

SHUTTLE CRITICAL ITEMS LIST - ORBITER NUMBER: MO-AA4-110-X

SUBSYSTEM NAME: STABILIZED PAYLOAD DEPLOYMENT SYSTEM

REVISION: 2 01/17/90

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
■ SRU :	SWITCH ASSEMBLY	V790-544020

■ EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
SWITCH ASSEMBLY - ZO INDICATOR, PEDESTAL ASSEMBLY

■ QUANTITY OF LIKE ITEMS: 2
ONE PER PEDESTAL ASSEMBLY

■ FUNCTION:
THE ZO INDICATOR SWITCH INDICATES WHEN THE PEDESTAL HAS MOVED UPWARDS APPROXIMATELY TWO INCHES. THE SWITCH MECHANISM CONSISTS OF DUAL LIMIT SWITCHES ACTIVATED BY A COMMON LEVER. INDICATION IS PROVIDED BY EACH LIMIT SWITCH. S15 FOR PANEL INDICATOR AND DOWNLINK SIGNAL. S18 FOR DOWNLINK SIGNAL ONLY.

PAGE: 2

PRINT DATE: 01/30/90

SHUTTLE CRITICAL ITEMS LIST ORBITER NUMBER: MO-AAA-110-B1-02

SUBSYSTEM: STABILIZED PAYLOAD DEPLOYMENT SYSTEM REVISION# 2 01/30/90

ITEM NAME: SWITCH ASSEMBLY

CRITICALITY OF THIS FAILURE MODE: 2R3

FAILURE MODE:
LOSS OF OUTPUT

MISSION PHASE:
00 DN-ORBIT

VEHICLE/PAYLOAD/KIT EFFECTIVITY: 102 COLUMBIA
: 103 DISCOVERY
: 104 ATLANTIS
: 105 ENDEAVOUR

CAUSE:
ELECTRICALLY OPEN, CONTAMINATION, PIECE-PART STRUCTURAL FAILURE

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REUNDANCY SCREEN A) PASS
B) FAIL
C) PASS

PASS/FAIL RATIONALE:

- A) PRELAUNCH INSTALLATION AND CHECKOUT
- B) UNABLE TO CONFIRM LIMIT-SWITCH FAILURE
- C) SEPARATION OF REDUNDANT ELEMENTS

FAILURE EFFECTS

(A) SUBSYSTEM:
NO INDICATION OF PEDESTAL POSITION. LOSS OF PEDESTAL POSITION SIGNAL OCCURS AFTER FAILURE OF BOTH SWITCHES ON EACH PEDESTAL.

(B) INTERFACING SUBSYSTEM(S):
NO INDICATION OF PEDESTAL POSITION. LOSS OF PEDESTAL POSITION SIGNAL OCCURS AFTER FAILURE OF BOTH SWITCHES ON EACH PEDESTAL.

SHUTTLE CRITICAL ITEMS LIST - ORBITER NUMBER: MO-AA-110-01 02

- (C) MISSION:
POSSIBLE MISSION ABORT.
- (D) CREW, VEHICLE, AND ELEMENT(S):
POSSIBLE DELAY IN CREW ACTIVITY IN ORDER TO VERIFY THE PEDESTAL POSITION AFTER FAILURE OF BOTH Z0 SWITCHES ON A PEDESTAL.
- (E) FUNCTIONAL CRITICALITY EFFECTS:
LOSS OF FUNCTION ON ONE OR BOTH PEDESTALS COULD RESULT IN UNSCHEDULED CREW ACTIVITY TO VERIFY CORRECT POSITION.

 - DISPOSITION RATIONALE -

- (A) DESIGN:
REFER TO APPENDIX A; ITEM 4.
- (B) TEST:
REFER TO APPENDIX A, ITEM 4.
- (C) INSPECTION:
REFER TO APPENDIX A, ITEM 4.
- (D) FAILURE HISTORY:
** AD6285.- V790-544002-002, S/N P18772; MC4520-123-0003, (S15), DELAYED OPERATION. THE Z0 "EXTENDED" LIGHTS ON THE TEST PANEL FAILED TO ILLUMINATE AFTER THE LATCHES WERE RELEASED. SUSPECT THAT THE SYSTEM WAS EXPERIENCING EXTRANEQUOUS LOADS DUE TO THE POSITION OF THE PAYLOAD ATTACH POINT. RELOCATED THE PAYLOAD ATTACH POINT TO ITS CENTER OF GRAVITY, CLEANED THE CARRIAGE AND ROLLERS USING GASEOUS NITROGEN, THEN CLEANED AND RELUBRICATED THE BEARING ON THE INTERFACE PLATE. AT RETEST, Z0 SPRING, SWITCH, AND LIGHT SYSTEM PERFORMED AS REQUIRED. CLOSED IN 891110.
- (E) OPERATIONAL USE:
~~REFER TO APPENDIX A, ITEM 4.~~

None

SHUTTLE CRITICAL ITEMS LIST ORBITER NUMBER: NO-AA-110-01 ⁰²

- APPROVALS -

RELIABILITY ENGINEERING:	W. R. MARLOWE	<i>W. R. Marlowe 1-20-90</i>
DESIGN ENGINEERING	: G. CAMPBELL	<i>G. Campbell 1/21/90</i>
QUALITY ENGINEERING	: M. F. MERGEN	<i>M. F. Mergen 1/21/90</i>
NASA RELIABILITY	:	<i>[Signature] 1/21/90</i>
NASA SUBSYSTEM MANAGER	:	<i>[Signature] 1/21/90</i>
NASA QUALITY ASSURANCE	:	<i>[Signature] 1-21-90</i>