

CRITICAL ITEMS LIST (CIL)

SYSTEM:	ASI	FUNCTIONAL CRIT:	1
SUBSYSTEM:	ET Interface Hardware	PHASE(S):	b
REV & DATE:	J, 12-19-97	HAZARD REF:	S.11
DCN & DATE:	002, 2-28-99		
ANALYSTS:	C. Rush/E. Howell		

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

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: Provides aft support structure for Orbiter/ET attach fittings.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
4.5.24.1	80911071743-009	Strut End Fitting Assembly (Vertical Strut)	2	LWT-54 thru 98

REMARKS:

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

SYSTEM: ASI
SUBSYSTEM: ET Interface Hardware
FMEA ITEM CODE(S): 4.5.24.1

REV & DATE: J, 12-19-97
DCN & DATE: 002, 2-28-99

RATIONALE FOR RETENTION

DESIGN:

- A, B: The fittings are machined from 2219-T6 aluminum alloy forgings. 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 vertical strut end fittings 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 Strut End Fitting Assembly (Vertical Strut) is certified. Reference HCS MMC-ET-TM08-L-S119 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S516 (LWT-89 thru 98).

Vendor:

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

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

- A, B: Verify materials selection and verification controls (MMC-ET-SE16, STM5163, STM-Q-250, drawing 82611031163 and standard drawings 26L2 and 33L2).
- A: Inspect dimensional conformance (drawing 80911071743).
- A: Penetrant inspect part (drawing 80911071743 and STP2501 Type 1 Method A).

MAF Quality Inspection:

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

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.