CRITICAL ITEMS LIST (CIL)

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

FAILURE MODE: Structural Failure

FAILURE EFFECT:
a) Loss of mission and vehicle/crew due to fire/explosion.
b) Loss of mission and vehicle/crew due to fire/explosion or debris source to Orbiter.

TIME TO EFFECT: Seconds (a), Immediate (b)

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

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: Provide support for the LO2 feedline on the LH2 tank.

FMEA ITEM CODE(S)	PART NO.	PART NAME	QTY	EFFECTIVITY
4.4.43.1	80911001451-009	Strut Assy (LO2 Feedline)	5	LWT-54 & Up

REMARKS:

SYSTEM:	ASI	REV & DATE:	J, 12-19-97
SUBSYSTEM:	Support Hardware	DCN & DATE:	
FMEA ITEM CODE(S):	4.4.43.1		

RATIONALE FOR RETENTION

DESIGN:

A, B: The Strut Assembly consists of a 321 CRES tube with stainless steel rod and bearing assemblies. Materials selected for this part number are in accordance with MMC-ET-SE16 which assures repetitive conformance of composition and properties.

A: The Strut Assembly is designed to the required yield (1.1) and ultimate (1.4) safety factors (ET Stress Report 826-2188).

B, C: The bearing and attaching hardware are 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 Strut Assembly (LO2 Feedline) is certified. Reference HCS MMC-ET-TM08-L-S096 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S507 (LWT-89 & Up).

Vendor:

B, C: Attaching fasteners are procured and tested to standard drawings 26L8 and 33L1, and bearings are procured and tested to standard drawing 36L10.

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

A-C: Verify materials selection and verification controls (MMC-ET-SE16, drawing 80911001451 and standard drawings 26L8, 33L1 and 36L10).

A, C: Inspect lubricant application (standard drawing 36L10).

A-C: Inspect dimensional conformance (drawing 80911001451 and standard drawing 36L10).

B: Inspect rod end installation and torque (drawing 80911001451 and STP2014).

MAF Quality Inspection:

B: Inspect that attaching hardware is free from damage (drawing 80911001459 and STP2014).

A, B: Verify installation and witness torque (drawing 80911001459 and STP2014).

C: Inspect bearing for freedom of movement (drawing 80911001459).

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.