

CRITICAL ITEMS LIST (CIL)

SYSTEM: ASI  
 SUBSYSTEM: ET Interface Hardware  
 REV & DATE: J, 12-19-97  
 DCN & DATE:  
 ANALYSTS: C. Rush/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 collapse of interface system resulting in fire/explosion 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: Provides hardware for launch site bipod installation.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
4.5.45.1	80911009190-050	Bipod Installation Hardware (Kit)	1	LWT-54 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)  
CONTINUATION SHEET

SYSTEM: ASI  
SUBSYSTEM: ET Interface Hardware  
FMEA ITEM CODE(S): 4.5.45.1

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

---

RATIONALE FOR RETENTION

---

DESIGN:

- A, B: The shear pin and retaining cap are made from AMS-5663 PPT HT Inconel bar and 7075-T7351 aluminum alloy plate stock respectively. Materials are selected in accordance with MMC-ET-SE16 which assures repetitive conformance of composition and properties. Surface integrity is assured by penetrant inspection per STP2501. The retaining cap and attachment hardware are designed to the required ultimate safety factor of 1.4 (ET Stress Report 826-2188).
- B: Attaching hardware is selected from the Approved Standard Parts List (ASPL 826-3500), 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 Bipod Installation Hardware (Kit) is certified. Reference HCS MMC-ET-TM08-L-S136 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S508 (LWT-89 & Up).

Vendor:

- B: Attaching fasteners are procured and tested to standard drawings 26L2 and 33L2.

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

- A, B: Verify materials selection and verification controls (MMC-ET-SE16, drawing 80911009181 and standard drawings 26L2, 33L2).
- A: Inspect dimensional conformance (drawing 80911009181).
- A: Penetrant inspect part (drawing 80911009181 and STP2501 Type 1 Method A).

Launch Site:

- B: Inspect that attaching hardware is free from damage (drawing 80911019109 and STP2014).
- A, B: Witness fastener installation and torque (drawing 80911019109).

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.