

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : SEPARATION MECHANISMS-MECH FMEA NO 02-3A -A2 -1 REV:10/09/87

ASSEMBLY : AFT STRUCTURAL ATTACH
P/N RI : V070-565241
P/N VENDOR:
QUANTITY : 2

	VEHICLE	102	103	104
CRIT. FUNC:				1
CRIT. HDW:				1
EFFECTIVITY:	X	X	X	
PHASE(S):	PL	LO X OO	DO	LS

PREPARED BY:
DES R. H. YEE
REL M. B. MOSKOWITZ
QE E. M. GUTIERREZ

REDUNDANCY SCREEN: A- B- C-
APPROVED BY: 10/1/87 APPROVED BY (NASA):
DES R. H. YEE For A.C. Ordway SSM
REL M.B. Moskowitz REL [Signature] 10-22-87
QE [Signature] 10/6/87 QE [Signature] 10-22-87

ITEM:
DEBRIS CONTAINER, AFT ATTACH

FUNCTION:
CONTAINS POST-SEPARATION FRANGIBLE NUT FRAGMENTS.

FAILURE MODE:
STRUCTURAL FAILURE

CAUSE(S):
CORROSION, DEFECTIVE PART/MATERIAL OR MANUFACTURING DEFECT, FAILURE/DEFLECTION OF INTERNAL PART

- EFFECT(S) ON:
(A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE
- (A) NONE.
 - (B) FRAGMENTS MAY DAMAGE ADJACENT EQUIPMENT AND STRUCTURE.
 - (C) POSSIBLE LOSS OF MISSION.
 - (D) POSSIBLE LOSS OF CREW/VEHICLE.

DISPOSITION & RATIONALE:
(A) DESIGN (B) TEST (C) INSPECTION (D) FAILURE HISTORY (E) OPERATIONAL USE

(A) DESIGN
SAFETY FACTOR EQUAL TO OR GREATER THAN 1.4; DESIGNED FOR INDEFINITE RE-USE (INNER ATTENUATION LINER REPLACED AFTER EACH FLIGHT) - FOR THE CONTAINMENT OF DEBRIS AND PRESSURE FROM FRANGIBLE NUT COMPONENTS DURING ORBITER/EXTERNAL TANK (ET) SEPARATION; FABRICATED OF 7075 (HEAT TREATED TO T73 CONDITION TO RESIST STRESS CORROSION). DESIGN STRESS ANALYSIS REPORT SD77-SH-0178.

(B) TEST
QUALIFICATION TESTS: SYSTEM QUALIFIED (TO CONTAIN DEBRIS AND GAS PRESSURE) AS PART OF THE AFT ATTACH SEPARATION SYSTEM PER CR-45-565201-001 AND TAR-STS-81-0443; 8 ROOM TEMPERATURE/DUAL BOOSTER PYRO FIRINGS (4 WERE WITH THE HOLE PLUGGER).

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OMRSD: VISUALLY INSPECT AFTER EACH FLIGHT (PRIOR TO FERRY FLIGHT) FOR EVIDENCE OF DISTORTION, CRACKS OR VISUAL DEFECTS (FROM DEBRIS IMPACT OR PYRO OVERPRESSURE).

(C) INSPECTION

ASSEMBLY/INSTALLATION

COMPONENTS ISSUED FOR ASSEMBLY ARE VERIFIED BY INSPECTION ON MANUFACTURING ORDERS.

NONDESTRUCTIVE EVALUATION

ELECTRICAL BONDING IS PER MA0113-306 SPECIFICATION AND VERIFIED BY INSPECTION ON MANUFACTURING ORDERS. PENETRANT INSPECTION IS REQUIRED AND VERIFIED BY INSPECTION.

HANDLING/PACKAGING

PACKAGED AND PROTECTED PER APP TABLE SPECIFICATION AND VERIFIED BY INSPECTION.

(D) FAILURE HISTORY

NONE.

(E) OPERATIONAL USE

NONE.