

CRITICAL ITEMS LIST (CIL)

SYSTEM: Venting
 SUBSYSTEM: Aft Cable Trays
 REV & DATE: J, 12-19-97
 DCN & DATE:
 ANALYSTS: P. Ghanchi/E. Howell

FUNCTIONAL CRIT: 1
 PHASE(S): a
 HAZARD REF: T.02

FAILURE MODE: Blockage
 FAILURE EFFECT: a) Loss of mission and vehicle/crew due to hazardous gas condition causing fire/explosion.
 TIME TO EFFECT: Seconds
 FAILURE CAUSE(S): A: Foreign Obstruction
 B: Undersize or Omission of Vent Hole
 REDUNDANCY SCREENS: Not Applicable
 FUNCTIONAL DESCRIPTION: Provides venting for the LO2 umbilical cable tray during the ascent phase and vents Orbiter cable tray purge gases during prelaunch (also provides water drainage).

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
7.4.11.2	80911031856-001	Covers, LO2 Umbilical Cable Tray (LO2 Umbilical Cable Tray Compartment Vent Hole)	1	LWT-54 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

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FMEA ITEM CODE(S): 7.4.11.2

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RATIONALE FOR RETENTION

DESIGN:

The LO2 cable tray umbilical compartment vent hole (.750 inch dia) provides venting for the LO2 umbilical cable tray during the ascent phase and vents Orbiter purge gases during prelaunch.

The LO2 umbilical fairing is purged with nitrogen gas per JCD-2-0A002 to avoid build-up of hazardous gases. The purge gases pass through a 0.03 in² orifice per JCD-2-12001, and vent out through the LO2 cable tray umbilical compartment vent hole thus sweeping out any oxygen leak from the interface and precluding any hazardous gas build-up in the umbilical compartment.

- B: Engineering requirements (drawing 80911031856) assure that the vent hole will be drilled to the required dimensions.
- B: Engineering requirements (drawing 80971028419) assure TPS fabrication of the LO2 umbilical cable tray compartment vent hole.

TEST:

The Covers, LO2 Umbilical Cable Tray (LO2 Umbilical Cable Tray Compartment Vent Hole) are certified. Reference RCS MMC-ET-TM08-L-S156 (LWT-54 thru 83) and RCS MMC-ET-TM08-L-S17 (LWT-89 & Up).

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

- B: Inspect location and dimension (drawing 80911031856).

MAF Quality Inspection:

- A, B: Inspect (visually) for freedom of obstruction (MMC-ET-TM04k and drawing 80900000008).
- A: Inspect cable tray area for visual cleanliness during installation (drawing 80911031849).

Launch Site:

- A, B: Inspect (visually) for freedom of obstruction (OMRSD, File IV and drawing 80901019008).

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.