

CRITICAL ITEMS LIST (CIL)

SYSTEM: ASI
 SUBSYSTEM: Electrical Cable Trays
 REV & DATE: J, 12-19-97
 DCN & DATE:
 ANALYSTS: J. Hicks/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 ET structural failure or debris source to Orbiter from support components.
 TIME TO EFFECT: Immediate
 FAILURE CAUSE(S): A: Improper Manufacture
 B,C: Failure of Attaching Hardware
 REDUNDANCY SCREENS: Not Applicable
 FUNCTIONAL DESCRIPTION: Supports for fairing routed between crossbeam and LH vertical strut.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
4.3.83.1	80911071822-010	Support Bracket Assy	1	LWT-54 & Up
4.3.84.1	80911071822-017	Strap	2	LWT-54 & Up
4.3.85.1	80911071822-025	Support Bracket	1	LWT-54 & Up

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

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

SYSTEM: ASI
SUBSYSTEM: Electrical Cable Trays
FMEA ITEM CODE(S): 4.3.83.1, 4.3.84.1, 4.3.85.1

REV & DATE: J, 12-19-97
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RATIONALE FOR RETENTION

DESIGN:

- A-C: The support components are machined from aluminum alloy 2219-T87 sheet and 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.
- A: The support components are 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 Support Components are certified. Reference HCS MMC-ET-TM08-L-S049 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S517 (LWT-89 & Up).

Vendor:

- B, C: Attaching fasteners are procured and tested to standard drawings 22L1, 26L3, 34L2, 26L2 and 33L1.

INSPECTION:

Vendor Inspection-Lockheed Martin Surveillance:

- A-C: Verify materials selection and verification controls (MMC-ET-SE16, drawing 80911071822 and standard drawings 22L1, 26L3, 26L2, 33L1, and 34L2).
- A: Inspect dimensional conformance (drawing 80911071822).
- A: Penetrant inspect part (drawing 80911071822 and STP2501 Type 1, Method A).

MAF Quality Inspection:

- B, C: Inspect that attaching hardware is free from damage (drawings 80911071809, 80911031849 and STP2014).
- A-C: Verify installation and witness torque (drawings 80911071809, 80911031849 and STP2014).
- C: Verify locking feature (drawings 80911071809, 80911031849 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.