INDEPENDENT ORBITER ASSESSMENT

CIL ISSUES
RESOLUTION REPORT
VOLUME 3 OF 3

16 SEPTEMBER 1988
SECTION C.18

REACTION CONTROL SUBSYSTEM
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-103
NASA FMEA #: 03-2F-101020-3

SUBSYSTEM: FRCS
MDAC ID: 103
ITEM: HE ISOL A & B VLVS
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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COMPARE [ / ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ P ] [ F ] [ P ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA NOW RECOMMENDS THAT THE B SCREEN BE FAILED AND THAT THIS ITEM AND FAILURE MODE BE PLACED ON THE CIL. A FAILURE OF THE REDUNDANT SECONDARY REG IS NOT DETECTABLE IN FLIGHT. IOA RECOMMENDS THE ADDITION OF A STATEMENT TO THE EFFECTS (FAILS OPEN) REGARDING POSSIBLE VIOLATIONS OF ORBITER ENTRY MASS PROPERTIES CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE BASED ON NSTS 22206 GROUNDRULE (8/21/87, P. 2-13, 2.3.4.c). A FAILED OPEN ISOL VALVE IS DETECTABLE DURING FLIGHT VIA TALKBACK DISPLAY. THE REDUNDANCY SCREEN B TEST SHOULD BE APPLIED ONLY TO THE ISOL VALVE SINCE THE UNLIKE REDUNDANT REGULATOR IS IDENTIFIED SEPARATELY IN THE FMEA/CIL. THAT IS, AN UNDETECTABLE REG FAILURE SHOULD NOT CAUSE A B SCREEN FAILURE FOR THE DETECTABLE ISOL VALVE FAILURE. HOWEVER, IOA RECOMMENDS THAT THE B SCREEN BE FAILED SINCE ONE LEVEL OF REDUNDANCY (REG) CAN BE LOST WITHOUT BEING DETECTED. ALSO, THE NASA RCS FMEA/CIL ANALYSIS CONSIDERED THE DETECTABILITY OF ALL REDUNDANT ITEMS IN DETERMINING B SCREEN PASSAGE OR FAILURE. IOA AGREES WITH THIS PRACTICE. FOR CONSISTENCY WITHIN THE RCS FMEA/CIL, THIS B SCREEN SHOULD BE FAILED.

REPORT DATE: 21 JULY 1988 C.18-2
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-103A
NASA FMEA #: NONE
SUBSYSTEM: FRCS
MDAC ID: 103
ITEM: HE ISOL A & B VLVs
LEAD ANALYST: C.D. PRUST

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RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ P ] [ P ] [ P ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (INTERNAL LEAKAGE).

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 5/19/88 AGREED TO ADD "INTERNAL LEAKAGE" TO THE FAILURE MODES ON 03-2F-101020-3 (3/1R PPP, FAILS OPEN) DURING THE NEXT FMEA UPDATE ACTIVITY. IOA WITHDRAWS B SCREEN ISSUE. WITH ONE HELIUM ISOL VALVE OPEN, INTERNAL LEAKAGE OF THE CLOSED PARALLEL VALVE IS UNDETECTABLE, BUT HAS NO EFFECT. IF BOTH VALVES ARE CLOSED AND ONE VALVE IS LEAKING INTERNALLY, THE EFFECTS ARE DETECTABLE VIA PRESSURE SENSORS IN THE HELIUM TANK AND/OR THE PROPELLANT TANK.

REPORT DATE: 21 JULY 1988 C.18-3
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-104
NASA FMEA #: 03-2F-101020-4
NASA DATA: BASELINE [ ] NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 104
ITEM: HE ISOL A & B VLVS
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALLY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /1R ] [ P ] [ NA] [ P ] [ X ]
COMPARE [ N / ] [ ] [ N ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ P ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ] INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THIS FAILURE MODE BE UPGRADED TO A 2/1R AND PLACED ON THE CIL. INABILITY TO REPRESS FRCS PROP TANK AND SUBSEQUENT INABILITY TO DEPLETE PROP COULD RESULT IN VIOLATION OF X CG LIMIT. FINAL RESOLUTION: IOA HELD MTG ON 6/2/88 WITH RCS SSM, & MOD, BOEING, & RSOE PERSONNEL TO DISCUSS IOA 1R/2 ISSUE AND INCONSISTENCY BETWEEN RCS HDW CRIT (1R/3) AND GN&C FMEA 05-1- FC6242-1 (1R/2). SSM STATED THAT USE OF A FRCS DUMP FOR ENTRY X CG MANAGEMENT WAS NOT CONSIDERED IN RCS CRIT ASSIGNMENT AS WAS DONE IN IOA AND GN&C CRITS. A POST-DEORBIT FRCS DUMP IS USED TO MEET THE FWD X CG LIMIT (1076.7 IN). THEREFORE, IF A PLANNED DUMP ISN'T COMPLETED BECAUSE OF TWO FAILED CLOSED HE ISOL VLVS, THE X CG LIMIT MAY BE VIOLATED CAUSING LOSS OF CREW/VEHICLE. THE CRIT ASSIGNED TO THIS FAILURE SHOULD REFLECT THE POTENTIAL ENTRY X CG LIMIT VIOLATION. IOA RELUCTANTLY WITHDRAWS ISSUE BASED ON THE NARROW TIME SPAN IN WHICH BOTH FAILURES MUST OCCUR, PARTIAL ULLAGE CAPABILITY, THE "CONTINGENCY CG ENVELOPE", AND THE SSM'S JUDGMENT. HOWEVER, IOA STRONGLY RECOMMENDS EITHER A 1R/2 FOR THIS FAILURE, OR A FLIGHT RULE WHICH PROHIBITS RELIANCE ON A FRCS DUMP TO MEET THE ENTRY X CG LIMIT. ALSO, THE INCONSISTENCY BETWEEN THE RCS CRIT AND ABOVE GN&C FMEA SHOULD BE CORRECTED.

REPORT DATE: 21 JULY 1988 C.18-4
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-109
NASA FMEA #: 03-2F-101091-1

SUBSYSTEM: FRCFS
MDAC ID: 109
ITEM: HIGH PRESSURE HELIUM TEST PORT COUPLINGS A & B

LEAD ANALYST: C.D. PRUST

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RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]  [ F ]  [ F ]  [ P ]  [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA AGREES WITH NASA/RI FAILURE OF A AND B SCREENS. IOA
RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON
THIS FMEA/CIL. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED
ON OTHER QD FMEAS. THE QUANTITY ON THIS FMEA/CIL SHOULD BE 12.
IOA RECOMMENDS ADDING A STATEMENT TO THE EFFECTS REGARDING
POSSIBLE VIOLATIONS OF ORBITER ENTRY MASS PROPERTIES CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS
RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE
ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS
ADDITION.

REPORT DATE: 21 JULY 1988 C.18-5
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-112
NASA FMEA #: 03-2F-101030-2
NASA DATA: BASELINE [ ] NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 112
ITEM: HE PRESS REGULATOR ASSEMBLY
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALLY REDUNDANCY CIL
FLIGHT HDW/FUNC A B C ITEM
NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /1R ] [ P ] [ NA] [ P ] [ X ]
COMPARE [ N / ] [ ] [ N ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ 2 /1R ] [ P ] [ F ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA RECOMMENDS THIS FAILURE MODE BE UPGRADED TO A 2/1R AND PLACED ON THE CIL. INABILITY TO REPRESS FRCS PROP TANK AND SUBSEQUENT INABILITY TO DEPLETE PROP COULD RESULT IN VIOLATION OF X CG LIMIT.

FINAL RESOLUTION: IOA HELD MTG ON 6/2/88 WITH RCS SSM, & MOD, BOEING, & RSOC PERSONNEL TO DISCUSS IOA 1R/2 ISSUE AND INCONSISTENCY BETWEEN RCS HDW CRIT (1R/3) AND GN&C FMEA 05-1-FC6242-1 (1R/2). SSM STATED THAT USE OF A FRCS DUMP FOR ENTRY X CG MANAGEMENT WAS NOT CONSIDERED IN RCS CRIT ASSIGNMENT AS WAS DONE IN IOA AND GN&C CRITS. A POST-DEORBIT FRCS DUMP IS USED TO MEET THE FWD X CG LIMIT (1076.7 IN). THEREFORE, IF A PLANNED DUMP IS NOT COMPLETED BECAUSE OF TWO FAILED CLOSED HELIUM REGS, THE X CG LIMIT MAY BE VIOLATED RESULTING IN LOSS OF CREW/VEHICLE. THE CRITICALITY ASSIGNED TO THIS FAILURE MODE SHOULD REFLECT THE POTENTIAL ENTRY X CG LIMIT VIOLATION. IOA RELUCTANTLY WITHDRAWS ISSUE BASED ON THE NARROW TIME SPAN IN WHICH BOTH FAILURES MUST BE PRESENT, PARTIAL ULLAGE CAPABILITY, THE "CONTINGENCY CG ENVELOPE", AND THE SSM'S JUDGMENT. HOWEVER, IOA STRONGLY RECOMMENDS EITHER A 1R/2 FOR THIS FAILURE MODE, OR A NEW FLIGHT RULE WHICH PROHIBITS RELIANCE ON A FRCS DUMP TO MEET THE ENTRY X CG LIMIT. ALSO, THE INCONSISTENCY BETWEEN THE RCS CRIT AND ABOVE GN&C FMEA SHOULD BE CORRECTED. IOA ACCEPTS B SCREEN FAILURE. SEE ASSESSMENT SHEET RCS-212 FOR RATIONALE.

REPORT DATE: 21 JULY 1988 C.18-6
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-113
NASA FMEA #: NONE

SUBSYSTEM: FRCS
MDAC ID: 113
ITEM: HE PRESS REGULATOR ASSEMBLY
LEAD ANALYST: C.D. PRUST

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| COMPARE [ N /N ] | [ N ] | [ N ] | [ N ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)
[ 2 /1R ] [ P ] [ F ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [ ] INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (RESTRICTED FLOW).
FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 5/19/88 AGREED TO ADD "RESTRICTED FLOW" TO THE FAILURE MODES ON 03-2F-101030-2 (3/1R PPP, FAILS CLOSED) DURING THE NEXT FMEA UPDATE ACTIVITY. IOA WITHDRAWS 2/1R ISSUE (SEE ASSESSMENT SHEET RCS-112 FOR RATIONALE). IOA ALSO WITHDRAWS B SCREEN ISSUE. THIS FAILURE WOULD BE DETECTABLE BEFORE LAUNCH AND AT SOME POINT ON-ORBIT SINCE ONLY ONE FLOW PATH IS OPEN AT A TIME DURING PAD PRE-PRESS AND ON-ORBIT. HOWEVER, IOA RECOMMENDS THAT THE B SCREEN BE FAILED FOR PHASES WHEN BOTH FLOW PATHS ARE USED SIMULTANEOUSLY (ASCENT AND ENTRY), WHEN THIS FAILURE WOULD NOT BE DETECTABLE.

REPORT DATE: 21 JULY 1988 C.18-7
### APPENDIX C
#### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 1/01/88  
**ASSESSMENT ID:** RCS-114  
**NASA FMEA #:** NONE  
**SUBSYSTEM:** FRCS  
**MDAC ID:** 114  
**ITEM:** HE PRESS REGULATOR ASSEMBLY  
**LEAD ANALYST:** C.D. PRUST  

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**RECOMMENDATIONS:** (If different from NASA)

[ 1 /1 ] [ ] [ ] [ ] [ ] [ A ]  
(ADD/DELETE)

**CIL RETENTION RATIONALE:** (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**

NASA/RI DO NOT COVER THIS FAILURE MODE (STRUCTURAL FAILURE, RUPTURE, EXTERNAL LEAKAGE). IOA ORIGINALLY CONSIDERED THE PARALLEL HELIUM PATHS TO BE REDUNDANT FOR THIS FAILURE (2/1R), BUT NOW CLASSIFIES THIS FAILURE AS A 1/1.

