

PAGE: 1

PRINT DATE: 06/01/94

**FAILURE MODES EFFECTS ANALYSIS (FMEA) - CRITICAL HARDWARE**

**NUMBER: 05-2B-22101 -X**

**SUBSYSTEM NAME: COMM & TRACK: ULTRA HIGH FREQ COMM (UHF)**

**REVISION: 1 5/25/94**

---

	<b>PART NAME VENDOR NAME</b>	<b>PART NUMBER VENDOR NUMBER</b>
LRU	: PANEL 06	V070-730389
SRU	: UHF MODE SELECT ROTARY SWITCH	ME452-0093-5027 (OV102)
SRU	: UHF MODE SELECT ROTARY SWITCH	ME452-0093-5227 (OV103, OV104, OV105)

---

**PART DATA**

---

**EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:**

UHF MODE SELECT ROTARY SWITCH, 5P5T

**REFERENCE DESIGNATORS: 33V73A6S6**

**QUANTITY OF LIKE ITEMS: 1**

ONE

**FUNCTION:**

ACTIVATES UHF TRANSCIVER & SELECTS OPERATING MODE BY PROVIDING CLOSURE TO COMMON OF ONE OF FOUR CONTROL LINES.

**FAILURE MODES EFFECTS ANALYSIS (FMEA) - CRITICAL FAILURE MODE**  
NUMBER: 05-2B-22101 - 05

REVISION# 1 5/28/94

SUBSYSTEM NAME: COMM & TRACK: ULTRA HIGH FREQ COMM (UHF)

LRU: PANEL 05

CRITICALITY OF THIS  
FAILURE MODE: 2 2

ITEM NAME: UHF MODE SELECT ROTARY SWITCH

**FAILURE MODE:**  
FAILURE TO TRANSFER

**MISSION PHASE:**

- P- PRELAUNCH
- LO LIFT-OFF
- OO ON-ORBIT
- DO DE-ORBIT
- LS LANDING SAFING

VEHICLE/PAYLOAD/KIT EFFECTIVITY:

102	COLUMBIA
103	DISCOVERY
104	ATLANTIS
105	ENDEAVOUR

**CAUSE:**  
MECHANICAL FAILURE, VIBRATION, SHOCK, CONTAMINATION.

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:**

- (1) 2/2 EVA - LOSS OF MISSION IF EVA IS REQUIRED - UNABLE TO SELECT EVA MODE.
- (2) 1R/3 OTHER MISSION PHASES - OPERATES IN MODE LAST SELECTED - UNABLE TO SELECT ALTERNATE MODE.

**(B) INTERFACING SUBSYSTEM(S):**

- (1) 2/2 EVA - LOSS OF MISSION IF EVA IS REQUIRED - UNABLE TO SELECT EVA MODE.
- (2) 1R/3 OTHER MISSION PHASES - OPERATES IN MODE LAST SELECTED - UNABLE TO SELECT ALTERNATE MODE.

FAILURE MODES EFFECTS ANALYSIS (FMEA) - CRITICAL FAILURE MODE  
NUMBER: 05-2B-22101 - 05

**(C) MISSION:**

(1) 2/2 EVA - LOSS OF MISSION IF EVA IS REQUIRED - LOSS OF MISSION DUE TO LOSS OF EVA COMM AND TRANSMISSION TO THE EMU'S - WORST CASE - EVA MUST BE TERMINATED.

(2) 1R/3 OTHER MISSION PHASES - NO EFFECT.

**(D) CREW, VEHICLE, AND ELEMENT(S):**

(1) 2/2 EVA - LOSS OF MISSION IF EVA IS REQUIRED - NO EFFECT.

(2) 1R/3 OTHER MISSION PHASES - NO EFFECT DUE TO FIRST FAILURE.

**(E) FUNCTIONAL CRITICALITY EFFECTS:**

(1) 2/2 EVA - LOSS OF MISSION IF EVA IS REQUIRED.

(2) 1R/3 OTHER MISSION PHASES - AFTER THREE FAILURES (THIS SWITCH AND 2 S-BAND), POSSIBLE LOSS OF CREW/ VEHICLE DUE TO LOSS OF STATE VECTOR UPDATE.

---

-DISPOSITION RATIONALE-

---

**(A) DESIGN:**

REFER TO APPENDIX A, ITEM #2, ROTARY SWITCH

**(B) TEST:**

REFER TO APPENDIX A, ITEM #2, ROTARY SWITCH

**GROUND TURNAROUND TEST**

ANY TURNAROUND CHECKOUT TESTING IS ACCOMPLISHED IN ACCORDANCE WITH OMRSD.

**(C) INSPECTION:**

REFER TO APPENDIX A, ITEM #2, ROTARY SWITCH

**(D) FAILURE HISTORY:**

CURRENT DATA ON TEST FAILURES, FLIGHT FAILURES, UNEXPLAINED ANOMALIES, AND OTHER FAILURES EXPERIENCED DURING GROUND PROCESSING ACTIVITY CAN BE FOUND IN THE PRACA DATABASE.

**(E) OPERATIONAL USE:**

NO CREW ACTION AVAILABLE.

---

- APPROVALS -

---

PAE MANAGER : K. L. PRESTON  
PRODUCT ASSURANCE ENGR : T. R. CLARK  
DESIGN ENGINEERING : H. D. HADDAD  
NASA SSMA  
NASA SUBSYSTEM MANAGER :

*K. L. Preston 7/8/94*  
*Thomas R. Clark*  
*H. D. Haddad 7/7/94*  
*Michael Penney*  
*Nancy A. Olson*