

CRITICAL ITEMS LIST (CIL)

SYSTEM:	ASI	FUNCTIONAL CRIT:	1
SUBSYSTEM:	Intertank	PHASE(S):	b
REV & DATE:	J, 12-19-97	HAZARD REF:	S.11
DCN & DATE:	004, 6-30-99		
ANALYSTS:	H. Keefe/E. Howell		

FAILURE MODE: Structural Failure

FAILURE EFFECT: b) Loss of mission and vehicle/crew due to intertank structural failure or debris source to orbiter.

TIME TO EFFECT: Immediate

FAILURE CAUSE(S): Improper Manufacture

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: Provides environmental enclosure for access opening.

FMEA ITEM CODE(S)	PART NO.	PART NAME	QTY	EFFECTIVITY
4.2.1.1	80911041305-019	Access Door Assembly	1	LWT-54 thru 73
	80911041310-001	Assy, Intertank Access Door	1	LWT-74 thru 113
	80911041310-002		1	LWT-114 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)  
CONTINUATION SHEET

SYSTEM: ASI  
SUBSYSTEM: Intertank  
FMEA ITEM CODE(S): 4.2.1.1

REV & DATE: J, 12-19-97  
DCN & DATE: 004, 6-30-99

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RATIONALE FOR RETENTION

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DESIGN:

The 80911041305 Intertank access door is fabricated from formed aluminum stringers and skin panels. The 80911041310 Intertank access door is fabricated from a graphite/polyimide composite. The door provides access for personnel to enter the Intertank for maintenance, test and inspection. The door structure does not carry primary Intertank structural loads, but is designed to withstand differential burst pressure. Materials selected for both are in accordance with MMC-ET-SE16 which assures repetitive conformance of composition and properties. The access door and attachment bolts are designed to the required ultimate safety factor of 1.4 (ET Stress Report 826-2188).

TEST:

The Access Door Assembly is certified. Reference HCS MMC-ET-TM08-L-S005 (for 80911041305)(LWT-54 thru 73), HCS MMC-ET-TM08-L-S187 (for 80911041310) (LWT-74 thru 88) and HCS MMC-ET-TM08-L-S519 (for 80911041310) (LWT- 89 & Up).

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

Verify materials selection and verification controls (MMC-ET-SE16; drawings 80911041301 and 80911041303 for LWT-54 thru 73; drawing 80911041310 for LWT-74 & Up).

Inspect dimensional conformance (drawings 80911041301 and 80911041303) (LWT-54 thru 73).

Penetrant inspect part (drawing 80911041303 and STP2501 Type 1 Method A) (LWT-54 thru 73).

Lockheed Martin Procurement Quality Representative:

Verify cured laminate physical properties (STM-H-176) (LWT-74 & Up).

Verify the following cured dry laminate mechanical properties; short beam shear, flexural strength and flexural modulus (STM-H-176) (LWT-74 & Up).

Inspect for delamination, debond, cracks, scratches or cuts, porosity, wrinkles (STP7501) (LWT-74 & Up).

Verify fiber volume, short beam shear, flexural strength, flexural modulus and microscopic examination (STP7501) (LWT-74 & Up).

Verify dimensional conformance (drawing 80911041310) (LWT-74 & Up).

Verify ultrasonic inspection (drawing 80911041310 and STP7535) (LWT-74 & Up).

MAE Quality Inspection:

Verify installation and witness torque (drawing 80911041309 for LWT-86 thru 88, 99 & Up).

Launch Site:

Verify installation and witness torque (drawing 80911041309 for LWT-54 thru 73; drawing 80911019320 for LWT-74 thru 85 and 89 thru 98).

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.