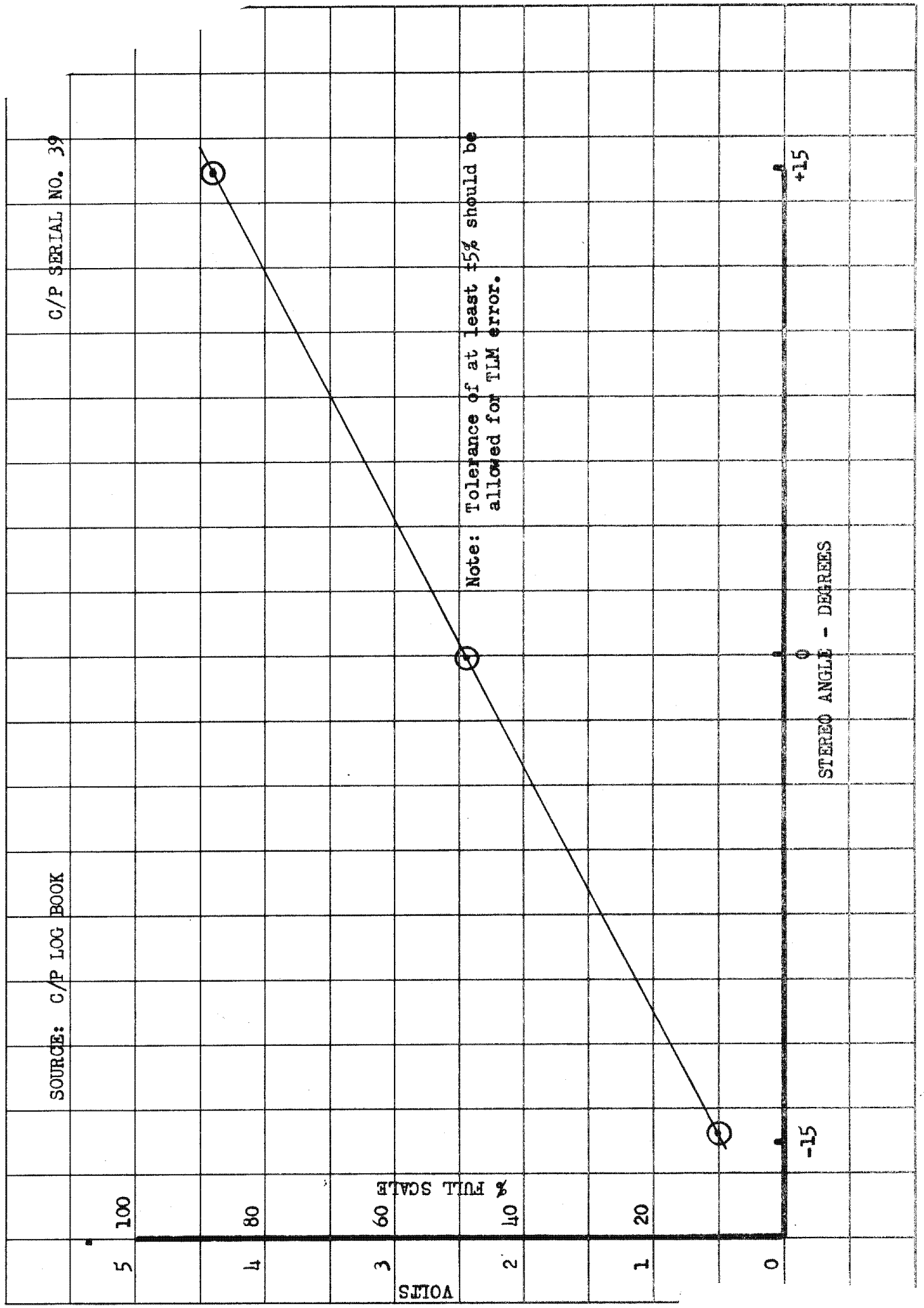
SOURCE-C/P LOG BOOK C/P SERIAL NO FM-39

POSITION	VOLTS D.C.	PERCENT FULL SCALE
A	0.580	11.60
B	1.620	32.40
C	2.620	52.40
D	3.650	73.00
E	4.710	94.20

NOTE- POSITION E IS NOT PROGRAMMABLE ON ORBIT.

NOTE- TOLERANCE OF AT LEAST +OR- 5 PERCENT SHOULD BE ALLOWED FOR TLM ERROR.

CPL 13 (GFE 1-13)(2,3-14-19)
STEREO POSITION

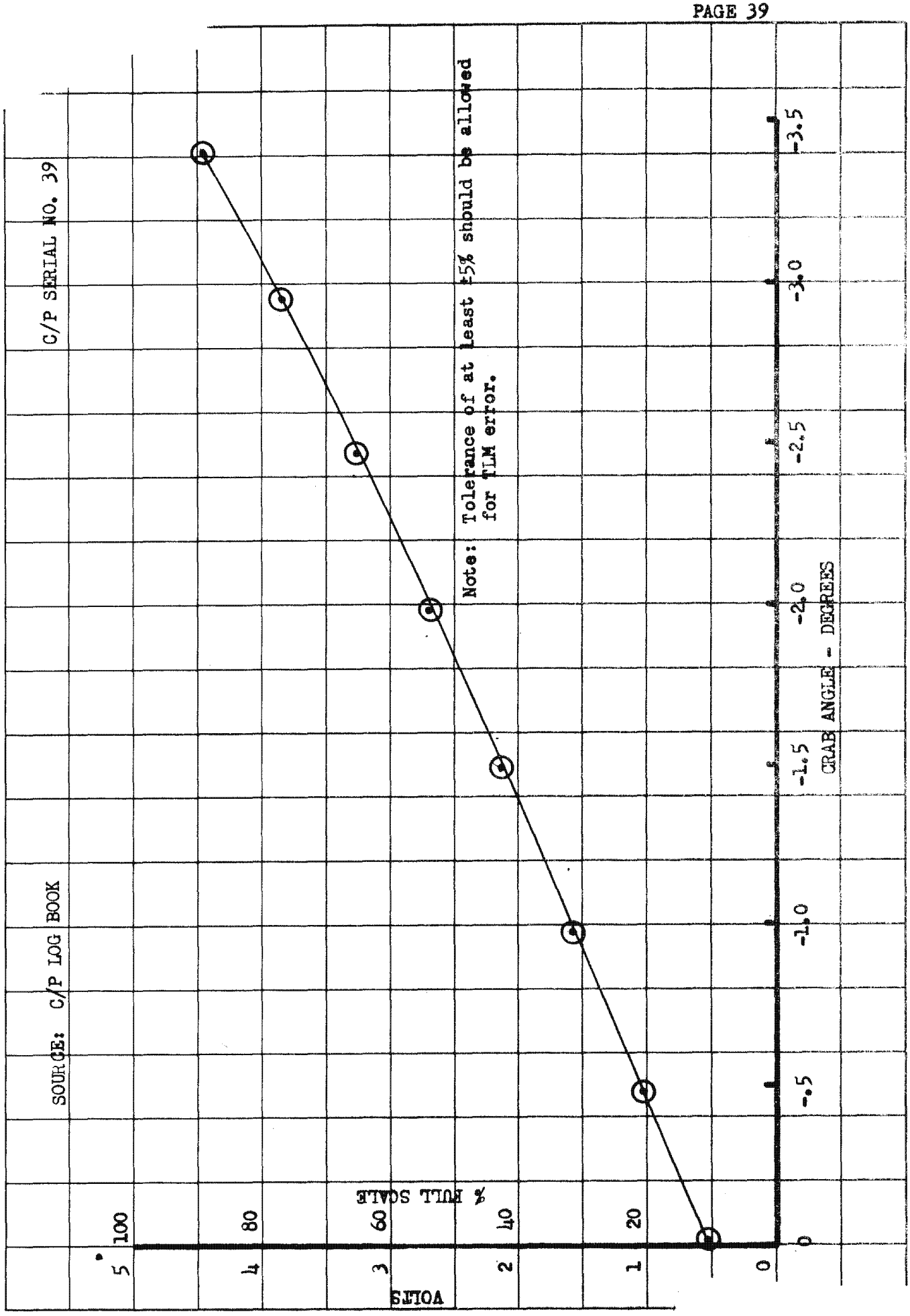


FM-39 CPL 13 2 OR 3-12-6

STEREO POSITION
DIGITAL LISTING OF CAL. CURVE

PERCENT	POSITION(DEG)	PERCENT	POSITION(DEG)
10.	-14.81	50.	0.30
11.	-14.42	51.	0.68
12.	-14.03	52.	1.06
13.	-13.65	53.	1.44
14.	-13.26	54.	1.82
15.	-12.88	55.	2.20
16.	-12.50	56.	2.59
17.	-12.11	57.	2.97
18.	-11.73	58.	3.35
19.	-11.35	59.	3.73
20.	-10.98	60.	4.12
21.	-10.60	61.	4.50
22.	-10.22	62.	4.88
23.	-9.84	63.	5.27
24.	-9.47	64.	5.65
25.	-9.09	65.	6.04
26.	-8.72	66.	6.42
27.	-8.34	67.	6.81
28.	-7.97	68.	7.19
29.	-7.59	69.	7.58
30.	-7.22	70.	7.96
31.	-6.84	71.	8.34
32.	-6.47	72.	8.73
33.	-6.09	73.	9.11
34.	-5.72	74.	9.50
35.	-5.34	75.	9.88
36.	-4.97	76.	10.27
37.	-4.59	77.	10.65
38.	-4.22	78.	11.04
39.	-3.84	79.	11.42
40.	-3.47	80.	11.80
41.	-3.09	81.	12.18
42.	-2.72	82.	12.56
43.	-2.34	83.	12.95
44.	-1.96	84.	13.32
45.	-1.59	85.	13.70
46.	-1.21	86.	14.08
47.	-0.83	87.	14.46
48.	-0.45	88.	14.83
49.	-0.08	89.	15.21

CPL 14 (GFE 1-14) (2,3-14-20)
CRAB POSITION



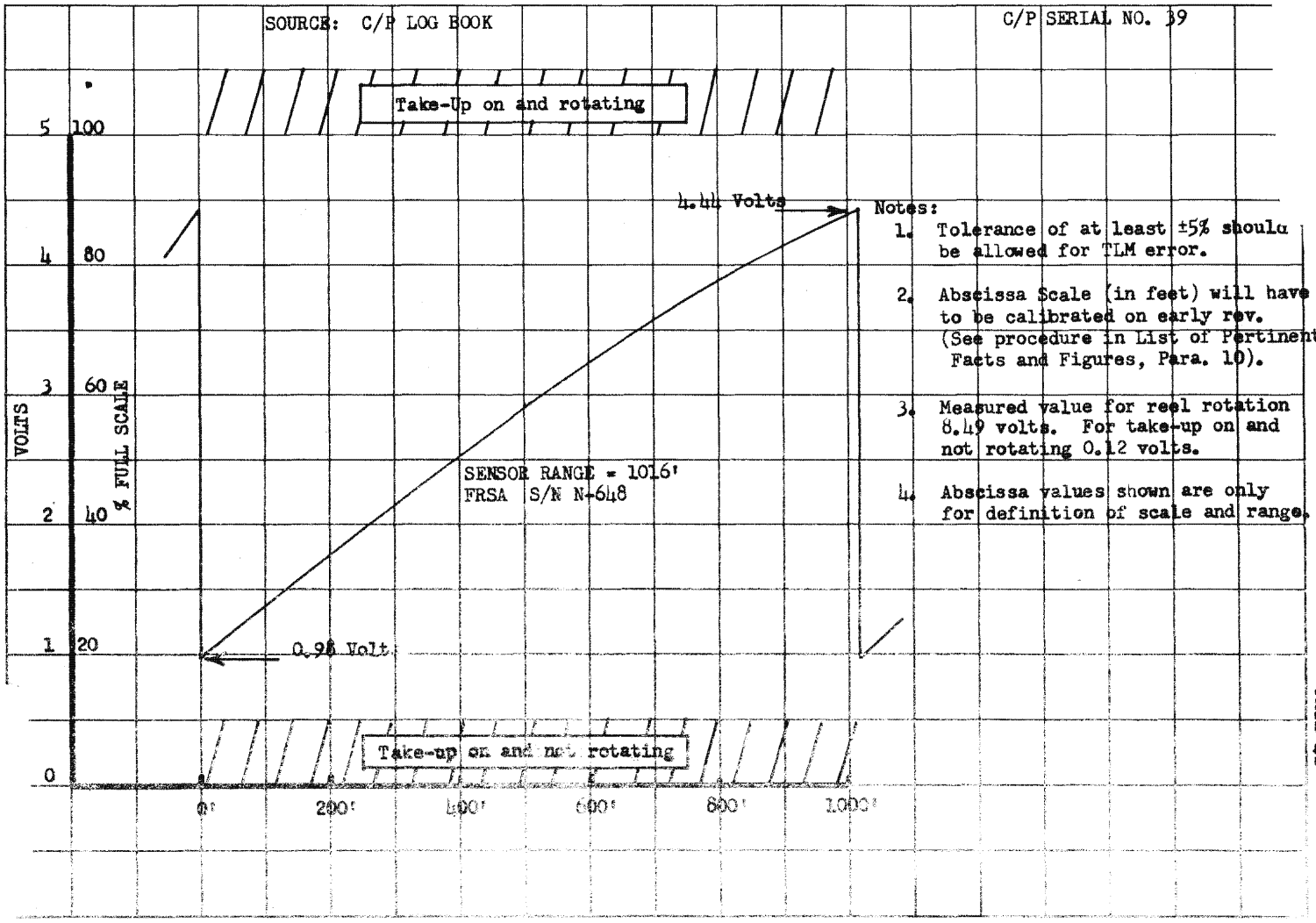
FM-39 CPL 14 2 OR 3-14-20

CRAB POSITION

DIGITAL LISTING OF CAL. CURVE

PERCENT	POSITION(DEG)	PERCENT	POSITION(DEG)
10.	0.01	50.	-1.76
11.	-0.04	51.	-1.81
12.	-0.09	52.	-1.85
13.	-0.13	53.	-1.90
14.	-0.18	54.	-1.94
15.	-0.22	55.	-1.99
16.	-0.27	56.	-2.03
17.	-0.31	57.	-2.07
18.	-0.36	58.	-2.12
19.	-0.40	59.	-2.16
20.	-0.45	60.	-2.21
21.	-0.49	61.	-2.25
22.	-0.54	62.	-2.30
23.	-0.58	63.	-2.34
24.	-0.62	64.	-2.38
25.	-0.67	65.	-2.43
26.	-0.71	66.	-2.47
27.	-0.76	67.	-2.52
28.	-0.80	68.	-2.56
29.	-0.84	69.	-2.60
30.	-0.89	70.	-2.65
31.	-0.93	71.	-2.69
32.	-0.97	72.	-2.73
33.	-1.02	73.	-2.77
34.	-1.06	74.	-2.82
35.	-1.11	75.	-2.86
36.	-1.15	76.	-2.90
37.	-1.19	77.	-2.94
38.	-1.24	78.	-2.98
39.	-1.28	79.	-3.02
40.	-1.32	80.	-3.06
41.	-1.37	81.	-3.10
42.	-1.41	82.	-3.14
43.	-1.46	83.	-3.18
44.	-1.50	84.	-3.22
45.	-1.54	85.	-3.26
46.	-1.59	86.	-3.30
47.	-1.63	87.	-3.33
48.	-1.68	88.	-3.37
49.	-1.72	89.	-3.40

CPL 15 (GFE 2-15 (2,3-12-1)
FILM TAKE-UP QUANTITY, COARSE/REEL ROTATION



R-008139-KH
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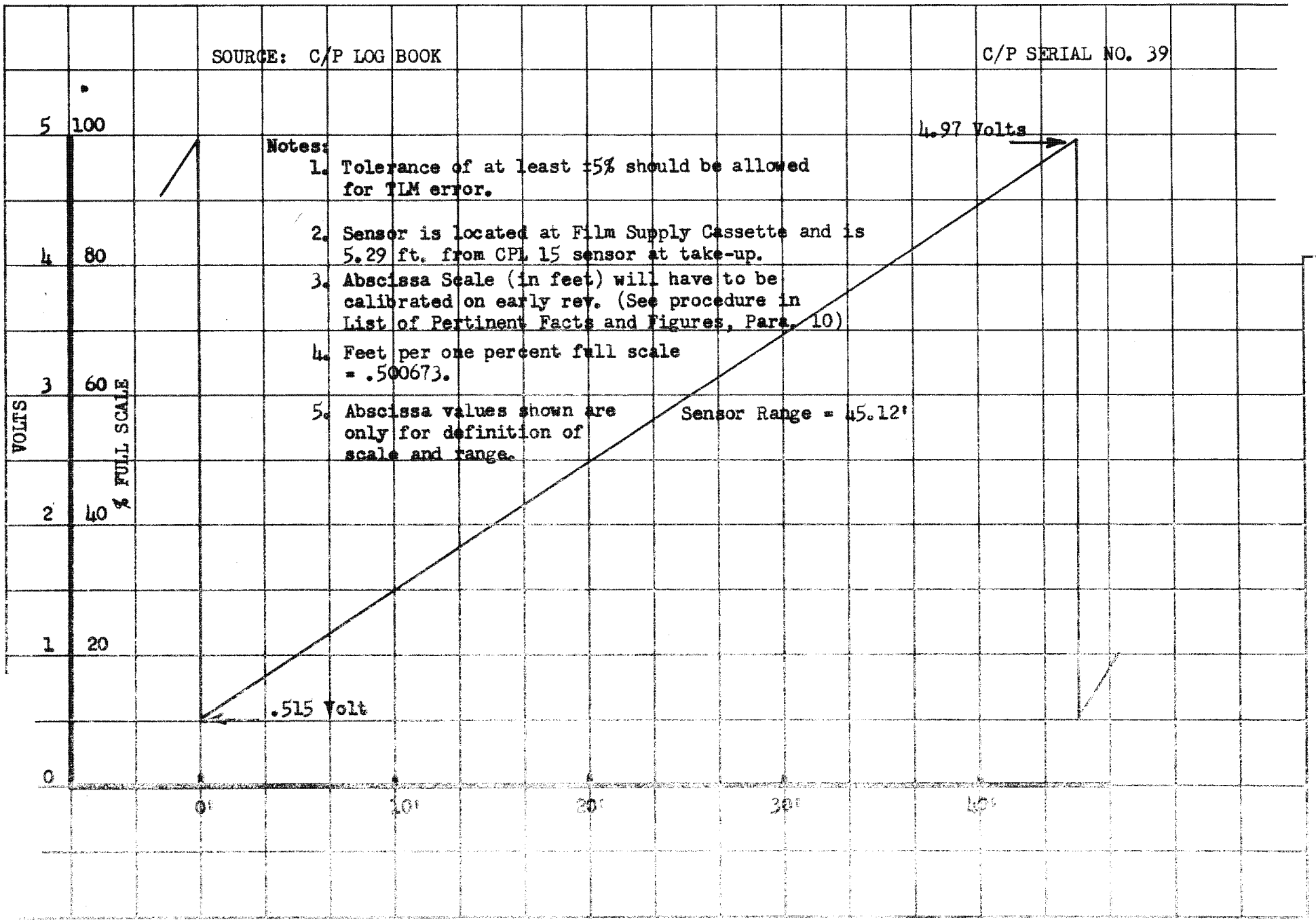
CPL 16 (GFE 1-16) (2,3-12-2)
FILM TAKE-UP QUANTITY, FINE (SUPPLY)

SOURCE: C/P LOG BOOK

C/P SERIAL NO. 39

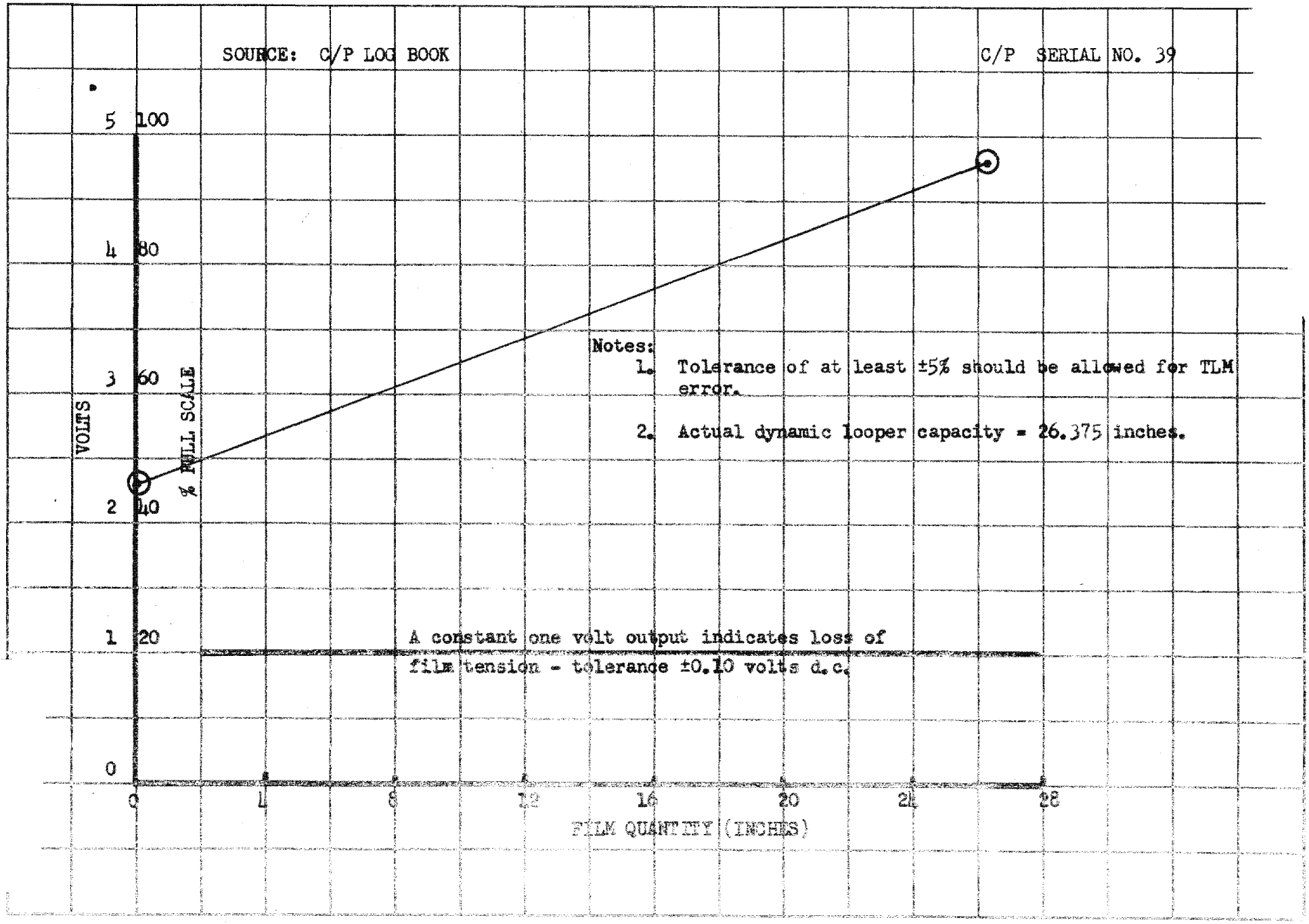


Notes:

1. Tolerance of at least ±5% should be allowed for TLM error.
2. Sensor is located at Film Supply Cassette and is 5.29 ft. from CPL 15 sensor at take-up.
3. Abscissa Scale (in feet) will have to be calibrated on early rev. (See procedure in List of Pertinent Facts and Figures, Para. 10)
4. Feet per one percent full scale = .500673.
5. Abscissa values shown are only for definition of scale and range.

Sensor Range = 45.12'

CPL 17 (GFE 1-17)(2,3-14-21)
LOOPER POSITION

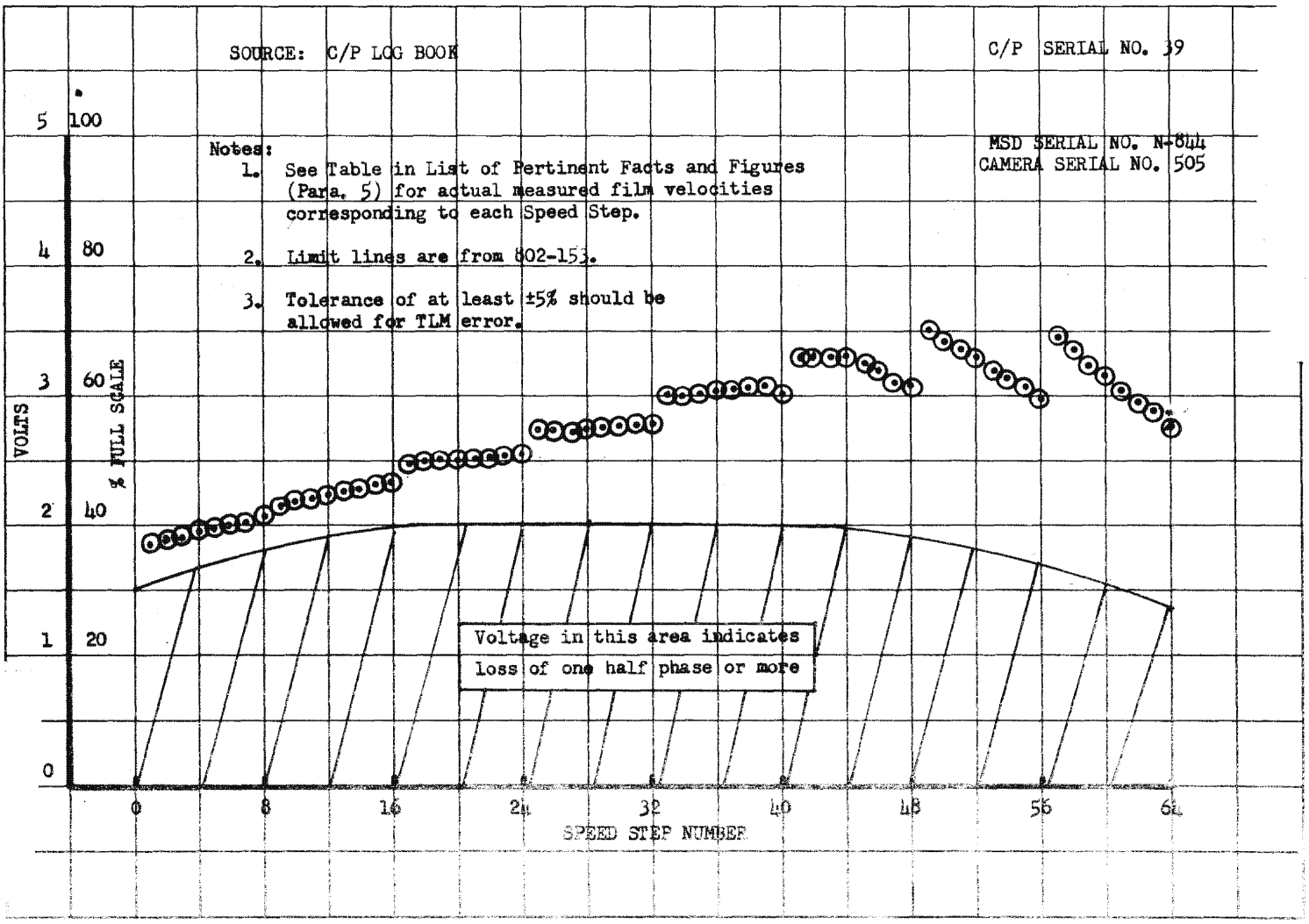


FM-39 CPL 17 2 OR 3-14-21

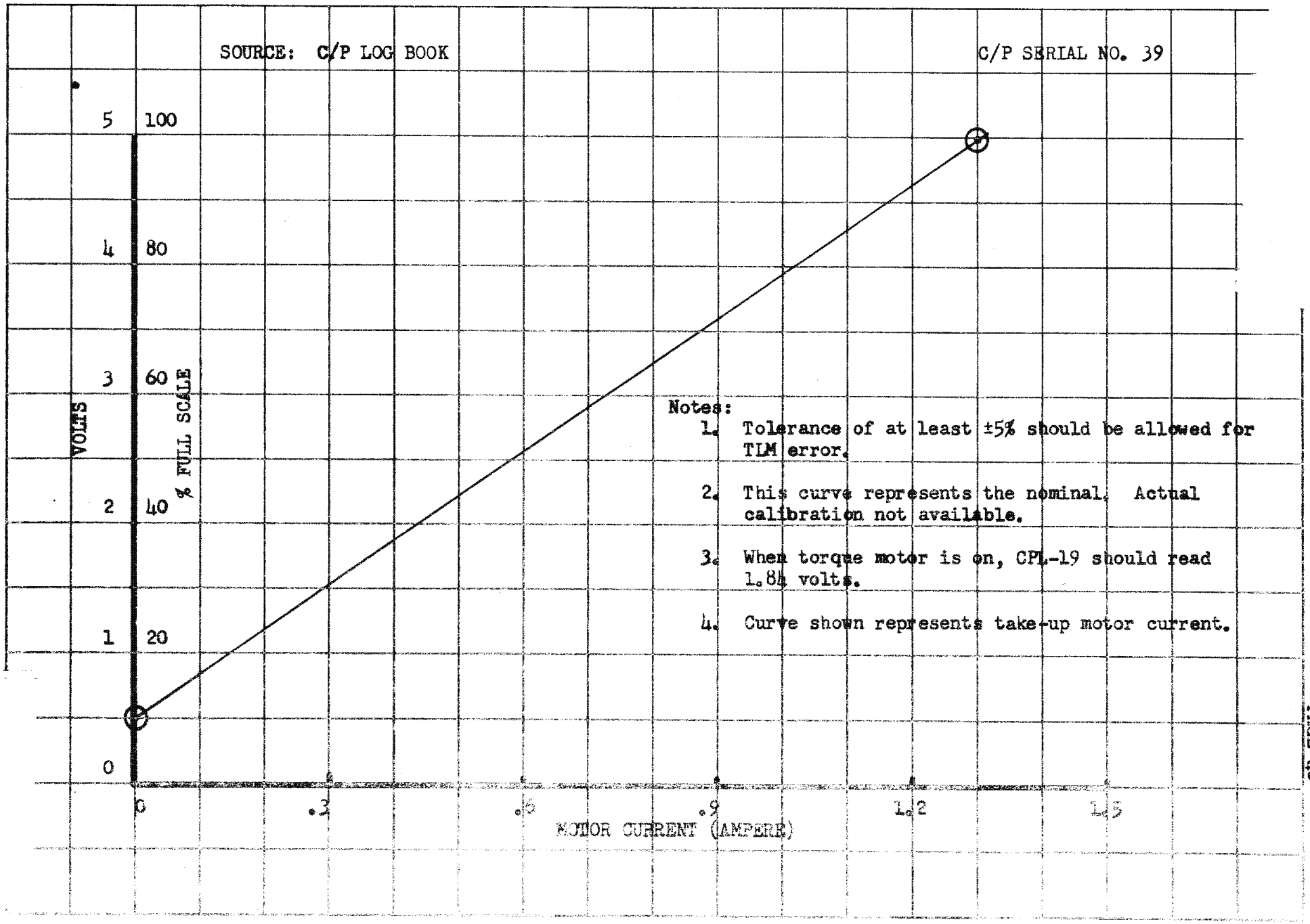
LOOPER POSITION
DIGITAL LISTING OF CAL. CURVE

PERCENT	INCHES(LOOP)	PERCENT	INCHES(LOOP)
46.	-0.21	72.	13.56
47.	0.32	73.	14.09
48.	0.85	74.	14.62
49.	1.38	75.	15.15
50.	1.91	76.	15.68
51.	2.44	77.	16.21
52.	2.97	78.	16.74
53.	3.50	79.	17.27
54.	4.02	80.	17.79
55.	4.55	81.	18.32
56.	5.08	82.	18.85
57.	5.61	83.	19.38
58.	6.14	84.	19.91
59.	6.67	85.	20.44
60.	7.20	86.	20.97
61.	7.73	87.	21.50
62.	8.26	88.	22.03
63.	8.79	89.	22.56
64.	9.32	90.	23.09
65.	9.85	91.	23.62
66.	10.38	92.	24.15
67.	10.91	93.	24.68
68.	11.44	94.	25.21
69.	11.97	95.	25.74
70.	12.50	96.	26.27
71.	13.03	97.	26.80

CPL 18 (GFE 1-18)(2,3-12-4)
FILM DRIVE ELECTRONICS OUTPUT



CPL 19 (GFE 1-19)(2,3-14-24)
TAKE-UP AND TORQUE MOTOR CURRENT



FM-39

CPL 19

2 OR 3- 14-24

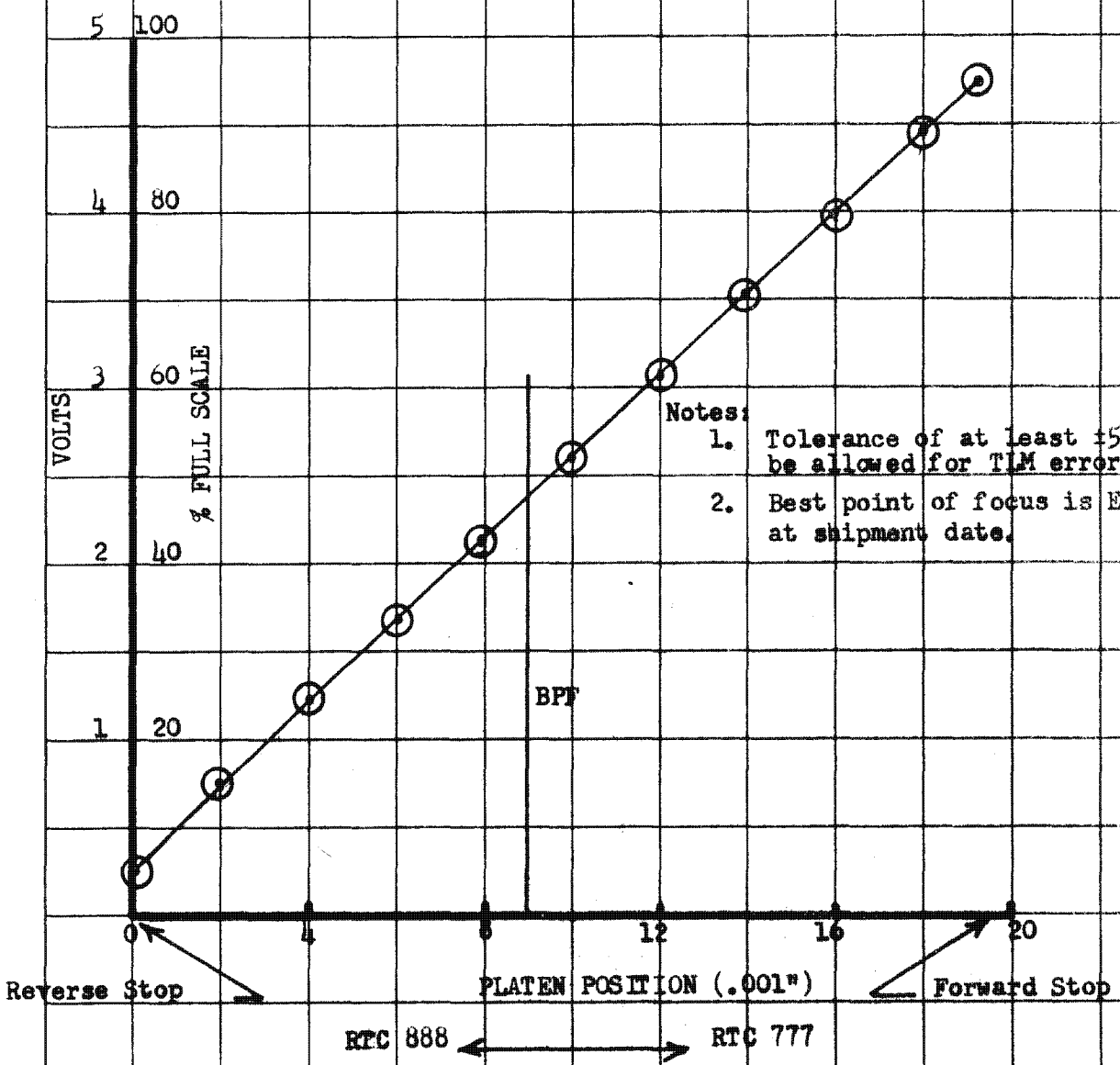
TAKE UP MOTOR CURRENT
DIGITAL LISTING OF CAL CURVE

PERCENT	AMPS	PERCENT	AMPS
5.	0.22	55.	0.94
6.	0.23	56.	0.95
7.	0.25	57.	0.97
8.	0.26	58.	0.98
9.	0.27	59.	1.00
10.	0.29	60.	1.01
11.	0.30	61.	1.03
12.	0.32	62.	1.04
13.	0.33	63.	1.05
14.	0.35	64.	1.07
15.	0.36	65.	1.08
16.	0.38	66.	1.10
17.	0.39	67.	1.11
18.	0.40	68.	1.13
19.	0.42	69.	1.14
20.	0.43	70.	1.16
21.	0.45	71.	1.17
22.	0.46	72.	1.18
23.	0.48	73.	1.20
24.	0.49	74.	1.21
25.	0.51	75.	1.23
26.	0.52	76.	1.24
27.	0.53	77.	1.26
28.	0.55	78.	1.27
29.	0.56	79.	1.29
30.	0.58	80.	1.30
31.	0.59	81.	1.31
32.	0.61	82.	1.33
33.	0.62	83.	1.34
34.	0.64	84.	1.36
35.	0.65	85.	1.37
36.	0.66	86.	1.39
37.	0.68	87.	1.40
38.	0.69	88.	1.42
39.	0.71	89.	1.43
40.	0.72	90.	1.44
41.	0.74	91.	1.46
42.	0.75	92.	1.47
43.	0.77	93.	1.49
44.	0.78	94.	1.50
45.	0.79	95.	1.52
46.	0.81	96.	1.53
47.	0.82	97.	1.55
48.	0.84	98.	1.56
49.	0.85	99.	1.57
50.	0.87	100.	1.59
51.	0.88	101.	1.60
52.	0.90	102.	1.62
53.	0.91	103.	1.63
54.	0.92	104.	1.65

CFL 20 (GFE 1-20)(2,3-14-22)
PLATEN POSITION (COARSE)

SOURCE: C/P LOG BOOK

C/P SERIAL NO. 39



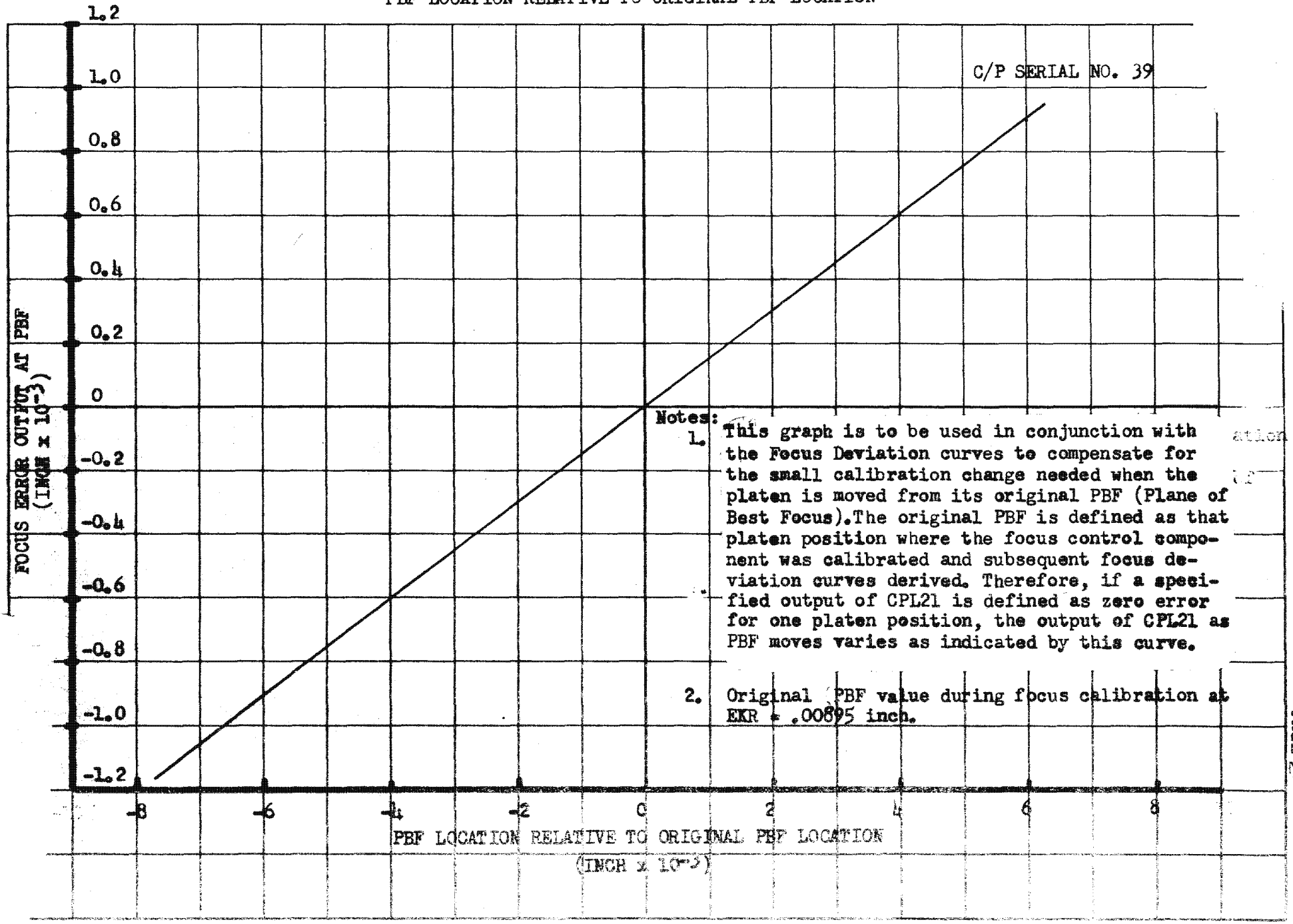
Notes:
1. Tolerance of at least ±5% should be allowed for TLM error.
2. Best point of focus is EKR value at shipment date.

