

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): a, b
 HAZARD REF: S.11

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 fitting, bushings and attaching hardware.

TIME TO EFFECT: Immediate

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

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: Provide hinge fitting between LH2 feedline support and crossbeam.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
4.5.7.1	80911071716-009	Fitting Assembly, LH2 Line Support	1	LWT-54 & Up
4.5.8.1	80911071716-010	Fitting Assembly, LH2 Line Support	1	LWT-54 & Up

REMARKS: The fittings are grouped as the failure mode, causes and effects are the same.

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

SYSTEM: ASI
SUBSYSTEM: ET Interface Hardware
FMEA ITEM CODE(S): 4.5.7.1, 4.5.8.1

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

RATIONALE FOR RETENTION

DESIGN:

- A-C: 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, bushings and attachment hardware are designed to the required ultimate safety factor of 1.4 (ET Stress Report 826-2188).
- B: 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 Fitting Assembly, LH2 Line Support is certified. Reference HCS MMC-ET-TM08-L-S106 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S516 (LWT-89 & Up).

Vendor:

- B, C: Attaching fasteners and bushings are procured and tested to standard drawings 26L13, 33L6, 36L3 and MS24665.

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

- A, B: Verify materials selection and verification controls (MMC-ET-SE16, STMS168, drawing 80911071715 and standard drawings 26L13, 33L6, 36L3 and MS24665).
- A: Inspect dimensional conformance (drawing 80911071716).
- A: Penetrant inspect part (drawing 80911071716 and STP2501 Type 1 Method A).
- C: Inspect that bushings are free from damage (drawing 80911071716).

MAF Quality Inspection:

- A, B: Verify fastener and cotter pin installation (drawing 80911071790 and STP2013).
- B: Inspect that attaching hardware is free from damage (drawing 80911071790 and STP2014).

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.