**FINAL RESOLUTION:** G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE HELIUM LINE EXTERNAL LEAKAGE FMEA (03-2F-101013-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-115
NASA FMEA #: NONE

SUBSYSTEM: FRC5
MDAC ID: 115
ITEM: HE PRESS REGULATOR PRIMARY SENSING PORT

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ / ] [ ] [ ] [ ] [ ] [ ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ 3 /2R ] [ P ] [ F ] [ P ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (EXTERNAL LEAKAGE THROUGH SENSING PORT). HOWEVER, THIS FAILURE MODE IS COVERED BY NASA/RI IN THE OMS SUBSYSTEM ON FMEA 03-3-1004-3 (3/2R PFP). IOA RECOMMENDS THAT THIS FAILURE MODE ALSO BE COVERED FOR THE RCS REGULATOR WITH THE SAME RATIONALE USED IN OMS. IOA WITHDRAWS 2/1R PFP CRIT.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. THE WORST CASE REGULATOR EXTERNAL LEAKAGE IS COVERED ON 03-2F-101013-1 (1/1). THE PROPOSED IOA FAILURE MODE IS A LESS SEVERE CASE OF THE FAILURE MODE COVERED ON 03-2F-101013-1 AND, THEREFORE, NEED NOT BE ADDED TO THE RCS FMEA/CIL. HOWEVER, FOR CONSISTENCY BETWEEN RCS AND OMS IDENTICAL ITEMS, IOA RECOMMENDS THAT THIS FAILURE MODE SHOULD ALSO BE ADDRESSED IN THE RCS FMEA/CIL.

REPORT DATE: 21 JULY 1988 C.18-9
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-117
NASA FMEA #: 03-2F-101091-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 117
ITEM: HE PRESS REGULATOR OUTLET TEST PORT COUPLING

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REDUNDANCY SCREENS
A   B   C

CIL
ITEM

NASA [ 3 /1R ] [ F ] [ F ] [ P ] [ X ] *
IOA [ 2 /1R ] [ P ] [ NA] [ P ] [ X ]
COMPARE [ N / ] [ N ] [ N ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ 3 /1R ] [ F ] [ F ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA AGREES WITH NASA/RI 3/1R FFP ASSIGNMENT. IOA ORIGINALLY IDENTIFIED THIS AS A TWO-SEAL COUPLING RATHER THAN A MULTIPLE SEAL 0032 COUPLING. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA/CIL. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON OTHER QD FMEAS. THE QUANTITY ON THIS FMEA SHOULD BE 12. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS REGARDING POSSIBLE VIOLATIONS OF ORBITER ENTRY MASS PROPERTIES CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.18-10
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-119
NASA FMEA #: 03-2F-101095-1

SUBSYSTEM: FRCS
MDAC ID: 119
ITEM: QUAD CHECK VALVE ASSEMBLY
LEAD ANALYST: C.D. PRUST

REMARKS:
IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE UPGRADED TO A 2/1R AND PLACED ON THE CIL. WITH SERIES POPPETS FAILED OPEN, THE CONTAMINATION OF REGULATORS BY PROP OR PROP VAPORS COULD RESULT IN LOSS OF PROP TANK REPRESS CAPABILITY AND INABILITY TO USE OR DEPLETE FRCS PROP. THIS COULD LEAD TO VIOLATIONS OF ENTRY MASS PROPERTIES CONSTRAINTS AND LOSS OF LIFE OF VEHICLE DURING ENTRY. FAILURE OF ONE POPPET UNDETECTABLE DURING FLIGHT (FAIL B SCREEN).

FINAL RESOLUTION: IOA ACCEPTS 3/3 BASED ON INPUTS FROM OMS AND RCS SSMs: THE REGS ARE DESIGNED TO BE COMPATIBLE WITH PROP AND HAVE PASSED 90 DAY PROP EXPOSURE TEST. ALSO, ENOUGH TIME DOES NOT EXIST DURING A MISSION FOR PROP EXPOSURE TO CAUSE A REG FAILURE. ANY PROBLEM RESULTING FROM PROP EXPOSURE ON THE GROUND WOULD BE DETECTED DURING PRELAUNCH OPS. THE SSMs AGREED THAT THE IOA CONCERNS WERE NOT IMPOSSIBLE, BUT CONSIDER THE PROBABILITY OF SUCH OCCURRANCES TO BE "INFINITESIMALLY SMALL". IOA STILL RECOMMENDS 2/1R BASED ON ULTIMATE WORST-CASE POSSIBLE EFFECTS, BUT ACCEPTS JUDGMENT OF SSMs. SINCE THESE FAILURE MODES CAN CAUSE 1R REGULATOR FAILURES (SEE CAUSES ON 03-2F-101030-1, 03-2A-201030-1, & 03-2A-201030-2), THEY SHOULD BE CLASSIFIED AS 1R's.

REPORT DATE: 21 JULY 1988  C.18-11

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ F ] [ P ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]
**APPENDIX C**

**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 1/01/88  
**ASSESSMENT ID:** RCS-120  
**NASA FMEA #:** 03-2P-101095-2  
**NASA DATA:**  
- BASELINE [ ]  
- NEW [X]

**SUBSYSTEM:** FRCs  
**MDAC ID:** 120  
**ITEM:** QUAD CHECK VALVE ASSEMBLY

**LEAD ANALYST:** C.D. PRUST

**ASSESSMENT:**

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**RECOMMENDATIONS:**  
(If different from NASA)

| [2 /1R] | [P] | [F] | [P] | [A] |

(ADD/DELETE)

* CIL RETENTION RATIONALE:  
(If applicable)

**REMARKS:**

IOA recommends this failure mode be upgraded to a 2/1R. Inability to repress FRCs prop tank and subsequent inability to deplete prop could result in violation of the entry X CG limit.

**FINAL RESOLUTION:**

IOA held mtg on 6/2/88 with RCS SSM, and MOD, BOEING, & RSOC personnel to discuss IOA 1R/2 issue and inconsistency between RCS HDW CRIT (1R/3) and GN&C FMEA 05-1-FC6242-1 (1R/2). SSM stated that use of a FRCs dump for entry X CG management was not considered in RCS CRIT assignment as was done in IOA and GN&C CRITS. A post-deorbit FRCs dump is used to meet the FWD X CG LIMIT (1076.7 IN). Therefore, if a planned dump is not completed because of two failed closed check VLV poppets, the X CG LIMIT may be violated resulting in loss of crew/vehicle. The criticality assigned to this failure mode should reflect the potential ENTRY X CG LIMIT VIOLATION. IOA reluctantly withdraws issue based on the narrow time span in which both failures must be present, partial ullage capability, the "CONTINGENCY CG ENVELOPE", and the SSM's judgment. However, IOA strongly recommends either a 1R/2 for this failure mode, or a new flight rule which prohibits reliance on a FRCs dump to meet the ENTRY X CG LIMIT. Also, the inconsistency between the RCS CRIT and above GN&C FMEA should be corrected.

**REPORT DATE:** 21 JULY 1988  
C.18-12
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-121
NASA FMEA #: 03-2F-101091-1

SUBSYSTEM: FRCS
MDAC ID: 121
ITEM: QUAD CHECK VALVE TEST PORT COUPLINGS A & B

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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NASA [ 3 /1R ] [ F ] [ F ] [ P ] [ X ] *
IOA [ 2 /1R ] [ P ] [ NA] [ P ] [ X ]

COMPARE [ N / ] [ N ] [ N ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ F ] [ F ] [ P ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA AGREES WITH NASA/RI 3/1R FFP ASSIGNMENT. IOA ORIGINALLY IDENTIFIED THIS AS A TWO-SEAL COUPLING RATHER THAN A MULTIPLE SEAL 0032 COUPLING. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA/CIL. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON OTHER QD FMEAS. THE QUANTITY ON THIS FMEA SHOULD BE 12. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS REGARDING POSSIBLE VIOLATIONS OF ORBITER ENTRY MASS PROPERTIES CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.18-13
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-128
NASA FMEA #: 03-2F-111110-3

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 128
ITEM: PROP CHANNEL SCREENS

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT THE P.A.D. COMPONENTS BE ITEMIZED IN THE ITEM LIST OR FUNCTIONAL DESCRIPTION SECTIONS TO SHOW SPECIFICALLY WHAT IS COVERED BY THIS FMEA/CIL. IOA ALSO RECOMMENDS THAT THE "HIGH G" DISCUSSION BE REMOVED FROM THE FUNCTIONAL DESCRIPTION.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA RECOMMENDS EDITORIAL REVISIONS AS STATED, HOWEVER NO LONGER CONSIDERS THIS RECOMMENDATION TO BE AN "ISSUE". THE CRITICALITY IS CORRECT FOR THIS FAILURE MODE.

REPORT DATE: 21 JULY 1988 C.18-14
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESMENT ID: RCS-130
NASA FMEA #: 03-2F-101090-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM:
MDAC ID: FRCS
ITEM:
COUPLING

LEAD ANALYST: C.D. PRUST

ASSESSMENT:
CRITICALITY FLIGHT HDW/FUNC

RENTU DANCY SCREENS CIL ITEM

NASA [ 3 /1R ] [ F ] [ F ] [ P ] [ X ] *

IOA [ 2 /1R ] [ P ] [ NA] [ P ] [ X ]

COMPARE [ N / ] [ N ] [ N ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ 3 /1R ] [ F ] [ F ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA AGREES WITH NASA/RI 3/1R FFP ASSIGNMENT. IOA ORIGINALLY IDENTIFIED THIS AS A TWO-SEAL COUPLING RATHER THAN A MULTIPLE-SEAL 0032 COUPLING. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA/CIL. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING STATEMENTS TO THE EFFECTS REGARDING POSSIBLE FIRE HAZARD, HAZARD TO GROUND CREW, AND POSSIBLE VIOLATIONS OF ENTRY MASS PROPERTIES CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAW ISSU. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-140
NASA FMEA #: NONE

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: FRCS
MDAC ID: 140
ITEM: PRESSURE RELIEF ASSEMBLY

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ F ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (BURST DISK INTERNAL LEAKAGE). IOA CONSIDERS THIS FAILURE MODE TO BE CREDIBLE AND RECOMMENDS IT BE ADDED TO 03-2F-101060-5. THE FAILURE HISTORY OF THE BURST DISK INCLUDES THIS FAILURE.


REPORT DATE: 21 JULY 1988 C.18-16
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-142
NASA FMEA #: 03-2F-101091-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 142
ITEM: RELIEF VALVE TEST PORT COUPLING

LEAD ANALYST: C.D. PRUST

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RECOMMENDATIONS: (If different from NASA)

| [ 3 /1R ] | [ F ] | [ F ] | [ P ] | [ A ] |
| ADD/DELETE |

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA AGREES WITH NASA/RI FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA/CIL. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON OTHER QD FMEAS. THE QUANTITY ON THIS FMEA/CIL SHOULD BE 12.

IOA RECOMMENDS ADDING A STATEMENT TO THE EFFECTS REGARDING POSSIBLE VIOLATIONS OF ORBITER ENTRY MASS PROPERTIES CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.18-17
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-146
NASA FMEA #: NONE

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: FRCS
MDAC ID: 146
ITEM: GROUND MANUAL ISOLATION VALVE

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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NASA [ / ] [ ] [ ] [ ] [ ] [ ] [ ] *
IOA [ 1 /1 ] [ ] [ ] [ ] [ ] [ X ]
COMPARE [ N / N ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ 1 /1 ] [ ] [ ] [ ] [ ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (STRUCTURAL FAILURE,
RUPTURE, EXTERNAL LEAKAGE).

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD
THIS VALVE BODY TO THE HELIUM LINE EXTERNAL LEAKAGE FMEA (03-2F-101013-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS
ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87. IOA ALSO
RECOMMENDS THAT THIS FMEA INCLUDE PROP LEAKAGE EFFECTS (CORROSION,
FIRE, EXPLOSION, EXPOSURE OF EVA AND GROUND CREWS).