FM-39 CPL 20 2 OR 3-14-22

PLATEN POSITION (COARSE)
DIGITAL LISTING OF CAL. CURVE

PERCENT	POSITION(INCHES)	PERCENT	POSITION(INCHES)
6.	0.0001	51.	0.0097
7.	0.0003	52.	0.0099
8.	0.0005	53.	0.0102
9.	0.0007	54.	0.0104
10.	0.0009	55.	0.0106
11.	0.0011	56.	0.0108
12.	0.0013	57.	0.0110
13.	0.0015	58.	0.0113
14.	0.0017	59.	0.0115
15.	0.0019	60.	0.0117
16.	0.0021	61.	0.0119
17.	0.0023	62.	0.0122
18.	0.0025	63.	0.0124
19.	0.0028	64.	0.0126
20.	0.0030	65.	0.0128
21.	0.0032	66.	0.0130
22.	0.0034	67.	0.0133
23.	0.0036	68.	0.0135
24.	0.0038	69.	0.0137
25.	0.0040	70.	0.0139
26.	0.0042	71.	0.0141
27.	0.0045	72.	0.0144
28.	0.0047	73.	0.0146
29.	0.0049	74.	0.0148
30.	0.0051	75.	0.0150
31.	0.0053	76.	0.0152
32.	0.0055	77.	0.0155
33.	0.0058	78.	0.0157
34.	0.0060	79.	0.0159
35.	0.0062	80.	0.0161
36.	0.0064	81.	0.0163
37.	0.0066	82.	0.0165
38.	0.0068	83.	0.0167
39.	0.0071	84.	0.0170
40.	0.0073	85.	0.0172
41.	0.0075	86.	0.0174
42.	0.0077	87.	0.0176
43.	0.0079	88.	0.0178
44.	0.0082	89.	0.0180
45.	0.0084	90.	0.0182
46.	0.0086	91.	0.0184
47.	0.0088	92.	0.0186
48.	0.0091	93.	0.0189
49.	0.0093	94.	0.0191
50.	0.0095	95.	0.0193

FOCUS ERROR OUTPUT AT PBF
VS.
PBF LOCATION RELATIVE TO ORIGINAL PBF LOCATION



Notes:

1. This graph is to be used in conjunction with the Focus Deviation curves to compensate for the small calibration change needed when the platen is moved from its original PBF (Plane of Best Focus). The original PBF is defined as that platen position where the focus control component was calibrated and subsequent focus deviation curves derived. Therefore, if a specified output of CPL21 is defined as zero error for one platen position, the output of CPL21 as PBF moves varies as indicated by this curve.

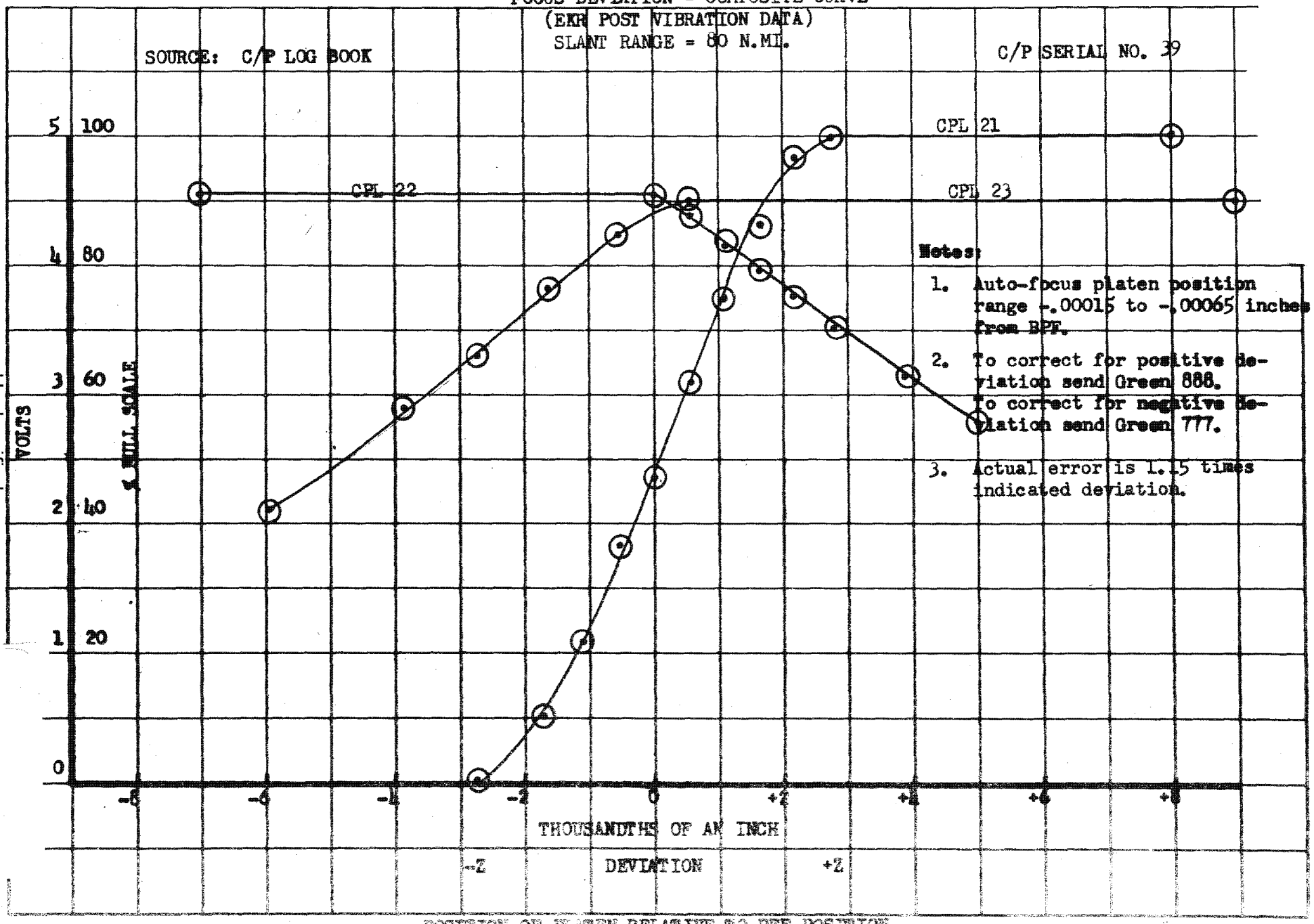
2. Original PBF value during focus calibration at EKR = .00895 inch.

CPL 21 - (GFE 1-21) (2,3-14-26)
CPL 22 - (GFE 1-22) (2,3-14-27)
CPL 23 - (GFE 1-23) (2,3-14-28)

FOCUS DEVIATION - COMPOSITE CURVE
(EKR POST VIBRATION DATA)
SLANT RANGE = 80 N.MI.

SOURCE: C/P LOG BOOK

C/P SERIAL NO. 39



Notes:

1. Auto-focus platen position range -.00015 to -.00065 inches from BPF.
2. To correct for positive deviation send Green 888. To correct for negative deviation send Green 777.
3. Actual error is 1.15 times indicated deviation.

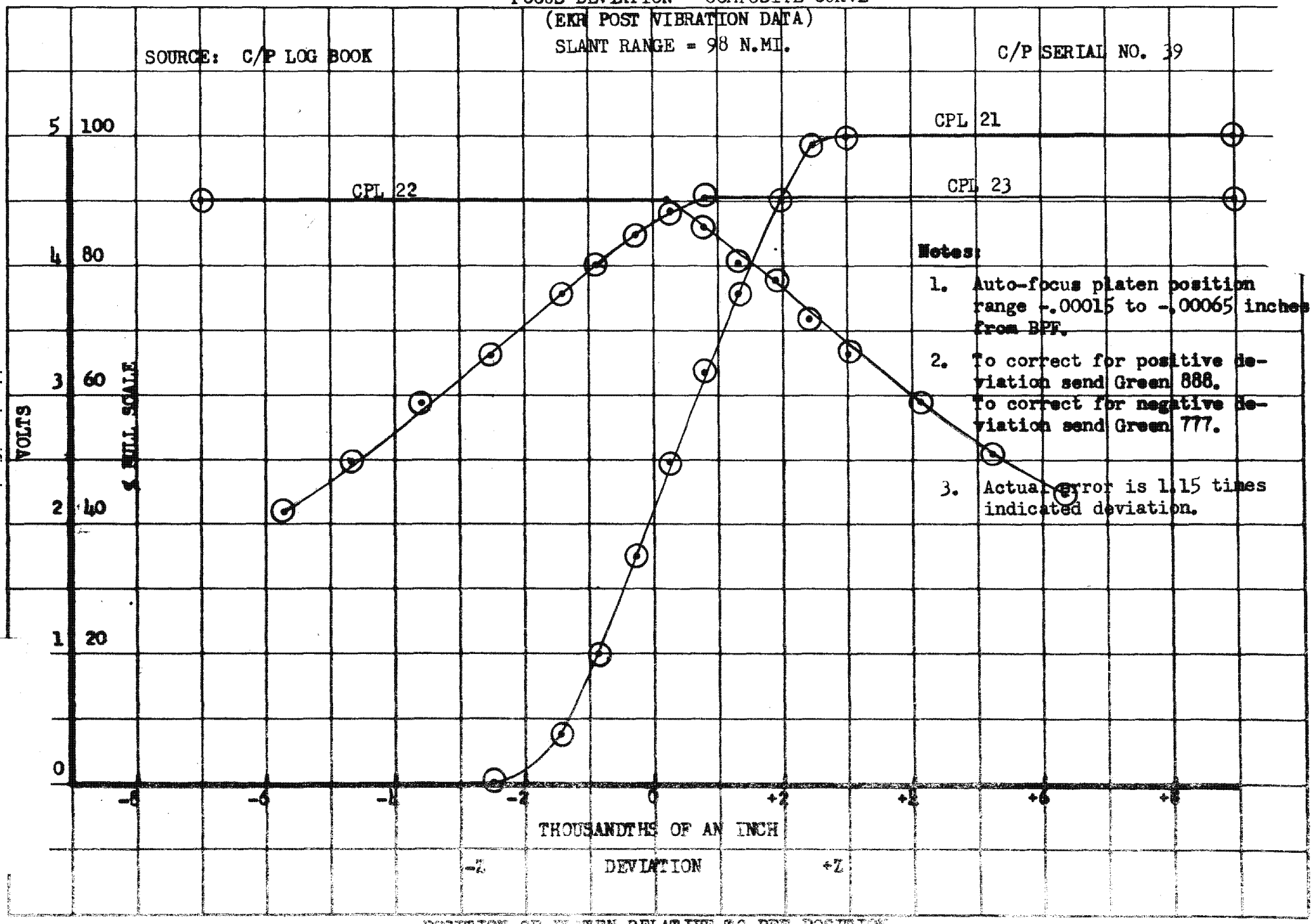
POSITION OF PLATEN RELATIVE TO BEF POSITION

CPL 21 - (GFE 1-21) (2,3-14-26)
CPL 22 - (GFE 1-22) (2,3-14-27)
CPL 23 - (GFE 1-23) (2,3-14-28)

FOCUS DEVIATION - COMPOSITE CURVE
(EKR POST VIBRATION DATA)
SLANT RANGE = 98 N.MI.

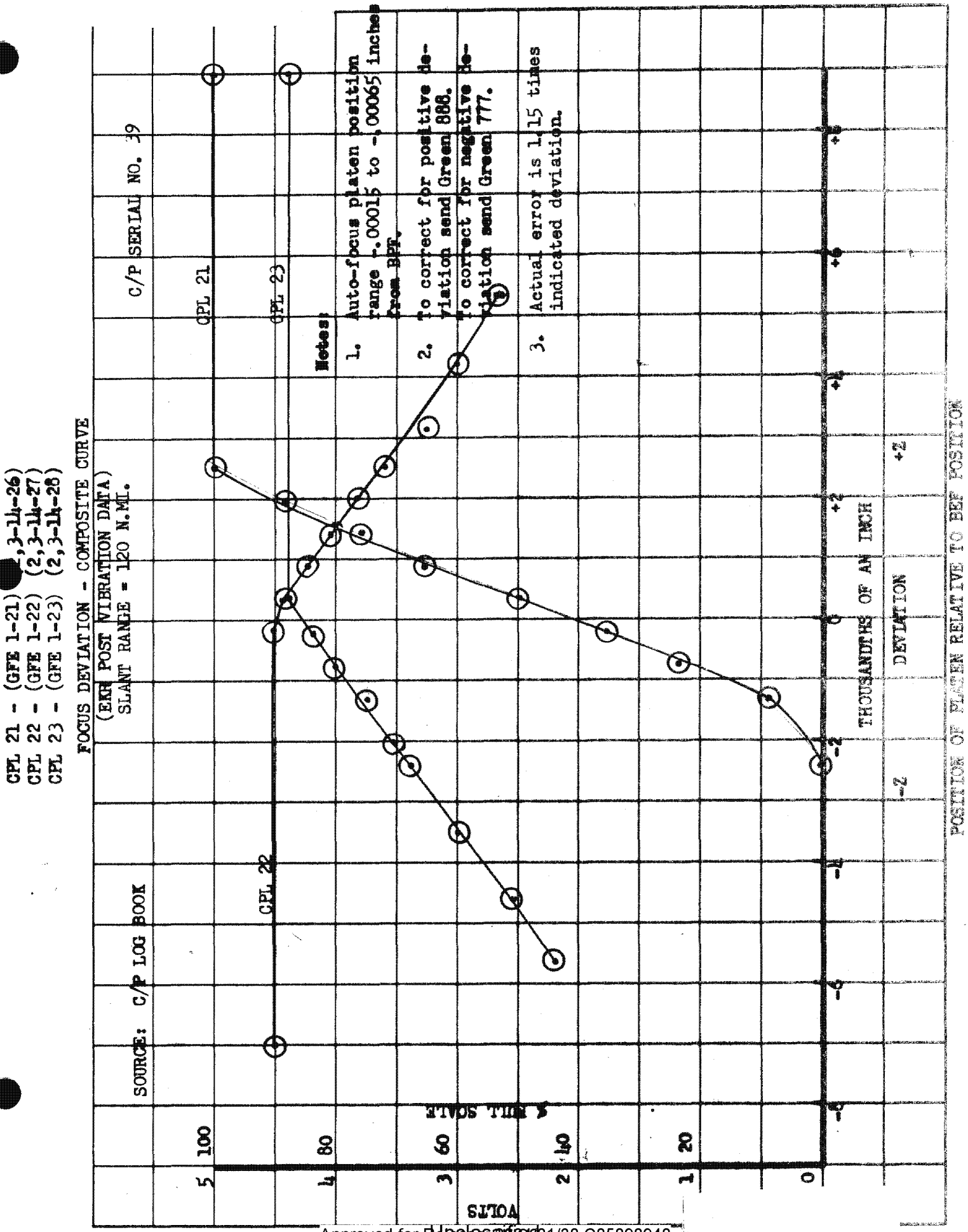
SOURCE: C/P LOG BOOK

C/P SERIAL NO. 39



Notes:

1. Auto-focus platen position range -.00015 to -.00065 inches from BPF.
2. To correct for positive deviation send Green 888. To correct for negative deviation send Green 777.
3. Actual error is 1.15 times indicated deviation.



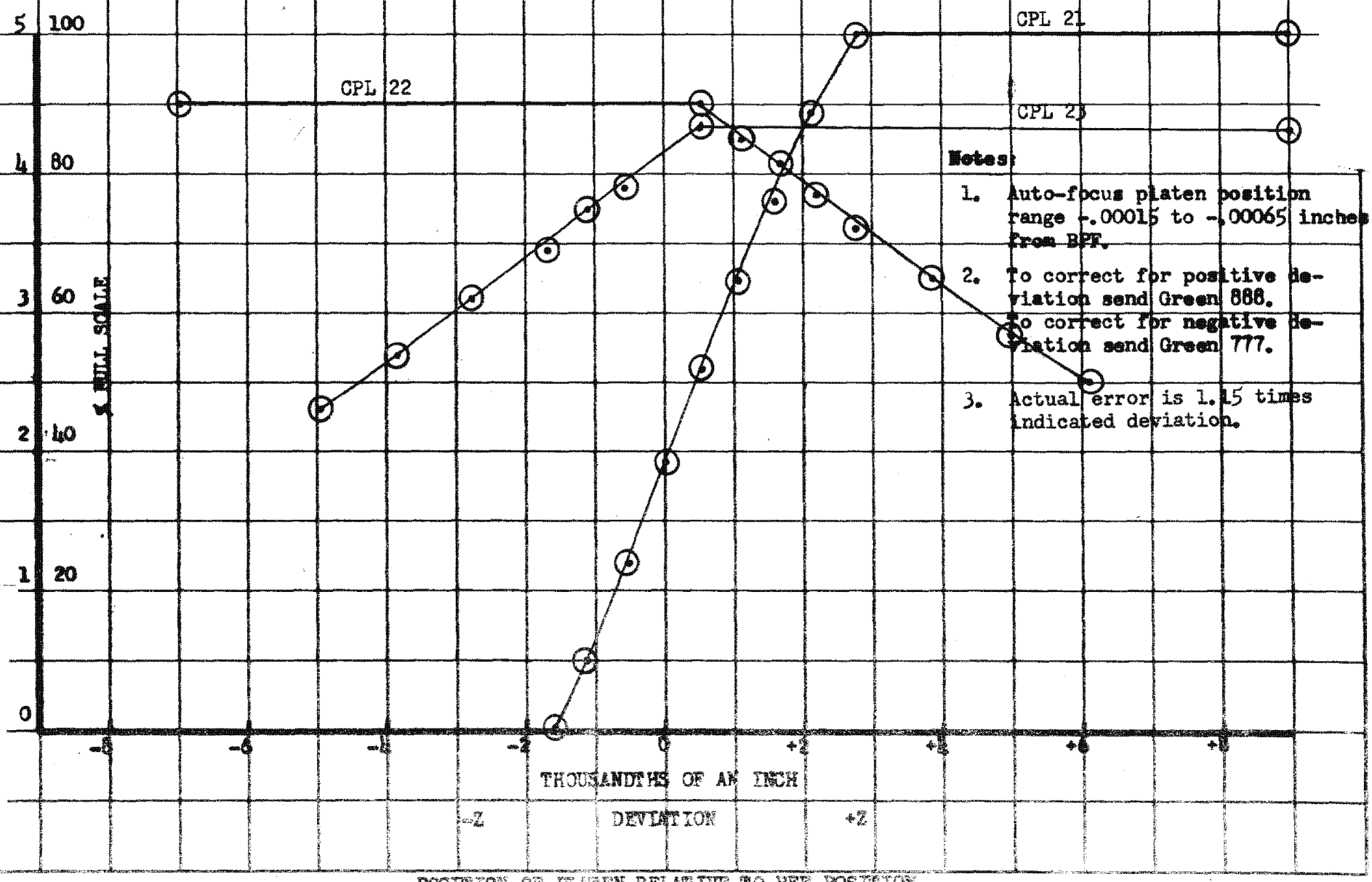
CPL 21 - (GFE 1-21) (2,3-14-26)
CPL 22 - (GFE 1-22) (2,3-14-27)
CPL 23 - (GFE 1-23) (2,3-14-28)

FOCUS DEVIATION - COMPOSITE CURVE

(EKR POST VIBRATION DATA)
SLANT RANGE = 80 N.MI.
1/4 NORMAL ILLUMINATION

SOURCE: C/P LOG BOOK

C/P SERIAL NO. 39



Notes:

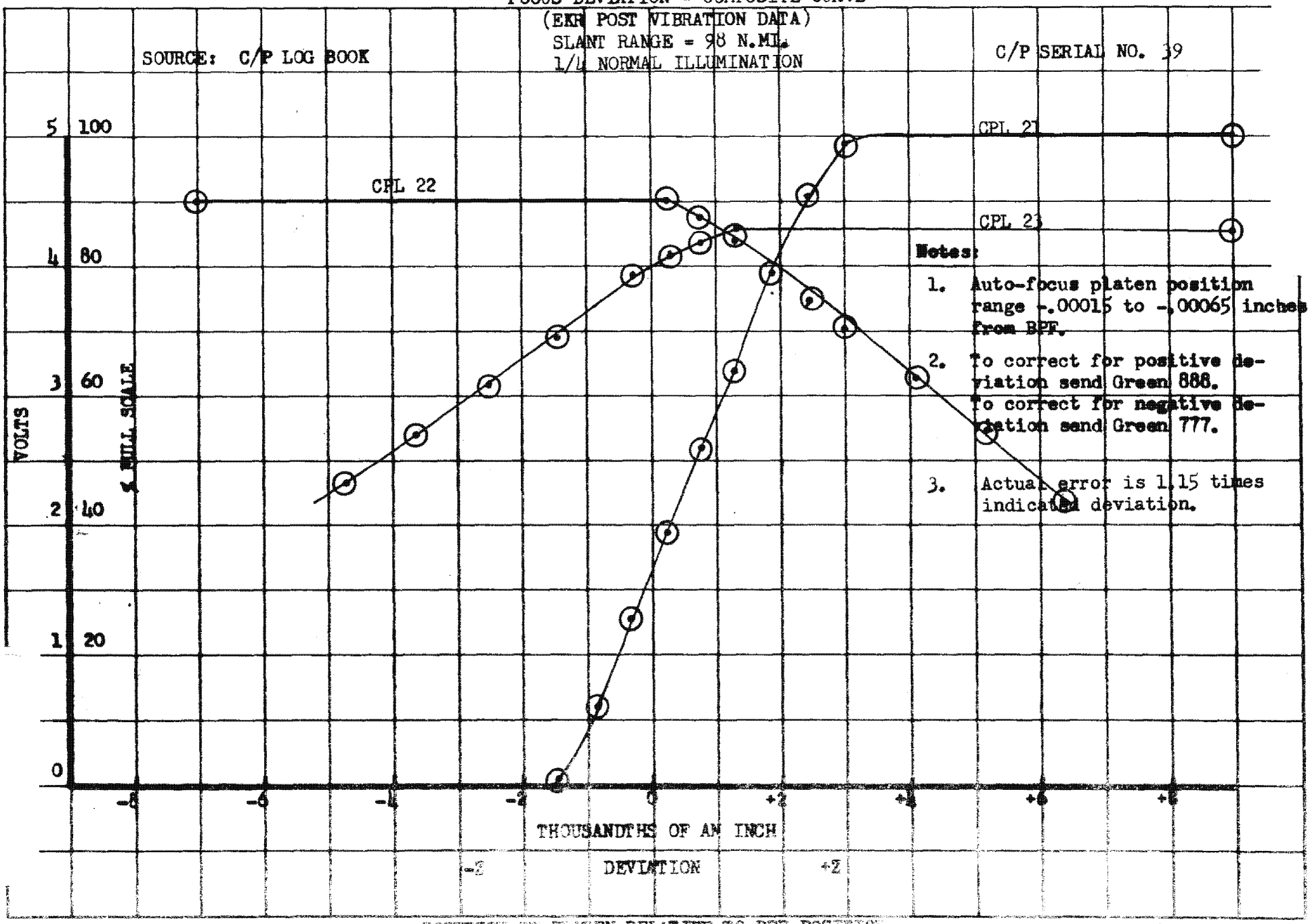
1. Auto-focus platen position range -.00015 to -.00065 inches from BPF.
2. To correct for positive deviation send Green 888. To correct for negative deviation send Green 777.
3. Actual error is 1.15 times indicated deviation.

CPL 21 - (GFE 1-21) (2,3-14-26)
CPL 22 - (GFE 1-22) (2,3-14-27)
CPL 23 - (GFE 1-23) (2,3-14-28)

FOCUS DEVIATION - COMPOSITE CURVE
(EKR POST VIBRATION DATA)
SLANT RANGE = 98 N.MI.
1/4 NORMAL ILLUMINATION

SOURCE: C/P LOG BOOK

C/P SERIAL NO. 39



Notes:

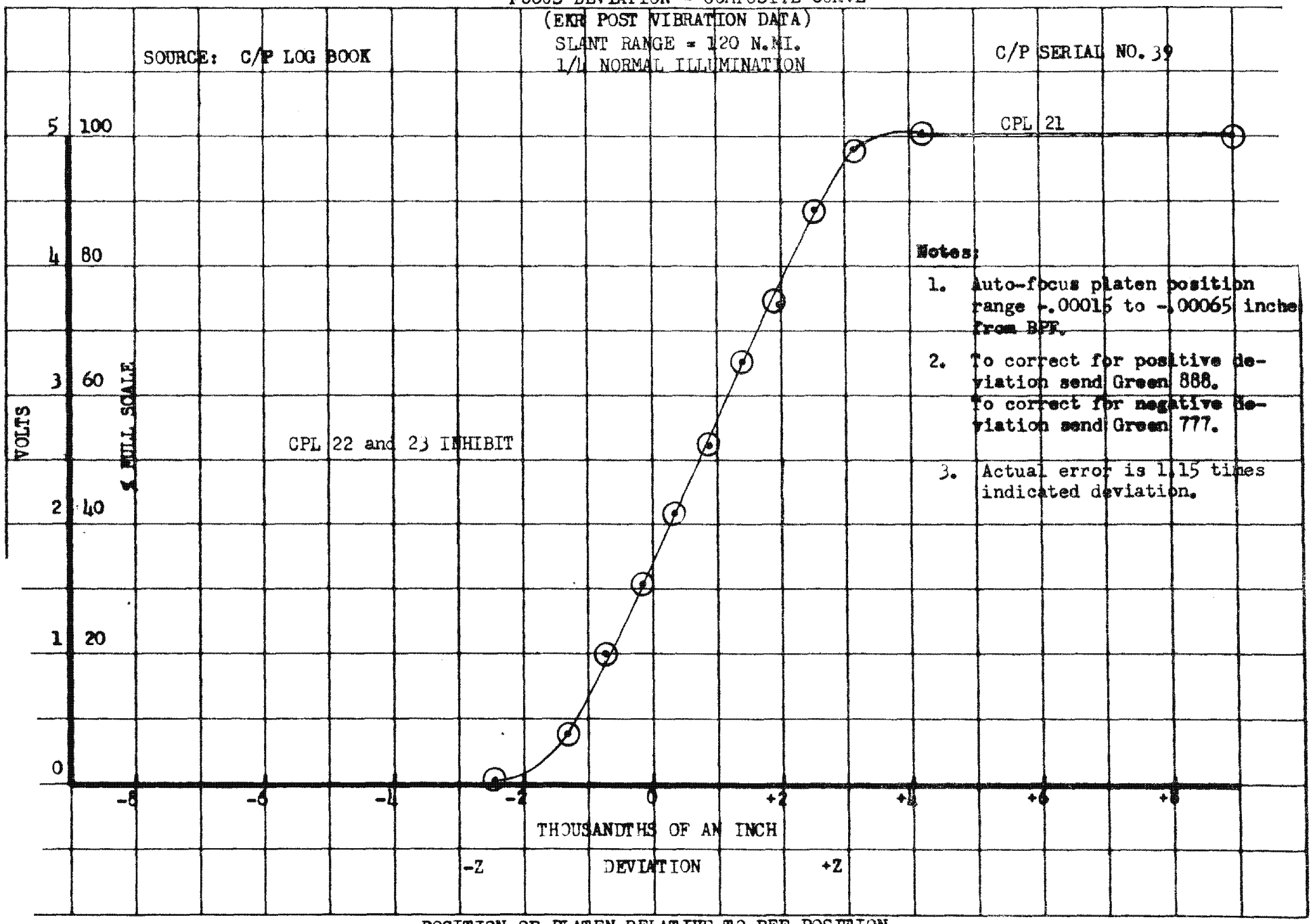
1. Auto-focus platen position range -.00015 to -.00065 inches from BPF.
2. To correct for positive deviation send Green 888. To correct for negative deviation send Green 777.
3. Actual error is 1.15 times indicated deviation.

CPL 21 - (GFE 1-[illegible]) (2,3-14-26)
CPL 22 - (GFE 1-22) (2,3-14-27)
CPL 23 - (GFE 1-23) (2,3-14-28)

FOCUS DEVIATION - COMPOSITE CURVE
(EKR POST VIBRATION DATA)
SLANT RANGE = 120 N.MI.
1/4 NORMAL ILLUMINATION

SOURCE: C/P LOG BOOK

C/P SERIAL NO. 39



Notes:

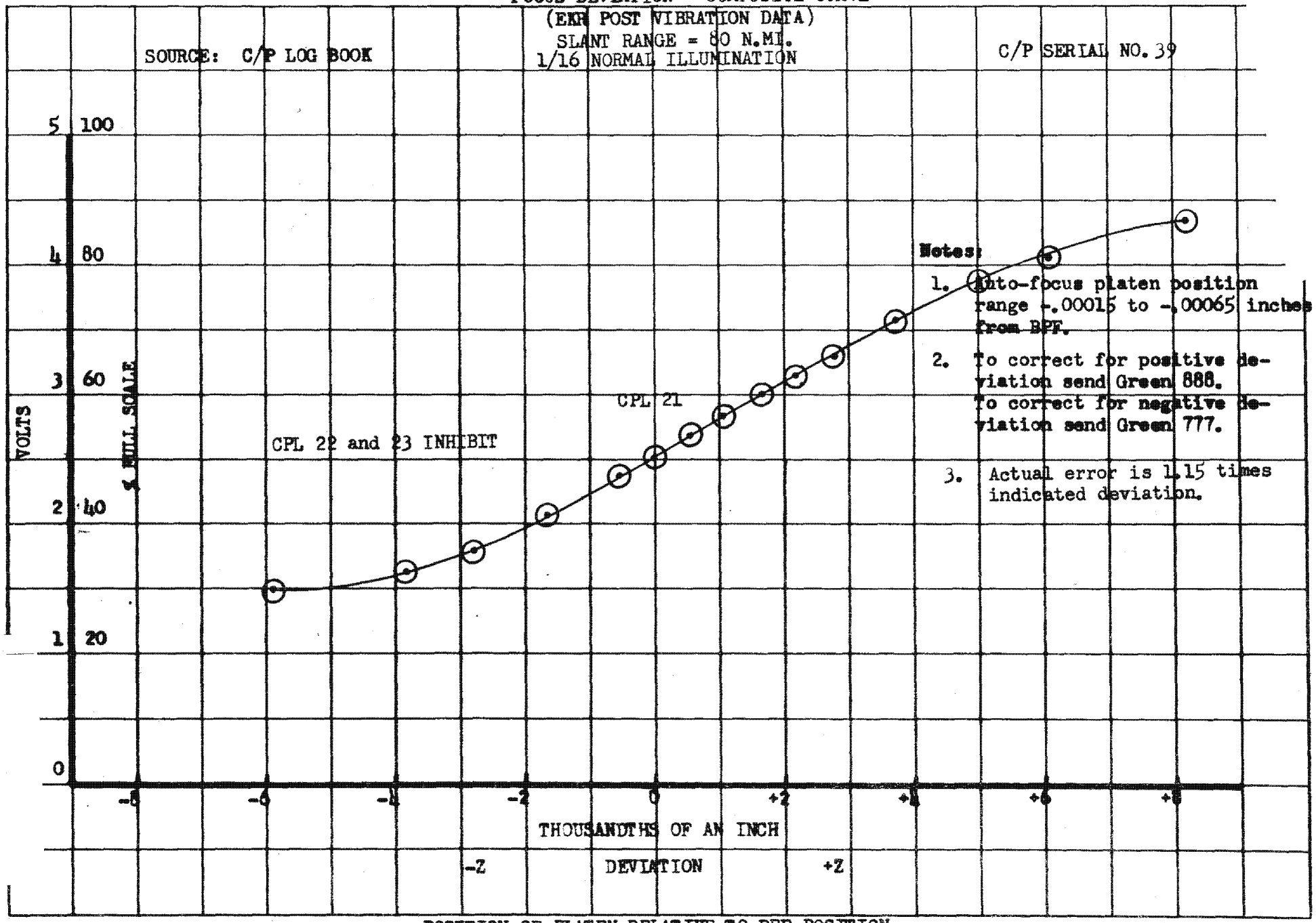
1. Auto-focus platen position range -.00015 to -.00065 inches from BPF.
2. To correct for positive deviation send Green 888. To correct for negative deviation send Green 777.
3. Actual error is 1.15 times indicated deviation.

CPL 21 - (GFE 1-21) (2,3-14-26)
CPL 22 - (GFE 1-22) (2,3-14-27)
CPL 23 - (GFE 1-23) (2,3-14-28)

FOCUS DEVIATION - COMPOSITE CURVE
(EKR POST VIBRATION DATA)
SLANT RANGE = 80 N.MI.
1/16 NORMAL ILLUMINATION

SOURCE: C/P LOG BOOK

C/P SERIAL NO. 39



Notes:

1. Auto-focus platen position range -.00015 to -.00065 inches from BPF.
2. To correct for positive deviation send Green 888. To correct for negative deviation send Green 777.
3. Actual error is 1.15 times indicated deviation.

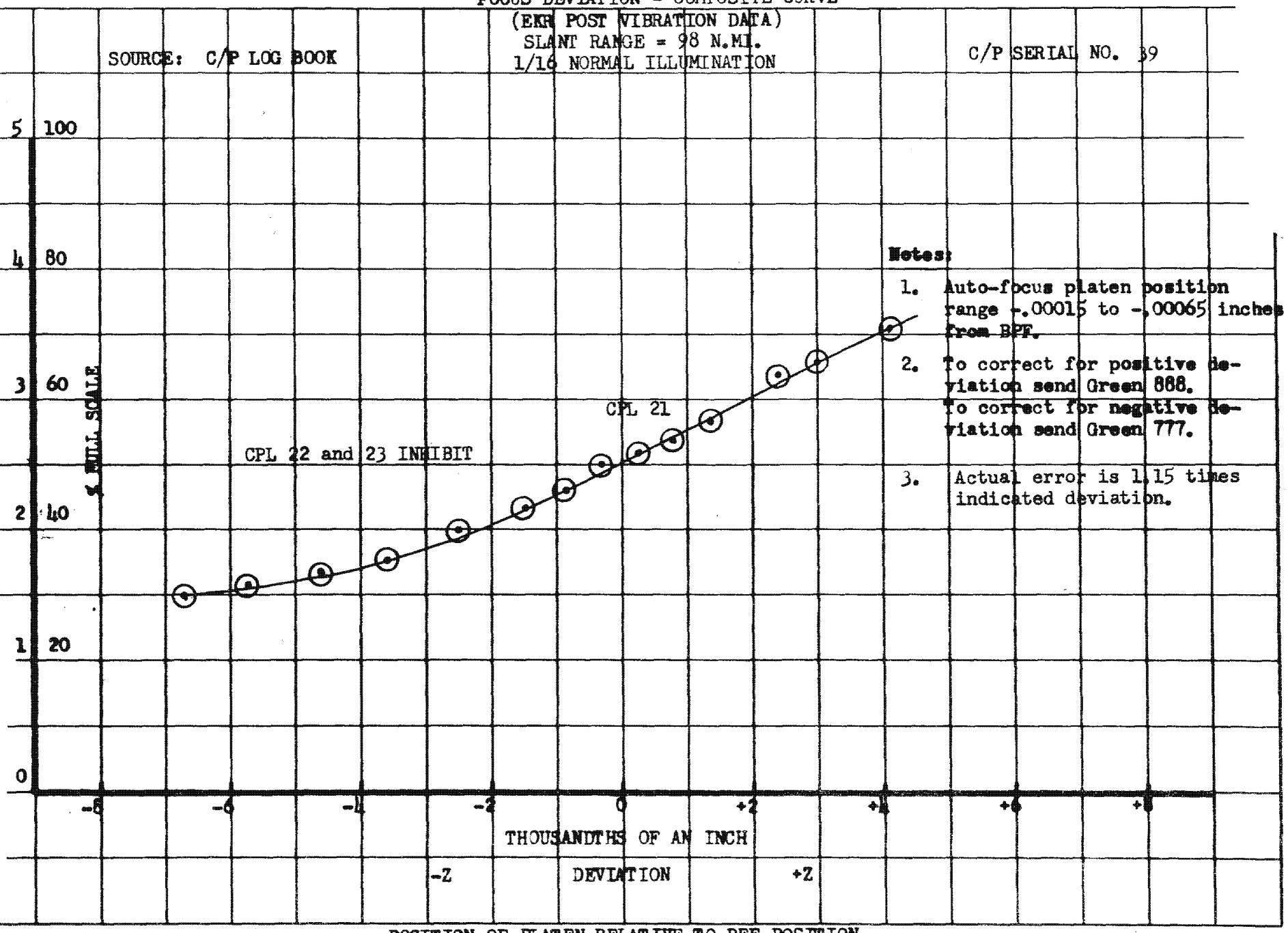
POSITION OF PLATEN RELATIVE TO BEF POSITION

CPL 21 - (GFE 1-21) (2,3-14-26)
CPL 22 - (GFE 1-22) (2,3-14-27)
CPL 23 - (GFE 1-23) (2,3-14-28)

FOCUS DEVIATION - COMPOSITE CURVE
(EKR POST VIBRATION DATA)
SLANT RANGE = 98 N.MI.
1/16 NORMAL ILLUMINATION

SOURCE: C/P LOG BOOK

C/P SERIAL NO. 39



Notes:

1. Auto-focus platen position range -.00015 to -.00065 inches from BPF.
2. To correct for positive deviation send Green 888. To correct for negative deviation send Green 777.
3. Actual error is 1.15 times indicated deviation.

