

**FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NON-GIL HARDWARE  
NUMBER: 05-6Q-2203B -X**

**SUBSYSTEM NAME: EPD&C - DISPLAYS & CONTROLS**

**REVISION: 2      01/06/98**

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**PART DATA**

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	<b>PART NAME</b>	<b>PART NUMBER</b>
	<b>VENDOR NAME</b>	<b>VENDOR NUMBER</b>
LRU	: PANEL F8A8 (PRE-MEDS)	V070-730267
LRU	: PANEL F8A3 (MEDS)	V070-730736
SRU	:SWITCH, TOGGLE	ME452-0102-7352
SRU	:SWITCH, TOGGLE	ME452-0102-7852
SRU	:SWITCH, TOGGLE	ME452-0102-8352

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**EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:**

SWITCH, TOGGLE, 3 POLE/2 POSITION. FLIGHT CONTROLLER POWER, PILOT'S STATION.

**REFERENCE DESIGNATORS:**    34V73A8A8S3 (PRE-MEDS)  
   34V73A8A3S3 (MEDS CONFIGURATION)

**QUANTITY OF LIKE ITEMS:**    1  
ONE ON PILOT STATION PNL

**FUNCTION:**

ENABLES CREW TO TURN PILOT STATION DDU FLIGHT CONTROL POWER SUPPLIES A, B AND C "ON" OR "OFF" FOR RHC, SBTC, RPTA, BFC, AND NWS.

## FAILURE MODES EFFECTS ANALYSIS FMEA -- NON-CIL FAILURE MODE

NUMBER: 05-6Q-2203B- 01

REVISION#: 2 01/08/98

SUBSYSTEM NAME: EPD&amp;C - DISPLAYS &amp; CONTROLS

LRU: PANEL F8A8 (PRE-MEDS), F8A3 (MEDS)

CRITICALITY OF THIS

ITEM NAME: SWITCH, TOGGLE

FAILURE MODE: 1R3

## FAILURE MODE:

FAILS CLOSED IN THE "OFF" POSITION, SHORT TO CASE AT "ON" POSITION CONTACTS,  
POLE TO POLE 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, INTERNAL STRUCTURAL FAILURE, VIBRATION, SHOCK.

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN        A) PASS  
    B) PASS  
    C) PASS

## PASS/FAIL RATIONALE:

A)

B)

C)

CORRECTING ACTION: MANUAL

## CORRECTING ACTION DESCRIPTION:

AFTER TOTAL (EITHER TWO OR THREE CHANNEL FAILURES) FAILURE OF THE PILOT'S  
FLIGHT CONTROLLER POWER SWITCH, THE FLIGHT CONTROL FUNCTION WILL BE  
TRANSFERRED TO THE COMMANDER'S STATION.

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 - FAILURE EFFECTS -
 

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**(A) SUBSYSTEM:**

SWITCH FUNCTION DEFEATED. LOSS OF ABILITY TO TURN ON AFFECTED FLIGHT CONTROL POWER SUPPLIES A, B OR C.

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

LOSS OF POWER TO ONE CHANNEL ON EACH OF THE FOLLOWING: RHC, SBTC, RPTA, BFC AND NWS, AT THE PILOT'S STATION.

**(C) MISSION:**

FIRST FAILURE - NO EFFECT.

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

FIRST FAILURE - NO EFFECT.

**(E) FUNCTIONAL CRITICALITY EFFECTS:**

SUCCESS PATHS AFTER FIRST FAILURE, FLIGHT CONTROL CAN BE TRANSFERRED TO COMMANDER'S STATION. FAILURE OF THE COMMANDER'S STATION FLIGHT CONTROLLER POWER SWITCH WILL RESULT IN LOSS OF POWER TO COMMANDER'S RHC, THC, SBTC, RPTA, AND BFC. SHOULD THIS OCCUR, ONLY AUTOMATIC FLIGHT CONTROL MODE REMAINS AVAILABLE TO THE CREW.

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 - APPROVALS -
 

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SS&PAE MANAGER	: P. STENGER-NGUYEN
SS&PAE	: T. AI
DESIGN ENGINEERING	: T. D. NGUYEN
MEDS SYSTEM	: M. B. WARNER
MEDS HARDWARE	: R. SITAPARA
JSC MOD	:

<i>P. Stenger-Nguyen</i>	
<i>T. Ai</i>	
<i>T. D. Nguyen</i>	1-12-98
<i>M. B. Warner</i>	1-9-98
<i>R. Sitapara</i>	1-8-98
<i>Clayton J. ...</i>	4-10-98