FAILURE MODES EFFECTS ANALYSIS (FMEA) – CIL HARDWARE
NUMBER: 05-5-B24-1 -X

SUBSYSTEM NAME: DATA PROCESSING SYSTEM (DPS)
REVISION: 9 04/08/96

PART DATA

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	:TOGGLE SWITCH, CRT SEL	ME452-0102-7201

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:

REFERENCE DESIGNATORS: 35V73A2A2S7
LEFT CRT SEL
35V73A2A2S8
RIGHT CRT SEL

QUANTITY OF LIKE ITEMS: 2
TWO

FUNCTION:
"LEFT CRT SEL" SWITCH, S7, PROVIDES MEANS FOR SWITCHING THE LEFT KEYBOARD FROM THE LEFT CRT TO THE CENTER CRT OR VICE VERSA. THE "RIGHT CRT SEL" SWITCH, S8, PROVIDES MEANS FOR SWITCHING THE RIGHT KEYBOARD FROM THE RIGHT CRT TO THE CENTER CRT OR VICE VERSA.

FAILURE MODES EFFECTS ANALYSIS FMEA – CIL FAILURE MODE

NUMBER: 05-5-B24-1-01

REVISION#: 9 04/05/95

SUBSYSTEM NAME: DATA PROCESSING SYSTEM (DPS)
LRU: SWITCH, TOGGLE
ITEM NAME: TOGGLE SWITCH CRT SEL

CRITICALITY OF THIS FAILURE MODE: 1R2

FAILURE MODE:
FAILS OPEN, PREMATURE OPEN

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

REDUNDANCY SCREEN

A) PASS
B) PASS
C) PASS

PASS/FAIL RATIONALE:
A)

B)

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:

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LOSS OF INPUT CAPABILITY TO THE DISPLAY ELECTRONICS UNIT (DEU) FROM KEYBOARD.

(B) INTERFACING SUBSYSTEM(S):
S7 FAILING OPEN RESULTS IN UNCHANGED DISPLAY STATUS (DEU'S CONTINUE TO UPDATE CRTS), BUT ABILITY TO ENTER DATA OR COMMANDS VIA THE LEFT KEYBOARD IS LOST. S8 FAILING OPEN HAS THE SAME RESULTS RELATIVE TO THE RIGHT KEYBOARD.

(C) MISSION:
POSSIBLE LOSS OF MISSION ON SECOND FAILURE.

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

(E) FUNCTIONAL CRITICALITY EFFECTS:
CRITICALITY 1R2 BECAUSE OF THE FOLLOWING REASON:

DURING ASCENT/ENTRY POTENTIAL LOSS OF VEHICLE/CREW DUE TO LOSS OF KEYSTROKE CAPABILITY (2ND SWITCH FAILURE); RESULTS IN 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, MANUAL OPS MODE TRANSITIONS.

-DISPOSITION RATIONALE-

(A) DESIGN:
REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH.

(B) TEST:
GROUND TURNAROUND TEST. ALL TURNAROUND CHECKOUT TESTING IS ACCOMPLISHED IN ACCORDANCE WITH OMRSD.

(C) INSPECTION:
REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH

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(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:
THE AFT MCDS CAN BE USED TO INTERFACE WITH GPC'S DURING ORBIT OR LOW ACCELERATION PHASES. IF TIME ALLOWS, DEU EQUIVALENTS CAN BE UPLINKED FROM THE GROUND TO REESTABLISH GPC INTERFACE.

- APPROVALS -

EDITORIALLY APPROVED	RI	R Wells 7-31-96
EDITORIALLY APPROVED	JSC	Sam Dabney 7-31-96
TECHNICAL APPROVAL	VIA APPROVAL FORM	96-CIL-013_05-5