POSITION OF PLATEN RELATIVE TO BEF POSITION

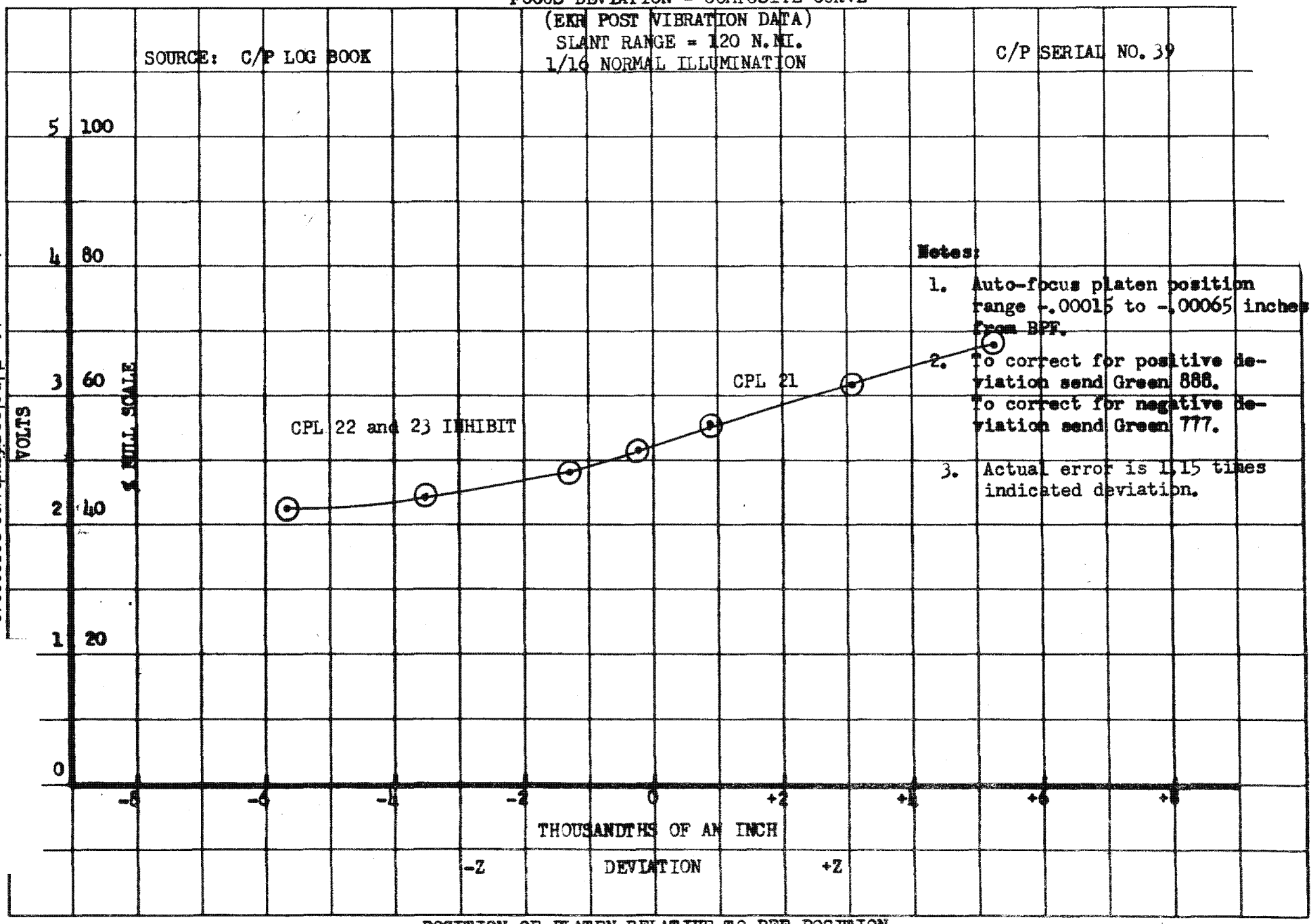
Approved for Release: 2024/01/30 C05098940

CPL 21 - (GFE 1-21) (2,3-14-26)
CPL 22 - (GFE 1-22) (2,3-14-27)
CPL 23 - (GFE 1-23) (2,3-14-28)

FOCUS DEVIATION - COMPOSITE CURVE
(EKR POST VIBRATION DATA)
SLANT RANGE = 120 N.MI.
1/16 NORMAL ILLUMINATION

SOURCE: C/P LOG BOOK

C/P SERIAL NO. 39



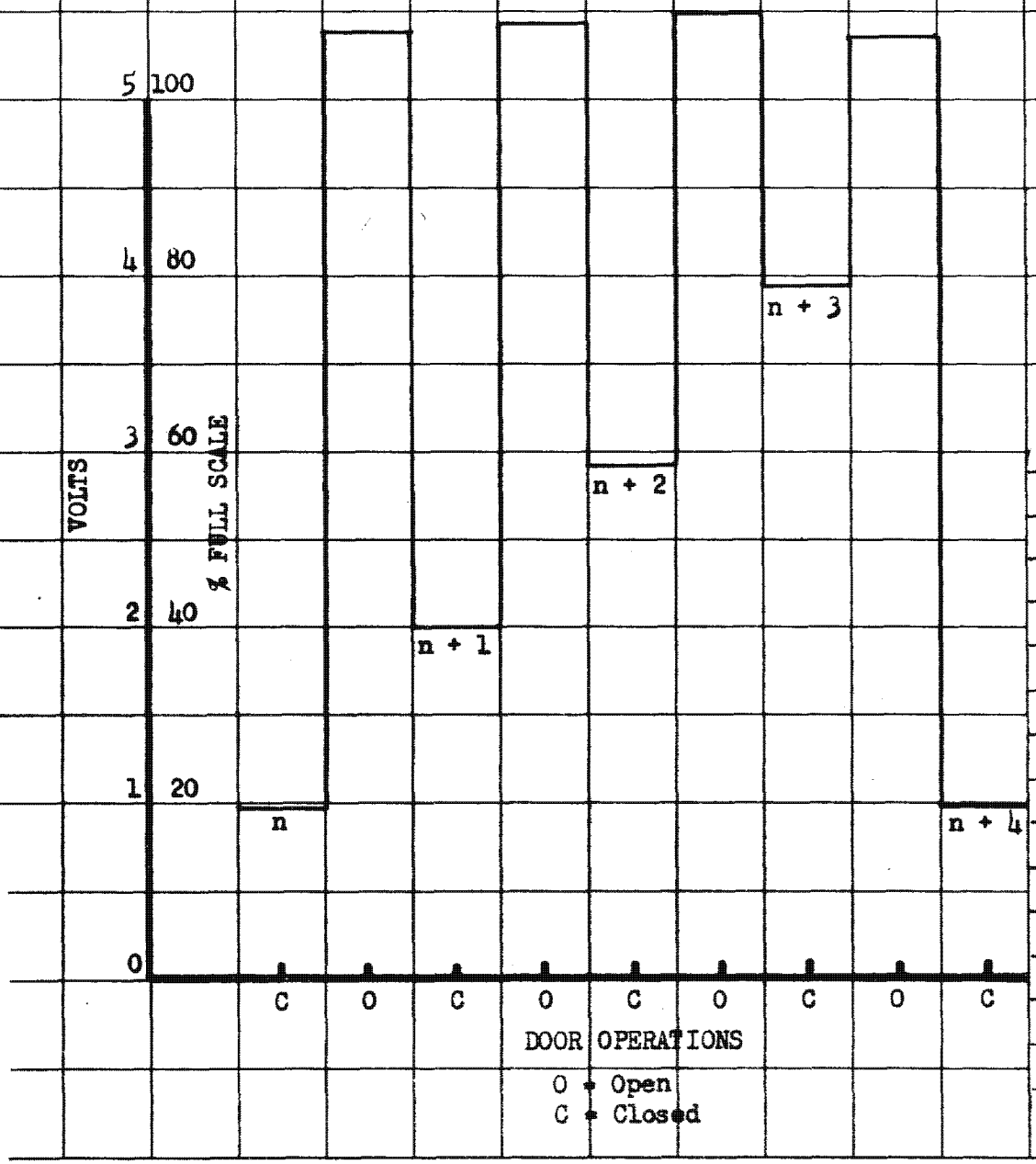
Notes:

1. Auto-focus platen position range +.00015 to -.00065 inches from BPF.
2. To correct for positive deviation send Green 888. To correct for negative deviation send Green 777.
3. Actual error is 1.15 times indicated deviation.

CPL 25 (GFE 1-25)(2,3-12-11)
PORT OPEN TELLTALE

SOURCE: C/P LOG BOOK

C/P SERIAL NO. 39

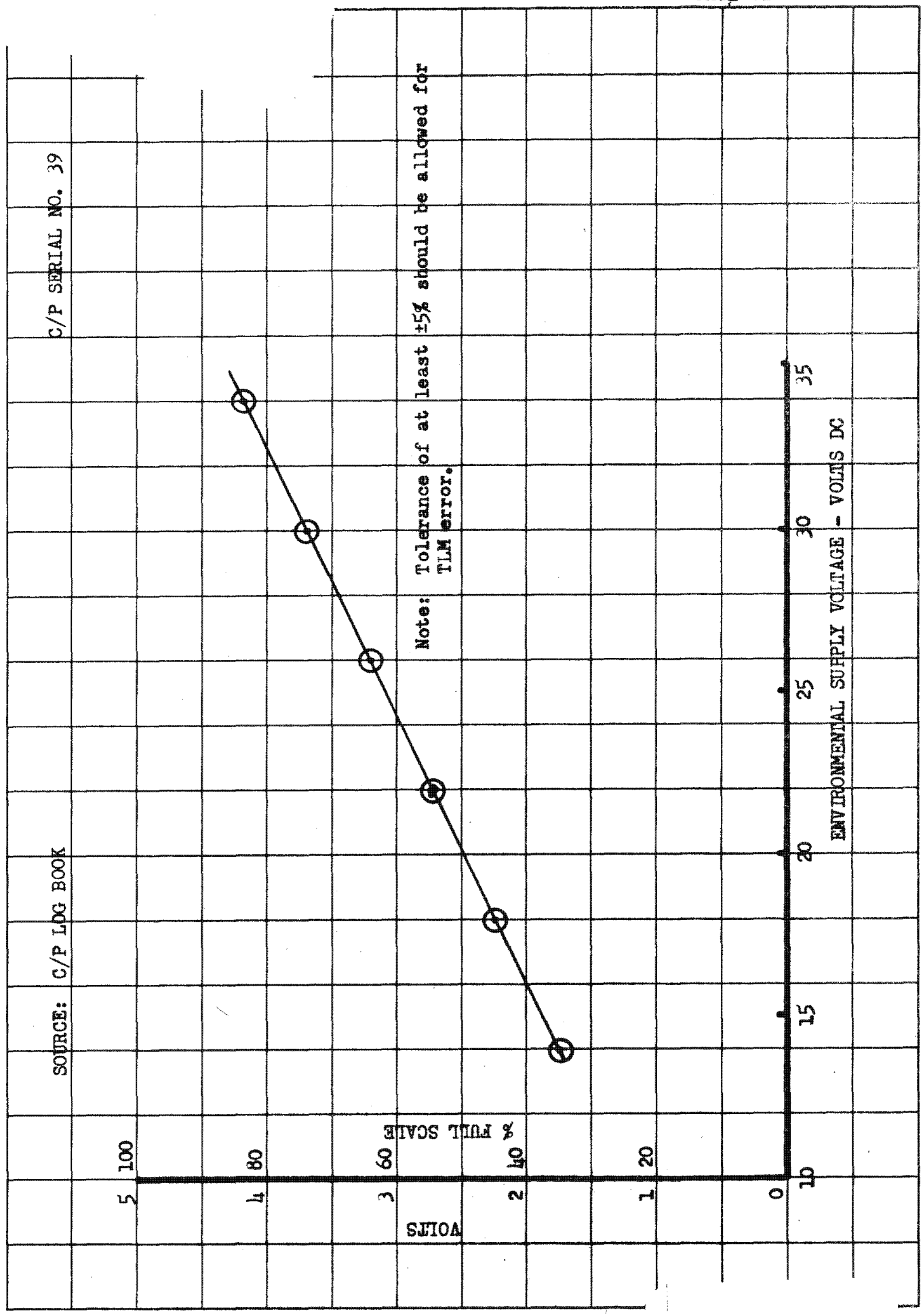


Notes:

1. Tolerance of at least ±5% should be allowed for TLM error.
2. Whenever door is open output should be approximately 5 volts.
3. Each time door is closed, output voltage increases by approximately one volt up to four volts, then repeats the cycle starting at the one volt level.

1	2	3	4	65	66	67	68
5	6	7	8	69	70	71	72
9	10	11	12	73	74	75	76
13	14	15	16	77	78	79	80
17	18	19	20	81	82	83	84
21	22	23	24	85	86	87	88
25	26	27	28	89	90	91	92
29	30	31	32	93	94	95	96
33	34	35	36	97	98	99	100
37	38	39	40	101	102	103	104
41	42	43	44	105	106	107	108
45	46	47	48	109	110	111	112
49	50	51	52	113	114	115	116
53	54	55	56	117	118	119	120
57	58	59	60	121	122	123	124
61	62	63	64	125	126	127	128

CPL 26 (GFE 1-26)(2,3-15-24, 10-12)
ENVIRONMENTAL SUPPLY

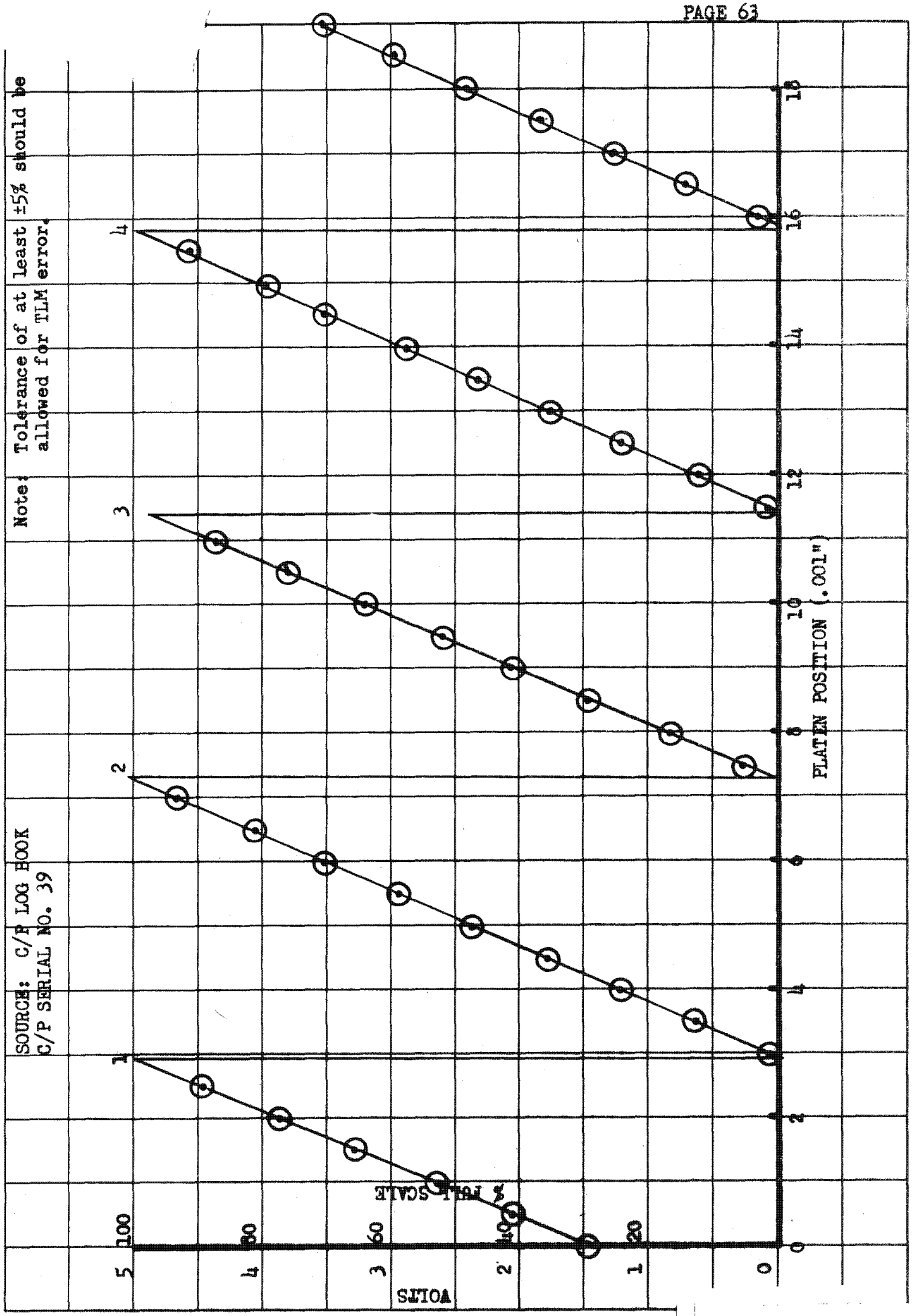


FM-39 CPL 26 2 OR 3-10-12

ENVIRONMENTAL SUPPLY
DIGITAL LISTING OF CAL. CURVE

PERCENT	VOLTS	PERCENT	VOLTS
35.	13.85	60.	24.26
36.	14.27	61.	24.68
37.	14.69	62.	25.09
38.	15.11	63.	25.50
39.	15.53	64.	25.91
40.	15.95	65.	26.32
41.	16.37	66.	26.73
42.	16.79	67.	27.14
43.	17.20	68.	27.55
44.	17.62	69.	27.96
45.	18.04	70.	28.37
46.	18.46	71.	28.78
47.	18.87	72.	29.19
48.	19.29	73.	29.60
49.	19.71	74.	30.01
50.	20.12	75.	30.42
51.	20.54	76.	30.82
52.	20.95	77.	31.23
53.	21.37	78.	31.64
54.	21.78	79.	32.05
55.	22.20	80.	32.45
56.	22.61	81.	32.86
57.	23.02	82.	33.26
58.	23.44	83.	33.67
59.	23.85	84.	34.07

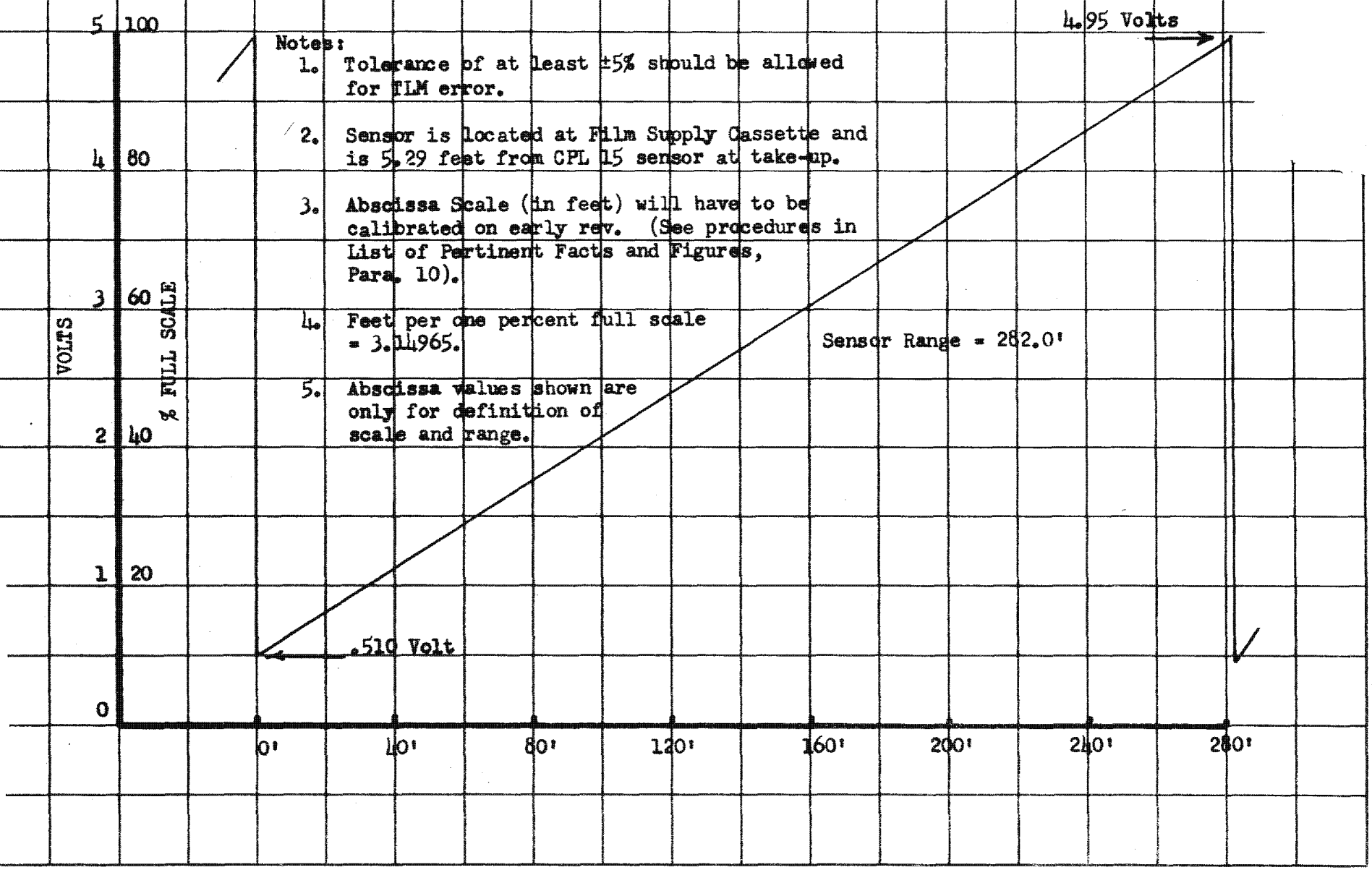
CPL 27 (GFE 1-27)(2,3-14-23)
PLATEN POSITION (FINE)



CPL 28 (GFE 1-28)(2,3-15-26)
FILM TAKE-UP QUANTITY, MEDIUM

SOURCE: C/P LOG BOOK

C/P SERIAL NO. 39



Notes:

1. Tolerance of at least ±5% should be allowed for TLM error.
2. Sensor is located at Film Supply Cassette and is 5.29 feet from CPL 15 sensor at take-up.
3. Abscissa Scale (in feet) will have to be calibrated on early rev. (See procedures in List of Pertinent Facts and Figures, Para. 10).
4. Feet per one percent full scale = 3.14965.
5. Abscissa values shown are only for definition of scale and range.

CPL 29 (GFE 1-29) (2,3-12-3)

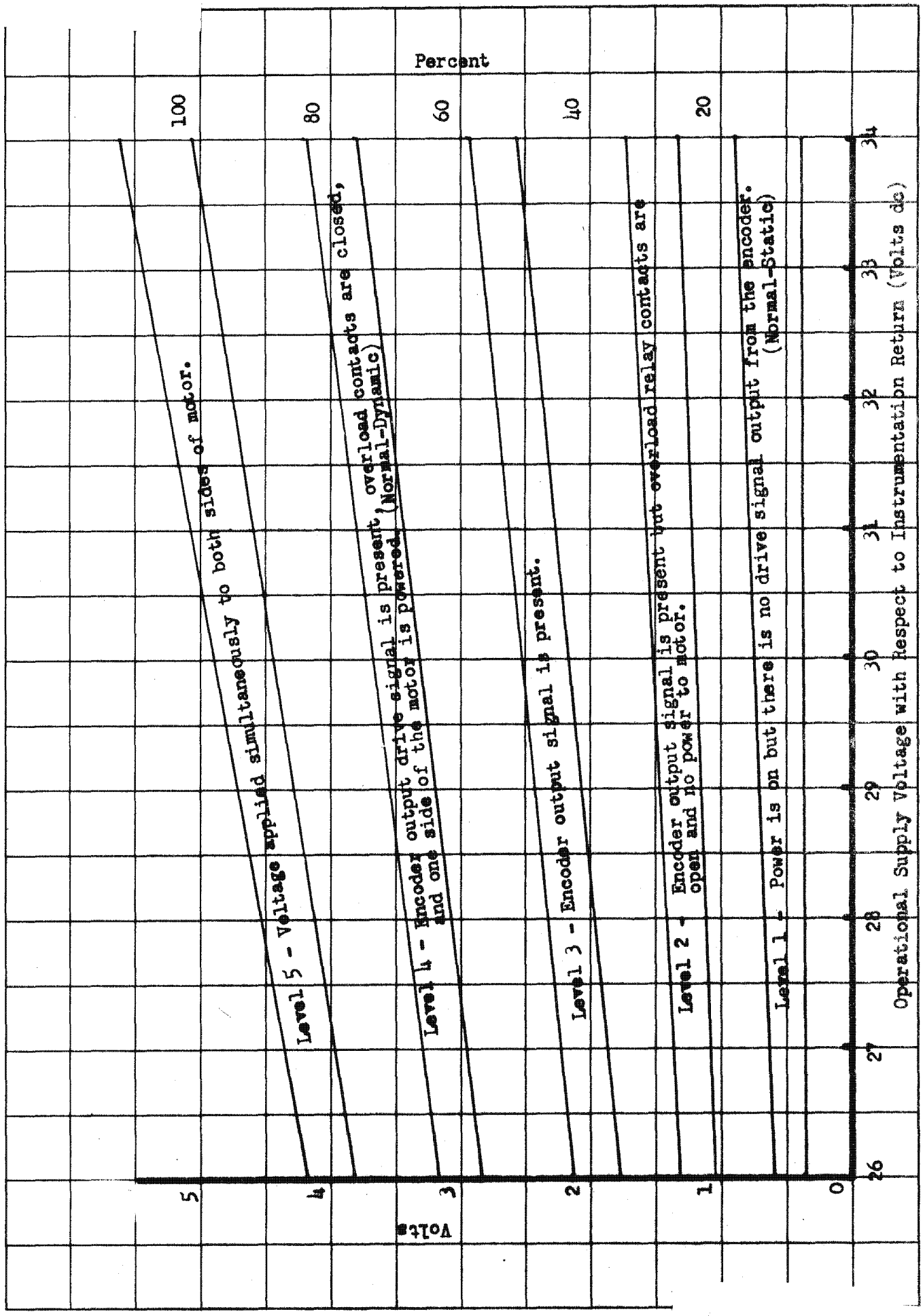
AMPLIFIED DATA SIGNALS

SOURCE-C/P LOG BOOK C/P SERIAL NO FM-39

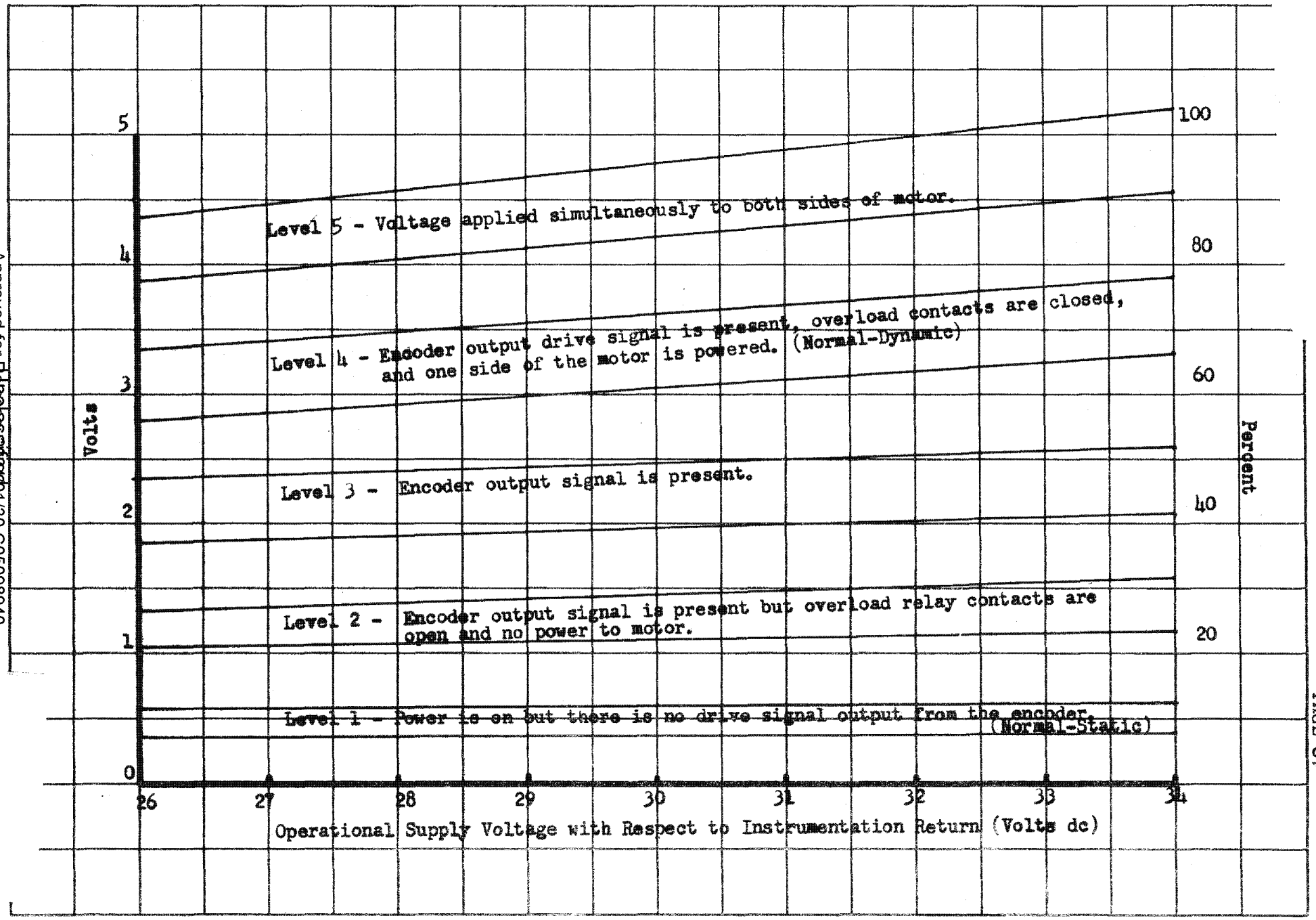
AMPLIFIERS A AND B ON-OFF STATE	VOLTS D.C.	PERCENT FULL SCALE
OPERATIONAL POWER OFF	0 TO .5 (DESIGN SPEC)	0 TO 10
A AND B OFF	1.360	27.20
A ON, B OFF	3.670	73.40
A OFF, B ON	2.800	56.00
A AND B ON	4.660	93.20

NOTE- TOLERANCE OF AT LEAST
+OR- 5 PERCENT SHOULD
BE ALLOWED FOR TLM ERROR.

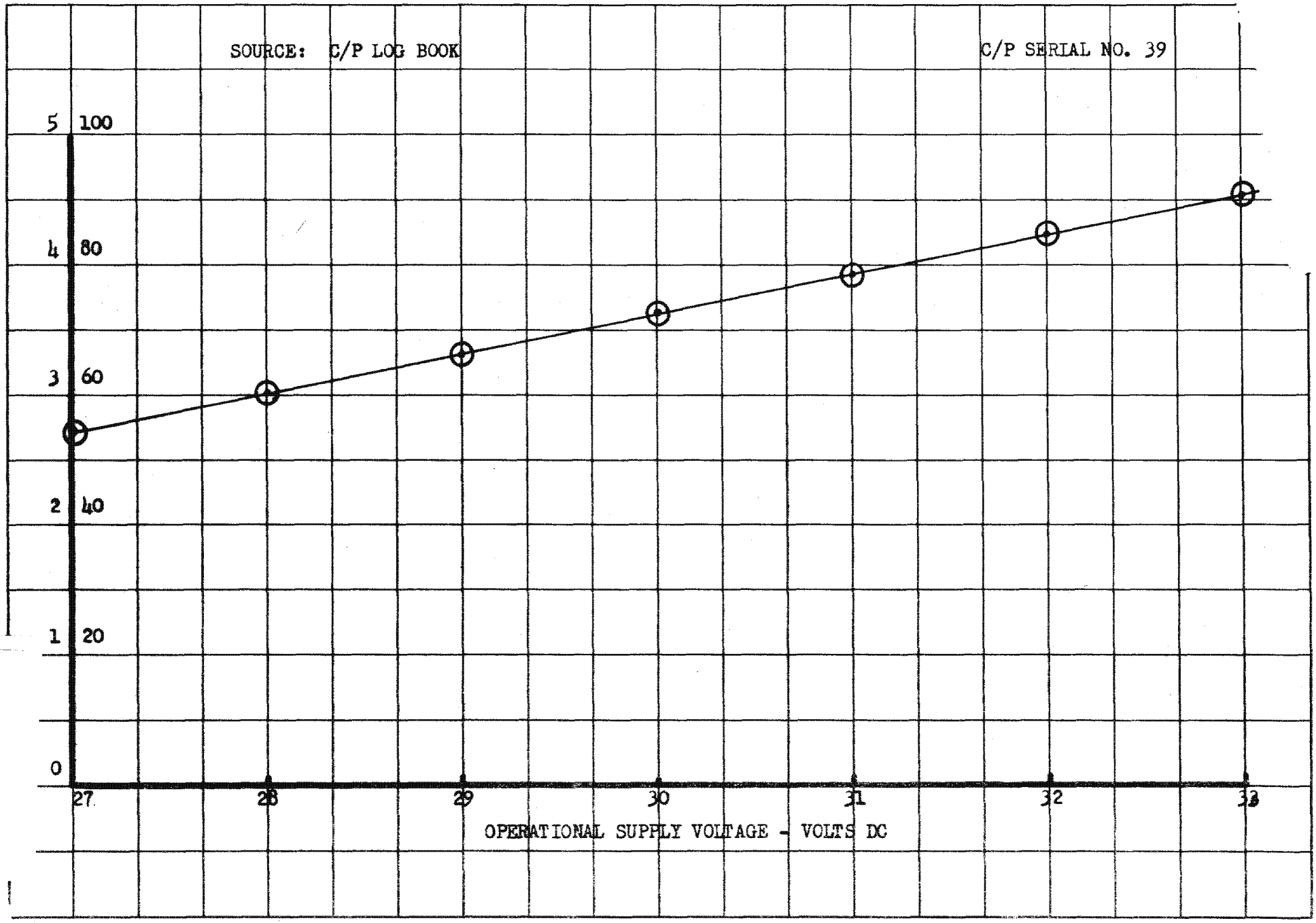
CPL 33 (GFE 1-33) (2,3-12-8)
POWER CONTROL MONITOR STEREO SERVO



CPL 34 (GFE 1-34) (2,3-12-9)
POWER CONTROL MONITOR CRAB SERVO



CPL 35 (GFE 1-35)(2,3-12-10, 15-28,10-4)
OPERATIONAL SUPPLY OUTPUT

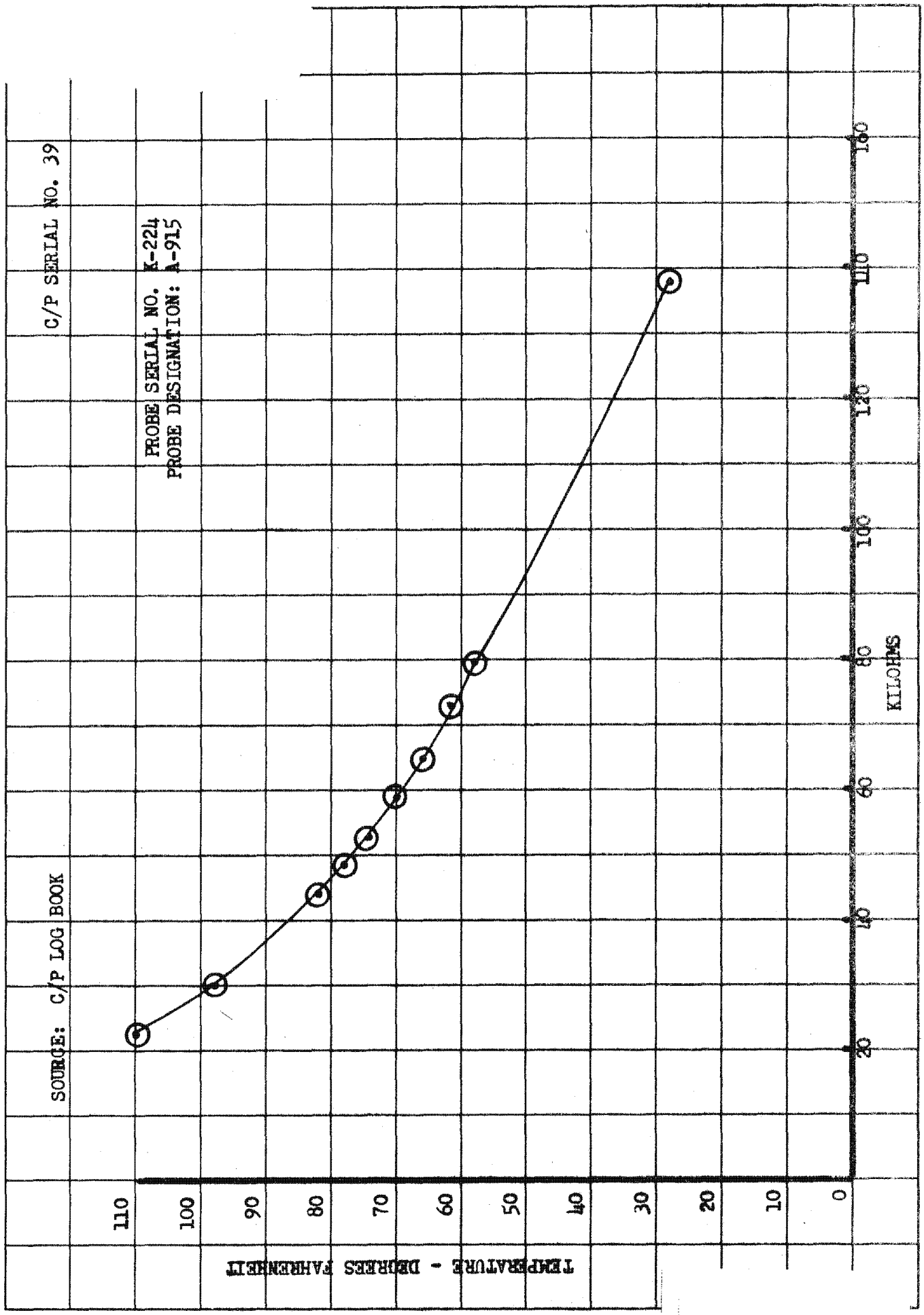


FM-39 CPL 35 2 OR 3-12-10

OPERATIONAL SUPPLY OUTPUT
DIGITAL LISTING OF CAL CURVE

PERCENT	VOLTS	PERCENT	VOLTS
54.	26.90	73.	30.02
55.	27.07	74.	30.19
56.	27.23	75.	30.35
57.	27.39	76.	30.52
58.	27.56	77.	30.68
59.	27.72	78.	30.84
60.	27.89	79.	31.01
61.	28.05	80.	31.17
62.	28.22	81.	31.34
63.	28.38	82.	31.50
64.	28.54	83.	31.67
65.	28.71	84.	31.83
66.	28.87	85.	31.99
67.	29.04	86.	32.16
68.	29.20	87.	32.32
69.	29.37	88.	32.49
70.	29.53	89.	32.65
71.	29.69	90.	32.82
72.	29.86	91.	32.98

BBT - 3
STEREO MIRROR TEMPERATURE

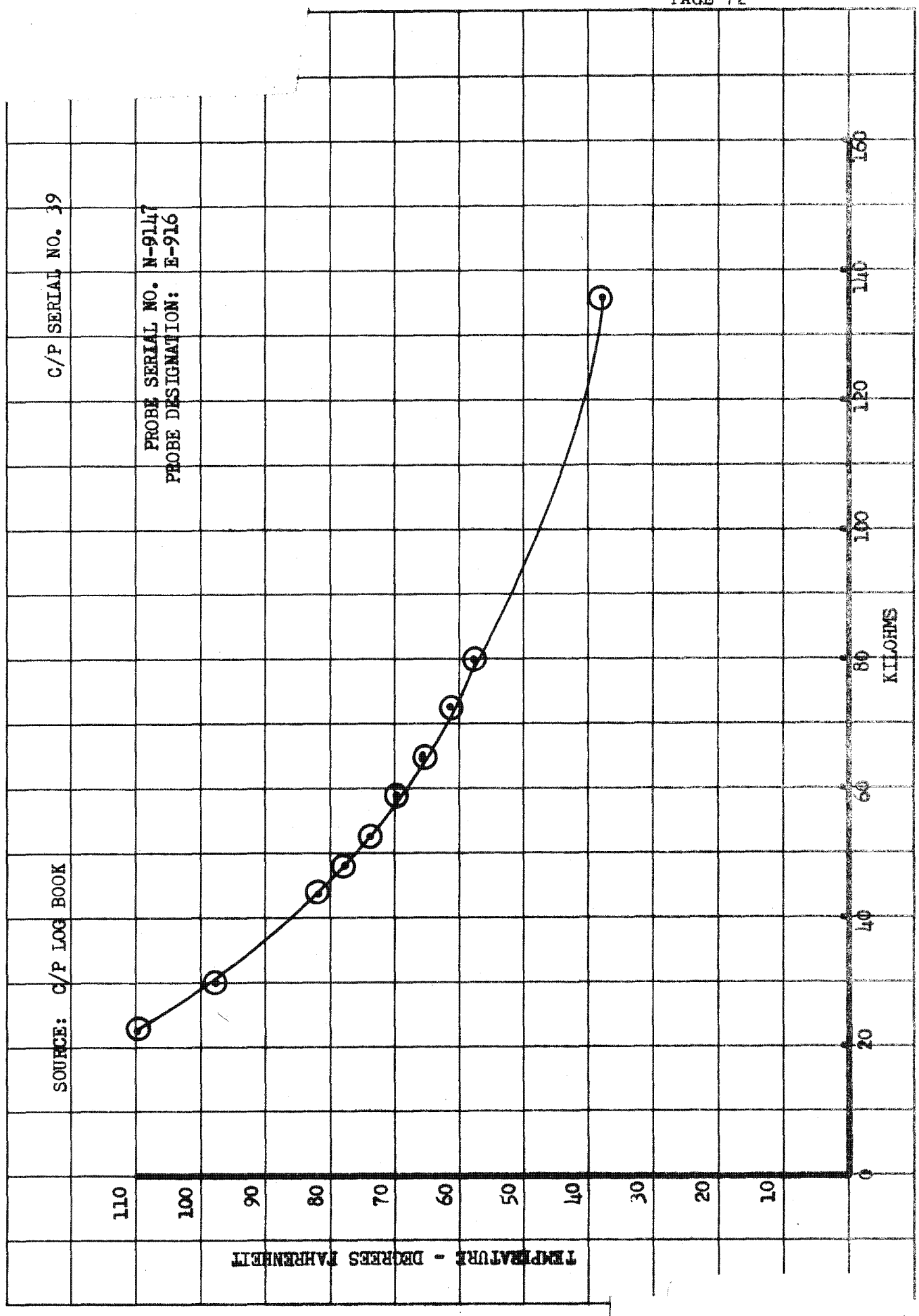


FM-39

BBT 3
STEREO MIRROR TEMPERATURE
DIGITAL LISTING OF CAL CURVE

KILOHMS	DEGREES (F)	KILOHMS	DEGREES (F)
20.	116.37	70.	63.71
21.	114.41	71.	63.15
22.	112.51	72.	62.60
23.	110.67	73.	62.06
24.	108.88	74.	61.52
25.	107.15	75.	60.99
26.	105.47	76.	60.46
27.	103.83	77.	59.93
28.	102.25	78.	59.41
29.	100.72	79.	58.89
30.	99.23	80.	58.38
31.	97.78	81.	57.87
32.	96.38	82.	57.36
33.	95.02	83.	56.86
34.	93.70	84.	56.36
35.	92.42	85.	55.86
36.	91.18	86.	55.37
37.	89.98	87.	54.87
38.	88.81	88.	54.38
39.	87.67	89.	53.89
40.	86.57	90.	53.41
41.	85.50	91.	52.92
42.	84.46	92.	52.44
43.	83.45	93.	51.96
44.	82.46	94.	51.48
45.	81.51	95.	51.01
46.	80.58	96.	50.54
47.	79.67	97.	50.07
48.	78.79	98.	49.60
49.	77.93	99.	49.14
50.	77.10	100.	48.67
51.	76.28	101.	48.22
52.	75.49	102.	47.76
53.	74.71	103.	47.31
54.	73.96	104.	46.87
55.	73.22	105.	46.43
56.	72.50	106.	45.99
57.	71.79	107.	45.56
58.	71.10	108.	45.14
59.	70.42	109.	44.72
60.	69.76	110.	44.31
61.	69.10	111.	43.90
62.	68.46	112.	43.50
63.	67.84	113.	43.11
64.	67.22	114.	42.73
65.	66.61	115.	42.36
66.	66.02	116.	42.00
67.	65.43	117.	41.65
68.	64.85	118.	41.30
69.	64.28	119.	40.97

BET - 4
COMPONENT SUPPORT TUBE TEMPERATURE, -Y STATION 177



FM-39 BBT 4

COMPONENT SUPPORT TUBE TEMPERATURE, -Y STATION 177

DIGITAL LISTING OF CAL CURVE

KILOHMS	DEGREES (F)	KILOHMS	DEGREES (F)
20.	116.35	70.	63.56
21.	114.35	71.	62.99
22.	112.41	72.	62.44
23.	110.53	73.	61.88
24.	108.71	74.	61.33
25.	106.95	75.	60.79
26.	105.24	76.	60.25
27.	103.59	77.	59.71
28.	101.98	78.	59.17
29.	100.43	79.	58.64
30.	98.93	80.	58.11
31.	97.48	81.	57.58
32.	96.07	82.	57.06
33.	94.70	83.	56.54
34.	93.38	84.	56.01
35.	92.10	85.	55.49
36.	90.86	86.	54.98
37.	89.65	87.	54.46
38.	88.49	88.	53.95
39.	87.35	89.	53.43
40.	86.26	90.	52.92
41.	85.19	91.	52.42
42.	84.16	92.	51.91
43.	83.16	93.	51.40
44.	82.18	94.	50.90
45.	81.23	95.	50.40
46.	80.31	96.	49.90
47.	79.42	97.	49.41
48.	78.55	98.	48.91
49.	77.70	99.	48.43
50.	76.87	100.	47.94
51.	76.07	101.	47.46
52.	75.28	102.	46.98
53.	74.52	103.	46.51
54.	73.77	104.	46.04
55.	73.04	105.	45.58
56.	72.32	106.	45.13
57.	71.62	107.	44.68
58.	70.94	108.	44.24
59.	70.27	109.	43.80
60.	69.61	110.	43.38
61.	68.96	111.	42.96
62.	68.32	112.	42.56
63.	67.70	113.	42.16
64.	67.08	114.	41.77
65.	66.48	115.	41.40
66.	65.88	116.	41.04
67.	65.29	117.	40.69
68.	64.70	118.	40.36
69.	64.13	119.	40.04

APPENDIX 4

PAYLOAD SUBSYSTEM TEST PROCEDURE

R-300654-KH
Sheets: 206

VTP-301

SUBSYSTEM PROCEDURE

EASTMAN KODAK COMPANY

VAFB

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
F	General rewrite to update existing tasks.	10-10-66	A.W. Reich

PREPARED BY: E. L. Krause DATE: 10/11/66

QUALITY CONTROL: E. H. Zeimer DATE: 10/11/66

PROJECT SUPERVISOR: A.W. Reich DATE: 10/12/66

BASE MANAGER: G. R. Poore DATE: 10/14/66

TABLE OF CONTENTS

TABLE OF CONTENTS (Cont'd)

1.0 PURPOSE

The purpose of this test procedure is to redemonstrate the photographic capability of the C/P and to verify the operability of all of its various components.

