

CRITICAL ITEMS LIST (CIL)

SYSTEM:	ASI	FUNCTIONAL CRIT:	1
SUBSYSTEM:	Support Hardware	PHASE(S):	b
REV & DATE:	J, 12-19-97	HAZARD REF:	S.11
DCN & DATE:			
ANALYSTS:	H. Keefe/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.

TIME TO EFFECT: Immediate

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

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: Provides G02 pressurization line fixed attachment and cable tray support on the LO2 tank.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
4.4.9.1	80911001209-009	Fitting Assembly (Fixed)	1	LWT-54 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

SYSTEM: ASI
SUBSYSTEM: Support Hardware
FMEA ITEM CODE(S): 4.4.9.1

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

RATIONALE FOR RETENTION

DESIGN:

- A, B: The Fitting is machined from 2219-T87 aluminum alloy plate stock. Materials selected for this part number are in accordance with MMC-ET-SE16 which assures repetitive conformance of composition and properties. Acceptable surface finish of machined parts is assured by penetrant inspection per STP2501.
- A: The Fitting Assembly is 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 Fitting Assembly (Fixed) is certified. Reference HCS MMC-TM08-L-S074 (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 26L2 and 34L2.

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

- A, B: Verify materials selection and verify controls (MMC-ET-SE16, drawings 80911001209, and standard drawings 26L2 and 34L2).
- A: Inspect dimensional conformance (drawing 80911001209).
- A: Penetrant inspect part (drawing 80911001209 and STP2501, Type 1, Method A).

MAF Quality Inspection:

- B: Inspect that attaching hardware is free from damage (drawing 80911001200 and STP2014).
- A, B: Verify installation and witness torque (drawing 80911001200 and STP2014).
- B: Verify locking feature (drawing 80911001200 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.