FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL HARDWARE
NUMBER:05-2B-22101M -X

SUBSYSTEM NAME: COMM & TRACK: UHF SPACE COMMUNICATION
REVISION: 0 11/14/95

PART DATA

	PART NAME **VENDOR NAME**	**PART NUMBER** **VENDOR NUMBER**
LRU	: PANEL O6	VO70-730389
SRU	: SWITCH, ROTARY	ME452-0093-5226

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
UHF MODE SELECT ROTARY SWITCH, 6P5P

REFERENCE DESIGNATORS: 33V73A6S6

QUANTITY OF LIKE ITEMS: 1
ONE

FUNCTION:
ACTIVATES UHF - ATC TRANSCEIVER OR SPACE-TO-SPACE ORBITER RADIO (SSOR). SELECTS OPERATING MODE BY PROVIDING CLOSURE TO COMMON OF ONE OF FOUR CONTROL CIRCUITS.

PRINT DATE: 08/20/98

FAILURE MODES EFFECTS ANALYSIS FMEA – NON-CIL FAILURE MODE
NUMBER: 05-2B-Z2101M-07

REVISION#: 0 10/03/96

SUBSYSTEM NAME: COMM & TRACK: UHF SPACE COMMUNICATION
LRU: PANEL O6
ITEM NAME: SWITCH, ROTARY

CRITICALITY OF THIS FAILURE MODE: 1R3

FUNCTIONAL CRITICALITY/
REQUIRED FAULT TOLERANCE/ACHIEVED FAULT TOLERANCE:1R/2/2

FAILURE MODE:
ATC "MODE COMMON" SHORT TO COMMON (RIGHT ATU: 28 VDC) WITHIN THE ROTARY SWITCH CONNECTOR (PIN H TO G).

MISSION PHASE:
PL PRE-LAUNCH
LO LIFT-OFF
OO ON-ORBIT
DO DE-ORBIT
LS LANDING/SAFING

VEHICLE/PAYLOAD/KIT EFFECTIVITY:
102 COLUMBIA
103 DISCOVERY
104 ATLANTIS
105 ENDEAVOUR
AFTER SPACE COMM MODIFICATION

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

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN
A) PASS
B) PASS
C) PASS

PASS/FAIL RATIONALE:
A)

B)

C)

PRINT DATE: 08/20/98

FAILURE MODES EFFECTS ANALYSIS (FMEA) – NON-CIL FAILURE MODE
NUMBER: 05-2B-22101M-07

CORRECTING ACTION: MANUAL

CORRECTING ACTION DESCRIPTION:
FOR ATC - USE ORBITER S-BAND SYSTEM FOR COMM.
FOR SSOR - SWITCH OFF RIGHT ATU.

- FAILURE EFFECTS -

(A) SUBSYSTEM:
LOSS OF TRANSMIT/RECEIVE OF UHF VOICE VIA UHF - ATC TRANSCEIVER. ALSO LOSS OF SSOR AUDIO WITH RIGHT ATU CONFIG CONTROL.

(B) INTERFACING SUBSYSTEM(S):
NO EFFECT - FIRST FAILURE

(C) MISSION:
LOSS OF SSOR AUDIO WITH RIGHT ATU CONFIG CONTROL.
UHF - ATC TRANSCEIVER IS NOT USED ON-ORBIT.

(D) CREW, VEHICLE, AND ELEMENT(S):
NO EFFECT - FIRST FAILURE

(E) FUNCTIONAL CRITICALITY EFFECTS:
POSSIBLE LOSS OF CREW/VEHICLE DUE TO LOSS OF STATE VECTOR UPDATE AFTER 3 FAILURES (THIS SWITCH, AND LOSS OF 2 S-BAND).

- TIME FRAME -

TIME FROM FAILURE TO CRITICAL EFFECT: MINUTES

- APPROVALS -

PRODUCT ASSURANCE ENGR. : VAN D. NGUYEN — Vdnguyen 8-20-98
DESIGN ENGINEERING : G. J. SCHWARTZ — 8-21-98