2.0 REFERENCE DOCUMENTS

2.1 Operating Instructions

VOI-401	C/P and FRSA Unpacking and Inspection
VOI-402	Record Thread-Up, Loading and Unloading
VOI-403	Preparation of the Payload for Collimator Testing
VOI-404	Test Console Set-Up Instructions
VOI-405	Line of Sight Test Set-Up
VOI-406	Chart Recorder Calibration
VOI-407	Record Processing and Evaluation
VOI-408	Handling of Test FRSA
VOI-409	Test Set-Up Configuration and Equipment
VOI-411	System Quick Look Analysis and Data Requirements
VOI-412	Preparation for C/P Integration

2.2 Other

VCP-501	Test Equipment Calibration and Maintainence Program
801-116	Payload Interface
813-100	Camera Cover Assembly

3.0 DOCUMENTATION

3.1 Test Data

All test data shall be recorded on the data sheets for this procedure. Any procedure deviation, data non-conformance or test non-conformance shall be noted on the data sheet and should be described on a NON-CONFORMANCE AND DEVIATIONS form attached to the data sheets.

3.2 Payload Log

The payload log shall be maintained as a historical record of C/P testing progress. Such items as the

completion of VTP-301 tasks, Special Engineering Tests, important incidents that may have an ultimate effect on C/P performance, etc. should be included in the Payload Log.

3.3 All chart recorder channels should be calibrated per VOI-406 prior to the start of every test or wherever otherwise indicated. The chart recorder shall be turned on prior to turning C/P power "On" and shall remain on until the power is turned "Off". Unless otherwise stated, the chart record shall be operated at 1 mm/sec.

The chart record shall be identified at the beginning and end of each test with the following information:

Operating Times
Channel Functions

In addition, the following information should be recorded on the outside of the rolled recorder paper:

C/P Serial Number
Test Procedure Number
Date
Initials of the personnel performing the test.

3.4 Digital Printouts

All digital printouts shall be identified with the following information:

C/P Serial Number
Test Procedure Number
Date
Time

3.5 Disposition of Data

Upon the completion of a Task, the data should be reduced as soon as possible and a QC "Scratch Sheet" form should be completed.

3.6 Test Record Evaluation

Test record shall be processed and evaluated per VOI-407.

4.0 FACILITIES

4.1 Equipment

534-100	Test Console
744-151	Record Loading and Unloading Kit
749-100	Record Splicer
833-300	Collimator Assembly
848-200	Truck
748-497	Record Supply and Record Storage Alignment Fixture
749-295	Record Storage Mount and Enclosure Assembly
833-110	Line of Sight Test Set
837-1728	Light Source Assembly
	Hydraulic Jack
	8 Channel Sanborn Chart Recorder
	Oscilloscope, Tektronix 545 w/Type CA Pre-amplifier, Simpson Model 260
	8 foot Steel Measuring Tape
	Fluorescent Desk Lamp

4.2 Power

115 volt ± 5 volts AC, 60 cycles ± 1% single phase, 60 amperes.

4.3 Area

Clean room standards shall be maintained.

5.0 OPERATING CONDITIONS

5.1 Environmental

Temperature	70 ± 2°F (unless otherwise noted)
Humidity	45 ± 5% R.H.

5.2 Payload Status

The C/P shall have been unpacked and inspected per VOI-401.

5.3 Calibration

All test instruments used for conducting these tests shall be within their calibration periods and shall have been calibrated per VCP-501.

5.4 Camera Slit Protection

Except during photographic testing (Tasks 5, 9, 10 and 13) the camera slit shall be set to the Test Slit Position.

TASK 1 - CONTINUITY AND WIRING VERIFICATION

ITEM

1. Verify that the following C/P connector pairs are mated: 651, 652, 653, 655, 656, 657, 658, 659, 662, 671, 671A, 672, 672A, 681, 682, 683, 684, 685, 686, 690, 691, 693 and 694.

2. Remove the AIR SUPPLY cassette cover.

3. Connect BREAKOUT BOX cables J697, J698 and J699 to the C/P TEST BOX.

4. Measure and record the resistance between the points listed in Table I-I with a Simpson Model 260 Volt-Ohm Meter or equivalent. Verify that the calibration is current.

TABLE I-I

Circuit	Ohmmeter Neg. Connection	Ohmmeter Pos. Connection
1. Operating Power (See Note)	J699j	J699f
2. Operating Power (See Note)	J699j	J699g
3. Heater Power	J699j	J699h
4. Heater Power	J699j	J699i
5. Torque Motor (CB-24)	J699j	J697S
6. 5 Volt Instrumentation	J698F	J698K
7. 5 Volt Instrumentation	J698G	J698K

NOTE: For OPERATING POWER measurements the looper must be kept at the "supply full" (+X) position and the tension arm in the AIR SUPPLY must be held off its microswitch.

TASK 1

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
1	The following connectors are mated: 651	Ck			_____		
	652	Ck			_____		
	653	Ck			_____		
	655	Ck			_____		
	656	Ck			_____		
	657	Ck			_____		
	658	Ck			_____		
	659	Ck			_____		
	662	Ck			_____		
	671	Ck			_____		
	671A	Ck			_____		
	672	Ck			_____		
	672A	Ck			_____		
	681	Ck			_____		
	682	Ck			_____		

Approved for Release: 2024/01/30 C05098940

TASK 1

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
	683	Ck			_____		
	684	Ck			_____		
	685	Ck			_____		
	686	Ck			_____		
	690	Ck			_____		
	691	Ck			_____		
	693	Ck			_____		
	694	Ck			_____		
4	Calibration date is current	Ck			_____		
	Circuit Resistances:						
	1. Operating Power	Ohms	200	5000	_____		
	2. Operating Power	Ohms	200	5000	_____		
	3. Heater Power	Ohms	200	5000	_____		
	4. Heater Power	Ohms	200	5000	_____		
	5. Torque Motor (CB 24)	Ohms	300	3500	_____		

Approved for Release: 2024/01/30 C05098940

TASK 1

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
	6. 5 Volt Instrumentation	Ohms	1600	2400	_____		
	7. 5 Volt Instrumentation	Ohms	1600	2400	_____		
5	Test Conductor Initials				_____		

TASK 2 - ALIGNMENT OF FRSA TO SUPPLY CASSETTE

ITEM

1. Install the TEST FORWARD RECORD STORAGE ASSEMBLY (FRSA) and the FORWARD RECORD STORAGE MOUNT and ENCLOSURE ASSEMBLY (FRSM & EA) on the CRADLE ASSEMBLY. Attach the rubber bellows flange plate to the AIR SUPPLY front (-X) mounting surface. Record the test FRSA and FRSA REEL serial numbers on the data sheets.

2. Remove the ACCESS COVER from the record chute.

3. Verify that the STOW PINS are in and locked. Verify that the index marks on the PRIMARY STRUCTURAL and SOCKET MOUNTING RINGS are aligned.

4. Mount the SUPPLY MIRROR ALIGNMENT FIXTURE (748-496) to the SUPPLY CASSETTE.

5. Raise the forward end of the C/P (-X) TRUCK with a hydraulic jack and lower both front truck jacks.

6. Raise the aft end of the C/P TRUCK with a hydraulic jack and place a mechanical screw jack against the truck channel section near the center of the truck.

7. Level the C/P using the three mechanical jacks by observing the two axis levels on the SUPPLY MIRROR ALIGNMENT FIXTURE.

8. Place the ALIGNMENT TRANSFER MIRROR into the chute access port by pushing the transfer mirror and instrument stand toward the chute. Pull the TRANSFER MIRROR micrometer out until the TRANSFER MIRROR is approximately 3/4 inch from the back of the chute and retract the instrument stand wheels. Using the micrometer adjustment, adjust the TRANSFER MIRROR position toward the back of the chute until the TRANSFER MIRROR can just be rotated. Using the vertical adjustment on the instrument stand, adjust the height of the transfer mirror to approximately the same height as the horizontal line on the SUPPLY MIRROR ALIGNMENT FIXTURE.

9. Place a theodolite at least 60 inches from the TRANSFER MIRROR and 60 inches from the SUPPLY MIRROR ALIGNMENT FIXTURE.

ITEM

10. Level the theodolite and set the elevation angle to 90° (±.5").

11. Adjust the theodolite instrument stand until the theodolite horizontal reticle line coincides with the extreme outer edge of the horizontal line on the SUPPLY ALIGNMENT FIXTURE MIRROR.

12. Level the TRANSFER MIRROR in the direction perpendicular to the theodolite optical axis and rotate the mirror so that it faces the theodolite.

    NOTE: To facilitate the viewing of the FRSA ALIGNMENT MIRROR during later steps it is advisable to adjust the height of the TRANSFER MIRROR so that the intersection of the etched X on the MIRROR coincides with the horizontal reticle line.

13. Autocollimate from the transfer mirror by rotating the mirror if necessary and adjusting the TRANSFER MIRROR leveling screw in line with the mirror and theodolite.

    NOTE: The theodolite elevation setting should not be varied but should remain at 90° (±.5").

14. Rotate the TRANSFER MIRROR until the horizontal and vertical lines on the FRSA ALIGNMENT MIRROR can be seen through the theodolite.

    NOTE: Two methods may be used to illuminate the FRSA ALIGNMENT MIRROR. The cyclospot illuminator and associated mirror can be adjusted to provide sufficient light to view the lines,or the theodolite autocollimating light may be used. If adjusted correctly, the first method will provide a better image.

15. Verify that the horizontal line on the FRSA ALIGNMENT MIRROR coincides with the horizontal theodolite reticle line. If the lines are not coincident it will be necessary to move the FRSA vertically (along the Y axis). This is achieved by loosening the four clamping screws and adjusting the two screws at the top of the FRSM & EA.

16. Track the vertical line on the FRSA ALIGNMENT MIRROR using the theodolite elevation adjustment. The visible portion of the vertical line should stay within the double vertical reticle lines on the theodolite when tracking from one end of the vertical target line to the other. If this condition

ITEM

16. is not satisfied it may be necessary to vary the adjustments outlined in Item 15.

17. Turn on the theodolite autocollimating lamp and obtain an autocollimated image of the theodolite reticle off the FRSA ALIGNMENT MIRROR. When autocollimation is achieved, lock the theodolite azimuth setting in place and set the theodolite elevation to 90° (±.5"). Adjust the Z axis tilt of the FRSA until the theodolite horizontal reticle line and its autocollimated image coincide. This can be done by adjusting the top and bottom adjustment screws on the FRSM & EA.

18. Recheck the translation of the FRSA as in Item 14 through 17 and readjust if required.

19. Recheck Z axis tilt as in Item 17 and readjust if required.

20. Remove the Test FRSA from the FRSM & EA and install the next lowest numbered available Flight FRSA. Record the serial numbers of the FRSA Frame and Reel in the data sheets.

21. Adjust the Flight FRSA within the HANDLING FRAME ASSEMBLY until the horizontal line on the FRSA ALIGNMENT MIRROR and the horizontal theodolite reticle line coincide.

22. Track the vertical line on the Flight FRSA ALIGNMENT MIRROR using the theodolite elevation adjustment. The visible portion of the vertical line should stay within the double vertical reticle lines on the theodolite when tracking from one end of the vertical target line to the other. If adjustments are required, adjust the Flight FRSA within the HANDLING FRAME ASSEMBLY.

23. Turn on the theodolite autocollimating lamp and obtain an autocollimated image of the theodolite reticle off the FRSA ALIGNMENT MIRROR. When autocollimation is achieved, lock the theodolite azimuth setting in place and set the theodolite elevation to 90° (±.5"). Adjust the Z axis tilt of the Flight FRSA within the HANDLING FRAME ASSEMBLY until the theodolite horizontal reticle line and its autocollimated image coincide.

24. Recheck the translation of the Flight FRSA as in Item 21. Readjust if required.

ITEM

25. Recheck Z axis tilt of the FRSA as in Item 23. Readjust if required.

TASK 2

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
1	Test FRSA (712-479) S/N	#			_____		
	Test FRSA Reel (712-513/514 S/N	#			_____		
3	Stow pins are in and locked	Ck			_____		
	Index marks are aligned	Ck			_____		
15	FRSA horizontal target line coincides with the horizontal theodolite reticle line	Ck			_____		
16	Vertical FRSA target line remains within the theodolite double vertical reticle line	Ck			_____		
17	Theodolite reticle and its image coincide	Ck			_____		
18	Recheck, if required	Ck			_____		
19	Recheck, if required	Ck			_____		
20	Flight FRSA (712-479) S/N	#			_____		
	Flight FRSA Reel (712-513/514) S/N	#			_____		

TASK 2

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
21	FRSA horizontal target line coincides with the horizontal theodolite reticle line	Ck			_____		
22	Vertical FRSA target line remains within the theodolite double vertical reticle line	Ck			_____		
23	Theodolite reticle and its image coincide	Ck			_____		
24	Recheck, if required	Ck			_____		
25	Recheck, if required	Ck			_____		
	Test Conductor Initials				_____		

TASK 3 - LINE OF SIGHT

ITEM

1. Set up the chart recorder as follows and verify that all test instruments are in calibration. Set the recorder speed at 1 mm/sec.

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-13	Stereo Position	1.0 v/cm
2	VTP-13	Stereo Position	1.0
3	CPL-14	Crab Position	1.0
4	VTP-14	Crab Position	1.0
5	CPL-12	Slit Position	1.0
6	VTP-12	Slit Position	1.0
7	-	Operating Current (see Item #13)	2.0
8	CPL-29	Take-Up Motor Current	1.0

2. Remove the AIR SUPPLY cover and set the looper carriage at the "supply empty" (-X) position.

3. Record C/P operating times and verify that the CABLE TEST STATUS indicator indicates a "Go" condition.

4. Set the OPERATING POWER to approximately 28 vdc and apply to the C/P long enough to record CPL-17 and to verify that the take-up motor runs. Verify that the MSD and GAIN CONTROL are "Off". Turn OPERATING POWER "Off".

5. Disconnect P662 at the AIR SUPPLY.

6. Set up the equipment with the C/P for the LINE OF SIGHT test in accordance with VOI-405.

7. Verify that the counterweight is in place and the top rollers on the Stereo Mirror Bridge are "free". Adjust the counterweight if necessary.

8. Reapply the OPERATING POWER to the C/P and, using the TEST CONSOLE DVM, adjust this voltage to 28.0 ±.2 vdc. Record PACKAGE INSTRUMENTATION VOLTAGE.

9. Set the chart recorder speed to 10 mm/sec and command the CRAB SERVO as follows:

ITEM

9.

FROM	TO
1	2
2	3
3	4
4	5
5	6
6	7
7	8
8	7
7	6
6	5
5	4
4	3
3	2
2	1
1	8
8	1

Pause sufficiently between steps to permit the servo to stop at each position.

10. With the chart recorder operating at 10 mm/sec., command the STEREO SERVO as follows:

FROM	TO
2	1
1	2
2	3
3	1
1	3

Pause sufficiently between steps to permit the servo to stop at each position. Change the chart recorder speed to 1 mm/sec.

11. Command the STEREO and CRAB SERVOS to each of the following position combinations and autocollimate the theodolite on the STEREO MIRROR.

ITEM

11.

STEREO	CRAB
3	8*
3	1*
2	1
2	8
1	8*
1	1*
2	1

At each of the positions listed, record the theodolite elevation and azimuth readings on the data sheets. At each of the above positions followed by an asterisk an inspection should be made to ascertain that sufficient clearance exists at the STEREO MIRROR position extremes when the servo shafts are manually adjusted to the outer limits of the null bands. Turn OPERATING POWER "Off".

NOTE: At all position combinations followed by an asterisk the theodolite readings should be taken prior to rotating the servo shafts.

12. Rotate the theodolite and autocollimate on the REFERENCE MIRROR. Record the theodolite elevation and azimuth readings on the data sheets.

13. A Tektronix oscilloscope (type 545 or 545A) and Type D preamp should be employed to perform the following test. Connect the preamp channel A input to the positive OPERATING POWER ammeter (M2002) terminal and the preamp channel B input to the negative ammeter terminal. Connect the oscilloscope ground to a convenient ground on the Power Monitor chassis and set the preamp Input Selector switch to DC A-B. Set the preamp MILLIVOLTS/CM at "1" and the MV/CM MULTIPLIER at "2".

14. Connect the oscilloscope Vertical Signal Output jack and the oscilloscope ground to channel 7 of the chart recorder. Verify that the chart recorder range switch is set at 2.0 v/cm and adjust the channel 7 trace to approximately midscale.

15. Set the chart recorder speed at 10 mm/sec. Reapply OPERATING POWER to the C/P and command the SLIDE SERVO as listed below. At each different SLIDER position measure and record CPL-12 using the TEST CONSOLE PINBOARD and DVM.

ITEM

15.

FROM	TO
A	B
B	C
C	D
D	C
C	B
B	A
A	C
C	A
A	D
D	B
B	D
D	A
A	E

16. Turn OPERATING POWER "Off" and reconnect connector P662.

17. Record C/P Operating Times on the data sheets.

TASK 3

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
1	All calibration dates are current	Ck			_____		
3	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Cable test status indicator indicates "Go"	Ck			_____		
4	CPL 17	VDC	0.90	1.10	_____		
	Take-up motor runs	Ck			_____		
8	Package Instrumentation Voltage	VDC	4.975	5.025	_____		
11	Theodolite Readings and clearance check						
	Elevation (3,8)	*	See DRS		_____		
	Azimuth (3,8)	*	See DRS		_____		

* Degrees, minutes, seconds

TASK 3

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
11	Sufficient clearance exists (3,8)	Ck			_____		
	Elevation (3,1)	*	See DRS		_____		
	Azimuth (3,1)	*	See DRS		_____		
	Sufficient clearance exists (3,1)	Ck			_____		
	Elevation (2,1)	*	See DRS		_____		
	Azimuth (2,1)	*	See DRS		_____		
	Elevation (2,8)	*	See DRS		_____		
	Azimuth (2,8)	*	See DRS		_____		
	Elevation (1,8)	*	See DRS		_____		
	Azimuth (1,8)	*	See DRS		_____		
	Sufficient clearance exists (1,8)	Ck			_____		
	Elevation (1,1)	*	See DRS		_____		
	Azimuth (1,1)	*	See DRS		_____		
	Sufficient clearance exists (1,1)	Ck			_____		

* Degrees, minutes, seconds

Unclassified
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TASK 3

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
11	Elevation (2,1)	*	See DRS		_____		
	Azimuth (2,1)	*	See DRS		_____		
12	Reference Mirror Theodolite Readings						
	Elevation	*	As Read		_____		
	Azimuth	*	As Read		_____		
15	CPL 12						
	Position A	VDC	0.40	0.76	_____		
	Position B	VDC	1.50	1.86	_____		
	Position C	VDC	2.51	2.87	_____		
	Position D	VDC	3.53	3.89	_____		
	Position E	VDC	4.57	4.93	_____		
16	Connector P662 is reconnected	Ck			_____		

TASK 3

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
17	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Test Conductor Initials				_____		

TASK 3

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
9	Crab Servo Transition Times (Channel #3: 10 mm/sec)	Sec					
	1 to 2	Sec		1.0	_____		
	2 to 3	Sec		1.0	_____		
	3 to 4	Sec		1.0	_____		
	4 to 5	Sec		1.0	_____		
	5 to 6	Sec		1.0	_____		
	6 to 7	Sec		1.0	_____		
	7 to 8	Sec		1.0	_____		
	8 to 7	Sec		1.0	_____		
	7 to 6	Sec		1.0	_____		
	6 to 5	Sec		1.0	_____		
	5 to 4	Sec		1.0	_____		
	4 to 3	Sec		1.0	_____		
	3 to 2	Sec		1.0	_____		
	2 to 1	Sec		1.0			

TASK 3

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
9	1 to 8	Sec		8.0	_____		
	8 to 1	Sec		8.0	_____		
	CPL 14 (Channel #3: 1 V/cm)						
	Position 1	VDC	0.37	0.63	_____		
	Position 2	VDC	0.99	1.25	_____		
	Position 3	VDC	1.55	1.81	_____		
	Position 4	VDC	2.10	2.36	_____		
	Position 5	VDC	2.66	2.92	_____		
	Position 6	VDC	3.24	3.50	_____		
	Position 7	VDC	3.81	4.07	_____		
	Position 8	VDC	4.39	4.65	_____		
	Position 7	VDC	3.81	4.07	_____		
	Position 6	VDC	3.24	3.50	_____		
	Position 5	VDC	2.66	2.92	_____		
	Position 4	VDC	2.10	2.36	_____		

TASK 3

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
9	Position 3	VDC	1.55	1.81	_____		
	Position 2	VDC	0.99	1.25	_____		
	Position 1	VDC	0.37	0.63	_____		
10	Stereo Servo Transition Times (Channel #1: 10 mm/sec.)						
	1 to 2	Sec		2.0	_____		
	2 to 3	Sec		2.0	_____		
	3 to 1	Sec		4.0	_____		
	1 to 3	Sec		4.0	_____		
	CPL 13 (Channel #1: 1 v/cm)						
	Position 1	VDC	0.37	0.63	_____		
	Position 2	VDC	2.40	2.60	_____		
	Position 3	VDC	4.32	4.58	_____		
	Position 1	VDC	0.37	0.63	_____		

TASK 3

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
15	Slide Servo Transition Time (Channel #7: 10 mm/sec)						
	A to B	Sec		4.0	_____		
	B to C	Sec		4.0	_____		
	C to D	Sec		4.0	_____		
	D to C	Sec		4.0	_____		
	C to B	Sec		4.0	_____		
	B to A	Sec		4.0	_____		
	A to C	Sec		8.0	_____		
	C to A	Sec		8.0	_____		
	A to D	Sec		12.0	_____		
	D to B	Sec		8.0	_____		
	B to D	Sec		8.0	_____		
	D to A	Sec		12.0	_____		
	Data reduced by:				_____		

DATE

TASK 3 ITEM 11

DRS-VTP-301

C/P _____

ELEVATION SERVO AT POS 3 (+ 7 1/2°)
AZIMUTH SERVO AT POS 8 (3 1/2°)

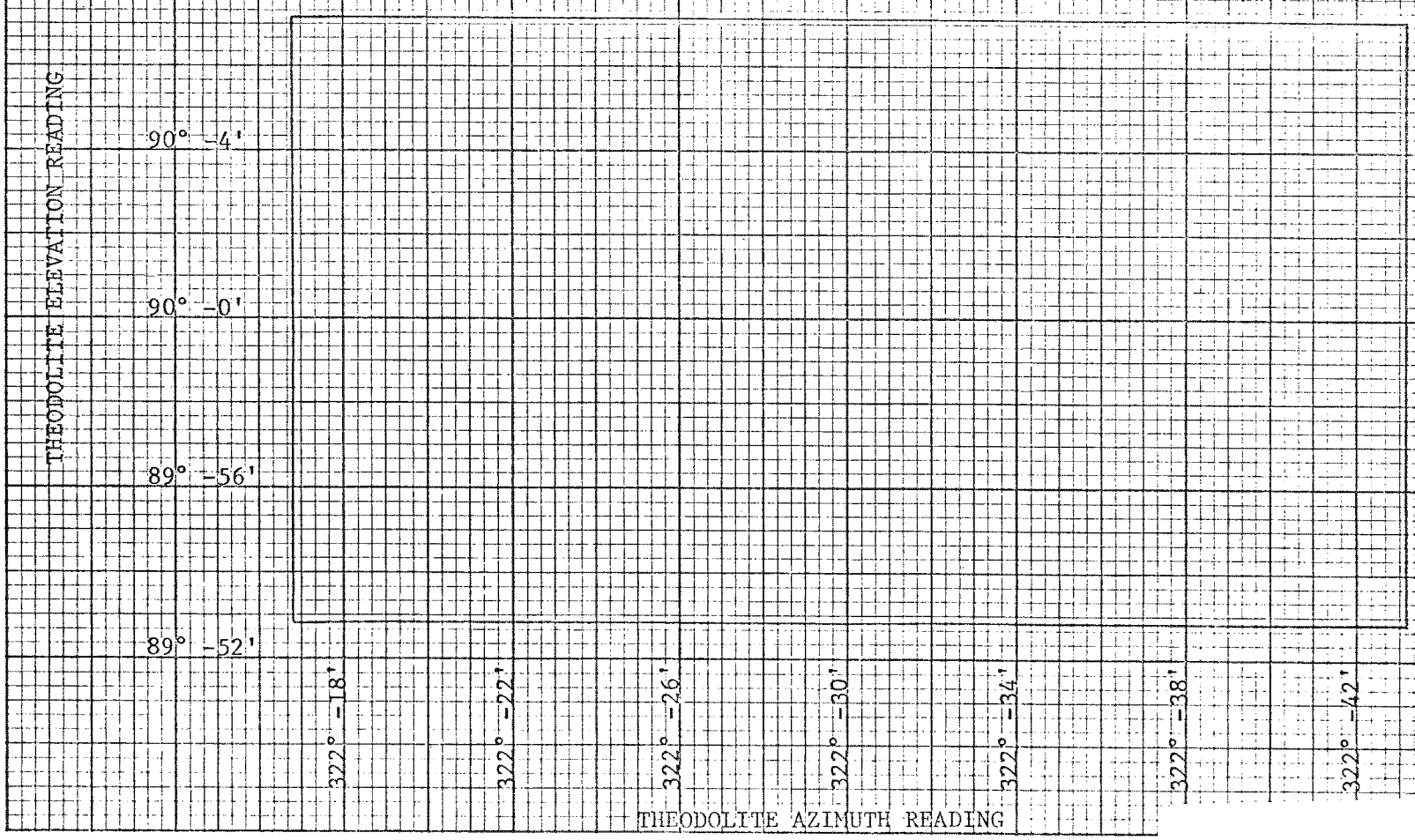
(NOTE: 1 DIV. = 20 SEC.)

DATE _____ TASK 3 ITEM 11 DRS-VTP-301

C/P _____

ELEVATION SERVO AT POS 3 (+ 7 1/2°)
AZIMUTH SERVO AT POS 1 (0°)

(NOTE: 1 DIV. = 20 SEC.)

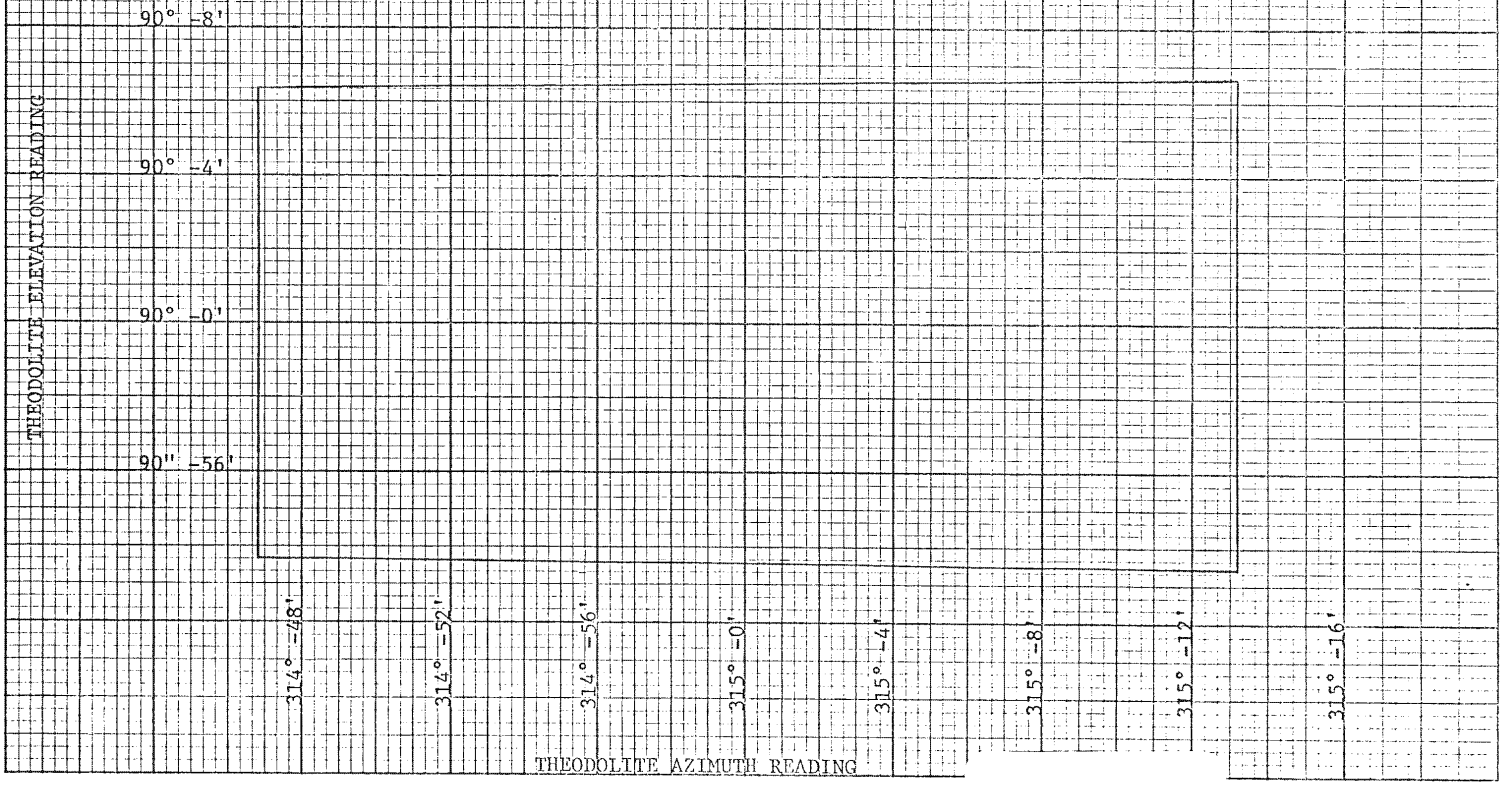


DATE _____ TASK 3 ITEM 11 DRS-VTP-301

C/P _____

ELEVATION SERVO AT POS 2 (0°)
AZIMUTH SERVO AT POS 1 (0°)

(NOTE: 1 DIV. = 20 SEC.)



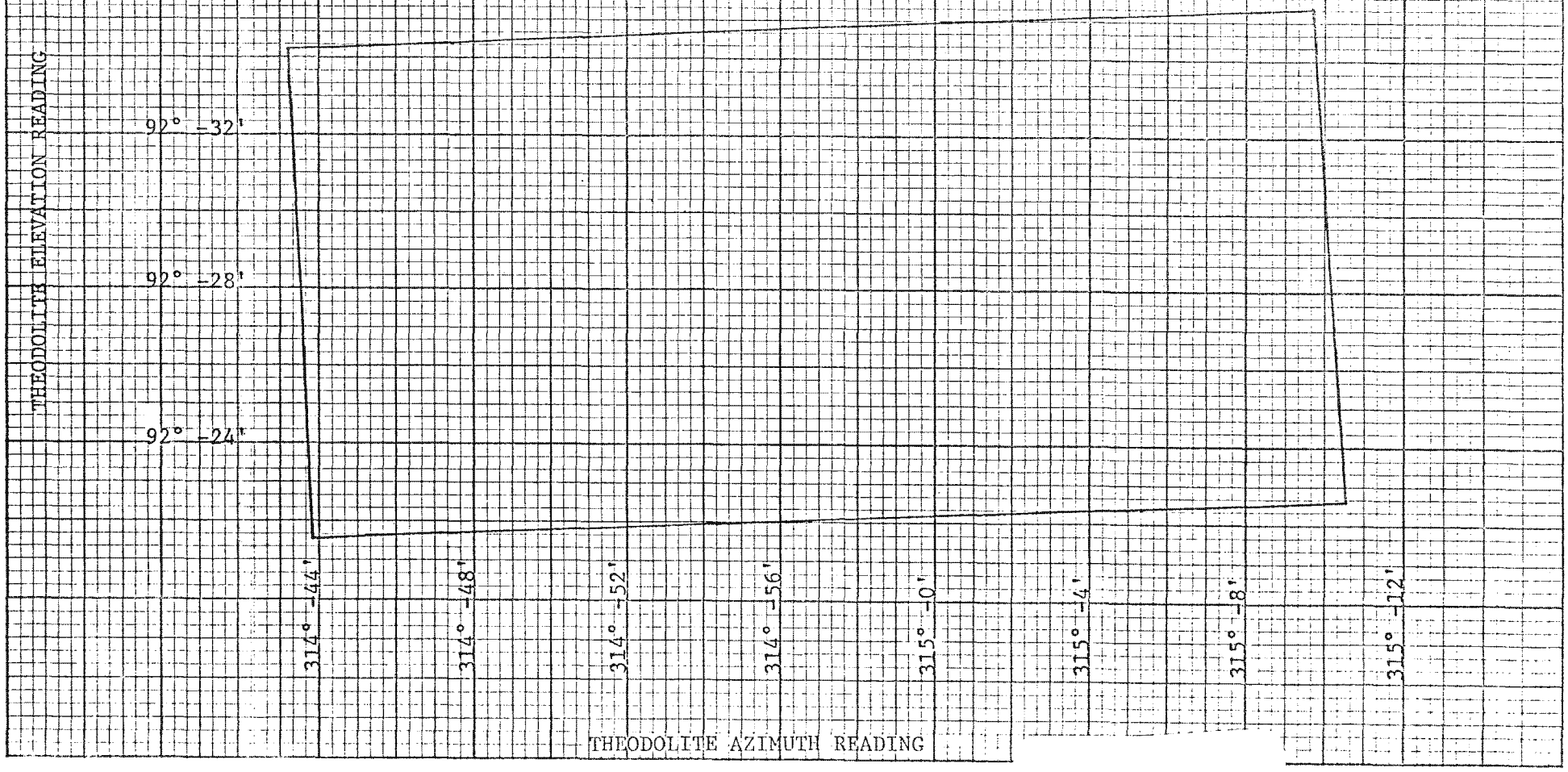
DS3-11

DATE _____ TASK 3 ITEM 11 DRS-VTP-301

C/P _____

ELEVATION SERVO AT POS 2 (0°)
AZIMUTH SERVO AT POS 8 (3 1/2°)

(NOTE: 1 DIV. = 20 SEC.)



Approved for Release: 2024/01/30 C05098940

Unclassified

DATE

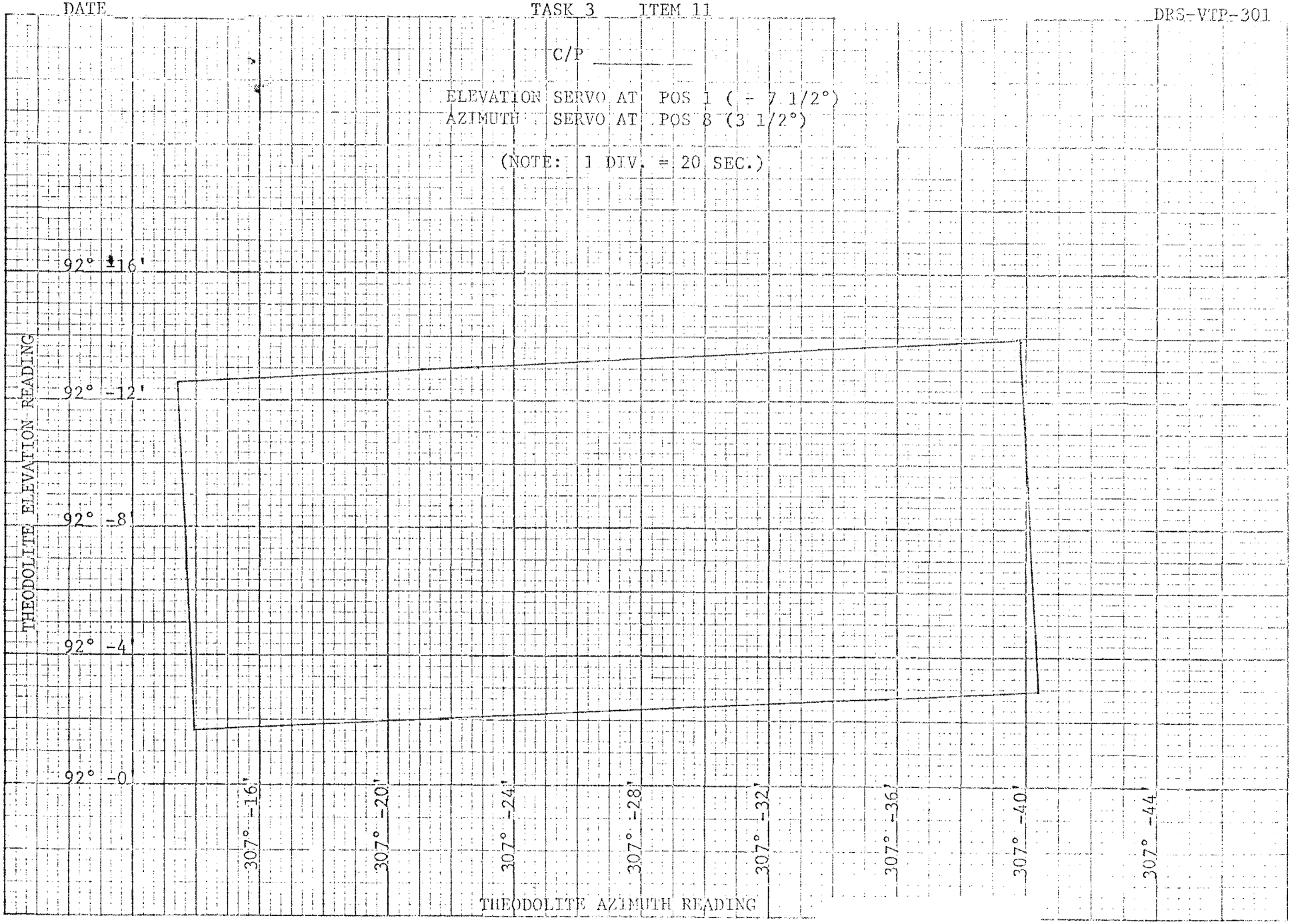
TASK 3 ITEM 11

DRS-VTP-301

C/P _____

ELEVATION SERVO AT POS 1 (- 7 1/2°)
AZIMUTH SERVO AT POS 8 (3 1/2°)

(NOTE: 1 DIV. = 20 SEC.)



