

FAILURE MODES EFFECTS ANALYSIS (FMEA) – NON-CIL HARDWARE
 NUMBER:05-2A-21956M -X

SUBSYSTEM NAME: COMM & TRACK: AUDIO

REVISION: 0 11/14/95

PART DATA

PART NAME	PART NUMBER
VENDOR NAME	VENDOR NUMBER
LRU : ROTATION HAND CONTROL	MC621-0043-3043
LRU : ROTATION HAND CONTROL	MC621-0043-3046
LRU : ROTATION HAND CONTROL	MC621-0043-3047
SRU : SWITCH, KEY	

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:

KEY SWITCH, RHC; PUSHBUTTON SWITCH (PUSH-TO-TALK) ON ROTATIONAL HAND CONTROLLERS. SPRING LOADED-OFF. KEYING IS A GROUNDING FUNCTION.

CDR AND PLT P/N IS MC621-0043-3046 OR -3047. AFT P/N IS -3043.

REFERENCE DESIGNATORS: 30V73A5
 30V73A6
 30V73A7

QUANTITY OF LIKE ITEMS: 3
 ONE EACH STATION

FUNCTION:

PROVIDES PUSH-TO-TALK (PPT) FUNCTION TO THE COMMANDER AND PILOT DURING LAUNCH AND ENTRY BY MEANS OF TRIGGER-LIKE SWITCH ON THE ROTATIONAL HAND CONTROLLER FOR AUDIO COMMUNICATION. THE SAME CAPABILITY IS PROVIDED TO THE AFT STATION. THIS KEY SWITCH IS IN PARALLEL TO PTT SWITCHES CONNECTED TO THE APPROPRIATE AUDIO TERMINAL UNITS.

FAILURE MODES EFFECTS ANALYSIS FMEA – NON-CIL FAILURE MODE

NUMBER: 05-2A-21956M-02

REVISION#: 0 11/14/95

SUBSYSTEM NAME: COMM & TRACK; AUDIO
 LRU: ROTATIONAL HAND CONTROLLER
 ITEM NAME: SWITCH, KEY

CRITICALITY OF THIS
 FAILURE MODE: 1R3

FUNCTIONAL CRITICALITY/

REQUIRED FAULT TOLERANCE/ACHIEVED FAULT TOLERANCE: 1R/2/2

FAILURE MODE:

CONTINUOUS OUTPUT (CONTACTS ARE SHORTED OR THE SWITCH JAMS MECHANICALLY
 IN THE "ON" POSITION), SHORT TO GROUND

MISSION PHASE: PL PRE-LAUNCH
 LO LIFT-OFF
 DO DE-ORBIT
 LS LANDING/SAFING

VEHICLE/PAYLOAD/KIT EFFECTIVITY: 102 COLUMBIA
 103 DISCOVERY
 104 ATLANTIS
 105 ENDEAVOUR
 AFTER SPACE COMM MODIFICATION

CAUSE:

PIECE PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK,
 PROCESSING ANOMALY.

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

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CORRECTING ACTION DESCRIPTION:

CREW CAN MAINTAIN EARPHONE CAPABILITY WHILE DISABLING MIC BY SWITCHING INTO RECEIVE ONLY POSITION FOR EACH CHANNEL OR BY TURNING OFF COMM POWER.

REMARKS/RECOMMENDATIONS:

TURNING OFF COMM POWER DOES NOT DEFEAT THE RHC/PTT SWITCH, INSTEAD IT TURNS OFF POWER TO THE MICROPHONE AMPLIFIER.

- FAILURE EFFECTS -

(A) SUBSYSTEM:

LOSS OF CAPABILITY TO DISABLE THE KEYING FUNCTION.

(B) INTERFACING SUBSYSTEM(S):

LOSS OF CAPABILITY TO DISABLE THE KEYING FUNCTION.

(C) MISSION:

NO EFFECT - FIRST FAILURE

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

NO EFFECT - FIRST FAILURE

(E) FUNCTIONAL CRITICALITY EFFECTS:

CONTINUOUS KEYING BY AN RHC CAN CAUSE THE AUDIO TO CONTINUOUSLY TRANSMIT, DISABLING THE RECEIVE FUNCTION. POSSIBLE LOSS OF CREW/VEHICLE DUE TO LOSS OF STATE VECTOR UPDATE.

- TIME FRAME -

TIME FROM FAILURE TO CRITICAL EFFECT: MINUTES

- APPROVALS -

PRODUCT ASSURANCE ENGR : VAN D. NGUYEN
 DESIGN ENGINEERING : D. Y. YOON

Van Nguyen 8-20-98
D. Y. Yoon 8-20-98