

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

FAILURE MODE: Structural Failure
 FAILURE EFFECT: b) Loss of mission and vehicle/crew due to L02 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 L02 umbilical cable tray.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
4.4.31.1	80911071817-004	Support Fitting (G02)	1	LWT-54 & Up
4.4.32.1	80911071817-005	Support Fitting (G02)	1	LWT-54 & Up

REMARKS: The support components are grouped as the failure mode, causes and effects are the same.

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

SYSTEM: ASI
SUBSYSTEM: Support Hardware
FMEA ITEM CODE(S): 4.4.31.1, 4.4.32.1

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

RATIONALE FOR RETENTION

DESIGN:

- A, B: The Support Fittings are machined from 2219-T851 aluminum alloy plate stock. Materials for these part numbers are selected in accordance with MMC-ET-SE16 which assures repetitive conformance of composition and properties. Acceptable surface of machined parts is assured by penetrant inspection per STP2501.
- A: The Support Fitting 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 Fitting (G02) is certified. Reference HCS MMC-ET-TM08-L-S087 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S516 (LWT-89 & Up).

Vendor:

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

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

- A, B: Verify materials selection and verification controls (MMC-ET-SE16, drawing 80911071817 and standard drawings 26L17 and 33L1).
- A: Inspect dimensional conformance (drawing 80911071817).
- A: Penetrant inspect part (drawing 80911071817 and STP2501, Type 1, Method A).
- B: Inspect that attaching hardware is free from damage (drawing 80911071815 and STP2014).
- A, B: Verify installation and witness torque (drawing 80911071815 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.