FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NON-CIL HARDWARE
NUMBER:05-3A-B26-1 -X

SUBSYSTEM NAME: MULTIFUNCTION ELECTRONIC DISPLAY SUBSYSTEM

REVISION: 0   01/19/95

PART DATA

	PART NAME	PART NUMBER
	VENDOR NAME	VENDOR NUMBER
LRU	: PANEL C2A2	VO70-730280
LRU	· PANEL R12A2	VO70-730335
SRU	: SWITCH, TOGGLE	ME452-0102-7106

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
SWITCH, "CRT" MAJOR, FUNCTION SELECT 1P3P "GNC-SM-PL" (GUIDANCE NAVIGATION
AND CONTROL-SYSTEM MANAGEMENT-PAYLOAD)

REFERENCE DESIGNATORS: 35V73A2A2S2
                                 35V73A2A2S3
                                 35V73A2A2S4
                                 32V73A12A2S2

QUANTITY OF LIKE ITEMS: 4
THREE FRONT
ONE AFT

FUNCTION:
PROVIDES MEANS FOR CONTROLLING AND SELECTING THE IDP, OR "CRT" MDU MAJOR
FUNCTION. THE SWITCH INTERFACES WITH THE GENERAL PURPOSE COMPUTER (GPC)
THROUGH THE INTEGRATED DISPLAY PROCESSOR (IDP).

REFERENCE DOCUMENTS: VS70-730182D
                               SSD90D0009B, CP#1
                               MC409-0185D, AMENDMENT E01
                               SSD92D0643D, CP#2

FAILURE MODES EFFECTS ANALYSIS FMEA -- NON-CIL FAILURE MODE
                                    NUMBER: 05-3A-B26-1-02

                                    REVISION#:   1   04/26/98
SUBSYSTEM NAME: MULTIFUNCTION ELECTRONIC DISPLAY SUBSYSTEM
LRU: PANEL C2A2, R12A2   **CRITICALITY OF THIS**
ITEM NAME: SWITCH, TOGGLE   **FAILURE MODE: 1R3**

FUNCTIONAL CRITICALITY/
REQUIRED FAULT TOLERANCE/ACHIEVED FAULT TOLERANCE: 1R/2/3

FAILURE MODE:
FAILS CLOSED, PREMATURE CLOSURE, CONTACT-TO-CONTACT SHORT

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

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

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

CRITICALITY 1R2 DURING INTACT ABORT ONLY (AVIONICS ONLY)? NO

REDUNDANCY SCREEN   **A)** PASS
                           B) PASS
                           C) PASS

PASS/FAIL RATIONALE:
A)

B)

C)

METHOD OF FAULT DETECTION:

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VISUAL

MASTER MEAS. LIST NUMBERS:	V72X5643B
	V98J4349C
	V73K2003E
	V73K2004E
	V73K2005E
	V72X5713B
	V98J4359C
	V73K2013E
	V73K2014E
	V73K2015E
	V72X5803B
	V98J4369C
	V73K2023E
	V73K2024E
	V73K2025E
	V72X5903B
	V98J4379C
	V73K2053E
	V73K2054E
	V73K2055E

CORRECTING ACTION: MANUAL

CORRECTING ACTION DESCRIPTION:
MDU'S COMMANDED BY OTHER IDP'S ARE AVAILABLE FOR DISPLAY.

REMARKS/RECOMMENDATIONS:
MDU'S COMMANDED BY OTHER IDP'S PROVIDE ADEQUATE BACKUP. IDP WILL DEFAULT
TO GNC FUNCTION IF SWITCH IS IN INDETERMINANT POSITION.

- FAILURE EFFECTS -

(A) SUBSYSTEM:
SWITCH REMAINS IN THE PREVIOUSLY COMMANDED MAJOR FUNCTION; INABILITY TO
TRANSFER TO GN&C MODE OR OTHER MODES. AN ALTERNATE IDP WILL HAVE TO BE
SELECTED FOR MAJOR FUNCTION RELATED KEYBOARD INPUTS TO THE GPC. THE
MULTIFUNCTION DISPLAY UNIT (MDU) CONTINUES TO UPDATE DATA OF THE PREVIOUS
COMMANDED MAJOR FUNCTION.

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

(C) MISSION:
NO EFFECT FIRST FAILURE

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

(E) FUNCTIONAL CRITICALITY EFFECTS:
POSSIBLE LOSS OF CREW/VEHICLE AFTER THREE FAILURES (SWITCH FAILS CLOSED
WILL RESULT IN IDP STUCK IN PREVIOUS COMMANDED MAJOR FUNCTION, LOSS OF THE
OTHER TWO IDP'S) DUE TO LOSS OF ABILITY TO ADVISE ORBITER CONTROL SYSTEMS
TO ACCEPT UPDATED STATE VECTOR DATA, NAVIGATIONAL AND AIR DATA INPUTS
REQUIRED TO ASSURE SAFE VEHICLE CONTROL, AND MANUAL OPS MODE
TRANSITIONS.

- TIME FRAME -

TIME FROM FAILURE TO CRITICAL EFFECT: MINUTES

TIME FROM FAILURE OCCURRENCE TO DETECTION: IMMEDIATE

TIME FROM DETECTION TO COMPLETED CORRECTING ACTION: SECONDS

IS TIME REQUIRED TO IMPLEMENT CORRECTING ACTION LESS THAN TIME TO EFFECT?
YES

RATIONALE FOR TIME TO CORRECTING ACTION VS TIME TO EFFECT:
N/A (CORRECTIVE ACTION CAN BE COMPLETED BEFORE CRITICAL EFFECT)

HAZARD REPORT NUMBER(S):

HAZARD(S) DESCRIPTION:

- APPROVALS -

SS&PAE ENGR   : N. D. NGUYEN   : _N. Nguyen_

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NUMBER: 05-3A-B26-1-02

MEDS SYSTEM   : M. B. WARNER
MEDS HARDWARE   : R. M. SITAPARA