

**FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL HARDWARE
NUMBER: 05-6G-2128 -X**

SUBSYSTEM NAME: EPD&C - HYDRAULICS (02-6)

REVISION: 2 10/07/91

PART DATA

	PART NAME	PART NUMBER
	VENDOR NAME	VENDOR NUMBER
LRU	: PANEL R4	V070-730278
SRU	: SWITCH, TOGGLE	ME452-0102-7105

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
SWITCH, TOGGLE, 1 POLE 3 POSITION, MOMENTARY - LANDING GEAR EXTEND ISOLATION VALVE

REFERENCE DESIGNATORS: 32V73A4S32

QUANTITY OF LIKE ITEMS: 1
ONE

FUNCTION:
PROVIDES FOR MANUAL SELECTION OF "OPEN/CLOSE" POSITION FOR THE LANDING GEAR EXTEND ISOLATION VALVE (SYSTEM 1).

FAILURE MODES EFFECTS ANALYSIS FMEA -- CIL FAILURE MODE

NUMBER: 05-6G-2128-04

REVISION#: 3 10/08/98

SUBSYSTEM NAME: EPD&C - HYDRAULICS (02-6)

LRU: PANEL R4

ITEM NAME: SWITCH, TOGGLE

CRITICALITY OF THIS

FAILURE MODE: 1R2

FAILURE MODE:

SWITCH FAILS IN VALVE "CLOSED" POSITION

MISSION PHASE:

LO LIFT-OFF
DO DE-ORBIT

VEHICLE/PAYLOAD/KIT EFFECTIVITY:

102 COLUMBIA
103 DISCOVERY
104 ATLANTIS
105 ENDEAVOUR

CAUSE:

PIECE PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK,
PROCESSING ANOMALY, THERMAL STRESS

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN

A) PASS
B) PASS
C) PASS

PASS/FAIL RATIONALE:

A)

B)

VALVE HAS POSITION INDICATION

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:

LOSS OF FUNCTION CONTROL

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(B) INTERFACING SUBSYSTEM(S):

LOSS OF THE ABILITY TO OPEN LDG EXTEND ISOLATION VALVE RESULTING IN LOSS OF HYDRAULIC LANDING GEAR DEPLOY CAPABILITY.

(C) MISSION:

NO EFFECT

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

FIRST FAILURE - NO IMPACT WITHOUT SUBSEQUENT FAILURE. LOSS OF REDUNDANT HYDRAULIC SUPPLY FOR NOSEWHEEL STEERING.

(E) FUNCTIONAL CRITICALITY EFFECTS:

POSSIBLE LOSS OF CREW/VEHICLE AFTER SECOND FAILURE: FOR THE SWITCH FAILED IN THE VALVE "CLOSED" POSITION, THE SECOND FAILURE IS THE LOSS OF THE BACKUP LANDING GEAR UPLOCK PYRO CARTRIDGE RESULTING IN THE LOSS OF CAPABILITY TO DEPLOY THE LANDING GEAR.

-DISPOSITION RATIONALE-

(A) DESIGN:

REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH

(B) TEST:

REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH

GROUND TURNAROUND TEST

ANY TURNAROUND CHECKOUT TESTING IS ACCOMPLISHED IN ACCORDANCE WITH OMRSD.

(C) INSPECTION:

REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH

(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 DATA BASE.

(E) OPERATIONAL USE:

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NONE

- APPROVALS -

EDITORIALLY APPROVED	: BNA	: <u>J. Komura 10-8-98</u>
TECHNICAL APPROVAL	: VIA APPROVAL FORM	: 95-CIL-009_05-6G