

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 covers.

TIME TO EFFECT: Immediate

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

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: Covers for fairing between LH SRB and LH vertical strut trays.

| <u>FMEA ITEM CODE(S)</u> | <u>PART NO.</u> | <u>PART NAME</u>  | <u>QTY</u> | <u>EFFECTIVITY</u> |
|--------------------------|-----------------|-------------------|------------|--------------------|
| 4.3.103.1                | 80911031898-059 | Cable Tray Covers | 1          | LWT-54 & Up        |
| 4.3.104.1                | 80911031898-029 | Cable Tray Covers | 1          | LWT-54 & Up        |

REMARKS: The covers 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): 4.3.103.1, 4.3.104.1

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

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DESIGN:

- A, B: The cable tray covers are machined from 2219-T6Z and 2219-T87 aluminum alloy sheet 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 covers 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 Cable Tray Covers are certified. Reference HCS MMC-ET-TM08-L-S059 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S517 (LWT-89 & Up).

Vendor:

- B: Attaching fasteners are procured and tested to standard drawings 26L3 and 33L3.

INSPECTION:

Vendor Inspection-Lockheed Martin Surveillance:

- A, B: Verify materials selection and verification controls (MMC-ET-SE16, drawing 80911031898 and standard drawings 26L3 and 33L3).
- A: Inspect dimensional conformance (drawing 80911031898).
- A: Penetrant inspect part (drawing 80911031898 and STP2501 Type 1, Method A).

MAF Quality Inspection:

- B: Inspect that attaching hardware is free from damage (drawing 80911031849 and STP2014).
- A, B: Verify installation and witness torque (drawing 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.