EXECUTIVE RISK ASSESSMENT SUMMARY

HAZARD REPORT NUMBER: LW-PS-RAES-3A	DATE: 7/96
REV. LETTER:	REV. DATE:
PART NUMBER: 950001-1	LRU NUMBER: SED39129185
TITLE: Unable to restrain crew member.	1. SEVERITY: Catastrophic 2. LIKELIHOOD OF OCCURRENCE: Improbable 3. CLASSIFICATION: Controlled
CAUSE: A. Restraint system inertia reel fails to restrain crew member's upper torso during launch/landing.	REDUNDANCY SCREENS: A - Pass B - Pass C - Pass
FMEA: LWS-PS-RAES-3A Criticality: 1R/2 Name/Quantity: Inertia Reel/1 Function: Restrains crew member's upper torso. Failure Mode: Internal components of inertia reel fail resulting in no upper torso restraint. Corrective Action: None	Cause: Contamination, excessive wear, piece-part defect Failure detection: Crew notices unrestricted movement of shoulder belts.
EFFECT: Time to Effect: Immediate Time to Correct: N/A Failure Effect: Restraint system inadequate to provide support/ restraint for nominal flight loads or crash loads. Possible crew injury/ loss of crew due to crewmember being tossed during turbulence, landing or following a failure which results in a crash landing.	REMAINING PATHS: None
CONTROL/RETENTION RATIONALE: **DESIGN:** 1. Designed for minimum access for contamination. 3. Restraint system inertia reel will be designed to withstand vibrations associated with Launch, RTLS and Landing. **TEST:** 2. Functional test performed before and after each certification test and acceptance testing with QA participation. **INSPECTION:** **FAILURE HISTORY:** **OPERATIONAL USE:** **MAINTAINABILITY:**	

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VERIFICATION:

1. During assembly all parts are checked to be clean.

2a. PDA 4.2.8.10, PIA 4.2.8.10 Verify the inertial reel manual lock functionality. Move the inertia reel controller to manual lock position. The inertia reel shall prevent the lead-in strap from extending more than 1/2 inch when pulled forward.

2b. PDA 4.2.8.12, PIA 4.2.8.12 Verify the inertia reel automatic lock functionality. Extend the lead-in strap approximately nine inches with the inertia reel controller in the automatic lock position. Hold the lead-in strap with one hand and strike the strap sharply with the other hand. The inertial reel shall lock the strap with a maximum payout of 1.5 inches or less.

3. A vibration test has been performed (QVT TPS FV9620123) to the acceptance levels listed below and approved by EM2:

Frequency Range (Hz)	Level		
20	0.010	g2/Hz	
150	0.030	g2/Hz	
350	0.030	g2/Hz	
1000	0.030	g2/Hz	
2000	0.0075	g2/Hz	Overall = 6.1 grms