REPORT DATE: 21 JULY 1988  C.18-18
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-147
NASA FMEA #: 03-2F-102112-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 147
ITEM: PROP TK ISOL VLVS 1/2 & 3/4/5

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 1/1 ] [ ] [ ] [ ] [ ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FMEA COVERS ONLY THE BELLOWS LEAKAGE FAILURE MODE FOR THE PROP TANK ISOL VALVES. IOA HAS NO ISSUE WITH THIS FAILURE MODE, HOWEVER DOES RECOMMEND THAT THE EFFECTS INCLUDE THE POSSIBLE EXPOSURE OF EVA AND GROUND CREWS TO PROP OR PROP VAPORS. NASA/RI DO NOT COVER STRUCTURAL FAILURE, RUPTURE, OR EXTERNAL LEAKAGE OF THE VALVE HOUSING ON THIS FMEA OR ELSEWHERE.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2F-102108-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.

REPORT DATE: 21 JULY 1988  C.18-19
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-148
NASA FMEA #: 03-2F-102120-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 148
ITEM: PROP TK ISOL VLVS 1/2 & 3/4/5

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ]  [ P ]  [ P ]  [ F ]  [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA withdraws 1/1 CRIT, but maintains concern that restricted flow to a thruster could result in burn-through. IOA also withdraws 1/1 abort issue due to lack of current FRCS dump capability during RRLS & TAL, however recommends a 1/1 abort CRIT (based on a possible incomplete dump) if such capability exists in the future. IOA recommends that the restricted flow mode be upgraded to a 2/1R and placed on the CIL. Inability to use or deplete FRCS prop could result in inability to perform ET SEP, or violation of the ENTRY X CG LIMIT. Any upstream contamination can affect all redundancy.

FINAL RESOLUTION: IOA met with G. Grush (RCS SSM) on 5/19/88 to discuss 1R/2 issue. IOA accepts SSM's judgment and reluctantly withdraws issue based on the narrow time span in which both VLVS must fail, and the "contingency CG envelope". However, IOA strongly recommends a 1R/2 PPF for this failure mode based on the above rationale. IOA contends that restricted flow of the two prop tank isol VLVS could result in loss ET SEP capability or violation of the entry X CG limit due to inability to dump FRCS prop after the deorbit burn. Also, the inconsistency between this RCS HDW CRIT (1R/3) and GN&C FMEA 05-1-FC6242-1 (1R/2) should be corrected.

REPORT DATE: 21 JULY 1988  C.18-20
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-150
NASA FMEA #: 03-2F-102120-1

SUBSYSTEM: FRCS
MDAC ID: 150
ITEM: PROP TK ISOL VLV 1/2

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ P ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [ ] INADEQUATE [ ]

REMARKS:
IOA withholds 1/1 abort issue due to lack of current FRCS dump capability during RTL & TAL, however recommends a 1/1 abort CRIT (based on possible inadequate dump) if such a capability exists in the future. IOA recommends that the failed closed and fails to remain open failure modes be upgraded to 2/1R and placed on the CIL. INABILITY TO USE OR DEPLETE FRCS PROP COULD RESULT IN INABILITY TO PERFORM ET SEP, OR VIOLATION OF THE ENTRY X CG LIMIT.

FINAL RESOLUTION: IOA met with G. Grush (RCS SSM) on 5/19/88 to discuss 1R/2 issue. IOA accepts SSM's judgment and reluctantly withdraws issue based on the narrow time span in which both valves must fail, and the "CONTINGENCY CG ENVELOPE". However, IOA strongly recommends a 1R/2 for this failure mode based on the above rationale. IOA contends that two failed closed prop tank isol vlv could result in loss of FRCS ET SEP capability and possible violation of the entry X CG LIMIT due to inability to dump FRCS prop after the deorbit burn. These valves are always open during flight, however a switch failure could cause a valve to go from open to failed closed. The inconsistency between this RCS HDW CRIT (1R/3) and GN&C FMEA 05-1-FC6242-1 (1R/2) should be corrected.

REPORT DATE: 21 JULY 1988 C.18-21
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-152
NASA FMEA #: 03-2F-102120-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 152
ITEM: PROP TK ISOL VLV 3/4/5

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY
FLIGHT HDW/FUNC

REDUNDANCY SCREENS
A B C

CIL ITEM

ITEM

NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *

IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ N / ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS:
(If different from NASA)

[ 2 /1R ] [ P ] [ P ] [ P ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:

IOA WITHDRAWS 1/1 ABORT ISSUE DUE TO LACK OF CURRENT FRCS DUMP CAPABILITY DURING RTLS & TAL, HOWEVER RECOMMENDS A 1/1 ABORT CRIT (BASED ON POSSIBLE INADEQUATE DUMP) IF SUCH A CAPABILITY EXISTS IN THE FUTURE. IOA RECOMMENDS THAT THE FAILED CLOSED AND FAILS TO REMAIN OPEN FAILURE MODES BE UPGRADED TO 2/1R AND PLACED ON THE CIL. INABILITY TO USE OR DEPLETE FRCS PROP COULD RESULT IN INABILITY TO PERFORM ET SEP, OR VIOLATION OF THE ENTRY X CG LIMIT.

FINAL RESOLUTION:

IOA MET WITH G. GRUSH (RCS SSM) ON 5/19/88 TO DISCUSS 1R/2 ISSUE. IOA ACCEPTS SSM'S JUDGMENT AND RELUCTANTLY WITHDRAWS ISSUE BASED ON THE NARROW TIME SPAN IN WHICH BOTH VALVES MUST FAIL, AND THE "CONTINGENCY CG ENVELOPE". HOWEVER, IOA STRONGLY RECOMMENDS A 1R/2 FOR THIS FAILURE MODE BASED ON THE ABOVE RATIONALE. IOA CONTENTS THAT TWO FAILED CLOSED PROP TANK ISOL VLVS COULD RESULT IN LOSS OF FRCS ET SEP CAPABILITY AND POSSIBLE VIOLATION OF THE ENTRY X CG LIMIT DUE TO INABILITY TO DUMP FRCS PROP AFTER THE DEORBIT BURN. THESE VALVES ARE ALWAYS OPEN DURING FLIGHT, HOWEVER A SWITCH FAILURE COULD CAUSE A VALVE TO GO FROM OPEN TO FAILED CLOSED. THE INCONSISTENCY BETWEEN THIS RCS HDW CRIT (1R/3) AND GN&C FMEA 05-1-FC6242-1 (1R/2) SHOULD BE CORRECTED.

REPORT DATE: 21 JULY 1988 C.18-22
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-158
NASA FMEA #: 03-2F-102110-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 158
ITEM: MANIFOLD 1, ISOL VLV

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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COMPARE [ N / ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ 2 /1R ] [ P ] [ P ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA WITHDRAWS 1/1 ABORT ISSUE. IOA RECOMMENDS THESE FAILURE MODES BE UPGRADED TO 1R/2. CERTAIN COMBINATIONS OF TWO FAILURES COULD RESULT IN INABILITY TO DUMP FRCS PROP AND VIOLATION OF ENTRY X CG LIMIT.

FINAL RESOLUTION: IOA HELD MTG ON 6/2/88 WITH RCS SSM, MOD, BOEING, & RSOC PERSONNEL TO DISCUSS IOA 1R/2 ISSUE AND INCONSISTENCY BETWEEN RCS CRIT (1R/3) AND GN&C FMEA 05-1-FC6242-1 (1R/2). SSM STATED THAT USE OF A FRCS DUMP FOR ENTRY X CG MANAGEMENT WASN'T CONSIDERED IN RCS CRIT ASSIGNMENT AS WAS DONE IN IOA AND GNC CRITS. A POST-DEORBIT FRCS DUMP IS USED TO MEET THE FWD X CG LIMIT (1076.7 IN). THEREFORE, IF A PLANNED DUMP ISN'T COMPLETED BECAUSE OF TWO FAILED CLOSED MANIFOLD VLVS, THE X CG LIMIT MAY BE VIOLATED CAUSING LOSS OF CREW/VEHICLE. THE CRIT ASSIGNED TO THIS FAILURE SHOULD REFLECT THE POTENTIAL ENTRY X CG LIMIT VIOLATION. IOA RELUCTANTLY WITHDRAWS ISSUE BASED ON THE NARROW TIME SPAN IN WHICH TWO FAILURES MUST OCCUR, PARTIAL ULLAGE CAPABILITY, THE "CONTINGENCY CG ENVELOPE", AND THE SSM'S JUDGMENT. HOWEVER, IOA STRONGLY RECOMMENDS EITHER A 1R/2 FOR THIS FAILURE, OR A FLIGHT RULE WHICH PROHIBITS RELIANCE ON A FRCS DUMP TO MEET THE ENTRY X CG LIMIT. ALSO, THE INCONSISTENCY BETWEEN THE RCS CRIT AND ABOVE GN&C FMEA SHOULD BE CORRECTED.

REPORT DATE: 21 JULY 1988 C.18-23
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-159
NASA FMEA #: 03-2F-101080-1
SUBSYSTEM: FRCS
MDAC ID: 159
ITEM: MANIFOLD 1, GROUND PURGE/DRAIN COUPLING
LEAD ANALYST: C.D. PRUST

NASA DATA:  
BASELINE []  
NEW [ X ]

CRITICALITY REDUNDANCY SCREENS

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IOA [ 2 /1R ] [ P ] [ NA ] [ P ] [ X ]

COMPARE [ / ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ F ] [ F ] [ P ] [ A ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA/CIL. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS ABOUT PROP LEAKAGE EFFECTS (CORROSION, FIRE, EXPLOSION, EXPOSURE OF EVA AND GROUND CREWS).

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.18-24
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-162
NASA FMEA #: 03-2F-102110-1

SUBSYSTEM: FRCS
MDAC ID: 162
ITEM: MANIFOLD 2, ISOL VLV

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N / ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ 2 /1R ] [ P ] [ P ] [ P ] [ A ]

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA WITHDRAWS 1/1 ABORT ISSUE. IOA RECOMMENDS THESE FAILURE MODES BE UPGRADED TO 1R/2. CERTAIN COMBINATIONS OF TWO FAILURES COULD RESULT IN INABILITY TO DUMP FRCS PROP AND VIOLATION OF ENTRY X CG LIMIT.

FINAL RESOLUTION: IOA HELD MTG ON 6/2/88 WITH RCS SSM, MOD, BOEING, & RSOC PERSONNEL TO DISCUSS IOA 1R/2 ISSUE AND INCONSISTENCY BETWEEN RCS CRIT (1R/3) AND GN&C FMEA 05-1-FC6242-1 (1R/2). SSM STATED THAT USE OF A FRCS DUMP FOR ENTRY X CG MANAGEMENT WASN'T CONSIDERED IN RCS CRIT ASSIGNMENT AS WAS DONE IN IOA AND GNC CRITS. A POST-DEORBIT FRCS DUMP IS USED TO MEET THE FWD X CG LIMIT (1076.7 IN). THEREFORE, IF A PLANNED DUMP ISN'T COMPLETED BECAUSE OF TWO FAILED CLOSED MANIFOLD VLVS, THE X CG LIMIT MAY BE VIOLATED CAUSING LOSS OF CREW/VEHICLE. THE CRIT ASSIGNED TO THIS FAILURE SHOULD REFLECT THE POTENTIAL ENTRY X CG LIMIT VIOLATION. IOA RELUCTANTLY WITHDRAWS ISSUE BASED ON THE NARROW TIME SPAN IN WHICH TWO FAILURES MUST OCCUR, PARTIAL ULLAGE CAPABILITY, THE "CONTINGENCY CG ENVELOPE", AND THE SSM'S JUDGMENT. HOWEVER, IOA STRONGLY RECOMMENDS EITHER A 1R/2 FOR THIS FAILURE, OR A FLIGHT RULE WHICH PROHIBITS RELIANCE ON A FRCS DUMP TO MEET THE ENTRY X CG LIMIT. ALSO, THE INCONSISTENCY BETWEEN THE RCS CRIT AND ABOVE GN&C FMEA SHOULD BE CORRECTED.

