EXECUTIVE RISK ASSESSMENT SUMMARY

HAZARD REPORT NUMBER: LW-PS-RAES-3B	DATE: 7/96
REV. LETTER:	REV. DATE:
PART NUMBER: 950001-205	LRU NUMBER: SED39129185
TITLE: Unable to restrain crew member.	1. SEVERITY: Catastrophic 2. LIKELIHOOD OF OCCURRENCE: Improbable 3. CLASSIFICATION: Controlled
CAUSE: B. Restraint system release buckle internal mechanism fails.	REDUNDANCY SCREENS: A - Pass B - Pass C - Pass
FMEA: LWS-PS-RAES-3B Criticality: 1R/2 Name/Quantity: Restraint release buckle/1 Function: Restrain crew member in the seat. Failure Mode: Internal buckle mechanism fails to hold each restraint harness belt in place or inadvertently releases all belts. Corrective Action: Crew will rebuckle loose belt.	Cause: Excessive wear, piece-part defect, vibration Failure detection: Crew member notices release of a belt.
EFFECT: Time to Effect: Immediate Time to Correct: Seconds 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:** 2. Restraint system harness will be designed to withstand vibrations associated with Launch, RTLS and Landing. 3. Designed for minimum access for contamination. 4. Even though the loss of a belt could result in injury to the crew during a crash, it has been determined that in a crash situation that the restraint provided by the remaining belts will provide some level of protection and is considered better than no restraint at all. **TEST:** 1. 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. PDA 4.2.8.6, PIA 4.2.8.6 Verify that the fittings for the shoulder and lap belts will release from the buckle. With a small preload on the harness system, 20 +/- 2 pounds, release the fittings from the buckle by using one hand and turn the buckle release clockwise. Repeat for counter-clockwise.
2. 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	
80	0.030 g2/Hz	
350	0.030 g2/Hz	
1000	0.030 g2/Hz	
2000	0.0075 g2/Hz	Overall = 6.1 grms

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