

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:	005, 6-30-00		
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.

TIME TO EFFECT: Immediate

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

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: Interface and structural thrust load path between Orbiter/ET attach fitting and end fitting.

FMEA ITEM CODE(S)	PART NO.	PART NAME	QTY	EFFECTIVITY
4.5.21.1	80911071765-003 -005	Strut, Thrust	1	LWT-54 thru 114
			1	LWT-115 & Up
4.5.22.1	80911071765-004 -006	Strut, Thrust	1	LWT-54 thru 114
			1	LWT-115 & Up

REMARKS: The struts 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): 4.5.21.1, 4.5.22.1

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

RATIONALE FOR RETENTION

DESIGN:

- A, B: The strut is a 7050-T74 aluminum alloy forged extrusion. 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 by penetrant inspection per STP2501. The strut is 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, Thrust is certified. Reference HCS MMC-ET-TM08-L-S117 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S516 (LWT-89 & Up).

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, STH5168, drawing 80911071766 and standard drawings 26L2 and 33L2).
- A: Inspect dimensional conformance (drawing 80911071766).
- A: Penetrant inspect part (drawing 80911071766, STP2501 Type 1 Method A).
- A: Verify ultrasonic inspection (drawing 80911071766).

MAF Quality Inspection:

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