

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL HARDWARE

NUMBER: MO-AD1-A08-X

SUBSYSTEM NAME: REMOTELY OPERATED ELECTRICAL UMBILICAL

REVISION : 1 02/11/91

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
■ ASSEM :	PANEL A6A1	V070-730325
■ SRU :	SWITCH, TOGGLE	ME452-0102-7303

PART DATA

- EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
- REFERENCE DESIGNATORS: 36V73A6A1 - S43
- QUANTITY OF LIKE ITEMS: 3
- FUNCTION:  
PROVIDES CONTROL OF LATCH DRIVE COMMAND TO HYBRID RELAYS TO PERFORM LATCH AND UNLATCH FUNCTIONS.

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE  
NUMBER: MO-AD1-A08-04

SUBSYSTEM: REMOTELY OPERATED ELECTRICAL UMBILICAL REVISION# 1 02/11/91 R

ITEM NAME: SWITCH, TOGGLE

CRITICALITY OF THIS  
FAILURE MODE: 2/2

■ FAILURE MODE:  
FAILS OPEN (ALL CONTACTS)

MISSION PHASE:  
00 ON-ORBIT

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

■ CAUSE:  
PIECE PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK, THERMAL STRESS, PROCESSING ANOMALY

■ CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

■ REDUNDANCY SCREEN A) N/A  
 ■ B) N/A  
 ■ C) N/A

PASS/FAIL RATIONALE:

■ A)  
N/A

■ B)  
N/A

■ C)  
N/A

- FAILURE EFFECTS -

■ (A) SUBSYSTEM:  
LOSS OF HOOK LATCH/UNLATCH FUNCTION.

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE  
NUMBER: MD-AD1-A08-04

- (B) INTERFACING SUBSYSTEM(S):  
THE HOOK LATCH FUNCTIONS WILL BE LOST. LOSS OF ROEU MISSION. POSSIBLE LOSS OF NOMINAL PAYLOAD RETENTION LATCH FUNCTION AS COMMANDED BY THIS SWITCH.
- (C) MISSION:  
LOSS OF MISSION.
- (D) CREW, VEHICLE, AND ELEMENT(S):  
NO EFFECT.
- (E) FUNCTIONAL CRITICALITY EFFECTS:  
LOSS OF SWING ARM HOOK LATCH/UNLATCH FUNCTION. LOSS OF ROEU MISSION AND POSSIBLE LOSS OF NOMINAL PAYLOAD RETENTION LATCH FUNCTION AS COMMANDED BY THE SWITCH.

- DISPOSITION RATIONALE -

- (A) DESIGN:  
REFER TO APPENDIX A, ITEM 1.
- (B) TEST:  
REFER TO APPENDIX A, ITEM 1.
- (C) INSPECTION:  
REFER TO APPENDIX A, ITEM 1.
- (D) FAILURE HISTORY:  
REFER TO APPENDIX A, ITEM 1.
- (E) OPERATIONAL USE:  
NONE.

- APPROVALS -

RELIABILITY ENGINEERING:	M. P. RAGUSA	<i>6/12/91</i>	<i>M.P. Ragusa 4-4-91</i>
DESIGN SUPERVISOR	: G. M. ANDERSON	<i>6/12/91</i>	<i>D. J. Anderson 5-11-91</i>
QUALITY ENGINEERING	: M. F. MERGEN	<i>6/12/91</i>	<i>M.F. Mergen 4-11-91</i>
NASA RELIABILITY	:		
NASA SUBSYSTEM MANAGER	:		
NASA EPO&C RELIABILITY	:		
NASA QUALITY ASSURANCE	:		
NASA EPO&C SUBSYS MGR	:		

*G.E. : [Signature] 6/27/91*  
*M. Saleem-Dinani 6/21/91*  
*RO [Signature] 6/12/91*  
*[Signature] FOR F. HEARNS*