

CRITICAL ITEMS LIST (CIL)

SYSTEM: ASI  
 SUBSYSTEM: Support Hardware  
 REV & DATE: J, 12-19-97  
 DCN & DATE:  
 ANALYSTS: H. Keefe/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.  
 TIME TO EFFECT: Seconds (a), Immediate (b)  
 FAILURE CAUSE(S): A: Improper Manufacture  
 B: Failure of Attaching Hardware  
 REDUNDANCY SCREENS: Not Applicable  
 FUNCTIONAL DESCRIPTION: Provide attachment fittings on the LH2 tank for the L02 feedline strut and yoke assemblies.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
4.4.38.1	80914041453-001	Fitting (L02 Feedline)	2	LWT-54 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)  
CONTINUATION SHEET

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RATIONALE FOR RETENTION

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DESIGN:

- A, B: The Fitting is machined from 2219-T87 aluminum alloy plate stock. Materials for this part number are selected in accordance with MMC-ET-SE16 which assures repetitive conformance of composition and properties. Acceptable surface finish of machined parts is assured by penetrant inspection per STP2501.
- A: The Fitting is designed to the required yield (1.1) and ultimate (1.4) safety factors (ET Stress Report 826-2188).
- B: The attaching hardware is selected from the Approved Standard Parts List (ASPL 826-3500). The hardware is 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 (L02 Feedline) is certified. Reference HCS MMC-ET-TM08-L-S091 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S507 (LWT-89 & Up).

Vendor:

- B: Attaching fasteners are procured and tested to standard drawings 26L2 and 34L2.

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

- A, B: Verify materials selection and verification controls (MMC-ET-SE16, drawing 80914041453 and standard drawings 26L2 and 34L2).
- A: Penetrant inspect part (drawing 80914041453 and STP2501, Type 1, Method A).
- A: Inspect dimensional conformance (drawing 80914041453).

MAF Quality Inspection:

- B: Inspect that attaching hardware is free from damage (drawing 80914041459 and STP2014).
- A, B: Verify installation and witness torque (drawing 80914041459 and STP2014).
- B: Verify locking feature (drawing 80914041459 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.