DATE

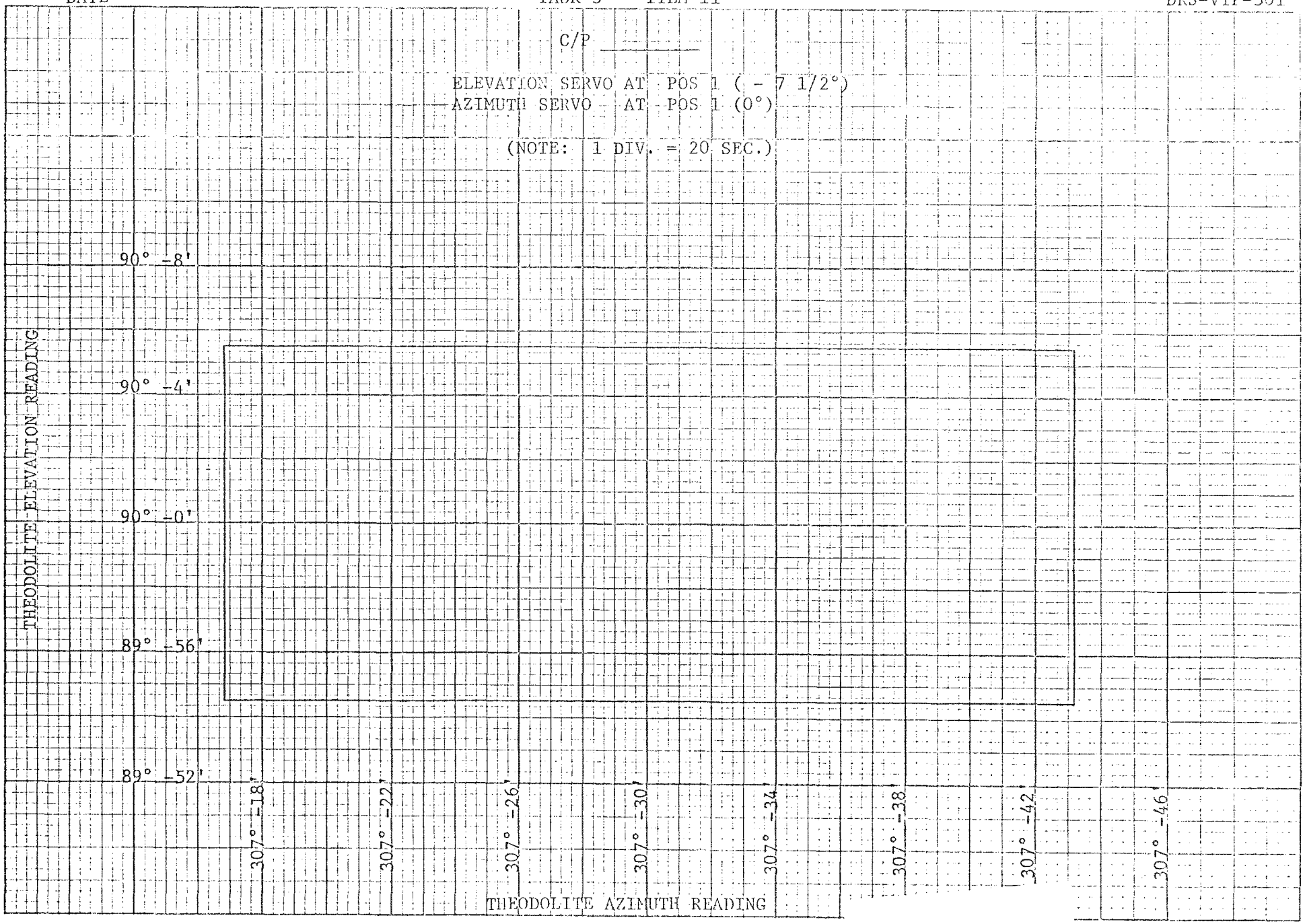
TASK 3 ITEM 11

DRS-VTP-301

C/P _____

ELEVATION SERVO AT POS 1 (- 7 1/2°)
AZIMUTH SERVO AT POS 1 (0°)

(NOTE: 1 DIV. = 20 SEC.)



DS3-14

DATE

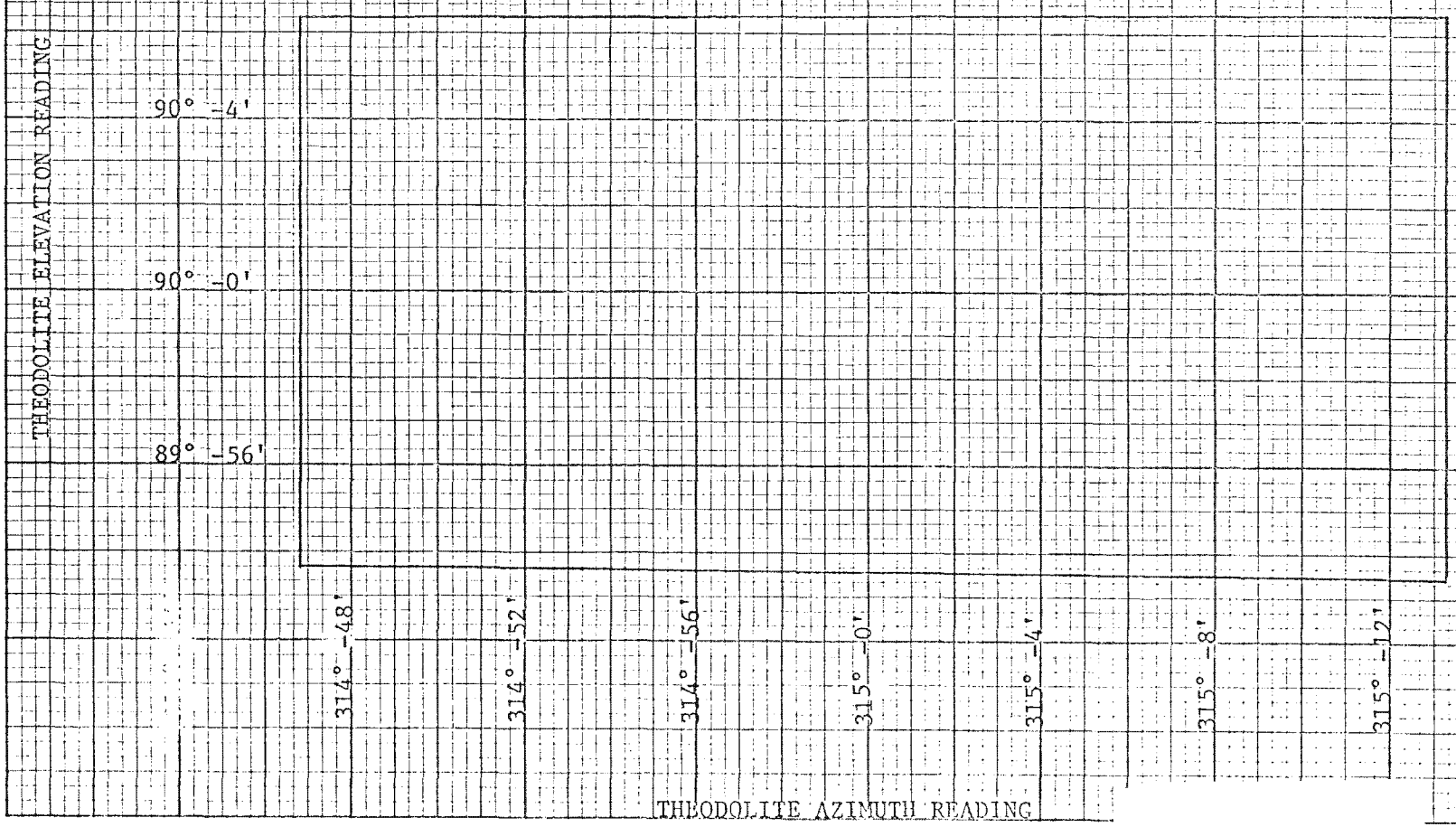
TASK 3 ITEM 11

DRS-VTP-301

C/P _____

ELEVATION SERVO AT POS 2 (0°)
AZIMUTH SERVO AT POS 1 (0°)

(NOTE: 1 DIV. = 20 SEC.)



Approved for Release: 2024/01/30 C05098940

TASK 4 - TEST RECORD INSTALLATION & TRACKING AND SLIT EVALUATION

ITEM

1. Install TEST RECORD load per VOI-402 and record the record lot identification on the data sheets. Do not reinstall the CAMERA cover(s), AIR SUPPLY cover and FRSA enclosure.

2. Set up the chart recorder as follows and verify that all test instruments are in calibration. Set the recorder speed at 1 mm/sec.

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-15	Film Take-Up Quantity, Coarse, Reel Rotation	2.0 v/cm
2	CPL-16	Film Take-Up, Quantity Fine (Supply)	1.0
3	CPL-29	Take-Up Motor Current	1.0
4	BBT-1	Looper Position Umbilical Instrumentation	1.0
5	CPL-18	Film Drive Electronics Output	1.0
6	BBT-5	Torque Motor Command Umbilical Instrumentation	10.0
7	CPL-20	Platen Position (Coarse)	1.0
8	CPL-27	Platen Position (Fine)	1.0

3. Record C/P operating times, ambient temperature and relative humidity on the data sheets. Verify that the CABLE TEST STATUS indicator indicates a "Go" condition.

4. Set the OPERATING POWER to approximately 28 vdc and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 28.0 ± 0.2 vdc after applying to the C/P.

5. Record PACKAGE INSTRUMENTATION voltage. Record VP-44 and VP-45 using the TEST CONSOLE DVM and external probe. Obtain a digital printout of CPL 1 through 35 and BBT-3 & 4 and identify the tape.

6. Operate the CAMERA at SPEED 31 for 1½ looper cycles. Verify that BBT-1 (Channel #4) appears normal on the chart record and that the record tracks normally.

ITEM

7. Apply the TORQUE MOTOR command (CB-24) long enough to verify that the TORQUE MOTOR causes the SUPPLY SPOOL to rewind record and that the chart record for BBT-5 (Channel #6) indicates approximately half scale deflection.

8. The TEST CONSOLE COUNTER controls should be set up as follows:

   COUNTER INPUT----------"BBT-2"

   FUNCTION----------"Per A X 10"

   SENSITIVITY----------"÷10"

   TIME INTERVAL----------"10^{-4}"

   DISPLAY TIME----------8 o'clock (approx)

   TRIGGER LEVEL----------12 o'clock (approx)

   NOTE: Further adjustment of the TRIGGER LEVEL control will probably be necessary to obtain proper triggering. No other COUNTER controls will require adjustment to obtain the desired measurements.

9. Operate the CAMERA at SPEED 31 and record in the data sheets the period of ten (10) cycles of the MSD frequency (BBT-2) in microseconds as displayed on the COUNTER. Observe record tracking for several looper cycles paying particular attention to the TAKE-UP SPOOL and COMPENSATOR ROLLER. When satisfied that the record is tracking properly, command the CAMERA "Off".

10. Command the CAMERA PLATEN to its reverse extreme and measure CPL-20 and CPL-27 using the TEST CONSOLE PINBOARD and DVM. Record the values in the data sheets.

11. Command the CAMERA PLATEN to its forward extreme in continuous movement and measure CPL-20 and CPL-27 using the TEST CONSOLE PINBOARD and DVM. Measure VTP-20 and VP-51 using the TEST CONSOLE DVM and the external probe. Command the CAMERA PLATEN to its reverse extreme in continuous movement. Record all values in the data sheets.

12. Obtain a digital printout of CPL-1 through 35 and identify the tape.

13. Command OPERATING POWER "Off".

ITEM

14. Reinstall the internal CAMERA cover, the AIR SUPPLY cover and the FRSA enclosure.

15. Change the chart recorder inputs as follows:

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-13	Stereo Position *	1.0 v/cm
2	CPL-14	Crab Position *	1.0
3	CPL-19	Amplified Data Signals	1.0
4	CPL-12	Slit Position	1.0
5	CPL-15	Film Take-Up Quantity, Coarse, Reel Rotation	2.0
6	CPL-16	Film Take-Up Quantity, Fine (Supply)	1.0
7	CPL-28	Take-Up Quantity, Medium	1.0
8	CPL-29	Take-Up Motor Current	1.0

* Temporary hook-up (see Item #18).

16. Turn OPERATING POWER "On" and command the STEREO SERVO to position 2 and the CRAB SERVO to position 1. Command the SLIDER to SLIT B (0.008 inch slit). Turn the OPERATING POWER "Off".

17. Disconnect connectors P671 and P672 from the STEREO and CRAB SERVO FILTER BOXES, respectively.

18. Change the chart recorder inputs as follows:

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-17	Looper Position	1.0 v/cm
2	CPL-18	Film Drive Electronics Output	1.0

19. Mount the LIGHT BOX MOUNTING FIXTURE on the C/P CRADLE outer frame member in front of the STEREO MIRROR and place the LIGHT BOX on the fixture. Connect W23 (J115) to the LIGHT BOX from the TEST CONSOLE.

ITEM

20. Turn the room lights off, dim the console reading lights and turn the ILLUMINATOR LAMP "On". Set the lamp current to 2.85 amperes and allow lamps to warm up for five minutes.

21. Adjust the ILLUMINATOR LAMP current fully counterclockwise and operate the CAMERA at SPEED 64 for 30 seconds. Adjust the current to 2.85 amperes and operate the CAMERA at SPEED 1 for 10 seconds.

22. Adjust the ILLUMINATOR LAMP current fully counterclockwise.

23. Operate the CAMERA at SPEED 1 for 10 seconds and command the SLIDER to SLIT C (.016 inch slit).

24. Adjust the ILLUMINATOR LAMP current to 2.50 amperes.

25. Operate the CAMERA at SPEED 1 for 10 seconds.

26. Adjust the ILLUMINATOR LAMP current fully counterclockwise.

27. Operate the CAMERA at SPEED 1 for 10 seconds and command the SLIDER to SLIT D (.032 inch slit).

28. Adjust the ILLUMINATOR LAMP current to 2.80 amperes.

29. Operate the CAMERA at SPEED 64 for 6 seconds.

30. Adjust the ILLUMINATOR LAMP current fully counterclockwise and command the SLIDER to SLIT E (test slit).

31. Operate the CAMERA at SPEED 64 for 60 seconds.

32. Command the OPERATING POWER and ILLUMINATOR LAMP "Off".

33. Turn the room lights on and remove the LIGHT BOX, LIGHT BOX FIXTURE and the COUNTERWEIGHT ASSEMBLY from the C/P CRADLE and reconnect FILTER BOX connectors P671 and P672.

34. Change the chart recorder inputs as follows:

ITEM

34.

Recorder Channel	Instrumentation Point	Recorder Range
1	CPL-13 Stereo Position	1.0 v/cm
2	CPL-14 Crab Position	1.0

35. Command the OPERATING POWER "On" and command the SERVOS as follows:

STEREO	CRAB
3	8
1	1
2	1

36. Obtain a digital printout of CPL-1 through 35 and identify the tape. Turn OPERATING POWER "Off".

37. Turn off room lights and remove the exposed record for delivery to the Photo Evaluation Group.

38. Change the chart recorder inputs as follows:

Recorder Channel	Instrumentation Point	Recorder Range
1	CPL-17 Looper Position	1.0 v/cm
2	CPL-18 Film Drive Electronics Output	1.0

39. Reinstall the FRSA and check record tracking.

40. Obtain a printout of CPL-1 through 35 and identify the tape.

41. Turn OPERATING POWER "Off" and record C/P operating times on the data sheets.

TASK 4

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
1	Record lot identification	#			_____		
2	All calibration dates are current	Ck			_____		
3	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Ambient Temperature	°F			_____		
	Relative Humidity	%	40	50	_____		
	Cable test status indicator indicates "Go"	Ck			_____		
5	Package Instrumentation Voltage	VDC	4.975	5.025	_____		
	VP-44	VDC	-21.00	-23.00	_____		
	VP-45	VDC	+21.00	+23.00	_____		

TASK 4

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
6	BBT-1 (Channel #4: 1 v/cm) appears normal	Ck			_____		
	Record tracks normally	Ck			_____		
7	Record tends to rewind	Ck			_____		
	BBT-5 (Channel #6: 10 v/cm)	Ck	Approx ½ Scale		_____		
9	BBT-2 at MSD Speed 31	Sec	25477	25528	_____		
	Record tracks properly	Ck			_____		
10	CPL-20 (Reverse Stop)	VDC	0.0		_____		
	CPL-27	VDC	0.0	5.0	_____		
11	CPL-20 (Forward Stop)	VDC		5.0	_____		
	CPL-27	VDC	0.0	5.0	_____		
	VTP-20	VDC		5.0	_____		
	VP-51	VDC	0.0	5.0	_____		

TASK 4

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
14	Camera cover, Air Supply cover and FRSA enclosure are replaced	Ck			_____		
16	Stereo Servo is at Position #2	Ck			_____		
	Crab Servo is at Position #1	Ck			_____		
	Slider is at Slit B	Ck			_____		
17	Connectors P671 and P672 are disconnected	Ck			_____		
33	Connectors P671 and P672 are reconnected	Ck			_____		
35	Servos function normally	Ck			_____		
41	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Test Conductor Initials				_____		

TASK 4

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
5	CPL-2 in VDC _____	°F	68	72	_____		
	CPL-3 in VDC _____	°F	As Read		_____		
	CPL-4 in VDC _____	°F	68	72	_____		
	CPL-5 in VDC _____	°F	68	72	_____		
	CPL-6 in VDC _____	°F	68	72	_____		
	CPL-7 in VDC _____	°F	68	72	_____		
	CPL-8 in VDC _____	°F	68	72	_____		
	CPL-9 in VDC _____	°F	68	72	_____		
	CPL-11 in VDC _____	°F	68	72	_____		
	CPL-10	VDC	2.33	2.63	_____		
	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
	BBT-3 in K ohms _____	°F	68	72	_____		
	BBT-4 in K ohms _____	°F	68	72	_____		

TASK 4

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
6	BBT 1 (Channel #4: 1v/cm)						
	Peak level	VDC	4.5	5.0	_____		
	Minimum level	VDC	1.9	2.4	_____		
	Waveform is normal	Ck			_____		
	Empty time (from peak down to minimum level)	Sec	2	9	_____		
	CPL-18 (Channel #5: 1v/cm)	VDC	2.0	5.0	_____		
	CPL-29 (Channel #3: 1v/cm)	VDC	0.5	3.5	_____		
	BBT 5 (Channel #6: 10v/cm)						
	Pulse Amplitude	VDC	28 Nominal		_____		
	Pulse Width	Sec	1 Nominal		_____		
	Leading edge of pulse is coincident with end of take-up run	Ck			_____		
7	BBT 5 (Channel #6: 10v/cm)	VDC	28 Nominal		_____		
9	CPL-18 (Channel #5: 1v/cm)	VDC	2.0	5.0	_____		

TASK 4

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
10	Reverse Stop						
	CPL-20 (Channel #7: 1 v/cm)	VDC	0		_____		
	CPL-27 (Channel #8: 1 v/cm)	VDC		5.0	_____		
11	Transition time from reverse extreme to forward extreme	Sec	As measured		_____		
	Forward Stop						
	CPL-20 (Channel #7: 1 v/cm)	VDC		5.0	_____		
	CPL-27 (Channel #8: 1 v/cm)	VDC	0	5.0	_____		
	Transition time from forward extreme to reverse extreme	Sec	As measured		_____		
10 & 11	Chart data agrees with DVM measurements	Ck			_____		
12	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		

TASK 4

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
36	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
39	CPL-17 waveform is normal (Channel #1: 1 v/cm)	Ck			_____		
	CPL-29 maximum (Channel #8: 1 v/cm)	VDC		3.0	_____		
40	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
	Data Reduced By _____						

Approved for Release: 2024/01/30 C05098940

TASK 5 - FOCUS SERIES

PREFACE

The TASK 5 focus series consist of the following four sub-tasks:

(1) TASK 5-1 Focus Series/On Axis at Set Point Temperature
(2) TASK 5-2 Focus Series/Off Axis at Set Point Temperature
(3) TASK 5-3 Focus Series/on Axis at Set Point +1.5° Temperature
(4) TASK 5-4 Focus Series/On Axis at Set Point -1.5° Temperature

The first focus run will normally consist of TASK 5-1 immediately followed with a TASK 5-2. After the "quick look" analysis of the combined TASK 5-1 and TASK 5-2 has been evaluated as acceptable, the temperature of room 108 may be adjusted in preparation for either a TASK 5-3 or TASK 5-4. The order of test conductance is immaterial and is normally decided on the basis of external temperature considerations. The temperature of room 108 is normally not changed until a "quick look" analysis of the prior focus run has been performed and evaluated as acceptable.

C/P TEMPERATURE

The C/P SET POINT temperature shall be determined by calculating the average of the average "Turn-On" and average Turn-Off temperatures of the HEATER SYSTEM Thermostats as recorded in the Rochester QC Acceptance Test Log for each C/P. This temperature should be entered in the appropriate section of the TASK 5 data sheets. The C/P temperature for any particular TASK 5 is defined as follows:

1. The temperature indicated by CPL's 4, 5 and 6 shall be averaged and this temperature shall be held to within ±.2°F of the desired operating temperature for the duration of the test. The average of this temperature at the beginning of the run and at the conclusion of the run is considered to be the C/P temperature for the task.

2. The temperatures indicated by CPL's 7, 8, 9 and 11 shall be averaged and this temperature shall be held to within ±.5°F of the desired operating temperature for the duration of the test.

The calculations as required above are included in each of the TASKS. No focus series should be run until the C/P temperature has been within the acceptable limits for the particular test for 3 hours prior to the test.

TASK 5 SET UP

The following procedure should be followed prior to every Focus Series run:

1. The COLLIMATOR FLAT MIRROR should be in place in the collimator at least 3 hours prior to an anticipated run. See VOI-403. Periodic COLLIMATOR focus stability and image quality checks should be made during the "soak" period preceding the run.

2. The MICROSCOPE ASSEMBLY should be properly positioned on the COLLIMATOR TARGET BED when the FLAT MIRROR is put in place.

NOTE: The first time that the MICROSCOPE ASSEMBLY is placed on the COLLIMATOR TARGET BED, the dial indicator located beneath the microscope eyepiece should be checked against the MICROSCOPE vernier. When the vernier reads 2.851 inches the dial indicator should read 0.000. Adjust the dial indicator if necessary to satisfy this criterion.

3. A 0.028 inch shim and a feeler gage thickness of 0.040 inch should be placed between the front locating button on the MICROSCOPE base and the TARGET BED forward stop. The two locating buttons on the left side of the MICROSCOPE base should contact the corresponding stop bar.

4. The COLLIMATOR FLAT MIRROR position should be adjusted so that the image can be viewed approximately in the center of the MICROSCOPE field.

5. With the microscope lamp power supply on and set at 6 volts, the MICROSCOPE should be adjusted to achieve the best possible image. Three to five dial indicator readings should be taken to obtain an average best focus position.

6. The feeler gage thickness should then be adjusted to make the dial indicator read 0.000 at the best focus position.

7. When all of the above requirements are met, the microscope, the 0.028 inch shim and the COLLIMATOR FLAT MIRROR should be removed.

8. The TARGET ASSEMBLY locating buttons should be placed against the front and side target base stops on the COLLIMATOR TARGET BED. The feeler gage thickness determined in step #6 should be in place between the forward button and the forward target base stop. The clamp at the right side of the target assembly should be engaged so that the target is held firmly against the stops.

TASK 5-1 - FOCUS SERIES/ON AXIS AT SET POINT TEMPERATURE

ITEM

1. Mount the C/P on the positioner per VOI-403 and connect TEST CONSOLE cables W1 (J654), W2 (J661), W5 (J695), W6 (J696), W7 (J697), W8 (J698), W9 (J699) and W10 (GRD) to the C/P. Check the COLLIMATOR focus and record the feeler gage reading on the data sheets.

2. Set up the chart recorder as follows and verify that all test instruments are in calibration. Set the recorder speed at 1 mm/sec.

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-13	Stereo Position **	1.0 v/cm
2	CPL-12	Slit Position **	1.0
3	CPL-19	Amplified Data Signals	1.0
4	CPL-20	Platen Position (Coarse)	1.0
5	CPL-15	Film Take-Up Quantity, Coarse, Reel Rotation	2.0
6	CPL-16	Film Take-Up Quantity, Fine (Supply)	1.0
7	CPL-28	Film Take-Up, Quantity, Medium	1.0
8	CPL-29	Take-Up Motor Current	1.0

** Temporary hook-up (see Item 8)

3. Record C/P operating times, ambient temperature and relative humidity on the data sheets. Verify that the CABLE TEST STATUS indicator indicates a "Go" condition.

4. Set the OPERATING POWER to approximately 28 vdc and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 28.0 ± 0.2 vdc after applying to the C/P.

5. Place a counterbalance beneath the STEREO MIRROR TRUNNION and adjust by adding weights until both the top and bottom rollers on the Stereo Mirror Bridge are "free". Exercise the STEREO SERVO as follows:

ITEM	FROM	TO
5.	2	3
	3	1
	1	3
	3	1
	1	2

Check to see that the rollers are still "free" and adjust the counterweight, if necessary.

6. Align the C/P to the Collimator for on-axis photo testing (refer to VOI-403). Command the SLIDER to the 0.008 inch slit (SLIT B).

7. Turn the ILLUMINATOR MOTOR and ILLUMINATOR LAMP "On". Set the ILLUMINATOR MOTOR for CAMERA SPEED 31 (Freq.: approx. 4.2KC/Counter Reading: 1437) and the ILLUMINATOR LAMP current at 3.50 amperes. Allow both to run for 15 minutes.

8. Change the chart recorder inputs as follows:

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-17	Looper Position	1.0 v/cm
2	CPL-18	Film Drive Electronics Output	1.0

9. Record the PACKAGE INSTRUMENTATION VOLTAGE and verify that the STEREO SERVO is at position #2, the CRAB SERVO at position #1, and the SLIDER at SLIT B.

10. Obtain a digital printout of CPL 1 through 35 and identify the tape.

11. Command OPERATING POWER "Off". Calculate the C/P temperature and compare to acceptable limits.

12. Adjust the ILLUMINATOR LAMP current fully counterclockwise.

13. Turn room lights off, turn OPERATING POWER "On" and operate the CAMERA at SPEED 31 for 40 seconds.

14. Adjust the ILLUMINATOR LAMP current to 3.50 amperes.

ITEM

15. Command the PLATEN to the position corresponding to a CPL-20 reading of 0.500 vdc. From this position the platen should be moved in increments equivalent to an increase in CPL-20 of 0.125 vdc until a CPL-20 reading of 4.500 vdc is achieved. At each position two 7 second CAMERA runs should be performed 20 seconds apart. At each position record CPL-20 and CPL-27.

16.* Adjust the ILLUMINATOR LAMP current fully counterclockwise.

17.* Operate the CAMERA at SPEED 64 for 60 seconds.

18.* Obtain a digital printout of CPL-1 through 35 and identify the tape.

19.* Turn OPERATING POWER and the ILLUMINATOR MOTOR "Off".

20.* Remove the exposed record per VOI-407 and deliver to the Photo Evaluation Group for processing and analysis.

21.* Reinstall the FRSA and check record tracking.

22.* Obtain a printout of CPL-1 through 35 and identify the tape.

23.* Turn OPERATING POWER "Off" and record C/P operating times on the data sheets.

* If this task is to immediately be followed by a TASK 5-2 Items #16 through #23 should be omitted. Start at Item #15 of TASK 5-2.

TASK 5-1

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
1	Feeler gage reading	Inch	As Read		_____		
2	All calibration dates are current	Ck			_____		
3	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Ambient temperature	°F			_____		
	Relative humidity	%	40	50	_____		
	Cable test status indicator indicates "Go"	Ck			_____		
6	Slit used for test	Ltr			_____		
9	Package Instrumentation Voltage	VDC	4.975	5.025	_____		
	Stereo Servo is at Position #2	Ck			_____		

TASK 5-1

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
9	Crab Servo is at Position #1	Ck			_____		
	Slider is at Position B	Ck			_____		
11	Set Point Temperature	°F	From EKR C/P Log		_____		
	Temperature Calculations:						
	CPL 4: _____ VDC = _____ °F						
	CPL 5: _____ VDC = _____ °F						
	CPL 6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.2°F)		_____		
	CPL 7: _____ VDC = _____ °F						
	CPL 8: _____ VDC = _____ °F						
	CPL 9: _____ VDC = _____ °F						
	CPL 11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.5°F)		_____		

TASK 5-1

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION				UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
15	Run 1 & 2	CPL 20	_	_	VDC	0.495	0.505	_____		
		CPL 27			VDC	As Read		_____		
	Run 3 & 4	CPL 20	_	_	VDC	0.620	0.630	_____		
		CPL 27			VDC	As Read		_____		
	Run 5 & 6	CPL 20	_	_	VDC	0.745	0.755	_____		
		CPL 27			VDC	As Read		_____		
	Run 7 & 8	CPL 20	_	_	VDC	0.870	0.880	_____		
		CPL 27			VDC	As Read		_____		
	Run 9 & 10	CPL 20	_	_	VDC	0.995	1.005	_____		
		CPL 27			VDC	As Read		_____		
	Run 11 & 12	CPL 20	_	_	VDC	1.120	1.130	_____		
		CPL 27			VDC	As Read		_____		
	Run 13 & 14	CPL 20	_	_	VDC	1.245	1.255	_____		
		CPL 27			VDC	As Read		_____		

TASK 5-1

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION						NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION		UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
15	Run 15 & 16	CPL 20 ___ ___	VDC	1.370	1.380	_____		
		CPL 27	VDC	As Read		_____		
	Run 17 & 18	CPL 20 ___ ___	VDC	1.495	1.505	_____		
		CPL 27	VDC	As Read		_____		
	Run 19 & 20	CPL 20 ___ ___	VDC	1.620	1.630	_____		
		CPL 27	VDC	As Read		_____		
	Run 21 & 22	CPL 20 ___ ___	VDC	1.745	1.755	_____		
		CPL 27	VDC	As Read		_____		
	Run 23 & 24	CPL 20 ___ ___	VDC	1.870	1.880	_____		
		CPL 27	VDC	As Read		_____		
	Run 25 & 26	CPL 20 ___ ___	VDC	1.995	2.005	_____		
		CPL 27	VDC	As Read		_____		
	Run 27 & 28	CPL 20 ___ ___	VDC	2.120	2.130	_____		
		CPL 27	VDC	As Read		_____		

TASK 5-1

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
15	Run 29 & 30 CPL 20 _____ _____	VDC	2.245	2.255	_____		
	CPL 27	VDC	As Read		_____		
	Run 31 & 32 CPL 20 _____ _____	VDC	2.370	2.380	_____		
	CPL 27	VDC	As Read		_____		
	Run 33 & 34 CPL 20 _____ _____	VDC	2.495	2.505	_____		
	CPL 27	VDC	As Read		_____		
	Run 35 & 36 CPL 20 _____ _____	VDC	2.620	2.630	_____		
	CPL 27	VDC	As Read		_____		
	Run 37 & 38 CPL 20 _____ _____	VDC	2.745	2.755	_____		
	CPL 27	VDC	As Read		_____		
	Run 39 & 40 CPL 20 _____ _____	VDC	2.870	2.880	_____		
	CPL 27	VDC	As Read		_____		
	Run 41 & 42 CPL 20 _____ _____	VDC	2.995	3.005	_____		
	CPL 27	VDC	As Read		_____		

TASK 5-1

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
15	Run 43 & 44 CPL 20 _____ _____	VDC	3.120	3.130	_____		
	CPL 27	VDC	As Read		_____		
	Run 45 & 46 CPL 20 _____ _____	VDC	3.245	3.255	_____		
	CPL 27	VDC	As Read		_____		
	Run 47 & 48 CPL 20 _____ _____	VDC	3.370	3.380	_____		
	CPL 27	VDC	As Read		_____		
	Run 49 & 50 CPL 20 _____ _____	VDC	3.495	3.505	_____		
	CPL 27	VDC	As Read		_____		
	Run 51 & 52 CPL 20 _____ _____	VDC	3.620	3.630	_____		
	CPL 27	VDC	As Read		_____		
	Run 53 & 54 CPL 20 _____ _____	VDC	3.745	3.755	_____		
	CPL 27	VDC	As Read		_____		
	Run 55 & 56 CPL 20 _____ _____	VDC	3.870	3.880	_____		
	CPL 27	VDC	As Read		_____		

TASK 5-1

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
15	Run 57 & 58 CPL 20 _____ _____	VDC	3.995	4.005	_____		
	CPL 27	VDC	As Read		_____		
	Run 59 & 60 CPL 20 _____ _____	VDC	4.120	4.130	_____		
	CPL 27	VDC	As Read		_____		
	Run 61 & 62 CPL 20 _____ _____	VDC	4.245	4.255	_____		
	CPL 27	VDC	As Read		_____		
	Run 63 & 64 CPL 20 _____ _____	VDC	4.370	4.380	_____		
	CPL 27	VDC	As Read		_____		
	Run 65 & 66 CPL 20 _____ _____	VDC	4.495	4.505	_____		
	CPL 27	VDC	As Read		_____		
18*	Temperature Calculations:						
	CPL 4: _____ VDC = _____ °F						
	CPL 5: _____ VDC = _____ °F						
	CPL 6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.2°F)		_____		

* If this task is to be immediately followed by a TASK 5-2 this data need not be recorded.

TASK 5-1

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
18*	CPL 7: _____ VDC = _____ °F						
	CPL 8: _____ VDC = _____ °F						
	CPL 9: _____ VDC = _____ °F						
	CPL 11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.5°F)		_____		
23*	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	*Test Conductor Initials				_____		

* If this task is to be immediately followed by a TASK 5-2 this data need not be recorded.

TASK 5-1

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
10	CPL 13	VDC	2.40	2.66	_____		
	CPL 14	VDC	0.38	0.64	_____		
	CPL 15	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		
	CPL 28	VDC	As Read		_____		
15	CPL 17 Waveform is normal (Channel #1: 1 v/cm)	Ck			_____		
	All runs CPL 18 (Channel #2: 1 v/cm)	Ck	2.0vdc	5.0vdc	_____		
	CPL 19 (Channel #3: 1 v/cm)				_____		
	A & B or	VDC	4.4	5.0	_____		
	A only (B disabled)	VDC	3.3	3.9	_____		
	CPL 29 minimum (Channel #8: 1 v/cm)	VDC	As Read		_____		
	CPL 29 maximum (Channel #8: 1 v/cm)	VDC		3.0	_____		

TASK 5-1

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
18*	CPL 13	VDC	2.40	2.66	_____		
	CPL 14	VDC	0.38	0.64	_____		
	CPL 15	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		
	CPL 28	VDC	As Read		_____		
21*	CPL 17 waveform is normal (Channel #1: 1 v/cm)	Ck			_____		
	CPL 29 maximum (Channel #8: 1 v/cm)	VDC		3.0	_____		
22*	CPL 15	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		
	CPL 28	VDC	As Read		_____		
	*Data Reduced By _____						

* If this task (5-1) is to be immediately followed by a TASK 5-2 this data need not be recorded.

TASK 5-2 - FOCUS SERIES/OFF AXIS AT SET POINT TEMPERATURE

ITEM

1.* Mount the C/P on the positioner per VOI-403 and connect TEST CONSOLE cables W1 (J654), W2 (J661), W5 (J695), W6 (J696), W7 (J697), W8 (J698), W9 (J699) and W10 (GRD) to the C/P. Check the COLLIMATOR focus and record the feeler gage reading.

2.* Set up the chart recorder as follows and verify that all test instruments are in calibration. Set the recorder speed at 1 mm/sec.

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-13	Stereo Position**	1.0 v/cm
2	CPL-12	Slit Position **	1.0
3	CPL-19	Amplified Data Signals	1.0
4	CPL-20	Platen Position (Coarse)	1.0
5	CPL-15	Film Take-Up Quantity, Coarse, Reel Rotation	2.0
6	CPL-16	Film Take-Up Quantity, Fine (Supply)	1.0
7	CPL-28	Film Take-Up Quantity Medium	1.0
8	CPL-29	Take-Up Motor Current	1.0

** Temporary hook-up (see Item #8).

3.* Record C/P operating times, ambient temperature and relative humidity on the data sheets. Verify that the CABLE TEST STATUS indicator indicates a "Go" condition.

4.* Set the OPERATING POWER to approximately 28 vdc and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 28.0 ± 0.2 vdc after applying to the C/P.

5.* Place the counterbalance beneath the STEREO MIRROR TRUNNION and adjust by adding weights until both the top and bottom rollers on the Stereo Mirror Bridge are "free". Exercise the STEREO SERVO as follows:

* If this task (5-2) is to immediately follow a TASK 5-1, steps 1 through 14 should be ommitted.

ITEM

5.*

FROM	TO
2	3
3	1
1	3
3	1
1	2

Check to see that the rollers are still "free" and adjust the counterweight if necessary.

6.* Align the C/P to the Collimator for photo testing (refer to VOI-403). Command the SLIDER to the 0.008 inch slit (SLIT B).

7.* Turn the ILLUMINATOR MOTOR and ILLUMINATOR LAMP "On". Set the ILLUMINATOR MOTOR for CAMERA SPEED 31 (Freq.: approx. 4.2 KC/Counter Reading: 1437) and the ILLUMINATOR LAMP current at 3.50 amperes. Allow both to run for 15 minutes.

8.* Change the chart recorder inputs as follows:

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-17	Looper Position	1.0 v/cm
2	CPL-18	Film Drive Electronics Output	1.0

9.* Record the PACKAGE INSTRUMENTATION VOLTAGE and verify that the STEREO SERVO is at position #2, the CRAB SERVO at position #1, and the SLIDER at SLIT B.

10.* Obtain a digital printout of CPL-1 through 35 and identify the tape.

11.* Command OPERATING POWER "Off". Calculate the C/P temperature and compare to acceptable limits.

12.* Adjust the ILLUMINATOR LAMP current fully counterclockwise.

13.* Turn room lights off, turn OPERATING POWER "On", and operate the CAMERA at SPEED 31 for 40 seconds.

* If this task (5-2) is to immediately follow a TASK 5-1, steps 1 through 14 should be omitted.

ITEM

14.* Adjust the ILLUMINATOR LAMP current to 3.50 amperes.

15. Using the POSITIONER CONTROL tilt the POSITIONER and C/P off-axis -2.5° as measured on the POSITION INDICATOR.

16. Command the PLATEN to the position corresponding to a CPL-20 reading of 0.500 vdc. From this position the platen should be moved in increments equivalent to an increase in CPL-20 of 0.125 vdc until a CPL-20 reading of 4.500 vdc is achieved. At each position one 7 second CAMERA run should be made.

17. Using the POSITIONER CONTROL tilt the POSITIONER and C/P off-axis +2.5° as measured on the POSITIONER INDICATOR.

18. Command the PLATEN to the position corresponding to a CPL-20 reading of 0.500 vdc. From this position the platen should be moved in increments equivalent to an increase in CPL-20 of 0.125 vdc until a CPL-20 reading of 4.500 vdc is achieved. At each position one 7 second CAMERA run should be made.