REPORT DATE: 21 JULY 1988 C.18-25
**APPENDIX C**
**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 1/01/88  
**ASSESSMENT ID:** RCS-163  
**NASA FMEA #:** 03-2F-101080-1  

**NASA DATA:**  
BASELINE [ ]  
NEW [ X ]

**SUBSYSTEM:** FRCS  
**MDAC ID:** 163  
**ITEM:** MANIFOLD 2, GROUND PURGE/DRAIN COUPLING  

**LEAD ANALYST:** C.D. PRUST

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)

[ 2 /1R ] [ F ] [ F ] [ P ] [ A ]  
(ADD/DELETE)

* **CIL RETENTION RATIONALE:** (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**

IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA/CIL. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS ABOUT PROP LEAKAGE EFFECTS (CORROSION, FIRE, EXPLOSION, EXPOSURE OF EVA AND GROUND CREWS).  
**FINAL RESOLUTION:** IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

**REPORT DATE:** 21 JULY 1988  
C.18-26
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-166
NASA FMEA #: 03-2F-102110-1

SUBSYSTEM: FRCs
MDAC ID: 166
ITEM: MANIFOLD 3, ISOL VLV

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY
FLIGHT HDW/FUNC
NASA [ 3 /1R ]
IOA [ 2 /1R ]
COMPARE [ N / ]

REDUNDANCE SCREENS
A [ P ]
B [ P ]
C [ P ]
ITEM [ ]

RECOMMENDATIONS: (If different from NASA)
[ 2 /1R ]

CIL RETENTION RATIONALE: (If applicable) ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA WITHDRAWS 1/1 ABORT ISSUE. IOA RECOMMENDS THESE FAILURE MODES BE UPGRADED TO 1R/2. CERTAIN COMBINATIONS OF TWO FAILURES COULD RESULT IN INABILITY TO DUMP FRCs PROP AND VIOLATION OF ENTRY X CG LIMIT.

FINAL RESOLUTION: IOA HELD MTG ON 6/2/88 WITH RCS SSM, MOD, BOEING, & RSOC PERSONNEL TO DISCUSS IOA 1R/2 ISSUE AND INCONSISTENCY BETWEEN RCS CRIT (1R/3) AND GN&C FMEA 05-1-FC6242-1 (1R/2). SSM STATED THAT USE OF A FRCs DUMP FOR ENTRY X CG MANAGEMENT WASN'T CONSIDERED IN RCS CRIT ASSIGNMENT AS WAS DONE IN IOA AND GNC CRITS. A POST-DEORBIT FRCs DUMP IS USED TO MEET THE FWD X CG LIMIT (1076.7 IN). THEREFORE, IF A PLANNED DUMP ISN'T COMPLETED BECAUSE OF TWO FAILED CLOSED MANIFOLD VLVS, THE X CG LIMIT MAY BE VIOLATED CAUSING LOSS OF CREW/VEHICLE. THE CRIT ASSIGNED TO THIS FAILURE SHOULD REFLECT THE POTENTIAL ENTRY X CG LIMIT VIOLATION. IOA RELUCTANTLY WITHDRAWS ISSUE BASED ON THE NARROW TIME SPAN IN WHICH TWO FAILURES MUST OCCUR, PARTIAL ULLAGE CAPABILITY, THE "CONTINGENCY CG ENVELOPE", AND THE SSM'S JUDGMENT. HOWEVER, IOA STRONGLY RECOMMENDS EITHER A 1R/2 FOR THIS FAILURE, OR A FLIGHT RULE WHICH PROHIBITS RELIANCE ON A FRCs DUMP TO MEET THE ENTRY X CG LIMIT. ALSO, THE INCONSISTENCY BETWEEN THE RCS CRIT AND ABOVE GN&C FMEA SHOULD BE CORRECTED.

REPORT DATE: 21 JULY 1988 C.18-27
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-167
NASA FMEA #: 03-2F-101080-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 167
ITEM: MANIFOLD 3, GROUND PURGE/DRAIN COUPLING

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ F ] [ F ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS.
IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE
ON THIS FMEA/CIL. THIS IS A CREDIBLE FAILURE MODE AND IS
ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING A
STATEMENT TO THE EFFECTS ABOUT PROP LEAKAGE EFFECTS (CORROSION,
FIRE, EXPLOSION, EXPOSURE OF EVA AND GROUND CREWS).
FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS
RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE
ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS
ADDITION.

REPORT DATE: 21 JULY 1988 C.18-28
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-170
NASA FMEA #: 03-2F-102110-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 170
ITEM: MANIFOLD 4, ISOL VLV

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ P ] [ P ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA WITHDRAWS 1/1 ABORT ISSUE. IOA RECOMMENDS THESE FAILURE MODES BE UPGRADED TO 1R/2. CERTAIN COMBINATIONS OF TWO FAILURES COULD RESULT IN INABILITY TO DUMP FRCS PROP AND VIOLATION OF ENTRY X CG LIMIT.

FINAL RESOLUTION: IOA HELD MTG ON 6/2/88 WITH RCS SSM, MOD, BOEING, & RSOC PERSONNEL TO DISCUSS IOA 1R/2 ISSUE AND INCONSISTENCY BETWEEN RCS CRIT (1R/3) AND GN&C FMEA 05-1-FC6242-1 (1R/2). SSM STATED THAT USE OF A FRCS DUMP FOR ENTRY X CG MANAGEMENT WASN'T CONSIDERED IN RCS CRIT ASSIGNMENT AS WAS DONE IN IOA AND GNC CRITS. A POST-DEORBIT FRCS DUMP IS USED TO MEET THE FWD X CG LIMIT (1076.7 IN). THEREFORE, IF A PLANNED DUMP ISN'T COMPLETED BECAUSE OF TWO FAILED CLOSED MANIFOLD VLVS, THE X CG LIMIT MAY BE VIOLATED CAUSING LOSS OF CREW/VEHICLE. THE CRIT ASSIGNED TO THIS FAILURE SHOULD REFLECT THE POTENTIAL ENTRY X CG LIMIT VIOLATION. IOA RELUCTANTLY WITHDRAWS ISSUE BASED ON THE NARROW TIME SPAN IN WHICH TWO FAILURES MUST OCCUR, PARTIAL ULLAGE CAPABILITY, THE "CONTINGENCY CG ENVELOPE", AND THE SSM'S JUDGMENT. HOWEVER, IOA STRONGLY RECOMMENDS EITHER A 1R/2 FOR THIS FAILURE, OR A FLIGHT RULE WHICH PROHIBITS RELIANCE ON A FRCS DUMP TO MEET THE ENTRY X CG LIMIT. ALSO, THE INCONSISTENCY BETWEEN THE RCS CRIT AND ABOVE GN&C FMEA SHOULD BE CORRECTED.

REPORT DATE: 21 JULY 1988 C.18-29
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-171
NASA FMEA #: 03-2F-101080-1
ASSESSMENT ID:
NASA DATA:
BASELINE [ ]
NEW [ X ]
SUBSYSTEM: FRCS
MDAC ID: 171
ITEM: MANIFOLD 4, GROUND PURGE/DRAIN COUPLING
LEAD ANALYST: C.D. PRUST
ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ F ] [ F ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA/CIL. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS ABOUT PROP LEAKAGE EFFECTS (CORROSION, FIRE, EXPLOSION, EXPOSURE OF EVA AND GROUND CREWS).

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.18-30
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  NASA DATA:
ASSESSMENT ID: RCS-175  BASELINE [   ]
NASA FMEA #: 03-2F-101080-1  NEW [ X ]
SUBSYSTEM: FRCS
MDAC ID: 175
ITEM: MANIFOLD 5, GROUND PURGE/DRAIN COUPLING
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]
INADEQUATE [   ]

REMARKS:
IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA/CIL. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS ABOUT PROP LEAKAGE EFFECTS (CORROSION, FIRE, EXPLOSION, EXPOSURE OF EVA AND GROUND CREWS).

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988  C.18-31
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-177
NASA FMEA #: 03-2F-102112-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 177
ITEM: MANIFOLD ISOL VLVS
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

THIS FMEA/CIL COVERS ONLY THE BELLOWS LEAKAGE FAILURE MODE FOR THE PRIMARY MANIFOLD ISOLATION VALVE. IOA HAS NO ISSUE WITH THIS FAILURE MODE, HOWEVER DOES RECOMMEND THAT THE EFFECTS DISCUSS THE POSSIBLE EXPOSURE OF EVA AND GROUND CREWS TO PROP OR PROP VAPORS. NASA/RI DO NOT COVER STRUCTURAL FAILURE, RUPTURE, OR EXTERNAL LEAKAGE OF THE VALVE HOUSING ON THIS FMEA OR ELSEWHERE.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2F-102108-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.

REPORT DATE: 21 JULY 1988 C.18-32
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-177A
NASA FMEA #: 03-2F-102170-3

SUBSYSTEM: FRCS
MDAC ID: 177
ITEM: MANIFOLD ISOL VLVS

LEAD ANALYST: C.D. PRUST

NASA DATA:
BASELINE [ ]
NEW [ X ]

CRITICALITY FLIGHT
HDW/FUNC

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FMEA/CIL COVERS ONLY THE BELLOWS LEAKAGE FAILURE MODE FOR THE VERNIER MANIFOLD ISOLATION VALVE. IOA HAS NO ISSUE WITH THIS FAILURE MODE, HOWEVER DOES RECOMMEND THAT THE EFFECTS DISCUSS THE POSSIBLE EXPOSURE OF EVA AND GROUND CREWS TO PROP OR PROP VAPORS. NASA/RI DO NOT COVER STRUCTURAL FAILURE, RUPTURE, OR EXTERNAL LEAKAGE OF THE VALVE HOUSING ON THIS FMEA OR ELSEWHERE.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2F-102108-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.

REPORT DATE: 21 JULY 1988 C.18-33
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-178
NASA FMEA #: NONE
SUBSYSTEM: FRCS
MDAC ID: 178
ITEM: MANIFOLD ISOL VLVS
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ P ] [ P ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA/RI DO NOT COVER THIS FAILURE MODE (RESTRICTED FLOW). IOA WITHDRAWS 1/1 CRIT, BUT MAINTAINS CONCERN THAT RESTRICTED FLOW TO A THRUSTER COULD CAUSE BURN-THROUGH. IOA ALSO WITHDRAWS 1/1 ABORT ISSUE DUE TO LACK OF CURRENT FRCS DUMP CAPABILITY DURING RTLS & TAL, HOWEVER RECOMMENDS A 1/1 ABORT CRIT (BASED ON A POSSIBLE INCOMPLETE DUMP) IF SUCH A CAPABILITY EXISTS IN THE FUTURE. IOA RECOMMENDS THAT THE RESTRICTED FLOW FAILURE MODE BE ADDRESSED ON THE FMEA/CIL.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 5/19/88 AGREED TO ADD "RESTRICTED FLOW" TO THE FAILURE MODES ON 03-2F-102110-1 (3/1R PPP, PRIMARY VALVES) AND 03-2F-102170-1 (2/2, VERNIER VALVES). IOA WITHDRAWS 2/1R ISSUE ON PRIMARY VALVES (SEE ASSESSMENT SHEETS RCS-158, 162, 166, & 170 FOR RATIONALE).

REPORT DATE: 21 JULY 1988 C.18-34
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-179
NASA FMEA #: 03-2F-121308-1

SUBSYSTEM: FRCS
MDAC ID: 179
ITEM: JET ALIGNMENT BELLOWS, PRIMARY, ALL AXES

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA RECOMMENDS THAT THE "D" EFFECTS BE REVISED. IOA CONSIDERS LEAKAGE OF PROP TO BE CRITICAL AFTER ET SEP ALSO, AS WELL AS A HAZARD TO EVA AND GROUND CREWS. IOA ALSO RECOMMENDS THAT "ISOL VALVE RELIEF DEVICE FAILURE TO RELIEVE" AND "FAILURE OF LINE BELLOWS TO DEFLECT" BE ADDED AS CAUSES ON THIS FMEA.

