

CRITICAL ITEMS LIST (CIL)

SYSTEM: ASI  
 SUBSYSTEM: ET Interface Hardware  
 REV & DATE: J, 12-19-97  
 DCN & DATE:  
 ANALYSTS: C. Rush/E. Howell

FUNCTIONAL CRIT: 1  
 PHASE(S): b  
 HAZARD REF: S.11

FAILURE MODE: Structural Failure

FAILURE EFFECT: b) Loss of mission and vehicle/crew due to collapse of interface system resulting in fire/explosion or debris source to Orbiter.

TIME TO EFFECT: Immediate

FAILURE CAUSE(S):  
 A: Improper Manufacture  
 B: Failure of Attaching Hardware  
 C: Failure of Attaching Hardware (Debris Source)

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: Provides aft support interface for RH Orbiter/ET attach.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
4.5.18.1	80911071764-019	Ball Fitting Assembly (EO-3)	1	LWT-54 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)  
CONTINUATION SHEET

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RATIONALE FOR RETENTION

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DESIGN:

- A-C: The fitting is machined from 7050-T74 aluminum alloy forging. Materials selected for this part number are in accordance with MMC-ET-SE16 which assures repetitive conformance of composition and properties. Part integrity is assured by ultrasonic inspection per MIL-I-8950 and penetrant inspection per STP2501. The ball fitting and attachment hardware are designed to the required ultimate safety factor of 1.4 (ET Stress Report 826-2188).
- B, C: Attaching hardware is selected from the Approved Standard Parts List (ASPL 826-3500), installed per STP2014 and torqued using values specified on Engineering drawings. Tensile installation loads are sufficient to provide screening for major flaws in individual fasteners.

TEST:

The Ball Fitting Assy (EO-3) is certified. Reference HCS MMC-ET-TM08-L-S115 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-SS16 (LWT-89 & Up).

Vendor:

- B, C: Attaching fasteners are procured and tested to standard drawings 26L2 and 33L2.

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

- A-C: Verify materials selection and verification controls (MMC-ET-SE16, STM5168, STM-Q-250, drawings 80911071772 and standard drawings 26L2 and 33L2).
- A: Inspect dimensional conformance (80911071764).
- A: Ultrasonic inspect part (80911071772).
- A: Penetrant inspect part (drawing 80911071764 and STP2501 Type 1 Method A and C).

MAF Quality Inspection:

- B, C: Inspect that attaching hardware is free from damage (drawing 80911071790 and STP2014).
- A-C: Verify installation and witness torque (drawing 80911071790).

Launch Site:

- A: Inspect condition of ball fitting surface (OMRSD File II).

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.