19. Return the POSITIONER to approximately 0°. Adjust the ILLUMINATOR LAMP current fully counterclockwise.

20. Operate the CAMERA at SPEED 64 for 60 seconds.

21. Obtain a digital printout of CPL-1 through 35 and identify the tape.

22. Turn OPERATING POWER and the ILLUMINATOR MOTOR "Off".

23. Record C/P operating times.

24. Remove the FLIGHT FRSA and record per VOI-407 and deliver the record to the Photo Evaluation Group for processing and analysis.

25. Install a TEST FRSA and check record tracking. Record serial numbers.

26. Obtain a printout of CPL-1 through CPL-35 and identify the tape.

27. Turn OPERATING POWER "Off" and record C/P operating times on the data sheets.

* If this task (5-2) is to immediately follow a TASK 5-1, steps 1 through 14 should be omitted.

TASK 5-2

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
1*	Feeler gage reading	Inch	As Read		_____		
2*	All calibration dates are current	Ck			_____		
3*	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Ambient temperature	°F			_____		
	Relative humidity	%	40	50	_____		
	Cable test status indicator indicates "Go"	Ck			_____		
6*	Slit used for test	Ltr			_____		
9*	Package Instrumentation Voltage	VDC	4.975	5.025	_____		
	Stereo Servo is at Position #2	Ck			_____		

* If this task (5-2) is to immediately follow a TASK 5-1 this data need not be recorded.

TASK 5-2

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
9*	Crab Servo is at Position #1	Ck			_____		
	Slider is at Position B	Ck			_____		
11*	Set Point Temperature	°F	From EKR C/P Log		_____		
	Temperature Calculations:						
	CPL 4: _____ VDC = _____ °F						
	CPL 5: _____ VDC = _____ °F						
	CPL 6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.2°F)		_____		
	CPL 7: _____ VDC = _____ °F						
	CPL 8: _____ VDC = _____ °F						
	CPL 9: _____ VDC = _____ °F						
	CPL 11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.5°F)		_____		

* If this task (5-2) is to immediately follow a TASK 5-1 this data need not be recorded.

TASK 5-2

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
16	Run 1 CPL 20	Ck	0.495	0.505	_____		
	Run 2 CPL 20	Ck	0.620	0.630	_____		
	Run 3 CPL 20	Ck	0.745	0.755	_____		
	Run 4 CPL 20	Ck	0.870	0.880	_____		
	Run 5 CPL 20	Ck	0.995	1.005	_____		
	Run 6 CPL 20	Ck	1.120	1.130	_____		
	Run 7 CPL 20	Ck	1.245	1.255	_____		
	Run 8 CPL 20	Ck	1.370	1.380	_____		
	Run 9 CPL 20	Ck	1.495	1.505	_____		
	Run 10 CPL 20	Ck	1.620	1.630	_____		
	Run 11 CPL 20	Ck	1.745	1.755	_____		
	Run 12 CPL 20	Ck	1.870	1.880	_____		
	Run 13 CPL 20	Ck	1.995	2.005	_____		
	Run 14 CPL 20	Ck	2.120	2.130	_____		

TASK 5-2

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
16	Run 15 CPL 20	Ck	2.245	2.255	_____		
	Run 16 CPL 20	Ck	2.370	2.380	_____		
	Run 17 CPL 20	Ck	2.495	2.505	_____		
	Run 18 CPL 20	Ck	2.620	2.630	_____		
	Run 19 CPL 20	Ck	2.745	2.755	_____		
	Run 20 CPL 20	Ck	2.870	2.880	_____		
	Run 21 CPL 20	Ck	2.995	3.005	_____		
	Run 22 CPL 20	Ck	3.120	3.130	_____		
	Run 23 CPL 20	Ck	3.245	3.255	_____		
	Run 24 CPL 20	Ck	3.370	3.380	_____		
	Run 25 CPL 20	Ck	3.495	3.505	_____		
	Run 26 CPL 20	Ck	3.620	3.630	_____		
	Run 27 CPL 20	Ck	3.745	3.755	_____		
	Run 28 CPL 20	Ck	3.870	3.880	_____		

TASK 5-2

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
16	Run 29 CPL 20	Ck	3.995	4.005	_____		
	Run 30 CPL 20	Ck	4.120	4.130	_____		
	Run 31 CPL 20	Ck	4.245	2.255	_____		
	Run 32 CPL 20	Ck	4.370	4.380	_____		
	Run 33 CPL 20	Ck	4.495	4.505	_____		
18	Run 1 CPL 20	Ck	0.495	0.505	_____		
	Run 2 CPL 20	Ck	0.620	0.630	_____		
	Run 3 CPL 20	Ck	0.745	0.755	_____		
	Run 4 CPL 20	Ck	0.870	0.880	_____		
	Run 5 CPL 20	Ck	0.995	1.005	_____		
	Run 6 CPL 20	Ck	1.120	1.130	_____		
	Run 7 CPL 20	Ck	1.245	1.255	_____		
	Run 8 CPL 20	Ck	1.370	1.380	_____		
	Run 9 CPL 20	Ck	1.495	1.505	_____		

TASK 5-2

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
18	Run 10 CPL 20	Ck	1.620	1.630	_____		
	Run 11 CPL 20	Ck	1.745	1.755	_____		
	Run 12 CPL 20	Ck	1.870	1.880	_____		
	Run 13 CPL 20	Ck	1.995	2.005	_____		
	Run 14 CPL 20	Ck	2.120	2.130	_____		
	Run 15 CPL 20	Ck	2.245	2.255	_____		
	Run 16 CPL 20	Ck	2.370	2.380	_____		
	Run 17 CPL 20	Ck	2.495	2.505	_____		
	Run 18 CPL 20	Ck	2.620	2.630	_____		
	Run 19 CPL 20	Ck	2.745	2.755	_____		
	Run 20 CPL 20	Ck	2.870	2.880	_____		
	Run 21 CPL 20	Ck	2.995	3.005	_____		
	Run 22 CPL 20	Ck	3.120	3.130	_____		
	Run 23 CPL 20	Ck	3.245	3.255	_____		

TASK 5-2

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
18	Run 24 CPL 20	Ck	3.370	3.380	_____		
	Run 25 CPL 20	Ck	3.495	3.505	_____		
	Run 26 CPL 20	Ck	3.620	3.630	_____		
	Run 27 CPL 20	Ck	3.745	3.755	_____		
	Run 28 CPL 20	Ck	3.870	3.880	_____		
	Run 29 CPL 20	Ck	3.995	4.005	_____		
	Run 30 CPL 20	Ck	4.120	4.130	_____		
	Run 31 CPL 20	Ck	4.245	2.255	_____		
	Run 32 CPL 20	Ck	4.370	4.380	_____		
	Run 33 CPL 20	Ck	4.495	4.505	_____		
21	Temperature Calculations:						
	CPL 4: _____ VDC = _____ °F						
	CPL 5: _____ VDC = _____ °F						
	CPL 6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.2°F)		_____		

TASK 5-2

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
21	CPL 7: _____ VDC = _____ °F						
	CPL 8: _____ VDC = _____ °F						
	CPL 9: _____ VDC = _____ °F						
	CPL 11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.5°F)		_____		
23	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
25	Test FRSA S/N	#			_____		
	Test FRSA Reel S/N	#			_____		

TASK 5-2

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
27	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Test Conductor Initials				_____		

TASK 5-2

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
10*	CPL 13	VDC	2.40	2.66	_____		
	CPL 14	VDC	0.38	0.64	_____		
	CPL 15	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		
	CPL 28	VDC	As Read		_____		
16	CPL 17 Waveform is normal (Channel #1: 1 v/cm)	Ck			_____		
	CPL 29 minimum (Channel #8: 1 v/cm)	VDC	As Read		_____		
	CPL 29 maximum (Channel #8: 1 v/cm)	VDC		3.0	_____		
18	CPL 17 Waveform is normal (Channel #1: 1 v/cm)	Ck			_____		
	CPL 29 minimum (Channel #8: 1 v/cm)	VDC	As Read		_____		
	CPL 29 maximum (Channel #8: 1 v/cm)	VDC		3.0	_____		

* If this task (5-2) is to immediately follow a TASK 5-1 this data need not be recorded.

TASK 5-2

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
21	CPL 13	VDC	2.40	2.66	_____		
	CPL 14	VDC	0.38	0.64	_____		
	CPL 15	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		
	CPL 28	VDC	As Read		_____		
25	CPL 17 waveform is normal (Channel #1: 1 v/cm)	Ck			_____		
	CPL 29 maximum (Channel #8: 1 v/cm)	VDC		3.0	_____		
26	CPL 15	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		
	CPL 28	VDC	As Read		_____		
	Data Reduced By _____						

TASK 5-3 - FOCUS SERIES/ON AXIS AT SET POINT + 1.5° TEMPERATURE

ITEM

1. Mount the C/P on the positioner per VOI-403 and connect TEST CONSOLE cables W1 (J654), W2 (J661), W5 (J695), W6 (J696), W7 (J697), W8 (J698), W9 (J699) and W10 (GRD) to the C/P. Check the COLLIMATOR focus and record the feeler gage reading on the data sheets.

2. Set up the chart recorder as follows and verify that all test instruments are in calibration. Set the recorder speed at 1 mm/sec.

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-13	Stereo Position *	1.0 v/cm
2	CPL-12	Slit Position *	1.0
3	CPL-19	Amplified Data Signals	1.0
4	CPL-20	Platen Position (Coarse)	1.0
5	CPL-15	Film Take-Up Quantity, Coarse, Reel Rotation	2.0
6	CPL-16	Film Take-Up Quantity, Fine (Supply)	1.0
7	CPL-28	Film Take-Up Quantity, Medium	1.0
8	CPL-29	Take-Up Motor Current	1.0

* Temporary hook-up (see Item #8).

3. Record C/P operating times, ambient temperature, and relative humidity on the data sheets. Verify that the CABLE TEST STATUS indicator indicates a "Go" condition.

4. Set the OPERATING POWER to approximately 28 vdc and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 28.0 ± 0.2 vdc after applying to the C/P.

5. Place the counterbalance beneath the STEREO MIRROR TRUNNION and adjust by adding weights until both the top and bottom rollers on the Stereo Mirror Bridge are "free". Exercise the STEREO SERVO as follows:

ITEM

5.

FROM	TO
2	3
3	1
1	3
3	1
1	2

Check to see that the rollers are still "free" and adjust the counterweight, if necessary.

6. Align the C/P to the Collimator for on-axis photo testing (refer to VOI-403). Command the SLIDER to the 0.008 inch slit (SLIT B).

7. Turn the ILLUMINATOR MOTOR and ILLUMINATOR LAMP "On". Set the ILLUMINATOR MOTOR for CAMERA SPEED 31 (Freq.: approx. 4.2KC/Counter Reading: 1437) and the ILLUMINATOR LAMP current at 3.50 amperes. Allow both to run for 15 minutes.

8. Change the chart recorder as follows:

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-17	Looper Position	1.0 v/cm
2	CPL-18	Film Drive Electronics Output	1.0

9. Record the PACKAGE INSTRUMENTATION VOLTAGE and verify that the STEREO SERVO is at position #2, the CRAB SERVO at position #1, and the SLIDER at SLIT B.

10. Obtain a digital printout of CPL-1 through 35 and identify the tape.

11. Command OPERATING POWER "Off". Calculate the C/P temperature and compare to acceptable limits.

12. Adjust the ILLUMINATOR LAMP current fully counterclockwise.

13. Turn room lights off, turn OPERATING POWER "On" and operate the CAMERA at SPEED 31 for 40 seconds.

ITEM

14. Adjust the ILLUMINATOR LAMP current to 3.50 amperes.

15. Command the PLATEN to the position corresponding to a CPL-20 reading of 1 volt less than the C/P BPF as determined from TASK 5-1. From this position the platen should be moved in increments equivalent to an increase in CPL-20 of 0.125 vdc until a CPL-20 reading 1 volt more than the C/P BPF is achieved. At each position two 7 second CAMERA runs should be performed 20 seconds apart.

16. Adjust the ILLUMINATOR LAMP current fully counterclockwise.

17. Operate the CAMERA at SPEED 64 for 60 seconds.

18. Obtain a digital printout of CPL-1 through 35 and identify the tape.

19. Turn OPERATING POWER and the ILLUMINATOR MOTOR "Off".

20. Remove the exposed record per VOI-407 and deliver to the Photo Evaluation Group for processing and analysis.

21. Reinstall the FRSA and check record tracking.

22. Obtain a printout of CPL-1 through CPL-35 and identifty the tape.

23. Turn OPERATING POWER "Off" and record C/P operating times on the data sheets.

TASK 5-3

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
1	Feeler gage reading	Inch	As Read		_____		
2	All calibration dates are current	Ck			_____		
3	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Ambient temperature	°F			_____		
	Relative humidity	%	40	50	_____		
	Cable test status indicator indicates "Go"	Ck			_____		
6	Slit used for test	Ltr			_____		

TASK 5-3

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
9	Package Instrumentation Voltage	VDC	4.975	5.025	_____		
	Stereo Servo is at Position #2	Ck			_____		
	Crab Servo is at Position #1	Ck			_____		
	Slider is at Position B	Ck			_____		
11	Set Point Temperature	°F	From EKR C/P Log		_____		
	Set Point + 1.5°F	°F	As calculated		_____		
	Temperature Calculations:						
	CPL 4: _____ VDC = _____ °F						
	CPL 5: _____ VDC = _____ °F						
	CPL 6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. +1.5°F (±0.2°F)		_____		

TASK 5-3

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
11	CPL 7: _____ VDC = _____ °F						
	CPL 8: _____ VDC = _____ °F						
	CPL 9: _____ VDC = _____ °F						
	CPL 11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. +1.5°F (±0.5°F)		_____		
15	BPF* (as determined from TASK 5-1)	VDC			_____		
	Run 1 & 2	Ck	.995	1.005	_____		
	Run 3 & 4	Ck	1.120	1.130	_____		
	Run 5 & 6	Ck	1.245	1.255	_____		
	Run 7 & 8	Ck	1.370	1.380	_____		
	Run 9 & 10	Ck	1.495	1.505	_____		
	Run 11 & 12	Ck	1.620	1.630	_____		
	Run 13 & 14	Ck	1.745	1.755	_____		
	Run 15 & 16	Ck	1.870	1.880	_____		

* This need not be the finally decided BPF platen position. This is only the preliminary indication from TASK 5-1.

TASK 5-3

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
15	Run 17 & 18	Ck	1.995	2.005	___ ___		
	Run 19 & 20	Ck	2.120	2.130	___ ___		
	Run 21 & 22	Ck	2.245	2.255	___ ___		
	Run 23 & 24	Ck	2.370	2.380	___ ___		
	Run 25 & 26	Ck	2.495	2.505	___ ___		
	Run 27 & 28	Ck	2.620	2.630	___ ___		
	Run 29 & 30	Ck	2.745	2.755	___ ___		
	Run 31 & 32	Ck	2.870	2.880	___ ___		
	Run 33 & 34	Ck	2.995	3.005	___ ___		
	Run 35 & 36	Ck	3.120	3.130	___ ___		
	Run 37 & 38	Ck	3.245	3.255	___ ___		
	Run 39 & 40	Ck	3.370	3.380	___ ___		
	Run 41 & 42	Ck	3.495	3.505	___ ___		
	Run 43 & 44	Ck	3.620	3.630	___ ___		

Approved for Release: 2024/01/30 C05098940

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
15	Run 45 & 46	Ck	3.745	3.755	___ ___		
	Run 47 & 48	Ck	3.870	3.880	___ ___		
	Run 49 & 50	Ck	3.995	4.005	___ ___		
18	Temperature Calculations:						
	CPL 4: _____ VDC = _____ °F						
	CPL 5: _____ VDC = _____ °F						
	CPL 6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. +1.5°F (±0.2°F)		_____		
	CPL 7: _____ VDC = _____ °F						
	CPL 8: _____ VDC = _____ °F						
	CPL 9: _____ VDC = _____ °F						
	CPL 11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. +1.5°F (±0.5°F)		_____		

TASK 5-3

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
23	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Test Conductor Initials				_____		

TASK 5-3

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
10	CPL 13	VDC	2.40	2.66	_____		
	CPL 14	VDC	0.38	0.64	_____		
	CPL 15	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		
	CPL 28	VDC	As Read		_____		
15	CPL 17 Waveform is normal (Channel #1: 1 v/cm)	Ck			_____		
	All runs CPL 18 (Channel #2: 1 v/cm)	Ck	2.0vdc	5.0vdc	_____		
	CPL 19 (Channel #3: 1 v/cm)				_____		
	A & B or	VDC	4.4	5.0	_____		
	A only (B disabled)	VDC	3.3	3.9	_____		
	CPL 29 minimum (Channel #8: 1 v/cm)	VDC	As Read		_____		
	CPL 29 maximum (Channel #8: 1 v/cm)	VDC		3.0	_____		

TASK 5-3

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
18	CPL 13	VDC	2.40	2.66	_____		
	CPL 14	VDC	0.38	0.64	_____		
	CPL 15	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		
	CPL 28	VDC	As Read		_____		
21	CPL 17 waveform is normal (Channel #1: 1 v/cm)	Ck			_____		
	CPL 29 maximum (Channel #8: 1 v/cm)	VDC		3.0	_____		
22	CPL 15	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		
	CPL 28	VDC	As Read		_____		
	Data Reduced By _____						

TASK 5-4 - FOCUS SERIES/ON AXIS AT SET POINT -1.5° TEMPERATURE

ITEM

1. Mount the C/P on the positioner per VOI-403 and connect TEST CONSOLE cables W1 (J654), W2 (J661), W5 (J695), W6 (J696), W7 (J697), W8 (J698), W9 (J699) and W10 (GRD) to the C/P. Check the COLLIMATOR focus and record the feeler gage reading on the data sheets.

2. Set up the chart recorder as follows and verify that all test instruments are in calibration. Set the recorder speed at 1 mm/sec.

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-13	Stereo Position *	1.0 v/cm
2	CPL 12	Slit Position *	1.0
3	CPL-19	Amplified Data Signals	1.0
4	CPL-20	Platen Position (Coarse)	1.0
5	CPL-15	Film Take-Up Quantity, Coarse, Reel Rotation	2.0
6	BBT-5	Torque Motor Instrumentation	10.0
7	CPL-16	Film Take-Up Quantity, Fine (Supply)	1.0
8	CPL-29	Take-Up Motor Current	1.0

* Temporary hook-up (see Item #8).

3. Record C/P operating times, ambient temperature and relative humidity on the data sheets. Verify that the CABLE TEST STATUS indicator indicates a "Go" condition.

4. Set the OPERATING POWER to approximately 28 vdc and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 28.0 ± 0.2 vdc after applying to the C/P.

5. Place a counterbalance beneath the STEREO MIRROR TRUNNION and adjust by adding weights until both the top and bottom rollers on the Stereo Mirror Bridge are "free". Exercise the STEREO SERVO as follows:

ITEM

5.

FROM	TO
2	3
3	1
1	3
3	1
1	2

Check to see that the rollers are still "free" and adjust the counterweight, if necessary.

6. Align the C/P to the Collimator for on-axis photo testing (refer to VOI-403). Command the SLIDER to the 0.008 inch slit (SLIT B).

7. Turn the ILLUMINATOR MOTOR and ILLUMINATOR LAMP "On". Set the ILLUMINATOR MOTOR for CAMERA SPEED 31 (Freq.: approx. 4.2KC/Counter Reading: 1437) and the ILLUMINATOR LAMP current at 3.50 amperes. Allow both to run for 15 minutes.

8. Change the chart recorder inputs as follows:

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-17	Looper Position	1.0 v/cm
2	CPL-18	Film Drive Electronics Output	1.0

9. Record the PACKAGE INSTRUMENTATION VOLTAGE and verify that the STEREO SERVO is at position #2, the CRAB SERVO at position #1, and the SLIDER at SLIT B.

10. Obtain a digital printout of CPL-1 through 35 and identify the tape.

11. Command OPERATING POWER "Off". Calculate the C/P temperature and compare to acceptable limits.

12. Adjust the ILLUMINATOR LAMP current fully counterclockwise.

13. Turn room lights off and turn OPERATING POWER "On". Set the chart recorder speed to 10 mm/sec and operate the CAMERA at SPEED 31 for 40 seconds. Return the chart recorder speed to 1 mm/sec.

ITEM

14. Adjust the ILLUMINATOR LAMP current to 3.50 amperes.

15. Command the PLATEN to the position corresponding to a CPL-20 reading of 1 volt less than the C/P BPF as determined from TASK 5-1. From this position the platen should be moved in increments equivalent to an increase in CPL-20 of 0.125 vdc until a CPL-20 reading 1 volt more than the C/P BPF is achieved. At each position two 7 second CAMERA runs should be performed 20 seconds apart.

16. Adjust the ILLUMINATOR LAMP current fully counterclockwise.

17. Set the chart recorder speed to 10 mm/sec. and operate the CAMERA at SPEED 64 for 60 seconds. Return the chart recorder speed to 1 mm/sec.

18. Obtain a digital printout of CPL-1 through 35 and identify the tape.

19. Turn OPERATING POWER and the ILLUMINATOR MOTOR "Off".

20. Remove the exposed record per VOI-407 and deliver to the Photo Evaluation Group for processing and analysis.

21. Reinstall the FRSA and check record tracking.

22. Obtain a printout of CPL-1 through 35 and identify the tape.

23. Turn OPERATING POWER "Off" and record C/P operating times on the data sheets.

TASK 5-4

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
1	Feeler gage reading	Inch			_____		
2	All calibration dates are current	Ck			_____		
3	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Ambient temperature	°F			_____		
	Relative humidity	%	40	50	_____		
	Cable test status indicator indicates "Go"	Ck			_____		
6	Slit used for test	Ltr			_____		

TASK 5-4

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
9	Package Instrumentation Voltage	VDC	4.975	5.025	_____		
	Stereo Servo is at Position #2	Ck			_____		
	Crab Servo is at Position #1	Ck			_____		
	Slider is at Position B	Ck			_____		
11	Set Point Temperature	°F	From EKR C/P Log		_____		
	Set Point Temperature -1.5°F	°F	As calculated		_____		
	Temperature Calculations:						
	CPL-4: _____ VDC = _____ °F						
	CPL-5: _____ VDC = _____ °F						
	CPL-6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. -1.5°F (±0.2°F)		_____		
	CPL-7: _____ VDC = _____ °F						
	CPL-8: _____ VDC = _____ °F						
	CPL-9: _____ VDC = _____ °F						

TASK 5-4

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
11	CPL-11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. -1.5°F (±0.5°F)		___ ___		
15	BPF* (as determined from TASK 5-1)	VDC			___ ___		
	Run 1 & 2	Ck	.995	1.005	___ ___		
	Run 3 & 4	Ck	1.120	1.130	___ ___		
	Run 5 & 6	Ck	1.245	1.255	___ ___		
	Run 7 & 8	Ck	1.370	1.380	___ ___		
	Run 9 & 10	Ck	1.495	1.505	___ ___		
	Run 11 & 12	Ck	1.620	1.630	___ ___		
	Run 13 & 14	Ck	1.745	1.755	___ ___		
	Run 15 & 16	Ck	1.870	1.880	___ ___		
	Run 17 & 18	Ck	1.995	2.005	___ ___		
	Run 19 & 20	Ck	2.120	2.130	___ ___		
	Run 21 & 22	Ck	2.245	2.255	___ ___		

* This need not be the finally decided BPF platen position. This is only the preliminary indication from TASK 5-1.

TASK 5-4

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
15	Run 23 & 24	Ck	2.370	2.380	___ ___		
	Run 25 & 26	Ck	2.495	2.505	___ ___		
	Run 27 & 28	Ck	2.620	2.630	___ ___		
	Run 29 & 30	Ck	2.745	2.755	___ ___		
	Run 31 & 32	Ck	2.870	2.880	___ ___		
	Run 33 & 34	Ck	2.995	3.005	___ ___		
	Run 35 & 36	Ck	3.120	3.130	___ ___		
	Run 37 & 38	Ck	3.245	3.255	___ ___		
	Run 39 & 40	Ck	3.370	3.380	___ ___		
	Run 41 & 42	Ck	3.495	3.505	___ ___		
	Run 43 & 44	Ck	3.620	3.630	___ ___		
	Run 45 & 46	Ck	3.745	3.755	___ ___		
	Run 47 & 48	Ck	3.870	3.880	___ ___		
	Run 49 & 50	Ck	3.995	4.005	___ ___		

TASK 5-4

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
18	Temperature Calculations:						
	CPL-4: _____ VDC = _____ °F						
	CPL-5: _____ VDC = _____ °F						
	CPL-6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. -1.5°F (±0.2°F)		_____		
	CPL-7: _____ VDC = _____ °F						
	CPL-8: _____ VDC = _____ °F						
	CPL-9: _____ VDC = _____ °F						
	CPL-11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. -1.5°F (±0.5°F)		_____		
23	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		

TASK 5-4

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
23	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Test Conductor Initials				_____		

TASK 5-4

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
10	CPL 13	VDC	2.40	2.66	_____		
	CPL 14	VDC	0.38	0.64	_____		
	CPL 15	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		
	CPL 28	VDC	As Read		_____		
13	BBT-5 (Channel #6: 10 v/cm & 10 mm/sec)						
	Square wave duration of all pulses	Sec	0.75	1.25	_____		
	Pulse amplitude	VDC	26	30	_____		
	Square wave pulse occurs at the end of every "looper empty" cycle	Ck			_____		
15	CPL 17 Waveform is normal (Channel #1: 1 v/cm)	Ck			_____		
	All runs CPL 18 (Channel #2: 1 v/cm)	Ck	2.0vdc	5.0vdc	_____		
	CPL 19 (Channel #3: 1 v/cm)				_____		
	A & B or	VDC	4.4	5.0	_____		
	A only (B disabled)	VDC	3.3	3.9	_____		

TASK 5-4

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
15	CPL 29 minimum (Channel #8: 1 v/cm)	VDC	As Read		_____		
	CPL 29 maximum (Channel #8: 1 v/cm)	VDC		3.0	_____		
	BBT-5 (Channel #6: 10 v/cm)						
	A square wave pulse of approximately 1 sec. duration occurs at the end of every "looper empty" cycle.	Ck			_____		
	Pulse amplitude	VDC	26	30	_____		
17	BBT-5 (Channel #6: 10 v/cm & 10 mm/sec)						
	Square wave duration of all pulses	Sec	0.75	1.25	_____		
	Pulse amplitude	VDC	26	30	_____		
	Square wave pulse occurs at the end of every "looper empty" cycle.	Ck			_____		
18	CPL 13	VDC	2.40	2.66	_____		
	CPL 14	VDC	0.38	0.64			
	CPL 15	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		

TASK 5-4

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
18	CPL 28	VDC	As Read		_____		
21	CPL 17 waveform is normal (Channel #1: 1 v/cm)	Ck			_____		
	CPL 29 maximum (Channel #8: 1 v/cm)	VDC		3.0	_____		
22	CPL 15	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		
	CPL 28	VDC	As Read		_____		
	Data Reduced By _____						

TASK 6 MSD FREQUENCY AND PORT OPEN TELLTALE

ITEM

1. Set up the recorder as follows and verify that all test instruments are in calibration. Set the recorder speed at 1 mm/sec.

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-17	Looper Position	1.0 v/cm
2	CPL-18	Film Drive Electronics Output	1.0
3	CPL-19	Amplified Data Signals	1.0
4	CPL-25	Port Open Telltale	2.0
5	CPL-15	Film Take-Up Quantity, Coarse, Reel Rotation	2.0
6	CPL-16	Film Take-Up Quantity, Fine (Supply)	1.0
7	CPL-28	Film Take-Up Quantity, Medium	1.0
8	CPL-29	Take-Up Motor Current	1.0

2. Record C/P operating times, ambient temperature and relative humidity. Verify that the CABLE TEST STATUS indicator indicates a "Go" condition.

3. The TEST CONSOLE COUNTER controls should be set up as follows:

COUNTER INPUT--------"BBT 2"

FUNCTION----------"Per A X 10"

SENSITIVITY----------"÷10"

TIME INTERVAL--------"10^{-4}"

DISPLAY TIME---------8 o'clock (approx)

TRIGGER LEVEL--------12 o'clock (approx)

NOTE: Further adjustment of the TRIGGER LEVEL control will probably be necessary to obtain proper triggering. No other COUNTER controls will require adjustment to obtain the desired measurements.

ITEM

4. Mount the LIGHT SOURCE (837-1728) on the C/P strut so that the light output will fall directly on the PORT OPEN TELLTALE sensor.

5. Disconnect cable W13 from J115 on the TEST CONSOLE. Connect cable W23 from J115 to the LIGHT SOURCE.

6. Set the OPERATING POWER to approximately 28 VDC and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 28.0 ± 0.2 VDC after applying to the C/P.

7. Obtain a digital printout of CPL 1 through 35 and identify the tape.

8. Measure and record the period of ten cycles of the BBT 2 signal as displayed on the COUNTER by operating the CAMERA at the following speeds for at least 1½ looper cycles.

   1, 10, 19, 20, 27, 28, 31, 37, 38, 46, 48, 55 and 64

9. Set the ILLUMINATOR LAMP current to 2.6 amperes. Set the DOOR INTENSITY switch to "Low".

10. Readjust the LIGHT SOURCE, if necessary, to shine directly on the PORT OPEN TELLTALE sensor.

11. Turn off room lights.

12. Set the HEATER POWER to approximately 28 VDC and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 28.0 ± 0.2 VDC after applying to the C/P.

13. Using the TEST CONSOLE PINBOARD and DVM, measure and record CPL-25.

14. Switch the DOOR INTENSITY switch to "High". Read and record CPL-25.

    NOTE: It may be necessary to readjust the ILLUMINATOR LAMP current to cycle the PORT OPEN TELLTALE circuitry.

15. Switch the DOOR INTENSITY switch to "Low". Read and record CPL-25.

ITEM

16. Repeat Items 14 and 15 three (3) times.

17. Turn the ILLUMINATOR LAMP "Off".

18. Obtain a digital printout of CPL-1 through 35 and identify the tape.

19. Turn HEATER POWER and OPERATING POWER "Off" and record the C/P operating times in the data sheets.

TASK 6

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
1	All calibration dates are current	Ck			_____		
2	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Ambient Temperature	°F	68	72	_____		
	Relative Humidity	%	40	50	_____		
	Cable test status indicator indicates "Go"	Ck			_____		
8	BBT 2 Period (X 10)						
	Speed 1	Sec	34339	34408	_____		
	Speed 10	Sec	31397	31460	_____		
	Speed 19	Sec	28708	28765	_____		

TASK 6

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
	Speed 20	Sec	28423	28480	_____		
	Speed 27	Sec	26511	26564	_____		
	Speed 28	Sec	26249	26301	_____		
	Speed 31	Sec	25477	25528	_____		
	Speed 37	Sec	24001	24049	_____		
	Speed 38	Sec	23763	23811	_____		
	Speed 46	Sec	21944	21988	_____		
	Speed 48	Sec	21512	21555	_____		
	Speed 55	Sec	20065	20105	_____		
	Speed 64	Sec	18346	18383	_____		
13	CPL-25 (Low)	VDC	0.9	1.1	_____		
14	CPL-25 (High)	VDC	5.0	5.5	_____		
15	CPL-25 (Low)	VDC	1.9	2.1	_____		
16	CPL-25 (High)	VDC	5.0	5.5	_____		
	CPL-25 (Low)	VDC	2.9	3.1	_____		

TASK 6

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
	CPL-25 (High)	VDC	5.0	5.5	_____		
	CPL-25 (Low)	VDC	3.9	4.1	_____		
	CPL-25 (High)	VDC	5.0	5.5	_____		
	CPL-25 (Low)	VDC	.9	1.1	_____		
19	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Test Conductor Initials				_____		

TASK 6

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
7	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
8	CPL-18 (Channel #2: 1 v/cm)						
	Speed 1	VDC	1.49	5.00	_____		
	Speed 10	VDC	1.77	5.00	_____		
	Speed 19	VDC	1.95	5.00	_____		
	Speed 20	VDC	1.96	5.00	_____		
	Speed 27	VDC	2.00	5.00	_____		
	Speed 28	VDC	2.00	5.00	_____		
	Speed 31	VDC	2.00	5.00	_____		
	Speed 37	VDC	2.00	5.00	_____		
	Speed 38	VDC	2.00	5.00	_____		
	Speed 46	VDC	1.95	5.00	_____		

Approved for Release: 2024/01/30 C05098940

TASK 6

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
8	Speed 48	VDC	1.92	5.00	_____		
	Speed 55	VDC	1.75	5.00	_____		
	Speed 64	VDC	1.22	5.00	_____		
8	CPL-19 (Channel #3: 1 v/cm)						
	A & B or	VDC	4.4	5.0	_____		
	A only (B disabled)	VDC	3.3	3.9	_____		
	CPL-29 (Channel #8: 1 v/cm)						
	Minimum	VDC			_____		
	Maximum	VDC		3.0	_____		
18	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
2 & 19	Operating times, C/P operations and record consumption data is transcribed in QC Log	Ck			_____		
	Data Reduced By _____						

TASK 7 - FOCUS CONTROL CHECKOUT

PREFACE

This task outlines the requirements necessary to perform a functional test of the C/P Gain Control Electronics Assembly. This test is performed at the C/P SET POINT Temperature. The BPF platen position should be determined before starting this task so that a preliminary check of the Gain Control can be made during the first run.

C/P TEMPERATURE

The C/P SET POINT Temperature should be entered in the appropriate section of the TASK 7 data sheets. The C/P temperature for TASK 7 is defined as follows:

1. The temperature indicated by CPL's 4, 5 and 6 shall be averaged and this temperature shall be held to within ±.2°F of the C/P SET POINT temperature for the duration of the test.

2. The temperatures indicated by CPL's 7, 8, 9 and 11 shall be averaged and this temperature shall be held to within ±.5°F of the C/P SET POINT temperature for the duration of the test. The calculations as required above are included in the TASK 7 data sheets.

TASK 7 SET UP

The following procedure should be followed prior to the TASK 7 run:

1. The COLLIMATOR FLAT MIRROR should be in place in the collimator at least 3 hours prior to an anticipated run. See VOI-403. Periodic COLLIMATOR focus stability and image quality checks should be made during the "soak" period preceding the run.

2. The MICROSCOPE ASSEMBLY should be properly positioned on the COLLIMATOR TARGET BED when the FLAT MIRROR is put in place.

NOTE: The first time that the MICROSCOPE ASSEMBLY is placed on the COLLIMATOR TARGET BED. the dial indicator located beneath the microscope eyepiece should be checked against the MICROSCOPE vernier. When the vernier reads 2.851 inches the dial indicator should read 0.000. Adjust the dial indicator if necessary to satisfy this criterion.

3. A 0.028 inch shim and a feeler gage thickness of 0.040 inch should be placed between the front locating button on the MICROSCOPE base and the TARGET BED forward stop. The two locating buttons on the left side of the MICROSCOPE base should contact the corresponding stop bar.

4. The COLLIMATOR FLAT MIRROR position should be adjusted so that the image can be viewed approximately in the center of the MICROSCOPE field.

5. With the microscope lamp power supply "On" and set at 6 volts, the MICROSCOPE should be adjusted to achieve the best possible image. Three to five dial indicator readings should be taken to obtain an average best focus position.

6. The feeler gage thickness should then be adjusted to make the dial indicator read 0.000 at the best focus position.

7. When all of the above requirements are met, the microscope, the 0.028 inch shim and the COLLIMATOR FLAT MIRROR should be removed.

8. The GAIN TARGET ASSEMBLY locating buttons should be placed against the front and side target base stops on the COLLIMATOR TARGET BED. The feeler gage thickness determined in step 6 should be in place between the forward button and the forward target base stop. The clamp at the right side of the target assembly should be engaged so that the target is held firmly against the stops.

NOTE: A new GAIN TARGET should be installed for every C/P and should be installed with the emulsion (dull side of the target) out.

ITEM

1. Check the COLLIMATOR FOCUS and record the feeler gage reading on the data sheets. Verify that a new GAIN TARGET is installed with the emulsion out.

2. Set up the chart recorder as follows and verify that all test instruments are in calibration. Set the recorder speed at 1 mm/sec.

ITEM

2.

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-13	Stereo Position *	1.0 v/cm
2	CPL-22	Focus Forward Channel Output	1.0
3	CPL-23	Focus Reverse Channel Output	1.0
4	CPL-27	Platen Position (Fine)	1.0
5	CPL-20	Platen Position (Coarse)	1.0
6	CPL-17	Looper Position	1.0
7	CPL-18	Film Drive Electronics Output	1.0
8	BBT-6	Master Telltale	5.0

* Temporary hook-up (see Item #8).

3. Record C/P operating times, ambient temperature and relative humidity on the data sheets. Verify that the CABLE TEST STATUS indicator indicates a "Go" condition.

4. Set the OPERATING POWER to approximately 28 vdc and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 28.0 ± 0.2 vdc after applying to the C/P.

5. Place a counterbalance beneath the STEREO MIRROR TRUNNION and adjust by adding weights until both the top and bottom rollers on the Stereo Mirror Bridge are "free". Exercise the STEREO SERVO as follows:

FROM	TO
2	3
3	1
1	3
3	1
1	2

Check to see that the rollers are still "free" and adjust the counterweight, if necessary.

6. Align the C/P to the Collimator per VOI-403 so that the image of the Gain Target is centered on the focus reticle.

ITEM

7. Turn the ILLUMINATOR MOTOR and ILLUMINATOR LAMP "On". Set the ILLUMINATOR oscillator frequency at 5.03KC and the ILLUMINATOR LAMP current at 3.625 amperes.

8. Change the chart recorder inputs as follows:

Recorder Channel	Instrumentation Point	Recorder Range
1	CPL-21 Focus Output	1.0 v/cm

9. Record the PACKAGE INSTRUMENTATION VOLTAGE and verify that the STEREO SERVO is at Position #2 and the CRAB SERVO at Position #1.

10. Obtain a digital printout of CPL-1 through 35 and identify the tape.

11. Command the OPERATING POWER "Off" and calculate the C/P temperature and compare to acceptable limits. If the temperature is acceptable proceed to Item #12.

12. Turn room lights off and verify that the ILLUMINATOR MOTOR oscillator frequency is 5.03KC and the ILLUMINATOR LAMP current is 3.625 amperes. Turn the OPERATING POWER "On". Turn the GAIN CONTROL "On" and note the start of manual operation (at 5.03KC) on the chart record.

13. Command the PLATEN to the position corresponding to a CPL-20 reading of 0.500 vdc. From this position the platen should be moved in increments as indicated on the data sheets* until a CPL-20 reading of 4.500 vdc is achieved.

    NOTE: The PLATEN should be maintained at all discreet PLATEN positions for <u>at least</u> 3 minutes to allow the GAIN CONTROL outputs to settle out at relatively constant levels.

    Drive the PLATEN the remaining distance to the Forward Stop.

    * In the event that CPL-21 evidences changes in level prior to a CPL-20 reading of 2.000 vdc or subsequent to a reading of 3.000 vdc, the platen should be driven in CPL-20 increments of 0.100 vdc for these ranges as well as the range

ITEM

13. of CPL-20 between 2.000 & 3.000 vdc called out in the data sheets. Supplementary TASK 7 data sheets (TDS/DRS) should be employed to record the data for these runs.

14. Note the start of automatic operation on the chart record and set the GAIN switch to "Automatic". The GAIN CONTROL should be maintained in the "Automatic" mode for at least 3 minutes (longer if the platen positioning exhibits abnormal oscillation).

    NOTE: While the GAIN CONTROL is automatically positioning the PLATEN it is advisable to monitor CPL-20 with the TEST CONSOLE DVM and to use a few representative CPL-20 DVM readings to anotate the chart record.

15. Command the PLATEN to the Forward Stop and repeat Item #14.

16. Command the PLATEN to the Reverse Stop and repeat Item #14.

17. Command the PLATEN to the Reverse Stop a second time and repeat Item #14.

18. Obtain a digital printout of CPL-1 through 35 and identify the tape. Turn the GAIN CONTROL "Off". Turn the OPERATING POWER "Off".

19. Adjust the ILLUMINATOR MOTOR oscillator frequency to 4.10KC. Calculate the C/P temperature and compare to acceptable limits. If the temperature is acceptable proceed to Item #20.

20. Add a 0.0025 inch shim to the feeler gage between the front locating button on the GAIN TARGET ASSEMBLY and the TARGET BED forward stop.

21. Turn room lights off and verify that the ILLUMINATOR MOTOR oscillator frequency is 4.10KC and the ILLUMINATOR LAMP current is 3.625 amperes. Turn OPERATING POWER "On".

22. Turn the GAIN CONTROL "On" and note the start of manual operation (at 4.10KC) on the chart record and repeat Items 13 through 18.

23. Adjust the ILLUMINATOR MOTOR oscillator frequency to 3.28KC. Calculate the C/P temperature and compare to acceptable limits. If the temperature is acceptable proceed to Item #24.