FINAL RESOLUTION: IOA NO LONGER CLASSIFIES THIS AS AN "ISSUE" SINCE THE CRITICITY IS CORRECT. HOWEVER, IOA DOES RECOMMEND THAT THE "D" EFFECTS BE REVISED AS DESCRIBED ABOVE.

REPORT DATE: 21 JULY 1988 C.18-35
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-181
NASA FMEA #: 03-2F-121310-2
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 181
ITEM: THRuster BIPROP SOLENoID VLV, PRIMARY, ALL AXES

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 1 /1 ] [ ] [ ] [ ] [ ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
IOA FAILURE MODES ON ANALYSIS SHEET SHOULD NOT INCLUDE "FAILS ON". IOA RECOMMENDS THAT THE FAILED OPEN MODE BE UPGRADED TO A 1/1 BECAUSE IT RESULTS IN LEAKAGE OF PROP. PER NSTS 22206, ANY SINGLE FAILURE RESULTING IN PROP LEAKAGE SHOULD BE CLASSIFIED AS A 1/1. PROP LEAKAGE PRESENTS A HAZARD TO THE GROUND CREW.

FINAL RESOLUTION: IOA WITHDRAWS 1/1 ISSUE AFTER DISCUSSION WITH RCS SSM ON 5/19/88. SSM BELIEVES THAT THE CRIT ASSIGNED TO THIS FAILURE MODE SHOULD REFLECT ONLY THE EFFECTS ON THE MISSION, CREW, AND VEHICLE DURING FLIGHT, AND NOT THE POTENTIAL EFFECTS TO THE GROUND CREW DURING NON-FLIGHT PHASES. IOA ACCEPTS THIS PHILOSOPHY, BUT RECOMMENDS THAT THE CRIT BE UPGRADED TO A 1/1 PER NSTS 22206 GROUNDRULES AND BECAUSE THIS FAILURE COULD CAUSE LOSS OF LIFE DURING THE PRE-LAUNCH AND LANDING/SAFING PHASES. FROM A LOSS OF THRUSTER STANDPOINT, IOA RECOMMENDS A 1R/2 FPP CRITICALITY. SEE ASSESSMENT SHEET RCS-186. THE SSM STATES THAT THE WORST-CASE EFFECT OF ZOTS RESULTING FROM THIS FAILURE WOULD BE THRUSTER INTERNAL LEAKAGE. ZOTS WOULD NOT RUPTURE THE THRUSTER HOUSING.

REPORT DATE: 21 JULY 1988 C.18-36
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-182
NASA FMEA #: NONE

SUBSYSTEM: FRCS
MDAC ID: 182
ITEM: THRUSTER BIPROP SOLENOID VALVE, PRIMARY, ALL AXES

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 1 / 1 ] [ ] [ ] [ ] [ ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA/RI DO NOT COVER THIS FAILURE MODE (STRUCTURAL FAILURE, Rupture, External Leakage) FOR THE THRUSTER SOLENOID VALVE.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2F-102108-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.

REPORT DATE: 21 JULY 1988 C.18-37
ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-183
NASA FMEA #: NONE

SUBSYSTEM: FRCS
MDAC ID: 183
ITEM: THRUSTER BIPROP SOLENOID VLV, PRIMARY, ALL AXES

LEAD ANALYST: C.D. PRUST

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ F ] [ P ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (RESTRICTED FLOW). IOA WITHDRAWS 1/1 CRIT, BUT MAINTAINS CONCERN THAT RESTRICTED FLOW TO A THRUSTER COULD RESULT IN BURN-THROUGH. IOA ALSO WITHDRAWS 1/1 ABORT ISSUE DUE TO LACK OF CURRENT FRCS DUMP CAPABILITY DURING RTLS & TAL, HOWEVER RECOMMENDS A 1/1 ABORT CRIT (BASED ON A POSSIBLE INCOMPLETE DUMP) IF SUCH A CAPABILITY EXISTS IN THE FUTURE. IOA RECOMMENDS THAT THE RESTRICTED FLOW FAILURE MODE BE ADDRESSED IN THE FMEA/CIL.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 5/19/88 AGREED TO ADD "RESTRICTED FLOW" TO THE FAILURE MODES ON 03-2F-121310-3 (3/1R FPP, FAILS CLOSED) DURING THE NEXT FMEA UPDATE ACTIVITY. IOA WITHDRAWS 2/1R ISSUE FOR YAW THRUSTERS (SEE ASSESSMENT SHEET RCS-186 FOR RATIONALE).

REPORT DATE: 21 JULY 1988 C.18-38
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-185
NASA FMEA #: 03-2F-121310-2

SUBSYSTEM: FRCS
MDAC ID: 185
ITEM: THRUSTER BIPROP SOLENOID VLV, PRIMARY, -X AXIS

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FLIGHT | HDW/FUNC | A | B | C | ITEM |
| NASA | [ 3 /1R ] | [ F ] | [ P ] | [ P ] | [ X ] * |
| IOA | [ 1 /1 ] | [ ] | [ ] | [ ] | [ X ] |
| COMPARE | [ N /N ] | [ N ] | [ N ] | [ N ] | [ ] |

RECOMMENDATIONS: (If different from NASA)

[ 1 /1 ] [ ] [ ] [ ] [ ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA recommends that the internal leakage failure mode be upgraded to a 1/1 because it results in leakage of prop. Per NSTS-22206, any single failure resulting in prop leakage should be classified as a 1/1. Prop leakage presents a hazard to the ground crew.

FINAL RESOLUTION: IOA withdraws 1/1 issue after discussion with RCS SSM on 5/19/88. SSM believes that the crit assigned to this failure mode should reflect only the effects on the mission, crew, and vehicle during flight, and not the potential effects to the ground crew during non-flight phases. IOA accepts this philosophy, but recommends that the crit be upgraded to a 1/1 per NSTS 22206 groundrules and because this failure could cause loss of life during the pre-launch and landing/safing phases. Per the SSM's philosophy, the NASA criticality is correct. The SSM states that the worst-case effect of ZOTS resulting from this failure would be thruster internal leakage. ZOTS would not rupture the thruster housing.

REPORT DATE: 21 JULY 1988 C.18-39
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-186
NASA FMEA #: 03-2F-121310-3
SUBSYSTEM: FRCS
MDAC ID: 186
ITEM: THRUSTER BIPROP SOLENOID VALVE, PRIMARY, Y AXIS
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY SCREENS

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RECOMMENDATIONS: (If different from NASA)

[ 2/IR ] [ F ] [ P ] [ P ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IoA withdraws 1/1 abort CRIT. IoA recommends that the failed closed mode for primary +/− Y jets be upgraded to IR/2. Loss of both +Y or −Y jets may cause inability to dump FRCS prop and violation of the entry X CG limit.

FINAL RESOLUTION: IoA held mtg on 6/2/88 with SSM, Mod, Boeing, & RSOC personnel to discuss IR/2 issue and inconsistency between RCS CRIT (1R/3) and GNC FMEA 05-1-FC6242-1 (1R/2). SSM stated that use of a FRCS dump for entry X CG management was not considered in RCS CRIT assignment as was done in IOA and GN&C CRITS. A post-deorbit FRCS dump is used to meet the fwd X CG limit. Therefore, if a planned dump isn't completed because two yaw jets on same side are failed, the X CG limit may be violated causing loss of crew/vehicle. The CRIT assigned to this failure should reflect the potential entry X CG limit violation. IoA reluctantly withdraws issue based on the narrow time span in which two jets must fail, the "contingency CG envelope", and the SSM's judgment. However, IoA strongly recommends either a IR/2 for this failure, or a flight rule which prohibits reliance on a FRCS dump to meet the entry X CG limit. Also, the inconsistency between the RCS CRIT and above GN&C FMEA should be corrected.

REPORT DATE: 21 JULY 1988 C.18-40
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-187
NASA FMEA #: 03-2F-121310-2

SUBSYSTEM: FRCS
MDAC ID: 187
ITEM: THRUSTER BIPROP SOLENOID VALVE, PRIMARY, Y AXIS

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM
NASA [ 3 /1R ] [ F ] [ P ] [ P ] [ X ] *
IOA [ 1 /1 ] [ ] [ ] [ ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ 1 /1 ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA recommends that the internal leakage failure mode be upgraded to a 1/1 because it results in leakage of prop. per NSTS-22206, any single failure resulting in prop leakage should be classified as a 1/1. Prop leakage presents a hazard to the ground crew.

FINAL RESOLUTION: IOA withdraws 1/1 issue after discussion with RCS SSM on 5/19/88. SSM believes that the crit assigned to this failure mode should reflect only the effects on the mission, crew, and vehicle during flight, and not the potential effects to the ground crew during non-flight phases. IOA accepts this philosophy, but recommends that the crit be upgraded to a 1/1 per NSTS 22206 groundrules and because this failure could cause loss of life during the pre-launch and landing/safing phases. From a loss of thruster standpoint, IOA recommends a 1R/2 FPP criticality. See assessment sheet RCS-186. The SSM states that the worst-case effect of ZOTS resulting from this failure would be thruster internal leakage. ZOTS would not rupture the thruster housing.

REPORT DATE: 21 JULY 1988 C.18-41
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-189
NASA FMEA #: 03-2F-121310-2

SUBSYSTEM: FRC5
MDAC ID: 189
ITEM: THRUSTER BIPROP SOLENOID VLV, PRIMARY, Z AXIS

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 1 /1 ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA recommends that the internal leakage failure mode be upgraded to a 1/1 because it results in leakage of prop. Per NSTS-22206, any single failure resulting in prop leakage should be classified as a 1/1. Prop leakage presents a hazard to the ground crew.

FINAL RESOLUTION: IOA withdraws 1/1 issue after discussion with RCS SSM on 5/19/88. SSM believes that the crit assigned to this failure mode should reflect only the effects on the mission, crew, and vehicle during flight, and not the potential effects to the ground crew during non-flight phases. IOA accepts this philosophy, but recommends that the crit be upgraded to a 1/1 per NSTS 22206 groundrules and because this failure could cause loss of life during the pre-launch and landing/safing phases. Per the SSM's philosophy, the NASA criticality is correct. The SSM states that the worst-case effect of ZOTS resulting from this failure would be thruster internal leakage. ZOTS would not rupture the thruster housing.

REPORT DATE: 21 JULY 1988 C.18-42
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-192
NASA FMEA #: 03-2F-131310-2

SUBSYSTEM: FRCS
MDAC ID: 192
ITEM: THRUSTER BIPROP SOLENOID VLV, VERNIERS, ALL AXES

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
[ 1 /1 ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
Adequate [ ]
Inadequate [ ]

REMARKS:
IOA failure modes on analysis sheet should not include "fails on". IOA recommends that the failed open mode be upgraded to a 1/1 because it results in leakage of prop. Per NSTS 22206, any single failure resulting in prop leakage should be classified as a 1/1. Prop leakage presents a hazard to the ground crew. IOA also recommends that the subassembly items included on this FMEA be separated onto individual FMEAs.

FINAL RESOLUTION: IOA withdraws 1/1 issue after discussion with RCS SSM on 5/19/88. SSM believes that the crit assigned to this failure mode should reflect only the effects on the mission, crew, and vehicle during flight, and not the potential effects to the ground crew during non-flight phases. IOA accepts this philosophy, but recommends that the crit be upgraded to a 1/1 per NSTS 22206 groundrules and because this failure could cause loss of life during the pre-launch and landing/safing phases. Per the SSM's philosophy, the NASA criticality is correct.

REPORT DATE: 21 JULY 1988 C.18-43
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-194
NASA FMEA #: NONE
NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: FRCS
MDAC ID: 194
ITEM: THRUSTER BIPROP SOLENOID VLV, VERNIERS, ALL AXES
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 1 / 1 ] [ ] [ ] [ ] [ ] [ A ]  
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (STRUCTURAL FAILURE, RUPTURE, EXTERNAL LEAKAGE).

