

FAILURE MODES EFFECTS ANALYSIS (FMEA) - CIL HARDWARE
 NUMBER:05-1-FC7246 -X

SUBSYSTEM NAME: GUIDANCE, NAVIGATION, & CONTROL

REVISION: 0 02/09/88

PART DATA

| | PART NAME VENDOR NAME | PART NUMBER VENDOR NUMBER |
|-----|------------------------------|------------------------------|
| LRU | :PANEL F2 GLARE SHIELD PANEL | V070-730400 |
| LRU | :PANEL F4 GLARE SHIELD PANEL | V070-730402 |
| SRU | :PUSHBUTTON SWITCH | ME452-0061-4142 |

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
 SWITCH PITCH AUTO, 3PST MOMENTARY "ON" PUSHBUTTON

REFERENCE DESIGNATORS: 34V73A4S2
 34V73A2S2

QUANTITY OF LIKE ITEMS: 2
 TWO

FUNCTION:
 PROVIDES CAPABILITY TO SELECT THE AUTOMATIC PITCH MODE FUNCTION.

FAILURE MODES EFFECTS ANALYSIS FMEA - CIL FAILURE MODE

NUMBER: 05-1-FC7245-01

REVISION#: 1 01/22/96

SUBSYSTEM NAME: GUIDANCE, NAVIGATION, & CONTROL

LRU: PANEL F2, F4 (GLARE SHIELD PANEL)

ITEM NAME: PUSHBUTTON SWITCH

CRITICALITY OF THIS

FAILURE MODE: 1R2

FAILURE MODE:

FAILS CLOSED (FAILS TO TRANSFER OUT OF AUTO MODE).

MISSION PHASE: DO DE-ORBIT

| | | |
|----------------------------------|-----|-----------|
| VEHICLE/PAYLOAD/KIT EFFECTIVITY: | 102 | COLUMBIA |
| | 103 | DISCOVERY |
| | 104 | ATLANTIS |
| | 105 | ENDEAVOUR |

CAUSE:

VIBRATION, SHOCK, CONTAMINATION, 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:

NO EFFECT.

(B) INTERFACING SUBSYSTEM(S):

SAME AS (A)

(C) MISSION:

FOR FIRST FAILURE (CONSTANT AUTO MODE SELECTION), CREW MUST DEPRESS AND CONTINUALLY HOLD CSS MODE SELECT PUSHBUTTON FOR ALL MISSION PHASES

FAILURE MODES EFFECTS ANALYSIS (FMEA) - CIL FAILURE MODE

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BELOW THE MINIMUM AUTO MODE ENGAGE ALTITUDE. SECOND FAILURE SAME AS FIRST (CONTINUOUS CSS MODE SELECT IN EITHER STATION WILL NULLIFY FAILURE EFFECTS).

(D) CREW, VEHICLE, AND ELEMENT(S):
SAME AS (C)

(E) FUNCTIONAL CRITICALITY EFFECTS:
CRITICALITY 1R BECAUSE LOSS OF CSS MODE BELOW THE MINIMUM AUTO MODE ENGAGE ALTITUDE MAY CAUSE LOSS OF CREW/VEHICLE.

-DISPOSITION RATIONALE-

(A) DESIGN:
REFER TO APPENDIX A, ITEM NO. 3 - PUSHBUTTON SWITCH.

(B) TEST:
REFER TO APPENDIX A, ITEM NO. 3 - PUSHBUTTON SWITCH.

GROUND TURNAROUND TEST
ALL SWITCH FUNCTIONS ARE VERIFIED DURING GROUND TURNAROUND TESTING.

(C) INSPECTION:
REFER TO APPENDIX A, ITEM NO. 3 - PUSHBUTTON SWITCH.

(D) FAILURE HISTORY:
REFER TO APPENDIX A, ITEM NO. 3 - PUSHBUTTON SWITCH.

(E) OPERATIONAL USE:
FOR ALL MISSION PHASES BELOW THE MINIMUM AUTO MODE ENGAGE ALTITUDE, CREW MUST DEPRESS AND CONTINUALLY HOLD THE CSS MODE SELECT PUSHBUTTON. IF THIS FAILURE IS DETECTED WHILE OPS-8 IS AVAILABLE (PRIOR TO DEORBIT BURN), FAILURE CAN BE NULLIFIED BY SOFTWARE DESELECTION FOR ON-ORBIT MISSION PHASES.

- APPROVALS -

| | | |
|----------------------|-----------------|------------------|
| EDITORIALLY APPROVED | : RI | : <u>9/25/96</u> |
| EDITORIALLY APPROVED | : JSC | : <u>2-1-96</u> |
| TECHNICAL APPROVAL | : APPROVAL FORM | : 95-CIL-004-RI |