ITEM

24. Replace the 0.0025 inch shim with a 0.005 inch shim.

25. Turn room lights off and verify that the ILLUMINATOR MOTOR oscillator frequency is 3.28KC and the ILLUMINATOR LAMP current is 3.625 amperes. Turn OPERATING POWER "On".

26. Turn the GAIN CONTROL "On" and note the start of manual operation (at 3.28KC) on the chart record and repeat Items 13 through 17.

27. Command the PLATEN to the BPF position. Turn GAIN CONTROL POWER "Off".

28. Obtain a digital printout of CPL-1 through 35 and identify the tape. Turn OPERATING POWER "Off" and calculate the C/P temperature and compare to acceptable limits.

29. Remove the 0.005 inch shim and adjust the target frequency to 5.03KC. Verify that the ILLUMINATOR LAMP current is adjusted to 3.625 amperes.

30. Verify that the room lights are off and turn the OPERATING POWER "On". Turn the GAIN CONTROL "On" and allow the system to stabilize a minimum of 3 minutes.

31. Install a 0.6 Neutral Density (N.D.) Filter between the target and the collimator and allow the system to stabilize a minimum of 3 minutes.

32. Replace the 0.6 N.D. Filter with a 1.2 N.D. Filter and allow the system to stabilize a minimum of 3 minutes.

33. Turn GAIN CONTROL POWER "Off" and remove the 1.2 N.D. Filter.

34. Turn the ILLUMINATOR MOTOR and ILLUMINATOR LAMP "Off".

35. Verify that the room lights are off and perform the following operations at the indicated time intervals.

Time	Operation
0	Turn GAIN CONTROL POWER "On"
2 min. 30 sec.	Turn MSD "On" at SPEED 64
3 min. 45 sec.	Turn MSD "Off"
5 min. 0 sec.	Turn GAIN CONTROL POWER "Off"
5 min. +	Turn OPERATING POWER "Off"

ITEM

36. Remove the GAIN TARGET from the GAIN TARGET ASSEMBLY and verify that no shim is in place between the front locating button on the GAIN TARGET ASSEMBLY and the TARGET BED forward stop.

37. Turn the ILLUMINATOR MOTOR and ILLUMINATOR LAMP "On". Set the ILLUMINATOR MOTOR oscillator frequency to 5.03KC and the ILLUMINATOR LAMP current to 3.625 amperes.

38. Verify that the room lights are off and turn OPERATING POWER "On". Turn the GAIN CONTROL POWER "On" and allow the system to stabilize a minimum of 3 minutes.

39. Install a 0.6 N.D. Filter between the target and the collimator and allow the system to stabilize a minimum of 3 minutes.

40. Replace the 0.6 N.D. Filter with a 1.2 N.D. Filter and allow the system to stabilize a minimum of 3 minutes.

41. Turn the GAIN CONTROL, ILLUMINATOR LAMP and ILLUMINATOR MOTOR "Off".

42. Obtain a digital printout of CPL-1 through 35 and identify the tape. Calculate the C/P temperature.

43. Turn the OPERATING POWER "Off" and record the C/P operating times.

TASK 7

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
1	Feeler gage reading	Inch	As Read		_____		
	New Gain Target is installed	Ck			_____		
2	All calibration dates are current	Ck			_____		
3	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Ambient Temperature	°F			_____		
	Relative humidity	%	40	50	_____		
	Cable test status indicator indicates "Go"	Ck			_____		
9	Package Instrumentation Voltage	VDC	4.975	5.025	_____		

TASK 7

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
9	Stereo Servo is at Position #2	Ck			_____		
	Crab Servo is at Position #1	Ck			_____		
11	Set Point Temperature	°F	From EKR C/P Log		_____		
	Temperature Calculations:						
	CPL-4: _____ VDC = _____ °F						
	CPL-5: _____ VDC = _____ °F						
	CPL-6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt.(±0.2°F)		_____		
	CPL-7: _____ VDC = _____ °F						
	CPL-8: _____ VDC = _____ °F						
	CPL-9: _____ VDC = _____ °F						
	CPL-11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt.(±0.5°F)		_____		

TASK 7

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
13	Run 1 (5030)	Ck	0.495	0.505	_____		
	Run 2	Ck	0.995	1.005	_____		
	Run 3	Ck	1.495	1.505	_____		
	Run 4*	Ck	1.995	2.005	_____		
	Run 5	Ck	2.095	2.105	_____		
	Run 6	Ck	2.195	2.205	_____		
	Run 7	Ck	2.295	2.305	_____		
	Run 8	Ck	2.395	2.405	_____		
	Run 9	Ck	2.495	2.505	_____		
	Run 10	Ck	2.595	2.605	_____		
	Run 11	Ck	2.695	2.705	_____		
	Run 12	Ck	2.795	2.805	_____		
	Run 13	Ck	2.895	2.905	_____		
	Run 14*	Ck	2.995	3.005	_____		

* See procedure page 7-4

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TASK 7

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
13	Run 15	Ck	3.495	3.505	_____		
	Run 16	Ck	3.995	4.005	_____		
	Run 17	Ck	4.495	4.505	_____		
19	Temperature Calculations:						
	CPL-4: _____ VDC = _____ °F						
	CPL-5: _____ VDC = _____ °F						
	CPL-6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.2°F)		_____		
	CPL-7: _____ VDC = _____ °F						
	CPL-8: _____ VDC = _____ °F						
	CPL-9: _____ VDC = _____ °F						
	CPL-11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.5°F)		_____		

TASK 7

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
22 (13)	Run 1 (4100)	Ck	0.495	0.505			
	Run 2	Ck	0.995	1.005			
	Run 3	Ck	1.495	1.505			
	Run 4*	Ck	1.995	2.005			
	Run 5	Ck	2.095	2.105			
	Run 6	Ck	2.195	2.205			
	Run 7	Ck	2.295	2.305			
	Run 8	Ck	2.395	2.405			
	Run 9	Ck	2.495	2.505			
	Run 10	Ck	2.595	2.605			
	Run 11	Ck	2.695	2.705			
	Run 12	Ck	2.795	2.805			
	Run 13	Ck	2.895	2.905			
	Run 14*	Ck	2.995	3.005			

* See procedure page 7-4

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TASK 7

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
22 (13)	Run 15	Ck	3.495	3.505	_____		
	Run 16	Ck	3.995	4.005	_____		
	Run 17	Ck	4.495	4.505	_____		
23	Temperature Calculations:						
	CPL-4: _____ VDC = _____ °F						
	CPL-5: _____ VDC = _____ °F						
	CPL-6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.2°F)		_____		
	CPL-7: _____ VDC = _____ °F						
	CPL-8: _____ VDC = _____ °F						
	CPL-9: _____ VDC = _____ °F						
	CPL-11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.5°F)		_____		

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TASK 7

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
26 (13)	Run 1 (3280)	Ck	0.495	0.505	_____		
	Run 2	Ck	0.995	1.005	_____		
	Run 3	Ck	1.495	1.505	_____		
	Run 4*	Ck	1.995	2.005	_____		
	Run 5	Ck	2.095	2.105	_____		
	Run 6	Ck	2.195	2.205	_____		
	Run 7	Ck	2.295	2.305	_____		
	Run 8	Ck	2.395	2.405	_____		
	Run 9	Ck	2.495	2.505	_____		
	Run 10	Ck	2.595	2.605	_____		
	Run 11	Ck	2.695	2.705	_____		
	Run 12	Ck	2.795	2.805	_____		
	Run 13	Ck	2.895	2.905	_____		
	Run 14*	Ck	2.995	3.005	_____		

* See procedure page 7-4

TASK 7

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
26 (13)	Run 15	Ck	3.495	3.505	_____		
	Run 16	Ck	3.995	4.005	_____		
	Run 17	Ck	4.495	4.505	_____		
28	Temperature Calculations:						
	CPL-4: _____ VDC = _____ °F						
	CPL-5: _____ VDC = _____ °F						
	CPL-6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.2°F)		_____		
	CPL-7: _____ VDC = _____ °F						
	CPL-8: _____ VDC = _____ °F						
	CPL-9: _____ VDC = _____ °F						
	CPL-11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.5°F)		_____		

TASK 7

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
42	Temperature Calculations:						
	CPL-4: _____ VDC = _____ °F						
	CPL-5: _____ VDC = _____ °F						
	CPL-6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.2°F)		_____		
	CPL-7: _____ VDC = _____ °F						
	CPL-8: _____ VDC = _____ °F						
	CPL-9: _____ VDC = _____ °F						
	CPL-11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. (±0.5°F)		_____		

TASK 7

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
43	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Test Conductor Initials				_____		

TASK 7

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
13	Target Frequency = 5030 cps						
	CPL-20 = 0.500 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-20 = 1.000 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-20 = 1.500 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-20 = 2.000 vdc:* CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		

* See procedure page 7-4

TASK 7

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION		UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
13	CPL-20 = 2.100 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.200 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.300 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.400 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.500 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		

TASK 7

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION		UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
13	CPL-20 = 2.600 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.700 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.800 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.900 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 3.000 vdc:*	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		

* See procedure page 7-4

TASK 7

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
13	CPL-20 = 3.500 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-20 = 4.000 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-20 = 4.500 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
14	CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-27	VDC	As Read		_____		
	CPL-20	VDC	As Read		_____		

TASK 7

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
15	CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-27	VDC	As Read		_____		
	CPL-20	VDC	As Read		_____		
16	CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-27	VDC	As Read		_____		
	CPL-20	VDC	As Read		_____		
17	CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-27	VDC	As Read		_____		
	CPL-20	VDC	As Read		_____		

TASK 7

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
22 (13)	Target Frequency = 4100 cps						
	CPL-20 = 0.500 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-20 = 1.000 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-20 = 1.500 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-20 = 2.000 vdc:* CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		

* See procedure page 7-4

TASK 7

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION		UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
22 (13)	CPL-20 = 2.100 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.200 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.300 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.400 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.500 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		

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Unclassified

TASK 7

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION		UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
22 (13)	CPL-20 = 2.600 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.700 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.800 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.900 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 3.000 vdc:*	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		

* See procedure page 7-4

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PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
22 (13)	CPL-20 = 3.500 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-20 = 4.000 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-20 = 4.500 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
22(14)	CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-27	VDC	As Read		_____		
	CPL-20	VDC	As Read		_____		

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PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
22 (15)	CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-27	VDC	As Read		_____		
	CPL-20	VDC	As Read		_____		
22 (16)	CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-27	VDC	As Read		_____		
	CPL-20	VDC	As Read		_____		
22 (17)	CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-27	VDC	As Read		_____		
	CPL-20	VDC	As Read		_____		

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PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
26 (13)	Target Frequency = 3280 cps						
	CPL-20 = 0.500 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-20 = 1.000 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-20 = 1.500 vdc: CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		
	CPL-20 = 2.000 vdc:* CPL-21	VDC	As Read		_____		
	CPL-22	VDC	As Read		_____		
	CPL-23	VDC	As Read		_____		

* See procedure page 7-4

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PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION		UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
26 (13)	CPL-20 = 2.100 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.200 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.300 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.400 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.500 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		

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DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION		UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
26 (13)	CPL-20 = 2.600 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.700 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.800 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 2.900 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 3.000 vdc:*	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		

* See procedure page 7-4

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PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION		UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
26 (13)	CPL-20 = 3.500 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 4.000 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
	CPL-20 = 4.500 vdc:	CPL-21	VDC	As Read		_____		
		CPL-22	VDC	As Read		_____		
		CPL-23	VDC	As Read		_____		
26 (14)	CPL-21		VDC	As Read		_____		
	CPL-22		VDC	As Read		_____		
	CPL-23		VDC	As Read		_____		
	CPL-27		VDC	As Read		_____		
	CPL-20		VDC	As Read		_____		

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PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
26 (15)	CPL-21	VDC			_____		
	CPL-22	VDC			_____		
	CPL-23	VDC			_____		
	CPL-27	VDC			_____		
	CPL-20	VDC			_____		
26 (16)	CPL-21	VDC			_____		
	CPL-22	VDC			_____		
	CPL-23	VDC			_____		
	CPL-27	VDC			_____		
	CPL-20	VDC			_____		
26 (17)	CPL-21	VDC			_____		
	CPL-22	VDC			_____		
	CPL-23	VDC			_____		
	CPL-27	VDC			_____		
	CPL-20	VDC			_____		

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PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
28	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
	CPL-20	VDC	As Read		_____		
	CPL-27	VDC	As Read		_____		
30	Zero Neutral Density						
	CPL-21 (Channel #1: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		
	CPL-22 (Channel #2: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		
	CPL-23 (Channel #3: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		

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PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
31	0.6 Neutral Density						
	CPL-21 (Channel #1: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		
	CPL-22 (Channel #2: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		
	CPL-23 (Channel #3: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		
32	1.2 Neutral Density						
	CPL-21 (Channel #1: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		

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PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
32	CPL-22 (Channel #2: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		
	CPL-23 (Channel #3: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		
35	Gain Power On Only						
	CPL-21 (Channel #1: 1 v/cm)	VDC	As Read		_____		
	CPL-22 (Channel #2: 1 v/cm	VDC	As Read		_____		
	CPL-23 (Channel #3: 1 v/cm)	VDC	As Read		_____		
	Gain Power & MSD On						
	CPL-21 (Channel #1: 1 v/cm)	VDC	As Read		_____		
	CPL-22 (Channel #2: 1 v/cm)	VDC	As Read		_____		
	CPL-23 (Channel #3: 1 v/cm)	VDC	As Read		_____		

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PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
35	Gain Power On Only						
	CPL-21 (Channel #1: 1 v/cm)	VDC	As Read		_____		
	CPL-22 (Channel #2: 1 v/cm)	VDC	As Read		_____		
	CPL-23 (Channel #3: 1 v/cm)	VDC	As Read		_____		
38	Zero Neutral Density						
	CPL-21 (Channel #1: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		
	CPL-22 (Channel #2: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		
	CPL-23 (Channel #3: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		

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DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
39	0.6 Neutral Density						
	CPL-21 (Channel #1: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		
	CPL-22 (Channel #2: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		
	CPL-23 (Channel #3: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		
40	1.2 Neutral Density						
	CPL-21 (Channel #1: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		

TASK 7

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PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
40	CPL-22 (Channel #2: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		
	CPL-23 (Channel #3: 1 v/cm)						
	Minimum	VDC	As Read		_____		
	Maximum	VDC	As Read		_____		
42	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
	Data Reduced By _____						

DATE

TASK 7

C/P

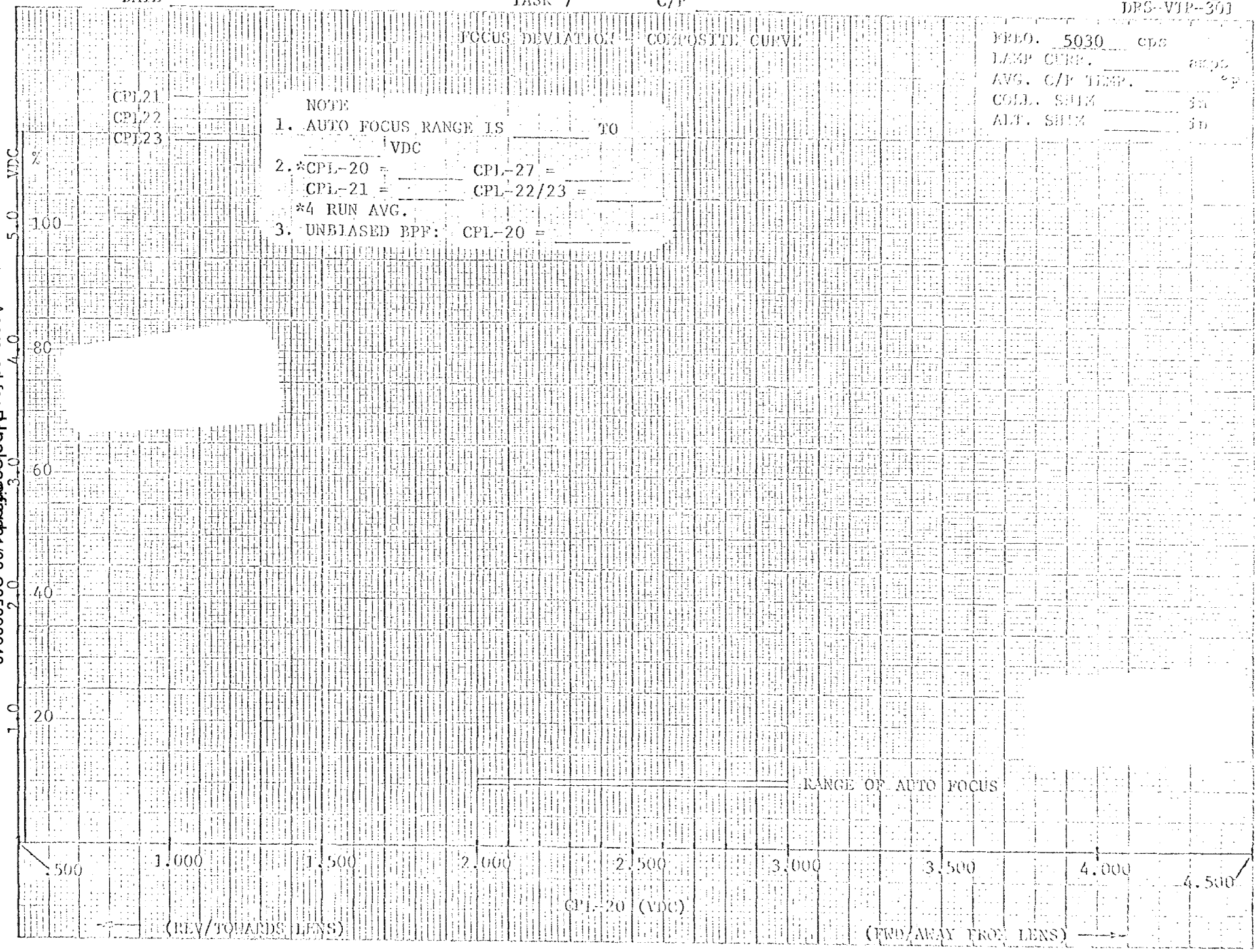
DRS-VTP-301

FOCUS DEVIATION COMPOSITE CURVE

FREQ. 5030 CPS
LAMP CURR. _____ AMPS
AVG. C/P TEMP. _____ °F
COLL. SHIM _____ IN
ALT. SHIM _____ IN

CPL21 _____
CPL22 _____
CPL23 _____

NOTE
1. AUTO FOCUS RANGE IS _____ TO _____ VDC
2. *CPL-20 = _____ CPL-27 = _____
CPL-21 = _____ CPL-22/23 = _____
*4 RUN AVG.
3. UNBIASED BPF: CPL-20 = _____



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DATE

TASK 7

C/P

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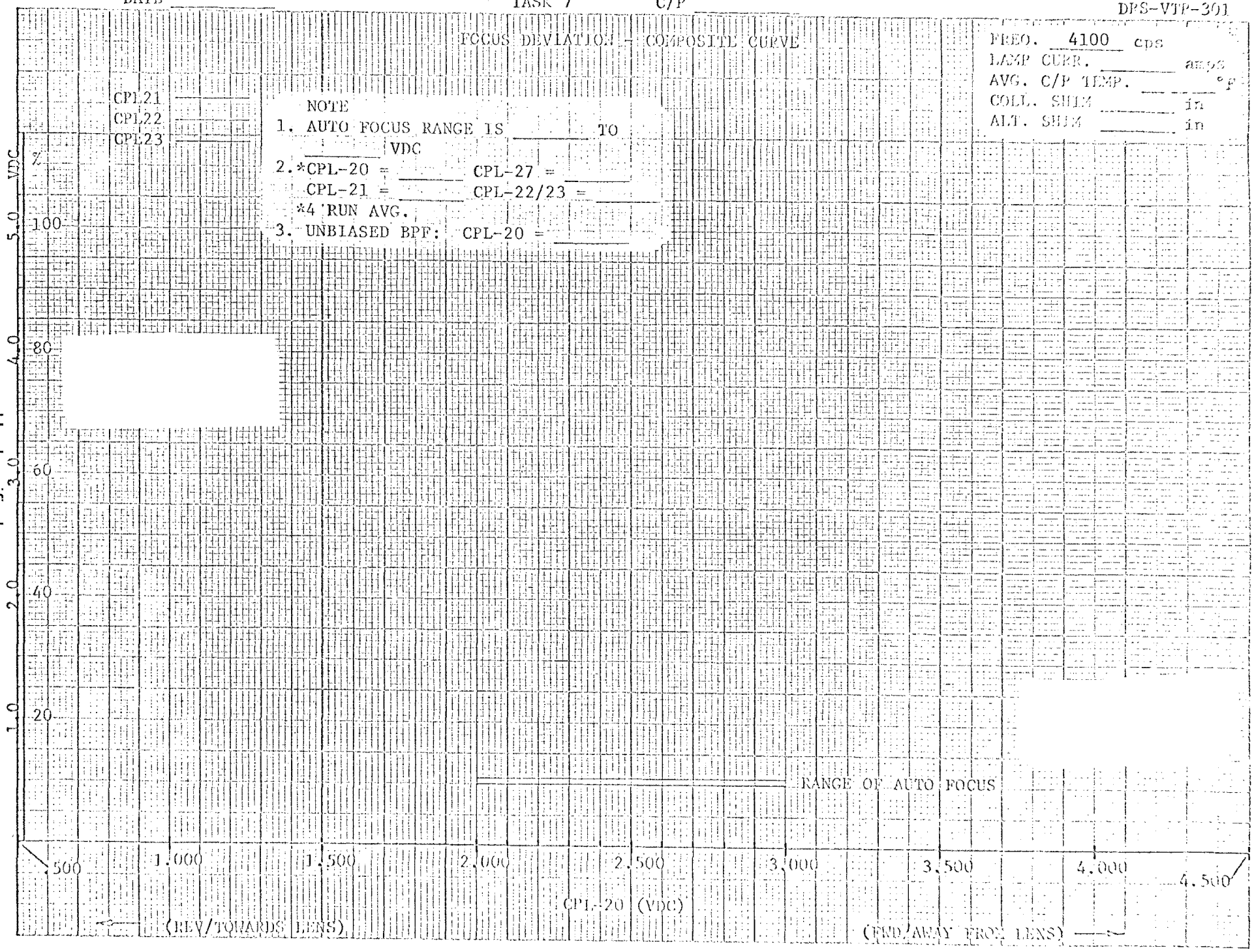
FOCUS DEVIATION - COMPOSITE CURVE

FREQ. 4100 cps
LAMP CURR. _____ amps
AVG. C/P TEMP. _____ °F
COLL. SHIM _____ in
ALT. SHIM _____ in

CPL21 _____
CPL22 _____
CPL23 _____

NOTE
1. AUTO FOCUS RANGE IS _____ TO _____ VDC
2. *CPL-20 = _____ CPL-27 = _____
CPL-21 = _____ CPL-22/23 = _____
*4 RUN AVG.
3. UNBIASED BPF: CPL-20 = _____



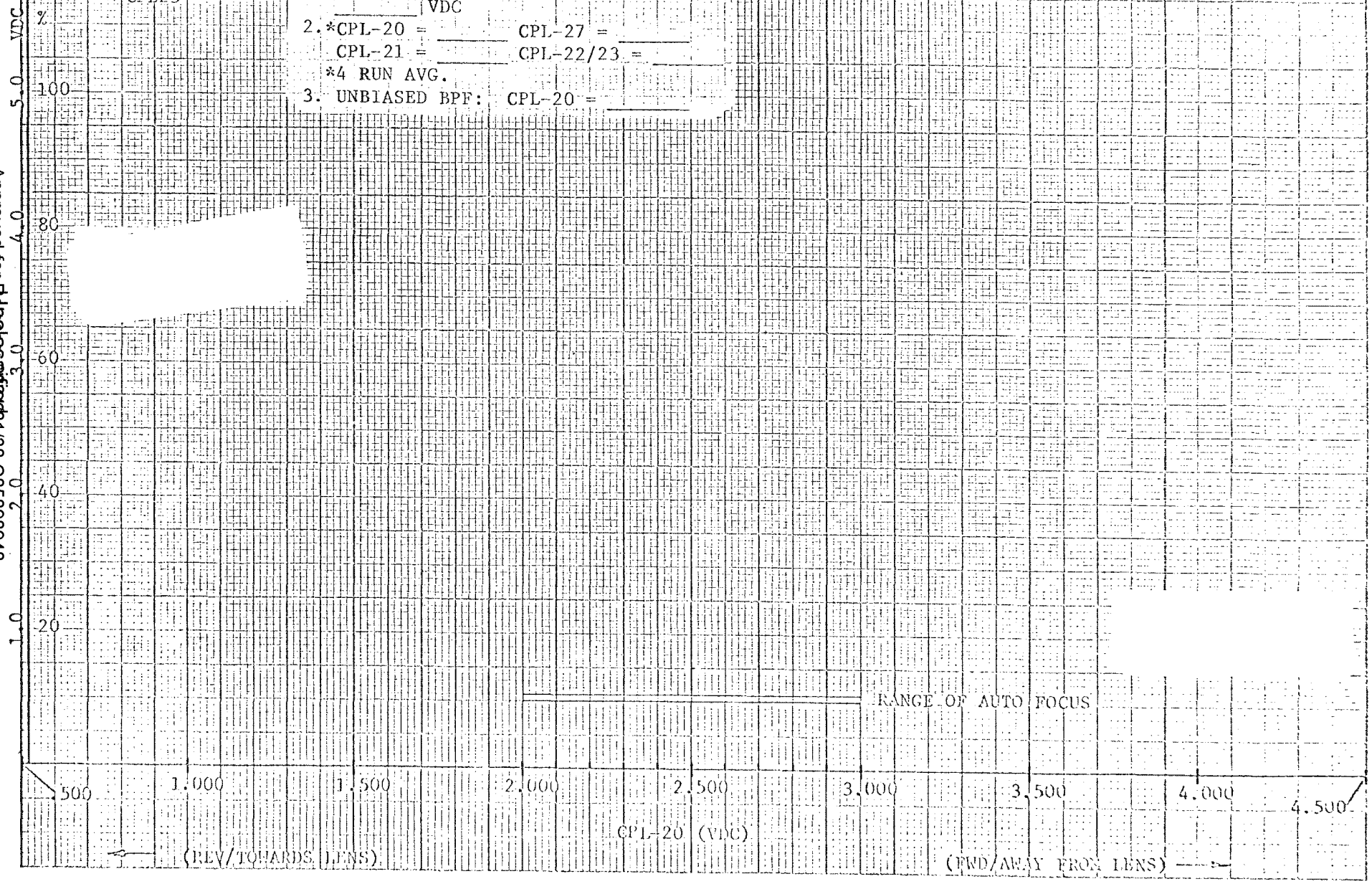
DATE TASK 7 C/P DPS-VTP-301

FOCUS DEVIATION - COMPOSITE CURVE

FREQ. 3280 cps
LAMP CURR. _____ amps
AVG. C/P TEMP. _____ °F
COLL. SHIM _____ in
ALT. SHIM _____ in

CPL21 _____
CPL22 _____
CPL23 _____

NOTE
1. AUTO FOCUS RANGE IS _____ TO _____ VDC
2. *CPL-20 = _____ CPL-27 = _____
CPL-21 = _____ CPL-22/23 = _____
*4 RUN AVG.
3. UNBIASED BPF: CPL-20 = _____



TASK 7 (Supplementary)*

DATE ______ C/P ______ TDS/DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION				MEASURED	NON-CON-FORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
	DESCRIPTION	UNITS	REQUIRED				
			MIN	MAX			
____	Frequency = ______ cps						
	CPL-20 = ______ VDC: CPL-21	VDC	As Read		______		
	CPL-22	VDC	As Read		______		
	CPL-23	VDC	As Read		______		
	CPL-20 = ______ VDC: CPL-21	VDC	As Read		______		
	CPL-22	VDC	As Read		______		
	CPL-23	VDC	As Read		______		
	CPL-20 = ______ VDC: CPL-21	VDC	As Read		______		
	CPL-22	VDC	As Read		______		
	CPL-23	VDC	As Read		______		
	CPL-20 = ______ VDC: CPL-21	VDC	As Read		______		
	CPL-22	VDC	As Read		______		
	CPL-23	VDC	As Read		______		
	Data Reduced By ______________						

* See procedure page 7-4

TASK 8 - HEATER OPERATION

PREFACE

Though not mandatory, it is convenient to perform this task during the period of time when the temperature of the C/P is higher than the SET POINT temperature (prior to a TASK 5-3) as this will reduce the amount of heater "On" and "Off" cycling.

ITEM

1. Set up the chart recorder as follows and verify that all test instruments are in calibration. Set the recorder speed at 0.25 mm/sec.

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-13	Stereo Position	1.0 v/cm
2	CPL-14	Crab Position	1.0
3	CPL-17	Looper Position	1.0
4	CPL-18	Film Drive Electronics Output	1.0
5	CPL-26	Environmental Supply	1.0
6	CPL-27	Platen Position (Fine)	1.0
7	No connection		
8	No connection		

2. Record C/P operating times, ambient temperature and relative humidity on the data sheets.

3. Set the OPERATING POWER to approximately 28 vdc and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 28.0 ± 0.2 vdc after applying to the C/P.

4. Obtain a digital printout of CPL 1 through 35 and identify the tape. Measure and record VTP-2 through VTP-9 and VTP-11 using the TEST CONSOLE DVM and the external probe.

5. Set the HEATER POWER to approximately 26 vdc and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 26.0 ± 0.05 vdc after applying to the C/P. Measure and record CPL-26 using the TEST CONSOLE PINBOARD and DVM, and VP-50 using the TEST CONSOLE DVM and the external probe. Adjust the HEATER POWER to 30.0 ± 0.05 vdc and measure CPL-26. Adjust the HEATER POWER to 34 ± 0.05 vdc and measure CPL-26.

ITEM

6. Set the HEATER POWER to 28.0 ± 0.2 vdc.

7. Operate each HEATER SYSTEM listed in Table 8-1 and measure the current drawn using the HEATER POWER SUPPLY ammeter. Record all measurements in the data sheets. HEATER SYSTEM operation shall be caused by local cooling (heater turn-on) and heating (heater turn-off) of the associated thermostat. The "On"/"Off" state of each system may be determined by connecting a DC voltmeter from the MONITOR POINT (+ terminal) listed in Table 8-1 to a convenient ground (- terminal). A reading of approximately 28 volts indicates an "Off" state while a reading of less than 1 volt indicates an "On" state. Refer to Figure 8-1 (in room 108) for the location of the various heater systems.

TABLE 8-1

Heater System	Thermostat	Monitor Point
3	RT-903	Terminal 5 of A 910
4	RT-904	Terminal 5 of A 911
5	RT-905	Terminal 5 of A 912
6	RT-906	Terminal 6 of TB 907
10	RT-907	TP-904
11	RT-908	TP-903
12	RT-909	TP-902
13	RT-910	TP-906
14	RT-911	TP-907
15	RT-912	TP-908
16	RT-913	Terminal 4 of TB 905
17	RT-914	TP-905
18	RT-915	TP-901

8. Turn HEATER POWER "Off".

9. Obtain a digital printout of CPL-1 through 35 and identify the tape.

10. Turn OPERATING POWER "Off" and record the C/P operating times in the data sheets.

TASK 8

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
1	All calibration dates are current	Ck			_____		
2	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Ambient Temperature	°F	As Read		_____		
	Relative Humidity	%	40	50	_____		
4	VTP-2	VDC	As Read		_____		
	VTP-3	VDC	As Read		_____		
	VTP-4	VDC	As Read		_____		
	VTP-5	VDC	As Read		_____		
	VTP-6	VDC	As Read		_____		
	VTP-7	VDC	As Read		_____		

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PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	VTP-8	VDC	As Read		_____		
	VTP-9	VDC	As Read		_____		
	VTP-11	VDC	As Read		_____		
5	CPL-26 @ 26.0 VDC	VDC	3.12	3.42	_____		
	VP-50 @ 26.0 VDC	VDC	3.12	3.42	_____		
	CPL-26 @ 30.0 VDC	VDC	3.60	3.90	_____		
	CPL-26 @ 34.0 VDC	VDC	4.12	4.42	_____		
7	Heater System Currents						
	Heater System 3	Amp	0.14	0.22	_____		
	Heater System 4	Amp	0.14	0.22	_____		
	Heater System 5	Amp	0.14	0.22	_____		
	Heater System 6	Amp	0.14	0.22	_____		
	Heater System 10	Amp	0.14	0.22	_____		
	Heater System 11	Amp	0.14	0.22	_____		
	Heater System 12	Amp	0.14	0.22	_____		

TASK 8

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
	Heater System 13	Amp	0.14	0.22	_____		
	Heater System 14	Amp	0.14	0.22	_____		
	Heater System 15	Amp	0.14	0.22	_____		
	Heater System 16	Amp	0.14	0.22	_____		
	Heater System 17	Amp	0.14	0.22	_____		
	Heater System 18	Amp	0.055	0.085	_____		
10	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Test Conductor Initials				_____		

TASK 8

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
4	CPL-2 - 9 & 11 voltages agree with VTP-2 - 9 & 11 voltages:						
	2	Ck			_____		
	3	Ck			_____		
	4	Ck			_____		
	5	Ck			_____		
	6	Ck			_____		
	7	Ck			_____		
	8	Ck			_____		
	9	Ck			_____		
	11	Ck			_____		
5	CPL-26 (Channel #5: 1 v/cm)						
	@ 26.0 VDC	VDC	3.12	3.42	_____		
	@ 30.0 VDC	VDC	3.6	3.9	_____		
	@ 34.0 VDC	VDC	4.12	4.42	_____		
	Data Reduced By _____						

TASK 9 - PHOTO VALIDATION

PREFACE

This task outlines the requirements necessary to produce Photo Validation samples. This test is performed at the BPF platen position and C/P SET POINT temperature. Prior to conducting this task the BPF platen position and the slit plate configuration should be determined.

C/P TEMPERATURE

The C/P SET POINT temperature should be entered in the appropriate section of the TASK 9 data sheets. The C/P temperature for TASK 9 is defined as follows:

1. The temperature indicated by CPL's 4, 5 and 6 shall be averaged and this temperature shall be held to within ±.2° of the C/P SET POINT temperature for the duration of the test. The average of this temperature at the beginning of the run and at the conclusion of the run is considered to be the C/P temperature for the task.

2. The temperatures indicated by CPL's 7, 8, 9 and 11 shall be averaged and this temperature shall be held to within ±.5°F of the C/P SET POINT temperature for the duration of the test. The calculations as required above are included in the TASK 9 data sheets. This task should not be performed until the C/P temperature has been within the acceptable limits for 3 hours prior to the run.

TASK 9 SET-UP

The following procedure should be followed prior to the TASK 9 run:

1. The COLLIMATOR FLAT MIRROR should be in place in the collimator at least 3 hours prior to an anticipated run. See VOI-403. Periodic COLLIMATOR focus stability and image quality checks should be made during the "soak" period preceding the run.

2. The MICROSCOPE ASSEMBLY should be properly positioned on the COLLIMATOR TARGET BED when the FLAT MIRROR is put in place.

NOTE: The first time that the MICROSCOPE ASSEMBLY is placed on the COLLIMATOR TARGET BED, the dial indicator located beneath the microscope eyepiece should be checked against

the MICROSCOPE vernier. When the vernier reads 2.851 inches the dial indicator should read 0.000. Adjust the dial indicator if necessary to satisfy this criterion.

3. A 0.028 inch shim and a feeler gage thickness of 0.040 should be placed between the front locating button on the MICROSCOPE base and the TARGET BED forward stop. The two locating buttons on the left side of the MICROSCOPE base should contact the corresponding stop bar.

4. The COLLIMATOR FLAT MIRROR position should be adjusted so that the image can be viewed approximately in the center of the MICROSCOPE field.

5. With the microscope lamp power supply on and set at 6 volts, the MICROSCOPE should be adjusted to achieve the best possible image. Three to five dial indicator readings should be taken to obtain an average best focus position.

6. The feeler gage thickness should then be adjusted to make the dial indicator read 0.000 at the best focus position.

7. When all of the above requirements are met, the microscope, the 0.028 inch shim and the COLLIMATOR FLAT MIRROR should be removed.

8. The TARGET ASSEMBLY locating buttons should be placed against the front and side target base stops on the COLLIMATOR TARGET BED. The feeler gage thickness determined in the step 6 should be in place between the forward button and the forward target base stop. The clamp at the right side of the target assembly should be engaged so that the target is held firmly against the stops.

ITEM

1. Check the COLLIMATOR focus per VOI-403 and record the feeler gage reading on the data sheets. Record the BPF platen position.

2. Set up the chart recorder as follows and verify that all test instruments are in calibration. Set the recorder at 1 mm/sec.

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-13	Stereo Position*	1.0 v/cm
2	CPL-18	Film Drive Electronics Output	1.0

* Temporary hook-up (see Item #8)

ITEM

2.

Recorder Channel	Instrumentation Point		Recorder Range
3	CPL-19	Amplified Data Signals	1.0
4	CPL-12	Slit Position	1.0
5	CPL-20	Platen Position (Coarse)	1.0
6	CPL-16	Film Take-Up Quantity, Fine (Supply)	1.0
7	CPL-28	Take-Up Quantity (Medium)	1.0
8	CPL-29	Take-Up Motor Current	1.0

3. Record C/P operating times, ambient temperature and relative humidity on the data sheets. Verify that the CABLE TEST STATUS indicator indicates a "Go" condition.

4. Set the OPERATING POWER to approximately 28 vdc and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 28.0 ± 0.2 vdc after applying to the C/P.

5. Place a counterbalance beneath the STEREO MIRROR TRUNNION and adjust by adding weights until both the top and bottom rollers on the Stereo Mirror Bridge are "free". Exercise the STEREO SERVO as follows:

FROM	TO
2	3
3	1
1	3
3	1
1	2

Check to see that the rollers are still free and adjust the counterweight, if necessary.

6. Align the C/P to the Collimator for on-axis photo testing (refer to VOI-403). Command the SLIDER to SLIT B (0.008 inch slit).

7. Turn the ILLUMINATOR MOTOR and ILLUMINATOR LAMP "On". Set the ILLUMINATOR MOTOR for CAMERA SPEED 31 (Freq.: approx. 4.2KC/Counter Reading: 1437) and the ILLUMINATOR LAMP current at 3.50 amperes. Allow both to run for 15 minutes.

ITEM

8. Change the chart recorder inputs as follows:

Recorder Channel	Instrumentation Point	Recorder Range
1	CPL-17 Looper Position	1.0 v/cm

9. Record the PACKAGE INSTRUMENTATION VOLTAGE and verify that the STEREO SERVO is at position 2, the CRAB SERVO is at position 1 and the PLATEN is at the BPF position.

10. Obtain a digital printout of CPL-1 through 35 and identify the tape. Calculate the C/P temperature and compare to acceptable limits.

11. Turn the room lights off and operate the CAMERA and TEST CONSOLE as follows:

Run	Lamp Illum.*	Approx Freq/Period**		Slit	Speed	Running Time
0	0 Amp	-	-	B	31	10 Sec.
1	3.40	3.1KC	1937	B	1	10
2	3.42	3.4KC	1771	B	10	9
3	3.45	3.7KC	1620	B	19	8
4	3.50	4.1KC	1480	B	28	7
5	3.60	4.5KC	1354	B	37	7
6	3.63	4.9KC	1238	B	46	6
7	3.70	5.3KC	1132	B	55	6
8	3.73	5.8KC	1035	B	64	5
9	3.50	4.2KC	1437	B	31	7
10	3.15	4.2KC	1437	C	31	7
11	2.93	4.2KC	1437	D	31	7

* The currents indicated are for the standard slit plate configuration. (B: 0.008"; C: 0.016"; D: 0.32")

** The period measurement should be used to control the target drum speed.

12. Using the POSITIONER CONTROL tilt the POSITIONER and C/P off axis -0.5° as measured on the POSITION INDICATOR.

ITEM

13. Operate the CAMERA and TEST CONSOLE as follows:

Run	Lamp Illum.*	Approx Freq/Period**		Slit	Speed	Running Time
1	2.93	4.2KC	1437	D	31	7 Sec.
2	3.15	4.2KC	1437	C	31	7 Sec.
3	3.50	4.2KC	1437	B	31	7 Sec.

14. Using the POSITIONER CONTROL tilt the POSITIONER and C/P off-axis +0.5° as measured on the POSITION INDICATOR.

15. Operate the CAMERA and TEST CONSOLE as follows:

Run	Lamp Illum.*	Approx Freq/Period**		Slit	Speed	Running Time
1	3.50	4.2KC	1437	B	31	7 Sec.
2	3.15	4.2KC	1437	C	31	7 Sec.
3	2.93	4.2KC	1437	D	31	7 Sec.

