[redacted]

1013

15 September 1964

To: [redacted]

From: [redacted]

Subject: J-15 RESOLUTION TEST RESULTS

Instrument 158 exhibited a resolution that peaked at a collimator setting lower than any instrument since J-1.

Planning and Evaluation (P&E) withheld approval until data was presented to show that instrument #158 performance is acceptable for flight.

P&E approved the resolution performance of instrument #158, 9-14-64, based on the following data and conclusions.

1. The 112 line/mm peak resolution at -0.002 collimator setting is within the 3 sigma tolerance of the A/P resolution test method used.

   The A/P collimator resolution peak point average for the past 22 instruments is -0.00075. The three sigma tolerance limit is ± 0.0015. The A/P collimator settings that encompass 3 sigma limits are -0.00225 +0.00075. The collimator value for instrument #158 was between the above limits and is 0.00200. See Figure 1.

2. Two A/P resolution tests show the peak at -0.00200. This indicates stable instrument mechanical performance.

3. Figure I shows stable collimator performance for the past year with no drift of the collimator standard aim points (-0.001 for A/P, 000 for Boston).

4. Figure 2 compares A/P vs Itek through focus data for instruments 158 and 159. The rapid fall off of resolution to the right of the A/P peak is a characteristic of the A/P collimation equipment and is not peculiar to J-15. The rapid fall off of resolution to the right of the A/P peak is attributed to astigmatism in the A/P collimator lens.

Signed: [redacted]
Planning & Evaluation

[redacted]

Approved: [redacted]
Planning & Evaluation

cc: [redacted]

[redacted]

Prepared	[redacted]	9-1[redacted]	LOCKHEED MISSILES & SPACE COMPANY A GROUP DIVISION OF LOCKHEED AIRCRAFT CORPORATION	Page
Checked			TITLE LOW CONTRAST RESOLUTION COMPARISON A/P VS BOSTON J SYSTEMS	FIGURE 1 Model
Approved				Report No.

NOTE: LOW CONTRAST PEAK RESOLUTION REQUIREMENT

J-15 ACCEPTED AS WITHIN 3 SIGMA LIMIT OF TEST METHOD USED

BOSTON: 90 LI/mm (min.) at 000 COLUMN. SETTING
A/P: 90 LI/mm (min.) at -.001 COLUMN. SETTING

SYSTEM	INSTRUMENT NUMBER	PEAK RESOLUTION (LI/mm) AT COLUMNATOR SETTING (INCHES) A/P	PEAK RESOLUTION (LI/mm) AT COLUMNATOR SETTING (INCHES) BOSTON	RESOLUTION AT ACCEPTED COLLIMATOR PEAK POINT STANDARD A/P(-.001")	RESOLUTION AT ACCEPTED COLLIMATOR PEAK POINT STANDARD BOSTON(000")	TEST DATE A/P	TEST DATE BOSTON
J-3X	160	115, -.001	130-000	115	130	8-13	4-
	161	120, -.001	125-000	120	125		
J-15	158	112, -.002	130-000	96	130	8-27	
	159	104, -.001	129-000	104	129		
J-13	156	114, -.001	131 - 000	114	131	7-11	3-21-
	157	119, -.001	131 - 000	119	131		
J-12	154	102, -.001	131 - 000	102	131	6-20	3-3-
	155	110, .000	137 - 000	105	139		
J-11	152	127, -.0005	128, -.0005	125	128	6-5	3-3-6
	153	109, -.0005	128, -.0005	105	128		
J-10	150	112, -.001	131, 000	112	131	5-7	2-3-6
	151	113, -.001	127, 000	113	127		
J-9	148	109, -.001	129, 000	109	129	4-21	1-8-6
	149	106, 000	129, 000	97	129		
J-8	146	105, -.001	127, 000	105	127	4-1	1-4-6
	147	113, -.001	131, 000	113	131		
J-7	144	108, -.0005	126, 000	105	126	4-24	12-24-
	145	110, -.001	123, 000	110	123		
J-6	126	114, -.001	132, 000	114	132	3-2-64	7-11-6
	143/127	108, -.0005	131, 000	108	131		
J-5	124	107-000	131, 000	98	131	1-26-64	
	125	108, +.0005	135, 000	85	135		5-16-
J-4							
		NOT USED IN 3 SIGMA LIMIT CALCULATION					
J-3	118	88, -.0005		85		9-19-63	
	119	94, -.0015		95			
J-2	116	90, -.0015	143, -.001	89	130	8-21-63	
	117	97, -.002	133, -.001	82	115		1-28-
J-1	114	88, -.003	135, -.001	80		8-2-63	
	115	95, -.0025	140, -.001	80			12-31-1962
3 SIGMA LIMIT		±0.0015	±0.0005				

