

CRITICAL ITEMS LIST (CIL)

SYSTEM: ASI  
 SUBSYSTEM: Electrical Cable Trays  
 REV & DATE: J, 12-19-97  
 DCN & DATE:  
 ANALYSTS: J. Micks/E. Howell

FUNCTIONAL CRIT: 1  
 PHASE(S): b  
 HAZARD REF: 5.11

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: Seven covers for trays on RH vertical strut and one for tray on LH vertical strut.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
4.3.72.1	80911031854-005	Cable Tray Covers	1	LWT-54 & Up
4.3.73.1	80911031854-006	Cable Tray Covers	1	LWT-54 & Up
4.3.74.1	80911031854-008	Cable Tray Covers	1	LWT-54 & Up
4.3.75.1	80911031854-009	Cable Tray Covers	1	LWT-54 & Up
4.3.76.1	80911031854-003	Cable Tray Covers	1	LWT-54 & Up
4.3.77.1	80911031854-007	Cable Tray Covers	1	LWT-54 & Up
4.3.78.1	80911031854-004	Cable Tray Covers	1	LWT-54 & Up
4.3.79.1	80911031854-001	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): 4.3.72.1, 4.3.73.1, 4.3.74.1, 4.3.75.1,  
4.3.76.1, 4.3.77.1, 4.3.78.1, 4.3.79.1

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RATIONALE FOR RETENTION

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DESIGN:

- A, B: The covers are machined from 2219-T87/T62 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.
- 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 MCS MMC-ET-TM08-L-S045 (LWT-54 thru 88) and MCS MMC-ET-TM08-L-S517 (LWT-89 & Up).

Vendor:

- B: Attaching fasteners are procured and tested to standard drawings 26L3, 33L3, 26L17 and 34L1.

INSPECTION:

Vendor Inspection-Lockheed Martin Surveillance:

- A, B: Verify materials selection and verification controls (MMC-ET-SE16, drawing 80911031854 and standard drawings 26L17, 34L1, 26L3 and 33L3).
- A: Inspect dimensional conformance (drawing 80911031854).

MAF Quality Inspection:

- B: Inspect that attaching hardware is free from damage (drawing 80911031849, 80911041149 and STP2014).
- A, B: Verify installation and witness torque (drawings 80911031849, 80911041149 and STP2014).
- B: Verify locking feature (drawings 80911031849, 80911041149 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.