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 ET structural failure or debris source to Orbiter.

TIME TO EFFECT: Immediate

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

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: Provide GO2 & GH2 pressurization and cable tray line support on the LH2 tank.

FMEA ITEM CODE(S)	PART NO.	PART NAME	QTY	EFFECTIVITY
4.4.16.1	80914041412-010	Fitting Assembly (GO2 & GH2)	13	LWT-54 & Up

REMARKS:

SYSTEM:	ASI	REV & DATE:	J, 12-19-97
SUBSYSTEM:	Support Hardware	DCN & DATE:	
FMEA ITEM CODE(S):	4.4.16.1		

RATIONALE FOR RETENTION

DESIGN:

A-C: The Fitting is machined from 2219-T87 aluminum alloy plate stock and shear pin is made from A286 Bar Cres. 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.

C: The Shear Pin is designed to required ultimate safety factor of 1.4 (ET Stress Analysis Report 826-2188).

TEST:

The Fitting Assembly (GO2 & GH2) is certified. Reference HCS MMC-ET-TM08-L-S081 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S506 (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 material selection and verification control (MMC-ET-SE16, drawings 80914041427, 80914041412 and standard drawings 26L2 and 34L2).

A: Inspect dimensional conformance (drawings 80914041412 and 80914041427).

A: Penetrant inspect part (drawing 80914041412 and STP2501, Type 1, Method A).

MAF Quality Inspection:

B: Inspect that attaching hardware is free from damage (drawing 80914041409 and STP2014).

A-C: Verify installation and witness torque (drawing 80914041409 and STP2014).

B: Verify locking feature (drawing 80914041409 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.