	NAME	DATE	LOCKHEED MISSILES & SPACE COMPANY	Page 1
Prepared			TITLE INSTRUMENT 168 J-15 LOW CONTRAST	Model FIGURE 2
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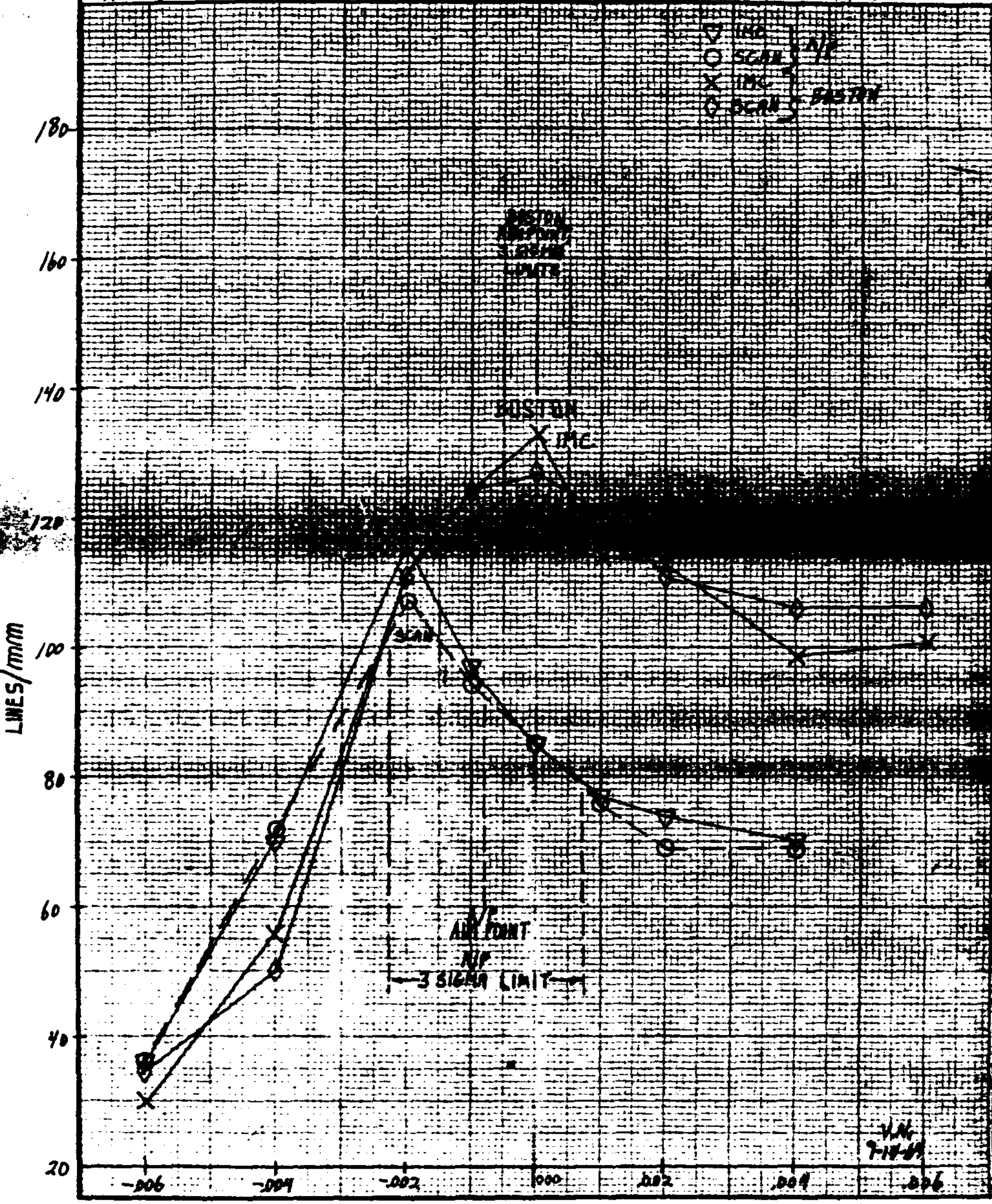
Approved				Report No.