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2F-102108-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.

REPORT DATE: 21 JULY 1988 C.18-44
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-195
NASA FMEA #: 03-2F-131310-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 195
ITEM: THRUSTER BIPROP SOLENOID VLV, VERNIERS, ALL AXES

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

| CRITICALLY REDUNDANCY CIL |
| FLIGHT | HDW/FUNC | A | B | C | ITEM |
| NASA   | [ 2 /2 ] | [ ] | [ ] | [ ] | [ ] | [ X ] | * |
| IOA    | [ 1 /1 ] | [ ] | [ ] | [ ] | [ ] | [ X ] |
| COMPARE| [ N /N ] | [ ] | [ ] | [ ] | [ ] | [ ] |

RECOMMENDATIONS: (If different from NASA)
[ 1 /1 ] [ ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA RECOMMENDS THAT THE INTERNAL LEAKAGE FAILURE MODE BE UPGRADED TO A 1/1 BECAUSE IT RESULTS IN LEAKAGE OF PROP. PER NSTS 22206, ANY SINGLE FAILURE WHICH RESULTS IN PROP LEAKAGE SHOULD BE CLASSIFIED AS A 1/1. PROP LEAKAGE PRESENTS A HAZARD TO THE GROUND CREW. IOA ALSO RECOMMENDS THAT THE SUBASSEMBLY COMPONENTS INCLUDED ON THIS FMEA BE SEPARATED ONTO INDIVIDUAL FMEAS.

FINAL RESOLUTION: IOA WITHDRAWS 1/1 ISSUE AFTER DISCUSSION WITH RCS SSM ON 5/19/88. SSM BELIEVES THAT THE CRIT ASSIGNED TO THIS FAILURE MODE SHOULD REFLECT ONLY THE EFFECTS ON THE MISSION, CREW, AND VEHICLE DURING FLIGHT, AND NOT THE POTENTIAL EFFECTS TO THE GROUND CREW DURING NON-FLIGHT PHASES. IOA ACCEPTS THIS PHILOSOPHY, BUT RECOMMENDS THAT THE CRIT BE UPGRADED TO A 1/1 PER NSTS 22206 GROUNDRULES AND BECAUSE THIS FAILURE COULD CAUSE LOSS OF LIFE DURING THE PRE-LAUNCH AND LANDING/SAFING PHASES. PER THE SSM'S PHILOSOPHY, THE NASA CRITICALITY IS CORRECT.

REPORT DATE: 21 JULY 1988 C.18-45
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-200
NASA FMEA #: 03-2A-201070-1
SUBSYSTEM: ARCS
MDAC ID: 200
ITEM: HELIUM FILL COUPLING
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ F ] [ F ] [ P ] [ A ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA AGREES WITH NASA/RI FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON OTHER QD FMEAS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED TO THE FAILURE MODES ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.18-46
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-202
NASA FMEA #: 03-A-201020-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 202
ITEM: HE ISOL A & B VLVS
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C ITEM

NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 3 /1R ] [ P ] [ P ] [ P ] [ ]
COMPARE [ / ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ 3 /1R ] [ P ] [ F ] [ P ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA NOW RECOMMENDS THAT THE B SCREEN BE FAILED AND THAT THIS ITEM AND FAILURE MODE BE ADDED TO THE CIL. A FAILURE OF THE REDUNDANT SECONDARY REG IS NOT DETECTABLE DURING FLIGHT.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE BASED ON NSTS 22206 GROUNDRULE (8/21/87, P. 2-13, 2.3.4.c). A FAILED OPEN ISOL VALVE IS DETECTABLE DURING FLIGHT VIA TALKBACK DISPLAY. THE REDUNDANCY SCREEN B TEST SHOULD BE APPLIED ONLY TO THE ISOL VALVE SINCE THE UNLIKE REDUNDANT REGULATOR IS IDENTIFIED SEPARATELY IN THE FMEA/CIL. THAT IS, AN UNDETECTABLE REG FAILURE SHOULD NOT CAUSE A B SCREEN FAILURE FOR THE DETECTABLE ISOL VALVE FAILURE. HOWEVER, IOA RECOMMENDS THAT THE B SCREEN BE FAILED SINCE ONE LEVEL OF REDUNDANCY (REG) CAN BE LOST WITHOUT BEING DETECTED. ALSO, THE NASA RCS FMEA/CIL ANALYSIS CONSIDERED THE DETECTABILITY OF ALL REDUNDANT ITEMS IN DETERMINING B SCREEN PASSAGE OR FAILURE. IOA AGREES WITH THIS PRACTICE. FOR CONSISTENCY WITHIN THE RCS FMEA/CIL, THIS B SCREEN SHOULD BE FAILED.
APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88           NASA DATA:  
ASSESSMENT ID: RCS-202A            BASELINE [ ]   
NASA FMEA #: NONE                  NEW [ ]   
SUBSYSTEM: ARCS                    
MDAC ID: 202                       
ITEM: HE ISOL A & B VLVS           
LEAD ANALYST: C.D. PRUST            

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ P ] [ F ] [ P ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA/RI DO NOT COVER THIS FAILURE MODE (INTERNAL LEAKAGE).

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 5/19/88 AGREED TO ADD "INTERNAL LEAKAGE" TO THE FAILURE MODES ON 03-2A-201020-2 (3/1R PPP, FAILS OPEN) DURING THE NEXT FMEA UPDATE ACTIVITY. IOA WITHDRAWS B SCREEN ISSUE. WITH ONE HELIUM ISOL VALVE OPEN, INTERNAL LEAKAGE OF THE CLOSED PARALLEL VALVE IS UNDETECTABLE, BUT HAS NO EFFECT. IF BOTH VALVES ARE CLOSED AND ONE VALVE IS LEAKING INTERNALLY, THE EFFECTS ARE DETECTABLE VIA PRESSURE SENSORS IN THE HELIUM TANK AND/OR THE PROPELLANT TANK.

REPORT DATE: 21 JULY 1988  C.18-48
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-208
NASA FMEA #: 03-2A-201091-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 208
ITEM: HIGH PRESSURE HELIUM TEST PORT COUPLINGS A & B

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FLIGHT | HDW/FUNC | A | B | C | ITEM |
| NASA | [ 3 /1R ] | [ F ] | [ F ] | [ P ] | [ X ] * |
| IOA | [ 3 /1R ] | [ P ] | [ NA ] | [ P ] | [ ] |
| COMPARISON | [ / ] | [ N ] | [ N ] | [ ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)
[ 3 /1R ] [ F ] [ F ] [ P ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON 03-2F-101070-I. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS REGARDING POSSIBLE VIOLATIONS OF ORBITER ENTRY MASS PROPERTIES CONSTRAINTS AND PROP TANK LANDING WEIGHT CONSTRAINTS. THE QUANTITY ON THIS FMEA IS INCORRECT.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.18-49
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-211
NASA FMEA #: 03-2A-201030-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 211
ITEM: HELIUM PRESSURE REGULATOR ASSEMBLY

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REDUNDANCY SCREENS
A  B  C

CIL
ITEM

NASA [ 2 /1R ] [ P ] [ P ] [ F ] [ X ] *
IOA [ 2 /1R ] [ P ] [ NA ] [ P ] [ X ]

COMPARE [ ] [ ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ F ] [ F ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA AGREES WITH NASA/RI FAILURE OF C SCREEN. HOWEVER, IOA RECOMMENDS THAT THE B SCREEN BE FAILED. A FAILED CLOSED REG WOULD NOT BE DETECTABLE DURING DUAL LEG OPERATION (ASCENT). IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS ABOUT POSSIBLE VIOLATIONS OF ORBITER ENTRY MASS PROPERTIES CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. LOSS OF FLOW THROUGH ONE REGULATOR WOULD NOT BE DETECTABLE WHEN BOTH FLOW PATHS ARE OPEN (AS DURING ASCENT AND ENTRY). HOWEVER, ONLY ONE OF THE PARALLEL FLOW PATHS IS USED AT A TIME FOR PAD PRE-PRESS AND ON-ORBIT. THEREFORE, THESE FAILURES WOULD BE DETECTABLE BEFORE LAUNCH OR AT SOME POINT DURING THE MISSION ON-ORBIT. HOWEVER, IOA RECOMMENDS THAT THE B SCREEN BE FAILED FOR PHASES WHEN BOTH PATHS ARE USED SIMULTANEOUSLY.

REPORT DATE: 21 JULY 1988 C.18-50
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-212
NASA FMEA #: 03-2A-201030-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 212
ITEM: HELIUM PRESSURE REGULATOR ASSEMBLY

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALLY REDUNDANCY CIL
FLIGHT HDW/FUNC A B C ITEM
NASA [ 2 /1R ] [ P ] [ P ] [ F ] [ X ] *
IOA [ 2 /1R ] [ P ] [ NA] [ P ] [ X ]
COMPARE [ / ] [ ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ 2 /1R ] [ P ] [ F ] [ F ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA AGREES WITH NASA/RI FAILURE OF C SCREEN. HOWEVER, IOA
RECOMMENDS THAT THE B SCREEN BE FAILED. A FAILED CLOSED REG WOULD
NOT BE DETECTABLE DURING DUAL LEG OPERATION (ASCENT). IOA ALSO
RECOMMENDS ADDING A STATEMENT TO THE EFFECTS ABOUT POSSIBLE
VIOLATIONS OF ORBITER ENTRY MASS PROPERTIES CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. LOSS OF FLOW THROUGH ONE
REGULATOR WOULD NOT BE DETECTABLE WHEN BOTH FLOW PATHS ARE OPEN
(AS DURING ASCENT AND ENTRY). HOWEVER, ONLY ONE OF THE PARALLEL
FLOW PATHS IS USED AT A TIME FOR PAD PRE-PRESS AND ON-ORBIT.
THEREFORE, THESE FAILURES WOULD BE DETECTABLE BEFORE LAUNCH OR AT
SOME POINT DURING THE MISSION ON-ORBIT. HOWEVER, IOA RECOMMENDS
THAT THE B SCREEN BE FAILED FOR PHASES WHEN BOTH PATHS ARE USED
SIMULTANEOUSLY.

REPORT DATE: 21 JULY 1988 C.18-51
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-213
NASA FMEA #: NONE

SUBSYSTEM: ARCS
MDAC ID: 213
ITEM: HELIUM PRESSURE REGULATOR ASSEMBLY

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALLY REDUNDANCY CIL
FLIGHT HDW/FUNC SCREENS ITEM

NASA [ ] [ ] [ ] [ ] [ ] [ ]

IOA [ 2/1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ N/N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ 1/1 ] [ ] [ ] [ ] [ ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (EXTERNAL LEAKAGE).
IOA ORIGINALLY CONSIDERED THE PARALLEL HELIUM FLOW PATHS TO BE
REDUNDANT FOR THIS FAILURE (2/1R), BUT NOW CLASSIFIES THIS FAILURE
AS A 1/1.
FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD
THIS VALVE BODY TO THE HELIUM LINE EXTERNAL LEAKAGE FMEA (03-2A-
201013-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS
ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-214
NASA FMEA #: NONE

SUBSYSTEM: ARCS
MDAC ID: 214
ITEM: HELIUM PRESSURE REGULATOR PRIMARY SENSING PORT
LEAD ANALYST: C.D. PRUST

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RECOMMENDATIONS: (If different from NASA)

[ 3 /2R ] [ P ] [ F ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (EXTERNAL LEAKAGE THROUGH SENSING PORT). HOWEVER, THIS FAILURE MODE IS COVERED BY NASA/RI IN THE OMS SUBSYSTEM ON FMEA 03-3-1004-3 (3/2R PFP). IOA RECOMMENDS THAT THIS FAILURE MODE ALSO BE COVERED FOR THE RCS REGULATOR WITH THE SAME RATIONALE USED IN OMS. IOA WITHDRAWS 2/IR PPP CRIT.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. THE WORST CASE REGULATOR EXTERNAL LEAKAGE IS COVERED ON 03-2F-101013-1 (1/1). THE PROPOSED IOA FAILURE MODE IS A LESS SEVERE CASE OF THE FAILURE MODE COVERED ON 03-2F-101013-1 AND, THEREFORE, NEED NOT BE ADDED TO THE RCS FMEA/CIL. HOWEVER, FOR CONSISTENCY BETWEEN RCS AND OMS IDENTICAL ITEMS, IOA RECOMMENDS THAT THIS FAILURE MODE SHOULD ALSO BE ADDRESSED IN THE RCS FMEA/CIL.

