PRINT DATE: 06/28/07

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL HARDWARE
NUMBER: 05-3-12602 -X

SUBSYSTEM NAME: DISPLAYS & CONTROLS

REVISION: 1 06/27/97

PART DATA

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: D&C PANEL F6	V070-730403
LRU	: D&C PANEL F8	V070-730404
LRU	: PILOT DISPLAY UNIT (PDU)	MC409-0096-00X1

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
PILOT DISPLAY UNIT (PDU)

REFERENCE DESIGNATORS: 34V73A6A9
34V73A8A9

QUANTITY OF LIKE ITEMS: 2
TWO. PDU 1 AND 2

FUNCTION:
PROCESSES ANALOG SIGNALS FROM THE HEAD UP DISPLAY ELECTRONICS (HUDE) UNIT AND PROVIDES A CRITICAL FLIGHT MEASUREMENT DISPLAY SUPERIMPOSED ON THE OUT-THE-WINDOW VIEW.

FAILURE MODES EFFECTS ANALYSIS FMEA – NON-CIL FAILURE MODE
NUMBER: 05-3-12602- 01

REVISION#: 1 08/27/97

SUBSYSTEM NAME: DISPLAYS & CONTROLS
LRU: D&C PANEL F6, F8
ITEM NAME: PDU

CRITICALITY OF THIS FAILURE MODE: 1R3

FAILURE MODE:
LOSS OF OUTPUT. DEFECTIVE CRT, VIDEO OR REFLECTION CIRCUITS, HVPS OR LVPS.

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:
VIBRATION, SHOCK, OVERLOAD, PIECE PART FAILURE, CONTAMINATION.

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:
CREW MAY UTILIZE REDUNDANT HUD AND OTHER DEDICATED DISPLAYS.

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NON-CIL FAILURE MODE
NUMBER: 05-3-12602- 01

- FAILURE EFFECTS -

(A) SUBSYSTEM:
LOSS OF AFFECTED PDU.

(B) INTERFACING SUBSYSTEM(S):
NO EFFECT.

(C) MISSION:
NO EFFECT.

(D) CREW, VEHICLE, AND ELEMENT(S):
DETECT LOSS OF OUTPUT AND USE BACK UP/ALTERNATE DISPLAYS.

(E) FUNCTIONAL CRITICALITY EFFECTS:
SUCCESS PATHS REMAINING AFTER THE FIRST FAILURE - THE REDUNDANT HEAD UP DISPLAY (HUD) AND OTHER DEDICATED DISPLAYS MAY BE USED. WHEN LOSS OF OUTPUT IS DETECTED, THE COMMANDER (OR PILOT) WILL TRANSITION TO THE DEDICATED DISPLAYS FOR CRITICAL LANDING DATA. LOSS OF ALL DISPLAYS COULD RESULT IN LOSS OF CREW AND VEHICLE DURING LANDING.

DESIGN CRITICALITY (PRIOR TO DOWNGRADE, DESCRIBED IN (F)): 1R2

(F) RATIONALE FOR CRITICALITY DOWNGRADE:
THE OTHER HUD OR DEDICATED DISPLAYS MAY BE USED FOR THIS SCENARIO SINCE IT IS THE FIRST FAILURE AND IS LOSS OF OUTPUT (I.E. EASILY RECOGNIZABLE).

- APPROVALS -

EDITORIALLY APPROVED	: BNA	: J. Kimura 8/28/97
EDITORIALLY APPROVED	: JSC	: Sam Deaver 9/22/97
TECHNICAL APPROVAL	: VIA APPROVAL FORM	: 96-CIL-024_05-3