

CRITICAL ITEMS LIST (CIL)

SYSTEM: ASI FUNCTIONAL CRIT: 1
 SUBSYSTEM: Electrical Cable Trays PHASE(S): b
 REV & DATE: K, 6-29-01 HAZARD REF: S.11
 DCN & DATE: 001, 2-7-02
 ANALYSTS: J. Hicks/E. Howell

FAILURE MODE: Structural Failure
 FAILURE EFFECT: b) Loss of mission and vehicle/crew due to LO2 tank structural failure or debris source to Orbiter from cable tray cover.
 TIME TO EFFECT: Immediate
 FAILURE CAUSE(S): A: Improper Manufacture
 B: Failure of Attaching Hardware
 REDUNDANCY SCREENS: Not Applicable
 FUNCTIONAL DESCRIPTION: Provide environmental protection for lines and cables routed along the LO2 tank surface.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
4.3.1.1	80911041206-039	Cable Tray Cover Assy (LO2)	1	ET-61 & Up
4.3.2.1	80911041206-009	Cable Tray Cover Assy (LO2)	5	ET-61 & Up
4.3.3.1	80911041206-010	Cable Tray Cover Assy (LO2)	4	ET-61 & Up
	80911041206-010	Cable Tray Cover Assy (LO2)	3	ET-115
	80911017063-009	Cable Tray Cover Assy (LO2)	1	ET-115

REMARKS: The cover assemblies are grouped as the failure mode, causes and effects are the same.

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

SYSTEM: ASI REV & DATE: K, 6-29-01
SUBSYSTEM: Electrical Cable Trays DCN & DATE: 001, 2-7-02
FMEA ITEM CODE(S): 4.3.1.1, 4.3.2.1, 4.3.3.1

RATIONALE FOR RETENTION

DESIGN:

- A, B: The covers are machined from 2024-T81 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 Cover Assembly (LO2) is certified. Reference HCS MMC-ET-TM08-L-S015 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S510 (LWT-89 & Up).

Vendor:

- B: Attaching fasteners are procured and tested to standard drawings NAS1219, 26L17 and 34L1.

INSPECTION:

Vendor Inspection-Lockheed Martin Surveillance:

- A, B: Verify materials selection and verification controls (MMC-ET-SE16, drawing 80911041206 and standard drawings 26L17, NAS1219 and 34L1).
- A: Inspect dimensional conformance (drawing 80911041206).

MAF Quality Inspection:

- B: Inspect that attaching hardware is free from damage (drawing 80911041205 and STP2014).
- A, B: Verify installation and witness torque (drawing 80911041205).
- B: Verify locking feature (drawing 80911041205 and STP2014).
- A: Inspect dimensional conformance (drawing 80911017063) (Effectivity ET-115). |

Launch Site Inspection:

- B: Inspect that attaching hardware is free from damage (drawing 80931017071 and STP2014)(Effectivity ET-115) |
- A, B: Verify installation and witness torque (draing 80931017071) (Effectivity ET-115). |
- B: Verify locking feature (drawing 80931017071 and STP2014)(Effectivity ET-115). |

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.