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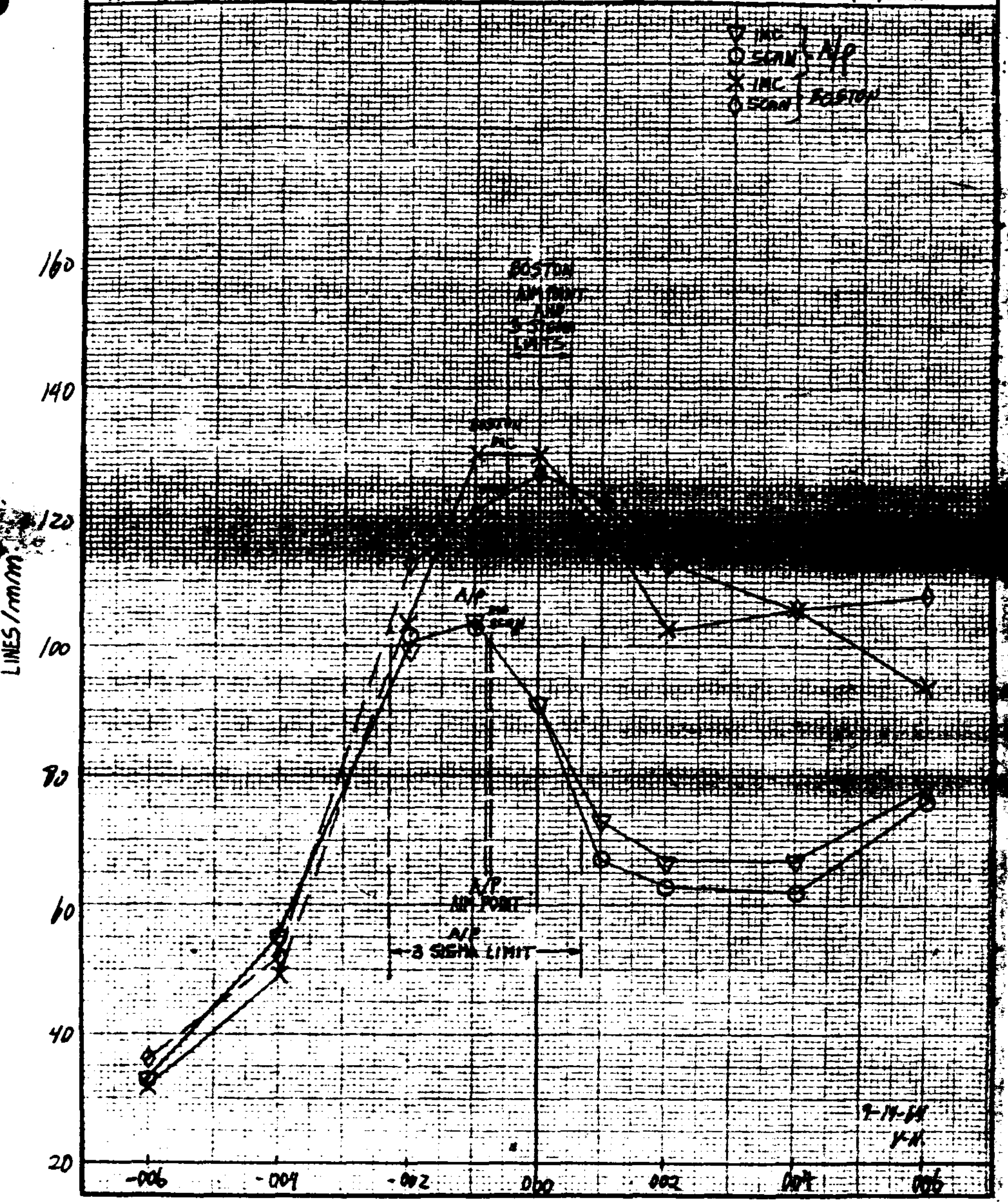
Checked			TITLE INSTRUMENT 159 J-15	Model FIGURE 2		
Approved			LOW CONTRAST	Report No.		



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