REPORT DATE: 21 JULY 1988 C.18-53
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-216
NASA FMEA #: 03-2A-201091-1
SUBSYSTEM: ARCS
MDAC ID: 216
ITEM: HELIUM PRESSURE REGULATOR OUTLET TEST PORT COUPLING
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY

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RECOMMENDATIONS: (If different from NASA)
[ 3 /1R ] [ F ] [ F ] [ P ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
IOA AGREES WITH NASA/RI 3/1R FFP ASSIGNMENT. IOA ORIGINALLY IDENTIFIED THIS -0032 COUPLING AS A -0018 COUPLING. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON 03-2F-101070-1. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS REGARDING POSSIBLE VIOLATIONS OF ORBITER ENTRY MASS PROPERTIES CONSTRAINTS AND PROP TANK LANDING WEIGHT CONSTRAINTS. THE QUANTITY ON THIS FMEA IS INCORRECT.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988  C.18-54
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-218
NASA FMEA #: 03-2A-201095-1
SUBSYSTEM: ARCS
MDAC ID: 218
ITEM: QUAD CHECK VALVE ASSEMBLY
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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| NASA | [ 3 /3 ] | [ ] | [ ] | [ ] | [ ] | [ X ] |
| IOA  | [ 2 /1R ] | [ P ] | [ F ] | [ P ] | [ X ] |
| COMPARE | [ N /N ] | [ N ] | [ N ] | [ N ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)

| [ 2 /1R ] | [ P ] | [ F ] | [ P ] | [ A ] |

ADD/DELETE

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE UPGRADED TO A 2/1R PFP AND PLACED ON THE CIL. WITH SERIES POPPETS FAILED OPEN, THE CONTAMINATION OF REGULATORS BY PROP OR PROP VAPORS COULD RESULT IN LOSS OF PROP TANK REPRESS CAPABILITY AND INABILITY TO USE OR DEPLETE ARCS PROP. THIS COULD RESULT IN LOSS OF ET SEP CONTROL, LOSS OF ENTRY CONTROL, AND POSSIBLE VIOLATIONS OF ENTRY MASS PROPERTIES CONSTRAINTS AND PROP TANK LANDING WEIGHT CONSTRAINTS. FAILURE OF ONE POPPET IS UNDETECTABLE DURING FLIGHT (FAIL B SCREEN).

FINAL RESOLUTION: IOA ACCEPTS 3/3 BASED ON INPUTS FROM OMS & RCS SSMs: THE REGS ARE DESIGNED TO BE PROP COMPATIBLE AND HAVE PASSED 90 DAY PROP EXPOSURE TEST. ALSO, ENOUGH TIME DOESN'T EXIST DURING A MISSION FOR PROP EXPOSURE TO CAUSE A REG FAILURE. ANY PROBLEM RESULTING FROM PROP EXPOSURE ON THE GROUND WOULD BE DETECTED DURING PRELAUNCH OPS. THE SSMs AGREED THAT THE IOA CONCERNS WERE NOT IMPOSSIBLE, BUT CONSIDER THE PROBABILITY OF SUCH OCCURRENCES TO BE "INFINITESIMALLY SMALL". IOA STILL RECOMMENDS 2/1R BASED ON ULTIMATE WORST CASE EFFECTS, BUT ACCEPTS THE JUDGMENT OF THE SSMs. SINCE THESE FAILURE MODES CAN CAUSE 1R REG FAILURES (SEE CAUSES ON 03-2F-101030-1, 03-2A-201030-1, & 03-2A-201030-2), THEY SHOULD BE CLASSIFIED AS 1R's.

REPORT DATE: 21 JULY 1988  C.18-55
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-220
NASA FMEA #: 03-2A-201091-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 220
ITEM: QUAD CHECK VALVE TEST PORT COUPLINGS A & B

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY

FLIGHT HDW/FUNC

REDUNDANCY SCREENS

CIL ITEM

A B C

NASA [ 3 /1R ] [ F ] [ F ] [ P ] [ X ] *

IOA [ 3 /1R ] [ P ] [ NA] [ P ] [ ]

COMPARE [ / ] [ N ] [ N ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ F ] [ F ] [ P ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:

IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON 03-2F-101070-1. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS REGARDING POSSIBLE VIOLATIONS OF ORBITER ENTRY MASS PROPERTIES CONSTRAINTS AND PROP TANK LANDING WEIGHT CONSTRAINTS. THE QUANTITY ON THIS FMEA IS INCORRECT.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.18-56
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-227
NASA FMEA #: 03-2A-211110-2

SUBSYSTEM: ARCS
MDAC ID: 227
ITEM: PROP CHANNEL SCREENS

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT THE P.A.D. COMPONENTS INCLUDED ON THIS FMEA BE ITEMIZED IN THE ITEM LIST OR FUNCTIONAL DESCRIPTIONS SECTIONS TO SHOW SPECIFICALLY WHAT IS COVERED ON THIS FMEA.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA RECOMMENDS EDITORIAL REVISIONS TO THE EFFECTS AS SHOWN, HOWEVER NO LONGER CONSIDERS THESE RECOMMENDATIONS TO BE AN "ISSUE". THE CRITICALITY ASSIGNED IS CORRECT FOR THIS FAILURE MODE.

REPORT DATE: 21 JULY 1988 C.18-57
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-229
NASA FMEA #: 03-2A-201090-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM:
ARCS
MDAC ID: 229
ITEM:
PROP TK UPPER COMPARTMENT CHANNEL CHECK-OUT
COUPLING

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ F ] [ F ] [ P ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS.
IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE MODE AND IS ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS REGARDING POSSIBLE FIRE/EXPLOSION HAZARD AND HAZARD TO GROUND AND EVA CREWS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988  C.18-58
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-233
NASA FMEA #: 03-2A-201090-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 233
ITEM: PROP TK LOWER COMPARTMENT CHECK-OUT COUPLING
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]
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[ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS.
IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE MODE AND IS ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS REGARDING POSSIBLE FIRE/EXPLOSION HAZARD AND HAZARD TO GROUND AND EVA CREWS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988   C.18-59
### APPENDIX C
#### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 1/01/88  
**ASSESSMENT ID:** RCS-235  
**NASA FMEA #:** 03-2A-201090-1  
**NASA DATA:**  
- BASELINE [ ]  
- NEW [ X ]  

**SUBSYSTEM:** ARCS  
**MDAC ID:** 235  
**ITEM:** PROP TK PLENUM SCREEN CHECK-OUT COUPLING  
**LEAD ANALYST:** C.D. PRUST

#### ASSESSMENT:

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**RECOMMENDATIONS:** (If different from NASA)

| [ 3 /1R ] | [ F ] | [ F ] | [ P ] | [ A ] |
| [ ] | (ADD/DELETE) |

* CIL RETENTION RATIONALE: (If applicable)

| ADEQUATE [ ] | INADEQUATE [ ] |

**REMARKS:**
IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE MODE AND IS ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS REGARDING POSSIBLE FIRE/EXPLOSION HAZARD AND HAZARD TO GROUND AND EVA CREWS.

**FINAL RESOLUTION:** IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

**REPORT DATE:** 21 JULY 1988 C.18-60
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-241
NASA FMEA #: NONE

SUBSYSTEM: ARCS
MDAC ID: 241
ITEM: PRESSURE RELIEF ASSEMBLY

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY
FLIGHT HDW/FUNC

NASA [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
IOA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ]
COMPAR [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ F ] [ P ] [ A ]
(AADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (BURST DISK INTERNAL LEAKAGE). IOA CONSIDERS THIS FAILURE MODE TO BE CREDIBLE AND RECOMMENDS IT BE ADDED TO 03-2F-101060-5. THE FAILURE HISTORY OF THE BURST DISK INCLUDES THIS FAILURE.


REPORT DATE: 21 JULY 1988 C.18-61
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-243
NASA FMEA #: 03-2A-201091-1
SUBSYSTEM: ARCS
MDAC ID: 243
ITEM: RELIEF VALVE TEST PORT COUPLING
LEAD ANALYST: C.D. PRUST

NASA DATA:
BASELINE [    ]
NEW [ X ]

ITEM: ARCS
243
RELIEF VALVE TEST PORT COUPLING

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY REDUNDANCY CIL
FLIGHT HDW/FUNC SCREENS ITEM

| NASA | 3 /1R | [ F ] | [ F ] | [ P ] | [ X ] * |
| IOA  | 3 /1R | [ P ] | [ NA] | [ P ] | [    ] |

COMPARE [ / ] [ N ] [ N ] [   ] [ N ]

RECOMMENDATIONS: (If different from NASA)

| 3 /1R | [ F ] | [ F ] | [ P ] | [    ] |

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [    ]
INADEQUATE [   ]

REMARKS:
IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON 03-2F-101070-1. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS REGARDING POSSIBLE VIOLATIONS OF ORBITER ENTRY mass PROPERTIES CONSTRAINTS AND PROP TANK LANDING WEIGHT CONSTRAINTS. THE QUANTITY ON THIS FMEA IS INCORRECT.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988  C.18-62
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-247
NASA FMEA #: NONE

SUBSYSTEM: ARCS
MDAC ID: 247
ITEM: GROUND MANUAL ISOLATION VALVE

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 1 /1 ] [ ] [ ] [ ] [ ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (EXTERNAL LEAKAGE).
FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE HELIUM LINE EXTERNAL LEAKAGE FMEA (03-2A-201013-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87. IOA ALSO RECOMMENDS THAT THE POSSIBLE PROP LEAKAGE EFFECTS OF THIS FAILURE BE INCLUDED IN THE EFFECTS (CORROSION, FIRE, EXPLOSION, EXPOSURE OF EVA AND GROUND CREWS).

REPORT DATE: 21 JULY 1988  C.18-63
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-248
NASA FMEA #: 03-2A-202112-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: MDAC ID:
ITEM: PROP TANK ISOL VLVS 1/2 & 3/4/5
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 1/1 ] [ ] [ ] [ ] [ ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FMEA COVERS ONLY THE BELLows LEAKAGE FAILURE MODE FOR THE
PROP TANK ISOL VALVES. IOA HAS NO ISSUE WITH THIS FAILURE MODE,
HOWEVER DOES RECOMMEND THAT THE EFFECTS INCLUDE THE POSSIBLE
EXPOSURE OF EVA AND GROUND CREWS TO PROP OR PROP VAPORS. NASA/RI
DO NOT COVER STRUCTURAL FAILURE, RUPTURE, OR EXTERNAL LEAKAGE OF
THE VALVE HOUSING ON THIS FMEA OR ELSEWHERE.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD
THIS VALVE BODY TO THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2A-
202108-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS
ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.