16. Adjust the ILLUMINATOR LAMP current fully counterclockwise and return the POSITIONER to approximately 0°.

17. Operate the CAMERA at SPEED 64 for 60 seconds.

18. Obtain a digital printout of CPL-1 through 35 and identify the tape. Turn OPERATING POWER "Off".

19. Remove the record per VOI-407 and deliver to the Photo Evaluation Group for processing and analysis.

20. Reinstall the FRSA Assembly and tape the record to the center of the FRSA reel. Provide only 1 wrap of the reel hub and do not check record tracking. Indicate on the TEST CONSOLE that the FRSA has been installed and that tracking has <u>not</u> been checked.

21. Obtain a printout of CPL-1 through 35 and identify the tape.

22. Record C/P operating times.

TASK 9

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
1	Feeler gage reading	In	As Read		_____		
	BPF Platen Position (CPL-20)	VDC	As Read		_____		
2	All calibration dates are current	Ck			_____		
3	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Ambient Temperature	°F			_____		
	Relative Humidity	%	40	50	_____		
	Cable test status indicator indicates "Go"	Ck			_____		
9	Package Instrumentation Voltage	VDC	4.975	5.025	_____		
	Stereo Servo is at Position #2	Ck			_____		

TASK 9

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
9	Crab Servo is at Position #1	Ck			_____		
	Platen is at the BPF position	Ck			_____		
10	Set Point Temperature	°F	From EKR C/P Log		_____		
	Temperature Calculations						
	CPL-4: _____ VDC = _____ °F						
	CPL-5: _____ VDC = _____ °F						
	CPL-6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. ±0.2°F		_____		
	CPL-7: _____ VDC = _____ °F						
	CPL-8: _____ VDC = _____ °F						
	CPL-9: _____ VDC = _____ °F						
	CPL-11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. ±0.5°F		_____		

TASK 9

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
18	Temperature Calculations						
	CPL-4: _____ VDC = _____ °F						
	CPL-5: _____ VDC = _____ °F						
	CPL-6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. ±0.2°F		_____		
	CPL-7: _____ VDC = _____ °F						
	CPL-8: _____ VDC = _____ °F						
	CPL-9: _____ VDC = _____ °F						
	CPL 11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. ±0.5°F		_____		
22	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		

TASK 9

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
22	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Test Conductor Initials				_____		

TASK 9

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
10	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
1 thru 17	CPL-17 Waveform is normal (Channel #1: 1 v/cm)	Ck			_____		
	CPL-18 (Channel #2: 1 v/cm)						
	Speed 1	VDC	1.49	5.00	_____		
	Speed 10	VDC	1.77	5.00	_____		
	Speed 19	VDC	1.95	5.00	_____		
	Speed 28	VDC	2.00	5.00	_____		
	Speed 37	VDC	2.00	5.00	_____		
	Speed 46	VDC	1.95	5.00	_____		
	Speed 55	VDC	1.75	5.00	_____		
	Speed 64	VDC	1.22	5.00	_____		

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TASK 9

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
	CPL-19 (Channel #3: 1 v/cm)						
	A & B or	VDC	4.4	5.0	_____		
	A only (B disabled)	VDC	3.3	3.9	_____		
	CPL-29 minimum (Channel #8: 1 v/cm)	VDC	As Read		_____		
	CPL-29 maximum (Channel #8: 1 v/cm)	VDC		3.0	_____		
18	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
21	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
	Data Reduced By _____						

TASK 10 - SLIT EVALUATION

ITEM

1. The actual SLIT PLATE configuration should be ascertained by the individual responsible for running this test. The slit widths indicated in this task are for the normal slit plate configuration.

2. Verify that TEST CONSOLE CABLES W1 (J654), W2 (J661), W5 (J695), W6 (J696), W7 (J697), W8 (J698), W9 (J699) and W10 (GRD) are connected to the C/P.

3. Set up the chart recorder as follows and verify that all test instruments are in calibration. Set the recorder speed at 1 mm/sec.

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-17	Looper Position	1.0
2	CPL-18	Film Drive Electronics Output	1.0
3	CPL-19	Amplified Data Signals	1.0
4	CPL-12	Slit Position	1.0
5	CPL-15	Film Take-Up Quantity, Coarse, Reel Rotation	2.0
6	CPL-16	Film Take-Up Quantity, Fine (Supply)	1.0
7	CPL-28	Film Take-Up Quantity, Medium	1.0
8	CPL-29	Take-Up Motor Current	1.0

4. Record C/P operating times, ambient temperature and relative humidity on the data sheets. Verify that the CABLE TEST STATUS indicator indicates a "Go" condition.

5. Set the OPERATING POWER to approximately 28 vdc and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 28.0 ± 0.2 vdc after applying to the C/P.

6. Verify that the STEREO SERVO is at Position 2 and the CRAB SERVO is at Position 1. Command the SLIDER to SLIT B (.008 slit).*

   * The dimensions given in the parenthesis are those for a normal slit plate.

ITEM

7. Obtain a digital printout of CPL 1 through 35 and identify the tape. Turn OPERATING POWER "Off".

8. Disconnect connectors P671 and P672 from the STEREO and CRAB SERVO FILTER BOXES, respectively.

9. Mount the LIGHT BOX MOUNTING FIXTURE on the C/P CRADLE outer frame member in front of the STEREO MIRROR and place the LIGHT BOX on the fixture. Disconnect cable W13 from J115 on the TEST CONSOLE. Connect W23 (J115) to the LIGHT BOX from the TEST CONSOLE.

10. Turn off the room lights, dim the console reading lights and operate the CAMERA at SPEED 1 for 30 seconds.

11. Turn the ILLUMINATOR LAMP "On" and set the lamp current to 2.85 amperes.

12. Operate the CAMERA at SPEED 1 for 10 seconds.

13. Adjust the ILLUMINATOR LAMP current fully counterclockwise.

14. Operate the CAMERA at SPEED 1 for 10 seconds and command the SLIDER to SLIT C (.016 slit).

15. Adjust the ILLUMINATOR LAMP current to 2.50 amperes.

16. Operate the CAMERA at SPEED 1 for 10 seconds.

17. Adjust the ILLUMINATOR LAMP current fully counterclockwise.

18. Operate the CAMERA at SPEED 1 for 10 seconds and command the SLIDER to SLIT D (.032 slit).

19. Adjust the ILLUMINATOR LAMP current to 2.50 amperes.

20. Operate the CAMERA at SPEED 64 for 6 seconds.

21. Adjust the ILLUMINATOR LAMP current fully counterclockwise and command the SLIDER to SLIT E (test slit).

22. Operate the CAMERA at SPEED 64 for 60 seconds.

23. Command OPERATING POWER and ILLUMINATOR LAMP "Off".

* The dimensions given in the parenthesis are those for a normal slit plate.

ITEM

24. Turn the room lights on and remove the LIGHT BOX, LIGHT BOX FIXTURE and the COUNTERWEIGHT ASSEMBLY from the C/P CRADLE and reconnect SERVO FILTER BOX connectors P671 and P672.

25. Change the chart recorder inputs as follows:

Recorder Channel	Instrumentation Point	Recorder Range
1	CPL-13 Stereo Position	1 v/cm
2	CPL-14 Crab Position	1 v/cm

26. Command OPERATING POWER "On" and command the SERVOS as follows:

Stereo	Crab
3	8
1	4
2	1

27. Obtain a digital printout of CPL-1 through 35 and identify the tape. Turn OPERATING POWER "Off".

28. Turn off the room lights and remove the exposed record for delivery to the Photo Evaluation Group.

29. Change the chart recorder inputs as follows:

Recorder Channel	Instrumentation Point	Recorder Range
1	CPL-17 Looper Position	1.0 v/cm
2	CPL-18 Film Drive Electronics Output	1.0

30. Reinstall the FRSA and check record tracking.

31. Obtain a printout of CPL-1 through 35 and identify the tape.

32. Turn OPERATING POWER "Off" and record C/P operating times on the data sheets.

TASK 10

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
1	Slit width/configuration*						
	A Slit	Inch	EKR C/P Log		_____		
	B Slit	Inch	EKR C/P Log		_____		
	C Slit	Inch	EKR C/P Log		_____		
	D Slit	Inch	EKR C/P Log		_____		
	E Slit	Inch	EKR C/P Log		_____		
3	All calibration dates are current	Ck			_____		
4	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Ambient Temperature	°F			_____		
	Relative Humidity	%	40	50	_____		

* It is not necessary to actually measure the slit width. This check is to insure that the following tests are performed correctly for unusual slit configurations. Varying slit widths should be noted as such.

TASK 10

DATE _____ C/P _____ TDS-VTP-391

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
4	Cable test status indicator indicates "Go"	Ck			_____		
6	Stereo Servo is at Position #2	Ck			_____		
	Crab Servo is at Position #1	Ck			_____		
8	Connectors P671 and P672 are disconnected	Ck			_____		
24	Servo Connectors P671 and P672 are reconnected	Ck			_____		
26	Servos function normally	Ck			_____		
32	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Test Conductor Initials				_____		

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TASK 10

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
7	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
27	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
30	CPL-17 waveform is normal (Channel #1: 1 v/cm)	Ck			_____		
	CPL-29 maximum (Channel #8: 1 v/cm)	VDC		3.0	_____		
31	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
	Data Reduced By _____						

TASK 11 - FRSA CHECKOUT

ITEM

1. Remove the FRSA from its shipping container per VOI-401 and mount it on the Record Storage Test Set Load Assembly. Record the FRSA and the FRSA REEL serial numbers on the data sheets.

2. Connect the power cable from J702 on the Test Set to a 115 VAC source and cable W4 from J703 on the Test Set to J902 on the Test Set Load Assembly. Connect W1 from J709 on the Test Set to J661 on the FRSA. Verify that the test set calibration is current.

3. Verify that a minimum of 150 feet of record is wound on the Test Set Load Assembly Spool.

4. Reset the RUNNING TIME indicator to zero and set the TEST SELECTOR switch to INSTRUMENTATION.

5. Turn the Test Set power "On" and allow the Test Set to warm up for 15 minutes. Zero the instrumentation meter.

6. Adjust the motor voltage to 32.5 vdc.

7. Set the TIME INTERVAL switch to "6 seconds" and the TEST SELECTOR switch to "Forward Motor". Press the START switch and verify that the unidirectional clutch is engaged after the FRSA motor stops.

8. Set the TEST SELECTOR switch to "Instrumentation".

9. Mount the full wooden core adapter on the FRSA reel and the full inertia disk on the Test Set Load Assembly Spool shaft. Thread the record through the system and tape the record to the core adaptor.

10. Using a DVM, measure and record CPL-15. Reset the QUANTITY COUNTER to 000.0. Set the TIME INTERVAL SWITCH to "Continuous" and the TEST SELECTOR switch to "Forward Motor".

11. Run the FRSA for 30 seconds and record the QUANTITY COUNTER reading at the conclusion of the run.

12. Adjust the motor voltage to 27.0 vdc and reset the QUANTITY COUNTER to 000.0.

ITEM

13. Run the FRSA for 30 seconds and record the QUANTITY COUNTER reading. Using a DVM, measure and record CPL-15 and CPL-2.

14. Set the TEST SELECTOR SWITCH to "Reverse Motor". Operate the FRSA in the reverse direction while manually rewinding all of the record onto the Load Assembly Spool. Verify that the Reverse Motor Operation is normal and enter as such on the data sheets.

15. Remove the wooden core adapter from the FRSA and the inertia disc from the Load Assembly Spool shaft.

16. Set the TEST SELECTOR switch to "Forward Motor" and operate the FRSA in the forward direction for 6 seconds. When the motor stops, verify that the unidirectional clutch is engaged.

17. Rethread the test set-up and tape the record to the FRSA spool.

18. Reset the QUANTITY COUNTER to 000.0 and verify that the motor voltage is 27.0 vdc.

19. Operate the FRSA in the forward direction for 30 seconds and record the QUANTITY COUNTER reading at the conclusion of the run.

20. Adjust the motor voltage to 32.5 vdc and reset the QUANTITY COUNTER to 000.0.

21. Operate the FRSA in the forward direction for 30 seconds and record the QUANTITY COUNTER reading at the conclusion of the run.

22. Set the TEST SELECTOR switch to "Reverse Motor". Operate the FRSA in the reverse direction while manually winding all of the record onto the Load Assembly Spool. Verify that the Reverse Motor Operation is normal and enter as such on the data sheets.

23. Set the TEST SELECTOR switch to "Forward Motor" and verify that CPL-15 reads greater than 5 vdc while the FRSA is operating. Stop the FRSA and verify that the unidirectional clutch is engaged.

ITEM

24. Turn the Test Set Power Switch to "Off" and record the RUNNING TIME.

25. Disconnect cable W1 from J661. Remove the FRSA from the Load Assembly and place on an FRSA handling cart.

TASK 11

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
1	FRSA S/N	#			_____		
	FRSA Reel S/N	#			_____		
2	Calibration is current	Ck			_____		
7	Unidirectional clutch is engaged	Ck			_____		
10	CPL 15	VDC	As Read		_____		
11	Quantity @ 32.5 vdc	Count	As Read		_____		
13	Quantity @ 27.0 vdc	Count	As Read		_____		
	CPL 15	VDC	As Read		_____		
	CPL 2	VDC	As Read		_____		
14	Reverse Motor Operation is Normal	Ck			_____		
16	Unidirectional clutch is engaged	Ck			_____		
19	Quantity @ 27.0 vdc	Count	As Read		_____		
21	Quantity @ 32.5 vdc	Count	As Read		_____		
22	Reverse Motor Operation is normal	Ck			_____		

TASK 11

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
23	CPL 15 (FRSA running)	VDC	5.00		_____		
	Unidirectional clutch is engaged	Ck			_____		
24	Running time	Min	As Read		_____		
	Test Conductor Initials				_____		

TASK 11

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
11	$V1 = \frac{\text{Item 11 Count}}{90}$	In/Sec			_____		
13	$V2 = \frac{\text{Item 13 Count}}{90}$	In/Sec			_____		
19	$V3 = \frac{\text{Item 19 Count}}{90}$	In/Sec			_____		
21	$V4 = \frac{\text{Item 21 Count}}{90}$	In/Sec			_____		
10 & 13	(a) Quantity of record transported as determined by CPL 15 (from Calibration Book)	In			_____		
	(b) Quantity from Test Count $\frac{(\text{Item 11 Count}) + (\text{Item 13 Count})}{3}$	In			_____		
	(c) % Error $= \frac{(a-b)}{(a)}$	%			_____		
	Data Reduced By _____						

TASK 12 - FLIGHT RECORD LOADING AND HARDWARE INSTALLATION

ITEM

1. Set up the chart recorder as follows and verify that all test instruments are in calibration. Set the recorder speed at 1 mm/sec.

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-12	Slit Position *	1.0 v/cm
2	CPL-18	Film Drive Electronics Output	1.0
3	CPL-19	Amplified Data Signals	1.0
4	CPL-20	Platen Position (Coarse)	1.0
5	CPL-15	Film Take-Up Quantity, Coarse, Reel Rotation	2.0
6	CPL-16	Film Take-Up Quantity, Fine (Supply)	1.0
7	CPL-28	Film Take-Up Quantity (Medium)	1.0
8	CPL-29	Take-Up Motor Current	1.0

* Temporary hook-up (see Item #5).

2. Record C/P operating times, ambient temperature and relative humidity on the data sheets. Verify that the CABLE TEST STATUS indicator indicates a "Go" condition.

3. Set the OPERATING POWER to approximately 28 vdc and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 28.0 ± 0.2 vdc after applying to the C/P. Obtain a digital printout of CPL-1 through 35 and identify the tape.

4. Verify that the SLIDER is in position E. If necessary, command the SLIDER to this position. Turn OPERATING POWER "Off".

5. Change the chart recorder inputs as follows:

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-17	Looper Position	1.0 v/cm

ITEM

6. Log the following FLIGHT RECORD information obtained from the record container:

   Can Number
   Lot(s) Identification
   Footage(s) and Total
   Weight of Record
   Weight of Reel
   Weight(s) per foot

7. Remove the screws from the platen mounting and retaining block clamps one at a time and replace with four (4) "new" screws (400-1441-175). Torque to $16 \begin{smallmatrix}+2.5\\-0\end{smallmatrix}$ in-lbs.

8. Unload the remainder of the test record in the SUPPLY CASSETTE and load the FLIGHT RECORD in accordance with VOI-402.

   NOTE: Verify that the container of FLIGHT RECORD had been removed from the refrigerator at least 24 hours prior to the actual loading of the C/P and that a fifty-five (55) foot sensitometric sample has been removed from the flight record.

9. Replace the Supply Reel Clamps and fasten to the bearing blocks using four (4) "new" screws (400-164-148) per VOI-402. Torque to $25 \begin{smallmatrix}+4.0\\-0\end{smallmatrix}$ in-lbs.

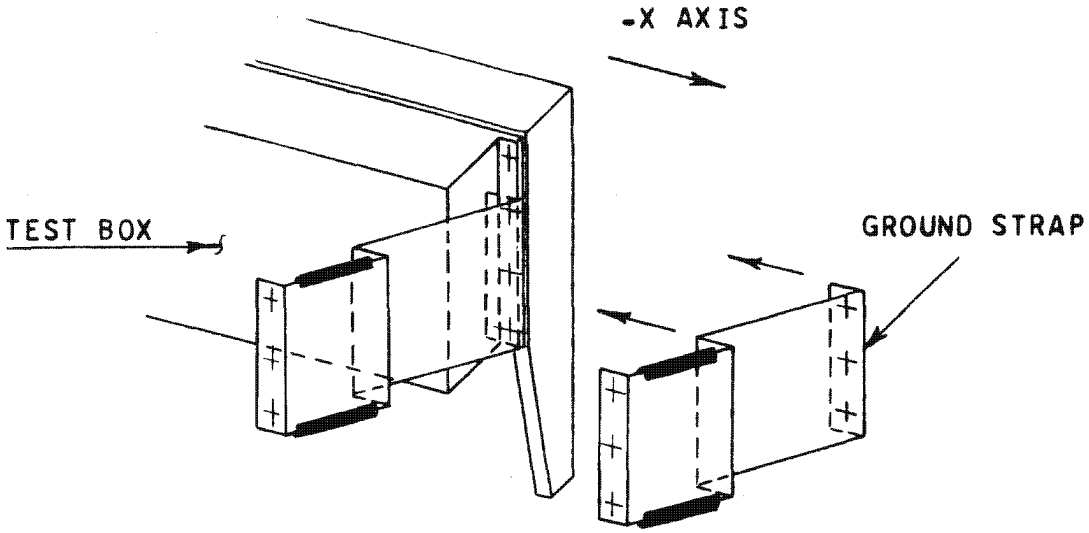
10. Safety wire the Supply Brake Band Retaining Spring per VOI-402. Replace the AIR SUPPLY COVER and fasten with at least six (6) screws (400-164-120).

11. Measure and record the amount of flight record removed during loading, thread-up and splicing. The fifty-five (55) feet removed for the sensitometric check should not be included in this amount.

12. Turn OPERATING POWER "On" and obtain a digital printout of CPL-1 through 35 and identify the tape. Operate the C/P at SPEED 1 for one (1) looper cycle and observe the record tracking on the FRSA rollers. If acceptable, operate the C/P at SPEED 31 for two (2) looper cycles and observe the record tracking on the FRSA rollers. If the system tracking is satisfactory, obtain a digital printout of CPL-1 through 35 and identify the tape, close all access panels and replace the camera cover. Turn the C/P power "Off" and replace the cover on the FRSA mount and enclosure.

ITEM

13. Remove the three lower screws and loosen the top screw on the -X axis end of the TEST BOX. To install the GROUND STRAP (516-202) to the C/P, slip one end under the TEST BOX flange and replace the three screws per 801-116 (C/P Interface). See below. Torque all four (4) screws to 43.9 $^{+7.0}_{-0}$ in-lbs. After assembly, bend the free end of the ground strap back toward the C/P in the -X direction and tape it to the GAIN CONTROL ELECTRONICS ASSEMBLY.



14. Install the complete CAMERA COVER ASSEMBLY (813-100).

15. Record C/P operating times on the data sheets.

TASK 12

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
1	All calibration dates are current	Ck			_____		
2	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Ambient Temperature	°F	68	72	_____		
	Relative Humidity	%	40	50	_____		
	Cable test status indicator indicates "Go"	Ck			_____		
3	CPL 15	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		
	CPL 28	VDC	As Read		_____		
4	Slider is at Position E	Ck			_____		

TASK 12

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
6	Flight Record Information:						
	Can Number	#			_____		
	Lot(s) Identification*						
	(1)	#			_____		
	(2)	#			_____		
	(3)	#			_____		
	(4)	#			_____		
	Footage(s)*						
	(1)	Ft			_____		
	(2)	Ft			_____		
	(3)	Ft			_____		
	(4)	Ft			_____		
	Total	Ft			_____		
	Weight of Record	Lbs			_____		

* If the flight record load consists of more than one type of film, list them from the core out.

Approved for Release: 2024/01/30 C05098940

Unclassified

TASK 12

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
6	Weight of Reel	Lbs			_____		
	Record Weight(s)/foot				_____		
	(1)	Lbs			_____		
	(2)	Lbs			_____		
	(3)	Lbs			_____		
	(4)	Lbs			_____		
7	Four "new" platen screws have been used and torqued to $16 \begin{smallmatrix}+2.5\\-0\end{smallmatrix}$ in-lbs	Ck			_____		
8	Sensitometric strip has been removed from the flight record load	Ck			_____		
9	Four "new" Supply Reel Clamp Screws have been used and torqued to $25 \begin{smallmatrix}+4.0\\-0\end{smallmatrix}$ in-lbs	Ck			_____		
10	Supply Brake Band Spring has been safety wired	Ck			_____		
11	Flight Record removed in loading	Ft			_____		

Approved for Release: 2024/01/30 C05098940

TASK 12

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
12	CPL 15 (Start)	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		
	CPL 28	VDC	As Read		_____		
	CPL 17, 18, 19, 15, 16, 28 and 29 indications and tracking are normal	Ck			_____		
	CPL 15 (Finish)	VDC	As Read		_____		
	CPL 16	VDC	As Read		_____		
	CPL 28	VDC	As Read		_____		
	All panels and covers are replaced	Ck					
13	Ground Strap is installed	Ck			_____		
14	Complete Camera Cover is installed	Ck			_____		
15	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		

TASK 12

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
15	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Test Conductor Initials						

TASK 13 - FLIGHT RECORD PHOTOGRAPHIC VALIDATION AND SLIT EVALUATION

PREFACE

This task outlines the requirements necessary to produce Flight Record Validation and Slit Evaluation samples. The Flight Record Validation portion of this test is performed at the BPF platen position and C/P SET POINT Temperature. Prior to conducting this task the BPF platen position and slit plate configuration should be determined.

C/P TEMPERATURE

The C/P SET POINT temperature should be entered in the appropriate section of the TASK 13 data sheets. The C/P temperature for TASK 13 is defined as follows:

1. The temperature indicated by CPL's 4, 5 and 6 shall be averaged and this temperature shall be held to within ± .2° of the C/P SET POINT temperature for the duration of the test. The average of this temperature at the beginning of the run and at the conclusion of the run is considered to be the C/P temperature for the task.

2. The temperatures indicated by CPL's 7, 8, 9 and 11 shall be averaged and this temperature shall be held to within ± .5°F of the C/P SET POINT temperature for the duration of the test. The calculations as required above are included in the TASK 13 data sheets.

TASK 13 SET-UP

The following procedure should be followed prior to the TASK 13 run:

1. The COLLIMATOR FLAT MIRROR should be in place in the collimator at least 3 hours prior to an anticipated run. See VOI-403. Periodic COLLIMATOR focus stability and image quality checks should be made during the "soak" period preceding the run.

2. The MICROSCOPE ASSEMBLY should be properly positioned on the COLLIMATOR TARGET BED when the FLAT MIRROR is put in place.

NOTE: The first time that the MICROSCOPE ASSEMBLY is placed on the COLLIMATOR TARGET BED, the dial indicator located beneath the microscope eyepiece should be checked against the MICROSCOPE vernier. When the vernier reads 2.851 inches

the dial indicator should read 0.000. Adjust the dial indicator if necessary to satisfy this criterion.

3. A 0.028 inch shim and a feeler gage thickness of 0.040 inch should be placed between the front locating button on the MICROSCOPE base and the TARGET BED forward stop. The two locating buttons on the left side of the MICROSCOPE base should contact the corresponding stop bar.

4. The COLLIMATOR FLAT MIRROR position should be adjusted so that the image can be viewed approximately in the center of the MICROSCOPE field.

5. With the microscope lamp power supply on and set at 6 volts, the MICROSCOPE should be adjusted to achieve the best possible image. Three to five dial indicator readings should be taken to obtain an average best focus position.

6. The feeler gage thickness should then be adjusted to make the dial indicator read 0.000 at the best focus position.

7. When all of the above requirements are met, the microscope, the 0.028 inch shim and the COLLIMATOR FLAT MIRROR should be removed.

8. The TARGET ASSEMBLY locating buttons should be placed against the front and side target base stops on the COLLIMATOR TARGET BED. The feeler gage thickness determined in step 6 should be in place between the forward button and the forward target base stop. The clamp at the right side of the target assembly should be engaged so that the target is held firmly against the stops.

ITEM

1. Check the COLLIMATOR focus per VOI-403 and record the feeler gage reading on the data sheets. Record the BPF platen position (CPL-20 & CPL-27).

2. Set up the chart recorder as follows and verify that all test instruments are in calibration. Set the recorder speed at 1 mm/sec.

ITEM

2.

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-13	Stereo Position*	1.0 v/cm
2	CPL-18	Film Drive Electronics Output	1.0
3	CPL-19	Amplified Data Signals	1.0
4	CPL-12	Slit Position	1.0
5	CPL-20	Platen Position (Coarse)	1.0
6	CPL-16	Film Take-Up Quantity, Fine (Supply)	1.0
7	CPL-28	Take-Up Quantity, Medium	1.0
8	CPL-29	Take-Up Motor Current	1.0

* Temporary hook-up (see Item #8).

3. Record C/P operating times, ambient temperature and relative humidity on the data sheets. Verify that the CABLE TEST STATUS indicator indicates a "Go" condition.

4. Set the OPERATING POWER to approximately 28 vdc and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 28.0 ± 0.2 vdc after applying to the C/P.

5. Place a counterbalance beneath the STEREO MIRROR TRUNNION and adjust by adding weights until both the top and bottom rollers on the Stereo Mirror Bridge are "free". Exercise the STEREO SERVO as follows:

FROM	TO
2	3
3	1
1	3
3	1
1	2

Check to see that the rollers are still "free" and adjust the counterweight, if necessary.

6. Align the C/P to the Collimator for on-axis photo testing (refer to VOI-403). Command the SLIDER to SLIT B (0.008 inch slit).

ITEM

7. Turn the ILLUMINATOR MOTOR and ILLUMINATOR LAMP "On". Set the ILLUMINATOR MOTOR for CAMERA SPEED 31 (Freq.: approx. 4.2KC/Counter Reading: 1437) and the ILLUMINATOR LAMP current at 3.50 amperes. Allow both to run for 15 minutes.

8. Change the chart recorder inputs as follows:

Recorder Channel	Instrumentation Point	Recorder Range
1	CPL-17 Looper Position	1.0 v/cm

9. Record the PACKAGE INSTRUMENTATION VOLTAGE and verify that the STEREO SERVO is at position #2, the CRAB SERVO at position #1 and the PLATEN at the BPF platen position.

10. Obtain a digital printout of CPL-1 through 35 and identify the tape. Calculate the C/P temperature and compare to acceptable limits.

11. Adjust the ILLUMINATOR LAMP current fully counterclockwise.

12. Turn the room lights off, turn OPERATING POWER "On" and operate the CAMERA at SPEED 31 for 10 seconds.

13. Adjust the ILLUMINATOR LAMP current to 3.50 amperes. Check the target rotational period; this should read 1437.

14. Operate the CAMERA for 7 seconds.

15. Command the SLIDER to SLIT C (0.016 inch slit) and adjust the ILLUMINATOR LAMP current to 3.15 amperes.

16. Operate the CAMERA for 7 seconds.

17. Command the SLIDER to SLIT D (0.032 inch slit) and adjust the ILLUMINATOR LAMP current to 2.93 amperes.

18. Operate the CAMERA for 7 seconds.

19. Adjust the ILLUMINATOR LAMP current fully counterclockwise and operate the CAMERA for 10 seconds. Turn C/P power "Off". The target drum shall be kept running.

ITEM

20. After a 15 minute interval adjust the ILLUMINATOR LAMP current to 2.93 amperes and check the target rotational period; this should read 1437.

21. Turn C/P power "On" and operate the CAMERA for 7 seconds.

22. Command the SLIDER to SLIT C (0.016 inch slit) and adjust the ILLUMINATOR LAMP current to 3.15 amperes.

23. Operate the CAMERA for 7 seconds.

24. Command the SLIDER to SLIT B (0.008 inch slit) and adjust the ILLUMINATOR LAMP CURRENT to 3.50 amperes.

25. Operate the CAMERA for 7 seconds. Adjust the ILLUMINATOR LAMP current fully counterclockwise and operate the CAMERA for 10 seconds. Turn C/P power "Off". The target drum shall be kept running.

26. After a 15 minute interval adjust the ILLUMINATOR LAMP current to 3.50 amperes and check the target rotational period; this should read 1437.

27. Turn C/P power "On" and operate the camera for 7 seconds.

28. Command the SLIDER to SLIT C (0.016 inch slit) and adjust the ILLUMINATOR LAMP current to 3.15 amperes.

29. Operate the CAMERA for 7 seconds.

30. Command the SLIDER to SLIT D (0.032 inch slit) and adjust the ILLUMINATOR LAMP current to 2.93 amperes.

31. Operate the CAMERA for 7 seconds.

32. Adjust the ILLUMINATOR LAMP current fully counterclockwise and operate the CAMERA for 10 seconds.

33. Obtain a digital printout of CPL 1 through 35 and identify the tape. Calculate C/P temperature.

    NOTE: Room lights may be turned on.

34. Change the chart recorder inputs as follows:

ITEM

34.

Recorder Channel	Instrumentation Point	Recorder Range
5	CPL-15 Film Take-Up Quantity, Coarse, Reel Rotation	2.0

35. Verify that the STEREO SERVO is at position 2 and the CRAB SERVO is at Position 1. Command the SLIDER to SLIT B (.008 inch slit). Turn the OPERATING POWER and ILLUMINATOR LAMP "Off".

36. Disconnect connectors P671 and P672 from the STEREO and CRAB SERVO FILTER BOXES, respectively.

37. Mount the LIGHT BOX MOUNTING FIXTURE on the C/P CRADLE outer frame member in front of the STEREO MIRROR and place the LIGHT BOX on the fixture. Connect W23 (J115) to the LIGHT BOX from the TEST CONSOLE.

38. Turn the room lights off, dim the console reading lights and turn the ILLUMINATOR LAMP "On". Set the lamp current to 2.85 amperes.

39. Operate the CAMERA at SPEED 1 for 10 seconds.

40. Adjust the ILLUMINATOR LAMP current fully counterclockwise.

41. Operate the CAMERA at SPEED 1 for 10 seconds and command the SLIDER to SLIT C (.016 inch slit).

42. Adjust the ILLUMINATOR LAMP current to 2.50 amperes.

43. Operate the CAMERA at SPEED 1 for 10 seconds.

44. Adjust the ILLUMINATOR LAMP current fully counterclockwise.

45. Operate the CAMERA at SPEED 1 for 10 seconds and command the SLIDER to SLIT D (.032 inch slit).

46. Adjust the ILLUMINATOR LAMP current to 2.80 amperes.

47. Operate the CAMERA at SPEED 64 for 6 seconds.

48. Adjust the ILLUMINATOR LAMP current fully counterclockwise and command the SLIDER to SLIT E (test slit).

ITEM

49. Operate the CAMERA at SPEED 64 for 60 seconds.

50. Command the OPERATING POWER and ILLUMINATOR LAMP "Off".

51. Turn the room lights on and remove the LIGHT BOX, LIGHT BOX FIXTURE and the COUNTERWEIGHT ASSEMBLY from the C/P CRADLE and reconnect FILTER BOX connectors P671 and P672.

52. Change the chart recorder inputs as follows:

Recorder Channel	Instrumentation Point	Recorder Range
1	CPL-13 Stereo Position	1.0 v/cm
2	CPL-14 Crab Position	1.0

53. Command the OPERATING POWER "On" and command the SERVOS as follows:

STEREO	CRAB
3	8
1	1
2	1

54. Determine the desired FLIGHT PLATEN POSITION from the vehicle manager and command the PLATEN to this position. Record CPL-20 and 27.

55. Obtain a digital printout of CPL-1 through 35 and BBT-3 & 4 and identify the tape. Turn OPERATING POWER "Off" and record C/P operating times on the data sheets.

56. Turn off room lights and remove the exposed record for delivery to the Photo Evaluation Group. Record waste during removal of exposed record.

57. Replace the enclosure on the FRSA mount.

TASK 13

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
1	Feeler gage reading	In	As Read		_____		
	BPF Platen Position (CPL-20)	VDC	Consult VM		_____		
	(CPL-27)	VDC	Consult VM		_____		
2	All calibration dates are current	Ck			_____		
3	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Ambient Temperature	°F			_____		
	Relative Humidity	%	40	50	_____		
	Cable test status indicator indicates "Go"	Ck			_____		

TASK 13

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
9	Package Instrumentation Voltage	VDC	4.975	5.025	_____		
	Stereo Servo at Position #2	Ck	Position #2		_____		
	Crab Servo at Position #1	Ck	Position #1		_____		
	Platen Position	Ck	BPF Position		_____		
10	Set Point Temperature	°F	From EKR C/P Log		_____		
	Temperature Calculations						
	CPL-4: _____ VDC = _____ °F						
	CPL-5: _____ VDC = _____ °F						
	CPL-6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. ±0.2°F		_____		
	CPL-7: _____ VDC = _____ °F						
	CPL-8: _____ VDC = _____ °F						
	CPL-9: _____ VDC = _____ °F						
	CPL-11: _____ VDC = _____ °F						

TASK 13

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	Temperature Average	°F	Set Pt. ±0.5°F		_____		
33	Temperature Calculations						
	CPL-4: _____ VDC = _____ °F						
	CPL-5: _____ VDC = _____ °F						
	CPL-6: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. ±0.2°F		_____		
	CPL-7: _____ VDC = _____ °F						
	CPL-8: _____ VDC = _____ °F						
	CPL-9: _____ VDC = _____ °F						
	CPL-11: _____ VDC = _____ °F						
	Temperature Average	°F	Set Pt. ±0.5°F		_____		
35	Stereo Servo at Position #2	Ck			_____		
	Crab Servo at Position #1	Ck			_____		
	Slider at Slit B	Ck			_____		
36	Connectors P671 and P672 are disconnected	Ck			_____		

TASK 13

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
51	Connectors P671 and P672 are reconnected	Ck			_____		
53	Servos function normally	Ck			_____		
54	Flight Platen Position						
	CPL-20	VDC	As Read		_____		
	CPL-27	VDC	As Read		_____		
55	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
56	Record Waste	Ft	As measured		_____		
	Test Conductor Initials				_____		

TASK 13

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED	NON-CONFORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
10	CPL-3	VDC	As Read		_____		
	CPL-5	VDC	As Read		_____		
	CPL-13	VDC	2.50	2.66	_____		
	CPL-14	VDC	0.38	0.64	_____		
	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
33	CPL-3	VDC	As Read		_____		
	CPL-5	VDC	As Read		_____		
	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		

TASK 13

DATE _____ C/P _____ DRS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE PARAGRAPH REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
55	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
	CPL-20	VDC	As Read		_____		
	CPL-27	VDC	As Read		_____		
	BBT-3 in K ohms _____	°F	As Read		_____		
	BBT-4 in K ohms _____	°F	As Read		_____		
	Data Reduced By _____						

TASK 14 - FINAL C/P PREPARATION FOR MATING

PREFACE

The purpose of this procedure is to outline the final mechanical assemblies and disassemblies required to prepare the C/P for mating.

ITEM

1. The amount of FLIGHT RECORD to be removed should be ascertained from Quality Control. If a significant amount of record must be removed, the test FRSA should be re-mounted to the FRSM & EA and the chart recorder should be set up as follows:

Recorder Channel	Instrumentation Point		Recorder Range
1	CPL-17	Looper Position	1.0 v/cm
2	CPL-18	Film Drive Electronics Output	1.0
3	CPL-19	Amplified Data Signals	1.0
4	CPL-20	Platen Position (Coarse)	1.0
5	CPL-15	Film Take-Up Quantity, Coarse, Reel Rotation	2.0
6	CPL-16	Film Take-Up Quantity, Fine (Supply)	1.0
7	CPL-28	Film Take-Up Quantity, Medium	1.0
8	CPL-29	Take-Up Motor Current	1.0

2. Record C/P operating times, ambient temperature and relative humidity on the data sheets. Verify that the CABLE TEST STATUS indicator indicates a "Go" condition.

3. Set the OPERATING POWER to approximately 28 vdc and apply to the C/P. Using the TEST CONSOLE DVM adjust this voltage to 28.0 ± 0.2 vdc after applying to the C/P.

4. Obtain a printout of CPL 1 through 35 and identify the tape. Transmit the CPL 15, 16 and 28 readings to QC so that they may determine the desired final readings.

5. Command the CAMERA "On" long enough to transport the desired amount of FLIGHT RECORD. Use the chart record as a rough estimate of the footage sensor readings and the TEST CONSOLE DVM for the final readings. Obtain a printout of CPL 1 through

ITEM

6. Command the C/P power "Off" and record the C/P operating times. Remove the TEST FRSA and deliver the record to the Photo Evaluation Group for a measurement of the length.

7. Remove the C/P from the Collimator per VOI-403 and install the Cover Assembly (Aperature Mask).

8. Move the C/P and TRUCK under the Room 108 hoist so that the hoist hook can be attached to the lifting eye on the FORWARD RECORD STORAGE MOUNT and ENCLOSURE ASSEMBLY (FRSM & EA).

9. Turn the room lights "Off" and remove the screws holding the bellows flange to the DUMMY DUST SHIELD on the SUPPLY CASSETTE.

NOTE: Maintain record tension during all subsequent operations.

10. Transfer the weight of the FRSM & EA to the hoist and remove all of the bolts holding the FRSM & EA to the TRUCK.

11. Cut the record at the FRSA TAKE-UP SPOOL and maintain record tension at the access door on the FRSM & EA.

12. Use the hoist to raise the FRSM & EA slightly and move the entire assembly forward and clear of the truck. The source of record tension will have to be transferred from the enclosure door to a point between the DUMMY DUST SHIELD and BELLOWS FLANGE as the FRSM & EA is moved forward.

13. Move the FRSM & EA clear of the truck and place on dollies.

14. Remove the dummy dust shield from the end of the supply cassette.

15. Seal the record (under tension) to the end of the supply cassette and completely seal the opening at the supply cassette with black photographic tape.

16. Tie the Primary Dust Shield so that it is tightly drawn around the +X axis end of the Air Supply.

17. Make certain that the reference mirror is still mounted to the C/P STRUCTURAL RING.

ITEM

18. Verify that the stow pins have not been removed and that they are in a locked position.

19. Move the C/P into Room 106 and prepare the C/P for C/P integration per VOI-412, Sections 6.1 - 6.7 inclusive.

TASK 14

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
2*	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
	Ambient Temperature	°F			_____		
	Relative Humidity	%	40	50	_____		
	Cable Test Status Indicator indicates "Go"	Ck			_____		
4*	CPL-15	VDC			_____		
	CPL-16	VDC			_____		
	CPL-28	VDC	As Read		_____		

* To be completed only if it is necessary to operate the C/P.

TASK 14

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
5*	CPL-15	VDC	As Read		_____		
	CPL-16	VDC	As Read		_____		
	CPL-28	VDC	As Read		_____		
	CPL-20	VDC	As Read		_____		
6*	Operating Times						
	Operating Power	Hrs			_____		
	Heater Power	Hrs			_____		
	MSD	Hrs			_____		
	MSD Operations	Oper			_____		
	Gain Control	Hrs			_____		
7	Cover Assembly (Aperature Mask) is Installed	Ck			_____		
16	Primary Dust Shield Assembly is tied	Ck			_____		
17	Reference Mirror is attached	Ck			_____		
18	Stow Pins are in and locked	Ck			_____		

* To be completed only if it is necessary to operate the C/P.

TASK 14

DATE _____ C/P _____ TDS-VTP-301

PROCEDURE PARAGRAPH REFERENCE	FUNCTION					NON-CON-FORMANCE REFERENCE	PROCEDURE DEVIATION REFERENCE
	DESCRIPTION	UNITS	REQUIRED MIN	REQUIRED MAX	MEASURED		
19	C/P is in the Erector	Ck			_____		
	Integration Lifting Yoke set-up per the Weight & Balance Summary in the Rochester QC Acceptance Log:						
	Z-axis	In	As Read		_____		
	Y-axis	In	As Read		_____		
	Integration Lifting Yoke is attached to the C/P	Ck			_____		
	Test Conductor Initials				_____		