

CRITICAL ITEMS LIST (CIL)

SYSTEM: ASI
 SUBSYSTEM: Support Hardware
 REV & DATE: J, 12-19-97
 DCN & DATE:
 ANALYSTS: H. Keefe/ E. Howell

FUNCTIONAL CRIT: 1
 PHASE(S): b
 HAZARD REF: S.11, S.03

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: Provide support for the flexible section of the G02 pressurization line at the LO2 umbilical cable tray.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
4.4.48.1	80921021037-005	Support (G02)	2	LWT-54 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

SYSTEM: ASI
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RATIONALE FOR RETENTION

DESIGN:

- A, B: The support is made from 2219-T62 aluminum alloy sheet. Materials are selected in accordance with MMC-ET-SE16 which assures repetitive conformance of composition and properties.
- A: The support 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 Support (G02) is certified. Reference HCS MMC-ET-TM08-L-S168 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S524 (LWT-89 & Up).

Vendor:

- B: Attaching fasteners are procured and tested to standard drawings 26L23, 26L17 and 33L1.

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

- A, B: Verify materials selection and verification controls (MMC-ET-SE16, drawing 80921021037 and standard drawings 26L23, 26L17 and 33L1).
- A: Inspect dimensional conformance (drawing 80921021037).

MAF Quality Inspection:

- B: Inspect that attaching hardware is free from damage (drawing 80921021009 and STP2014).
- A, B: Verify installation and witness torque (drawing 80921021009 and STP2014).
- B: Verify locking feature (drawing 80921021009 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.