FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NON-CIL HARDWARE
NUMBER:05-6QA-BCB1 -X

SUBSYSTEM NAME: EPD&C - MEDS

REVISION: 0 01/19/95

PART DATA

	PART NAME / **VENDOR NAME**	**PART NUMBER** / **VENDOR NUMBER**
LRU	PANEL R15	VO70-730342
SRU	: BREAKER, CIRCUIT	MC454-0026-2100

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
BREAKER, CIRCUIT, 10A, MDU POWER

REFERENCE DESIGNATORS:
32V73A15CB78
32V73A15CB79
32V73A15CB81
32V73A15CB82
32V73A15CB83
32V73A15CB84
32V73A15CB85

QUANTITY OF LIKE ITEMS: 7
SEVEN

FUNCTION:
PROVIDES CIRCUIT PROTECTION BETWEEN THE MAIN DC BUS VOLTAGE 28 VDC TO THE MULTIFUNCTION DISPLAY UNIT (MDU) POWER SUPPLY FOR THE FOLLOWING MDU'S: CDR1, CDR2, MFD1, MFD2, PLT1, PLT2, AFD1.

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

FAILURE MODES EFFECTS ANALYSIS FMEA -- NON-CIL FAILURE MODE
NUMBER: 05-6QA-8CB1-01

REVISION#: 1 0426/98

SUBSYSTEM NAME: EPD&C - MEDS
LRU: PANEL R15
ITEM NAME: BREAKER, CIRCUIT

CRITICALITY OF THIS FAILURE MODE: 1R3

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

FAILURE MODE:
FAILS 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:
PIECE PART FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK, PROCESSING ANOMALY, THERMAL STRESS

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; NO DISPLAY ON ASSOCIATED MDU

MASTER MEAS. LIST NUMBERS: NONE

CORRECTING ACTION: MANUAL

CORRECTING ACTION DESCRIPTION:
CREW CAN UTILIZE OTHER MDU'S FOR NECESSARY DATA.

REMARKS/RECOMMENDATIONS:
NONE

- FAILURE EFFECTS -

(A) SUBSYSTEM:
POWER TO THE ASSOCIATED MDU IS INTERRUPTED.

(B) INTERFACING SUBSYSTEM(S):
LOSS OF MDU. ALTERNATE MDU MUST BE USED.

(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 FOUR FAILURES BECAUSE OF INABILITY TO MONITOR OR RESPOND TO SYSTEM FAILURES:

FIRST FAILURE	SECOND FAILURE	THIRD FAILURE	FOURTH FAILURE
CB (CDR1 MDU) FAILS OPEN	LOSS OF IDP2	LOSS OF EITHER MFD1, CRT3, OR PLT2 MDU	LOSS OF MN A

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FIRST FAILURE	SECOND FAILURE	THIRD FAILURE	FOURTH FAILURE
CB (CDR1 MDU) FAILS OPEN	LOSS OF IDP1	LOSS OF EITHER MFD2, CRT3, OR PLT2 MDU	LOSS OF MN B
CB (CDR1 MDU) FAILS OPEN	LOSS OF IDP3	LOSS OF EITHER MFD2, CRT1 OR PLT1 MDU	LOSS OF MN B
CB (CDR2 MDU) FAILS OPEN	LOSS OF IDP3	LOSS OF EITHER MFD1, CRT2, OR PLT2 MDU	LOSS OF MN A
CB (CDR2 MDU) FAILS OPEN	LOSS OF IDP1	LOSS OF EITHER MFD1, CRT2, OR PLT1 MDU	LOSS OF MN C
CB (CDR2 MDU) FAILS OPEN	LOSS OF IDP2	LOSS OF EITHER CRT1, MFD2, OR PLT1 MDU	LOSS OF MN C
CB (MFD1 MDU) FAILS OPEN	LOSS OF IDP2	LOSS OF EITHER CDR1, CRT3, OR PLT1 MDU	LOSS OF MN A
CB (MFD1 MDU) FAILS OPEN	LOSS OF IDP3	LOSS OF EITHER CDR2, CRT2, OR PLT2 MDU	LOSS OF MN A
CB (MFD1 MDU) FAILS OPEN	LOSS OF IDP1	LOSS OF EITHER CDR2, CRT2, OR PLT1 MDU	LOSS OF MN C
CB (MFD2 MDU) FAILS OPEN	LOSS OF IDP3	LOSS OF EITHER CDR1, CRT1 OR PLT1 MDU	LOSS OF MN B
CB (MFD2 MDU) FAILS OPEN	LOSS OF IDP1	LOSS OF EITHER CRT3, CDR1, OR PLT2 MDU	LOSS OF MN B
CB (MFD2 MDU) FAILS OPEN	LOSS OF IDP2	LOSS OF EITHER CDR2, CRT1, OR PLT1 MDU	LOSS OF MN C
CB (PLT1 MDU) FAILS OPEN	LOSS OF IDP2	LOSS OF EITHER MFD2, CRT1, OR CDR2 MDU	LOSS OF MN C
CB (PLT1 MDU) FAILS OPEN	LOSS OF IDP3	LOSS OF EITHER MFD2, CRT1 OR CDR1 MDU	LOSS OF MN B
CB (PLT1 MDU) FAILS OPEN	LOSS OF IDP1	LOSS OF EITHER MFD1, CRT2, OR CDR2 MDU	LOSS OF MN C
CB (PLT2 MDU) FAILS OPEN	LOSS OF IDP3	LOSS OF EITHER MFD1, CRT2, OR CDR2 MDU	LOSS OF MN A

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FIRST FAILURE	SECOND FAILURE	THIRD FAILURE	FOURTH FAILURE
CB (PLT2 MDU) FAILS OPEN	LOSS OF IDP1	LOSS OF EITHER MFD2, CRT3, OR CDR1 MDU	LOSS OF MN B
CB (PLT2 MDU) FAILS OPEN	LOSS OF IDP2	LOSS OF EITHER MFD1, CDR1, OR CRT3 MDU	LOSS OF MN A

POSSIBLE LOSS OF CREW/VEHICLE DUE TO INADEQUATE DISPLAYS TO PROVIDE THE CREW WITH VISIBILITY OF VEHICLE STATUS DURING CRITICAL FLIGHT PHASES. INADEQUATE DISPLAYS WILL HINDER THE CREW'S ABILITY TO RESPOND TO SYSTEM FAILURES AND/OR LAND THE VEHICLE SAFELY.

NOTE: HEAD UP DISPLAY IS NOT A USABLE SOURCE OF INFORMATION PRIOR TO MAJOR MODE 305.

- 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
MEDS SYSTEM	: M. B. WARNER	: M. B. Warner
MEDS HARDWARE	: R. M. SITAPARA	: Ramon M. Sitapara 4/28/98