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FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL HARDWARE
NUMBER: MO-AD1-A07-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 - S36
- QUANTITY OF LIKE ITEMS: 2
- FUNCTION:
  PROVIDES COMMAND CONTROL FOR THE SWING ARM RELAX FUNCTIONS AND FOR SWITCH SCAN INPUT TO MDM.

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FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE
NUMBER: MO-AD1-A07-03

REVISION# 1 02/11/91 R

SUBSYSTEM: REMOTELY OPERATED ELECTRICAL UMBILICAL

ITEM NAME: SWITCH, TOGGLE

CRITICALITY OF THIS FAILURE MODE:2/2

■ FAILURE MODE:
FAILED SHORTED, TWO OR MORE SETS OF POWER CONTROL CONTACTS

MISSION PHASE:
OO 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)

■ B)

■ C)

- FAILURE EFFECTS -

■ (A) SUBSYSTEM:
DRIVE MOTORS WILL BE COMMANDED TO DRIVE IN BOTH DIRECTIONS AT THE SAME TIME.

■ (B) INTERFACING SUBSYSTEM(S):
THE ASSOCIATED AC CIRCUIT BREAKER WILL TRIP. SUBSEQUENT SWING ARM RELAX DRIVE FUNCTIONS WILL BE LOST. POSSIBLE LOSS OF ROEU MISSION AND

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FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE
NUMBER: MO-AD1-AD7-03

POSSIBLE LOSS OF NOMINAL PAYLOAD RETENTION/LATCH FUNCTION AS COMMANDED BY THIS SWITCH.

- (C) MISSION:
  POSSIBLE LOSS OF ROEU MISSION.

- (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, ITEM 1.

- (D) FAILURE HISTORY:
  REFER TO APPENDIX A, ITEM 1.

- (E) OPERATIONAL USE:
  NONE.

- APPROVALS -

RELIABILITY ENGINEERING	M. P. RAGUSA	4-4-91
DESIGN SUPERVISOR	G. M. ANDERSON	4-18-91
QUALITY ENGINEERING	M. F. MERGEN	4/16/91
NASA RELIABILITY	G. E	6/26/91
NASA SUBSYSTEM MANAGER		6/27/91
NASA EPD&C RELIABILITY		6/27/91
NASA QUALITY ASSURANCE		KO Grant Gutierrez 6/12/91
NASA EPD&C SUBSYS MGR		for F. Pleasants