

FAILURE MODES EFFECTS ANALYSIS (FMEA) — CRITICAL HARDWARE

NUMBER: MO-AD1-A06-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 - S42

■ QUANTITY OF LIKE ITEMS:

■ FUNCTION:

PROVIDES COMMAND CONTROL FOR THE "MATE" AND "STOW" FUNCTIONS AND FOR SWITCH SCAN INPUT TO MDM.

**FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE
NUMBER: MO-AD1-A06-03**

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

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 FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK, THERMAL SHOCK, 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)
- B)
- C)

- FAILURE EFFECTS -

■ **(A) SUBSYSTEM:**
LOSS OF SWING ARM MATE/STOW CAPABILITY.

■ **(B) INTERFACING SUBSYSTEM(S):**
POSSIBLE LOSS OF NOMINAL PAYLOAD RETENTION LATCH FUNCTION AS COMMANDED BY THIS SWITCH.

■ **(C) MISSION:**
LOSS OF MISSION

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- (D) CREW, VEHICLE, AND ELEMENT(S):
NO EFFECT
- (E) FUNCTIONAL CRITICALITY EFFECTS:
LOSS OF SWING ARM MATE/STOW FUNCTION. LOSS OF ROEU MISSION AND POSSIBLE
LOSS OF NOMINAL PAYLOAD RETENTION LATCH FUNCTION AS COMMANDED BY THIS
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>M.P. Ragusa</i>
DESIGN SUPERVISOR	: G. M. ANDERSON	<i>G.M. Anderson 7-18-91</i>
QUALITY ENGINEERING	: M. F. Mergen	<i>M.F. Mergen 4/10/91</i>
NASA RELIABILITY	:	<i>G.E. [Signature] 6/21/91</i>
NASA SUBSYSTEM MANAGER	:	<i>[Signature] 6/21/91</i>
NASA EPD&C RELIABILITY	:	<i>M. Saleem [Signature] 6/21/91</i>
NASA QUALITY ASSURANCE	:	<i>R.D. [Signature] 6/12/91</i>
NASA EPD&C SUBSYS MGR	:	<i>[Signature] for F. Altwis</i>