

CRITICAL ITEMS LIST (CIL)

SYSTEM:	Venting	FUNCTIONAL CRIT:	1
SUBSYSTEM:	Aft Cable Trays	PHASE(S):	b
REV & DATE:	J, 12-19-97	HAZARD REF:	T.02
DCM & DATE:	001, 6-15-98		
ANALYSTS:	P. Ghanchi/E. Howell		

FAILURE MODE: Excessive Leak Area

FAILURE EFFECT: b) Loss of mission and vehicle/crew due to loss of SRB command signals.

TIME TO EFFECT: Seconds

FAILURE CAUSE(S):
 A: Out of Tolerance Dimensional Clearance between Fairing Assembly and LH Vertical Strut Cable Tray
 B: Out of Tolerance TPS on Cable Tray or Cover

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: Provides venting for the left hand vertical strut cable tray compartment during the ascent phase.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
7.4.9.2	80911031849-030 -500	Cable Tray, Fairing and Cover Insl, ET/Orbiter (LH Vertical Strut Vent/Leak Area)	1 1	LMT-54 thru 88, 600 & Up LMT-89 thru 599

REMARKS:

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

SYSTEM: Venting
SUBSYSTEM: Aft Cable Trays
FMEA ITEM CODE(S): 7.4.9.2

REV & DATE: J, 12-19-97
DCN & DATE:

RATIONALE FOR RETENTION

DESIGN:

The system of cable trays on the ET/ORB/SRB aft attachment is a network of interlocking individual cable tray compartments. Most of the vent/leak locations occur at a juncture of these individual cable trays. In order to model the pressure conditions at a vent/leak location, the space between the overlapping trays were divided into three distinct areas. These areas were defined according to whether they experience windward, leeward, or tangential flow. External pressure coefficients and discharge coefficients are documented in NMC-ET-SE05-95 and NMC-ET-SE05-579.

The left hand vertical strut vent/leak area is defined by the gap formed between the left hand vertical strut cable tray and the crossbeam fairing.

Vent system performance verification is by analysis (NMC-ET-SE05-95 for LWT-54 thru 88 and NMC-ET-SE05-579 for LWT-89 & Up).

- A: Engineering drawing 80911031780 specifies installation requirements for the left hand vertical strut cable tray. Engineering drawing 80911071809 specifies installation requirements for the fairing assembly. Engineering drawing 80911071822 and 80971028475 assure that the bracket cover and the fillers will be installed on the fairing assembly.
- B: Engineering drawing 80911071811 specifies fabrication requirements for the left hand vertical strut cable tray. Engineering drawing 80911071822 specifies fabrication requirements for the brackets. Engineering drawing 80971078442 specifies TPS thickness requirements for the left hand vertical strut cable tray.

TEST:

The Cable Tray Fairing, and Cover Insl, ET/Orbiter (LH Vertical Strut Vent/Leak Area) is certified. Reference HCS NMC-ET-TN08-L-3155 (LWT-54 thru 88) and HCS NMC-ET-TN08-L-8517 (LWT-89 & Up).

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

- A: Inspect dimensions (drawings 80911071811, 80911031854, 80911031843 and 80911071822).

MAF Quality Inspection:

- A: Verify installation (drawing 80911031849).
- A: Dimensionally inspect vent/leak areas (NMC-ET-TN04k and drawing 80900000008).

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.