

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 fire/explosion or debris source to Orbiter.  
 TIME TO EFFECT: Immediate  
 FAILURE CAUSE(S): A: Improper Manufacture  
 C: Failure of Attaching Hardware  
 REDUNDANCY SCREENS: Not Applicable  
 FUNCTIONAL DESCRIPTION: LH2 feedline support tie plate.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
4.5.11.1	80911071781-002	Tie Plate	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 tie plate is machined from 7075-T7351 aluminum alloy plate stock. 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 tie plate and attachment hardware are designed to the required ultimate safety factor of 1.4 (ET Stress Report 826-2188).
- 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 Tie Plate is certified. Reference HCS MMC-ET-TM08-L-S109 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S516 (LWT-89 & Up).

Vendor:

- C: Attaching fasteners are procured and tested to standard drawings 26L3, 26L13, 33L1, 33L6, NAS 1221 and MS24665.

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

- A, C: Verify materials selection and verification controls (MMC-ET-SE16, drawing 80911071781 and standard drawings 26L3, 26L13, 33L1, 33L6 NAS 1221 and MS24665).
- A: Inspect dimensional conformance (drawing 80911071781).
- A: Penetrant inspect part (drawing 80911071781 and STP2501 Type 1 Method A).

MAF Quality Inspection

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

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.