

CRITICAL ITEMS LIST (CIL)

SYSTEM:	ASI	FUNCTIONAL CRIT:	1
SUBSYSTEM:	ET Interface Hardware	PHASE(S):	a, b
REV & DATE:	J, 12-19-97	HAZARD REF:	S.11
DCN & DATE:			
ANALYSTS:	C. Rush/E. Howell		

FAILURE MODE: Structural Failure

FAILURE EFFECT: a) Loss of mission and vehicle/crew due to fire/explosion.  
 b) Loss of mission and vehicle/crew due to fire/explosion or debris source to Orbiter from bearing and bushings.

TIME TO EFFECT: Immediate

FAILURE CAUSE(S): A: Improper Manufacture  
 B: Failure of Bearings

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: LH2 feedline/umbilical support brackets.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
4.5.5.1	80911071718-009	Fitting, Crossbeam LH2 Line Support	1	LWT-54 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)  
CONTINUATION SHEET

SYSTEM: ASI  
SUBSYSTEM: ET Interface Hardware  
FMEA ITEM CODE(S): 4.5.5.1

REV & DATE: J, 12-19-97  
DCN & DATE:

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RATIONALE FOR RETENTION

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DESIGN:

A, B: The fitting is machined from a 7050-T74 aluminum alloy die forging. Materials selected for this part number are in accordance with MMC-ET-SE16 which assures repetitive conformance of composition and properties. Surface integrity is assured by penetrant inspection per STP2501. The fitting, bearing, bushing and attachment hardware are designed to the required ultimate safety factor of 1.4 (ET Stress Report 826-2188).

TEST:

The Fitting, Crossbeam LH2 Line Support is certified. Reference HCS MMC-ET-TM08-L-S104 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S516 (LWT-89 & Up).

Vendor:

A, B: Bearing, bushing and lock ring are procured and tested to standard drawings 36L3, 36L8 and M27426.

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

- A, B: Verify materials selection and verification controls (MMC-ET-SE16, STM5168, STM-0-250, drawing 80911071717, standard drawings 36L8, 36L3 and M27426).
- A: Inspect dimensional conformance (drawing 80911071718).
- A: Penetrant inspect part (drawing 80911071718 and STP2501 Type 1 Method A).
- A: Inspect retaining ring installation (drawing 80911071718 and STP2025).

FAILURE HISTORY:

Current data on test failures, unexplained anomalies and other failures experienced during ground processing activity can be found in the PRACA data base.