REPORT DATE: 21 JULY 1988 C.18-64
## APPENDIX C
### ASSESSMENT WORKSHEET

| ASSESSMENT DATE: | 1/01/88 |
| ASSESSMENT ID:   | RCS-249 |
| NASA FMEA #:     | NONE    |
| NASA DATA: | BASELINE [ ] NEW [ ] |
| SUBSYSTEM: | ARCS |
| MDAC ID: | 249 |
| ITEM: | PROP TANK ISOL VLVS 1/2 & 3/4/5 |
| LEAD ANALYST: | C.D. PRUST |

### ASSESSMENT:

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### RECOMMENDATIONS:
(If different from NASA)

[ 3 /1R ] [ P ] [ P ] [ P ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

### REMARKS:

IOA ITEM LIST SHOULD NOT INCLUDE THE 3/4/5 VALVES. NASA/RI DO NOT COVER THIS FAILURE MODE (RESTRICTED FLOW). IOA WITHDRAWS 1/1 ISSUE, BUT MAINTAINS CONCERN THAT RESTRICTED FLOW OF PROP TO A THRUSTER COULD RESULT IN BURN-THROUGH. IOA RECOMMENDS A 3/1R PPP, 1/1 ABORT FMEA AND CIL FOR RESTRICTED FLOW OF THE PROP TANK ISOL 1/2 VALVES. LOSS OF PROP FLOW THROUGH THE 1/2 VALVE WOULD RESULT IN THE LOSS OF ONE +X THRUSTER USED TO DUMP ARCS PROP DURING RTLS & TAL ABORTS. INABILITY TO COMPLETE A PLANNED ARCS DUMP COULD RESULT IN VIOLATIONS OF ENTRY MASS PROPERTIES CONSTRAINTS AND TANK LANDING WEIGHT CONSTRAINTS.

**FINAL RESOLUTION:** G. GRUSH (RCS SSM) ON 5/19/88 AGREED TO ADD "RESTRICTED FLOW" TO THE FAILURE MODES ON 03-2A-202110-1 (3/1R PPP, FAILS CLOSED) DURING THE NEXT FMEA UPDATE ACTIVITY. IOA WITHDRAWS 1/1 ABORT ISSUE (SEE ASSESSMENT SHEET RCS-251 FOR RATIONALE.)

### REPORT DATE: 21 JULY 1988 C.18-65
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-251
NASA FMEA #: 03-2A-202110-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 251
ITEM: PROP TANK ISOL VLV 1/2

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS
FLIGHT HDW/FUNC A B C
NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N / ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ 3 /1R ] [ P ] [ P ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA RECOMMENDS THAT THIS PROP TANK ISOL 1/2 VALVE FAILURE BE UPGRADED TO A 3/1R PPP, 1/1 ABORT AND PLACED ON THE CIL. LOSS OF FLOW THROUGH THE 1/2 VALVE WOULD RESULT IN THE LOSS OF ONE +X THRUSTER USED TO DUMP ARCS PROP DURING RTLS & TAL ABORTS. INABILITY TO COMPLETE A PLANNED ARCS DUMP COULD RESULT IN VIOLATION OF ENTRY MASS PROPERTIES CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAWS 1/1 ABORT ISSUE BECAUSE OF THE UNIQUE SET OF CIRCUMSTANCES REQUIRED FOR A 1/1 ABORT CRIT TO BE POSSIBLE. FOR THE LOSS OF ONE +X THRUSTER TO CAUSE POSSIBLE LOSS OF CREW/VEHICLE DURING RTLS & TAL ABORTS, THE PLANNED ENTRY X CG OF THE ORBITER MUST BE AT OR NEAR THE AFT X CG LIMIT (1109.0 INCHES) SUCH THAT THE EXTRA AMOUNT OF ARCS PROP REMAINING IN THE TANKS, WHICH COULD NOT BE DUMPED DUE TO THIS VALVE FAILURE, CAUSES THE AFT X CG LIMIT TO BE VIOLATED. THE AFT LIMIT IS BASED ON ORBITER THERMAL CONSTRAINTS. IOA ESTIMATES THIS FAILURE COULD MOVE THE X CG AFT BY A MAXIMUM OF LESS THAN 1 INCH. IOA STILL RECOMMENDS A 1/1 ABORT CRIT TO COVER THIS WORST-CASE SCENARIO, AND FURTHER RECOMMENDS THAT SUCH AN OCCURRENCE BE PROTECTED AGAINST IN PRE-FLIGHT CG PLANNING. HOWEVER, IOA RECOGNIZES THAT THE SCENARIO REQUIRED FOR A 1/1 ABORT CRIT IS VERY UNIQUE.

REPORT DATE: 21 JULY 1988 C.18-66
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-254
NASA FMEA #: 03-2A-201080-1

SUBSYSTEM: ARCS
MDAC ID: 254
ITEM: MANIFOLD 1/2 GROUND PURGE COUPLING

LEAD ANALYST: C.D. PRUST

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ F ] [ F ] [ P ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

Adequate [ ]
Inadequate [ ]

REMARKS:
IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS.
IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE MODE AND IS ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING STATEMENTS TO THE EFFECTS REGARDING FIRE/EXPLOSION HAZARD AND HAZARD TO GROUND AND EVA CREWS. THE QUANTITY ON THIS FMEA APPEARS TO BE INCORRECT.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.18-67
### APPENDIX C
#### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 1/01/88  
**ASSESSMENT ID:** RCS-256  
**NASA FMEA #:** 03-2A-201080-1  
**NASA DATA:**

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**SUBSYSTEM:** ARCS  
**MDAC ID:** 256  
**ITEM:** MANIFOLD 3/4/5 GROUND PURGE COUPLING  
**LEAD ANALYST:** C.D. PRUST  

**ASSESSMENT:**

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**RECOMMENDATIONS:**  
(If different from NASA)

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* CIL RETENTION RATIONALE:  
(If applicable)

**ADEQUATE [ ]**  
**INADEQUATE [ ]**

**REMARKS:**

IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE MODE AND IS ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING STATEMENTS TO THE EFFECTS REGARDING FIRE/EXPLOSION HAZARD AND HAZARD TO GROUND AND EVA CREWS. THE QUANTITY ON THIS FMEA APPEARS TO BE INCORRECT.

**FINAL RESOLUTION:** IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

**REPORT DATE:** 21 JULY 1988  
C.18-68
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-258
NASA FMEA #: NONE

SUBSYSTEM: ARCS
MDAC ID: 258
ITEM: RCS CROSSFEED VLV 1/2 OR 3/4/5

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 2 /2 ] [ ] [ ] [ ] [ ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

   ADEQUATE [ ]

   INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (RESTRICTED FLOW).
IOA WITHDRAWS 1/1 CRIT ISSUE, BUT MAINTAINS CONCERN THAT
RESTRICTED FLOW OF PROP TO A THRUSTER COULD RESULT IN BURN-
THROUGH.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 5/19/88 AGREED TO ADD
"RESTRICTED FLOW" TO THE FAILURE MODES ON 03-2A-202111-2 (2/2, 1/1
ABORT, FAILS CLOSED) DURING THE NEXT FMEA UPDATE ACTIVITY.

REPORT DATE: 21 JULY 1988 C.18-69
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-259
NASA FMEA #: 03-2A-202112-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 259
ITEM: RCS CROSSFEED VLV 1/2 OR 3/4/5

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 1 / 1 ] [ ] [ ] [ ] [ ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

THIS FMEA COVERS ONLY THE BELLOWS LEAKAGE FAILURE MODE FOR THE CROSSFEED VALVES. IOA HAS NO ISSUE WITH THIS FAILURE MODE, HOWEVER DOES RECOMMEND THAT THE EFFECTS INCLUDE THE POSSIBLE EXPOSURE OF EVA AND GROUND CREWS TO PROP OR PROP VAPORS. NASA/RI DO NOT COVER STRUCTURAL FAILURE, RUPTURE, OR EXTERNAL LEAKAGE OF THE VALVE HOUSING ON THIS FMEA OR ELSEWHERE.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2A-202108-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.

REPORT DATE: 21 JULY 1988 C.18-70
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-267
NASA FMEA #: 03-2A-202120-3

SUBSYSTEM: ARCS
MDAC ID: 267
ITEM: MANIFOLD 1, ISOL VLV

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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| NASA | [ 3 /1R ] | [ P ] | [ P ] | [ P ] | [ ] * |
| IOA  | [ 3 /1R ] | [ P ] | [ P ] | [ P ] | [ X ] |

COMPARE [ / ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ P ] [ P ] [ P ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA recommends that this item and failure mode be upgraded to a 3/1R PPP, 1/1 abort and placed on the CIL. Loss of all thrusters on one manifold may result in the inability to complete OMS or ARCS dumps during RTLS or TAL, resulting in possible violation of entry mass properties constraints or OMS prop tank landing weight constraints.

FINAL RESOLUTION: IOA withdraws 1/1 abort issue because of the unique set of circumstances required for a 1/1 abort crit to be possible. For the loss of three primary thrusters to cause possible loss of crew/vehicle during RTLS & TAL aborts, the planned entry XCG of the Orbiter must be at or near the aft XCG limit (1109.0 inches) such that the extra amount of ARCS and OMS prop remaining in the tanks, which could not be dumped due to this valve failure, causes the aft XCG limit to be violated. The aft limit is based on Orbiter thermal constraints. IOA still recommends a 1/1 abort crit to cover this worst-case scenario, and further recommends that such an occurrence be protected against in pre-flight CG planning. However, IOA recognizes that the scenario required for a 1/1 abort crit is very unique.

REPORT DATE: 21 JULY 1988  C.18-71
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-268
NASA FMEA #: 03-2A-201080-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 268
ITEM: MANIFOLD 1, GROUND PURGE/DRAIN COUPLING

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ F ] [ F ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE MODE AND IS ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING STATEMENTS TO THE EFFECTS REGARDING FIRE/EXPLOSION HAZARD AND HAZARD TO GROUND AND EVA CREWS. THE QUANTITY ON THIS FMEA APPEARS TO BE INCORRECT. FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988  C.18-72
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-271
NASA FMEA #: 03-2A-202120-3

SUBSYSTEM: ARCS
MDAC ID: 271
ITEM: MANIFOLD 2, ISOL VLV
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ P ] [ P ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE UPGRADED TO A 3/1R PPP, 1/1 ABORT AND PLACED ON THE CIL. LOSS OF ALL THRUSTERS ON ONE MANIFOLD MAY RESULT IN THE INABILITY TO COMPLETE OMS OR ARCS DUMPS DURING RTLS OR TAL, RESULTING IN POSSIBLE VIOLATION OF ENTRY MASS PROPERTIES CONSTRAINTS OR OMS PROP TANK LANDING WEIGHT CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAWS 1/1 ABORT ISSUE BECAUSE OF THE UNIQUE SET OF CIRCUMSTANCES REQUIRED FOR A 1/1 ABORT CRIT TO BE POSSIBLE. FOR THE LOSS OF THREE PRIMARY THRUSTERS TO CAUSE POSSIBLE LOSS OF CREW/VEHICLE DURING RTLS & TAL ABORTS, THE PLANNED ENTRY X CG OF THE ORBITER MUST BE AT OR NEAR THE AFT X CG LIMIT (1109.0 INCHES) SUCH THAT THE EXTRA AMOUNT OF ARCS AND OMS PROP REMAINING IN THE TANKS, WHICH COULD NOT BE DUMPED DUE TO THIS VALVE FAILURE, CAUSES THE AFT X CG LIMIT TO BE VIOLATED. THE AFT LIMIT IS BASED ON ORBITER THERMAL CONSTRAINTS. IOA STILL RECOMMENDS A 1/1 ABORT CRIT TO COVER THIS WORST-CASE SCENARIO, AND FURTHER RECOMMENDS THAT SUCH AN OCCURRENCE BE PROTECTED AGAINST IN PRE-FLIGHT CG PLANNING. HOWEVER, IOA RECOGNIZES THAT THE SCENARIO REQUIRED FOR A 1/1 ABORT CRIT IS VERY UNIQUE.

REPORT DATE: 21 JULY 1988 C.18-73
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-272
NASA FMEA #: 03-2A-201080-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 272
ITEM: MANIFOLD 2, GROUND PURGE/DRAIN COUPLING

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FLIGHT | HDW/FUNC | A | B | C |
| NASA | [ 2 /1R ] | [ F ] | [ F ] | [ P ] | [ X ] |
| IOA | [ 2 /1R ] | [ P ] | [ NA ] | [ P ] | [ X ] |
| COMPARE | [ ] | [ N ] | [ N ] | [ ] | [ ] |

RECOMMENDATIONS: (If different from NASA)
[ 2 /1R ] [ F ] [ F ] [ P ] [ A ]

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE MODE AND IS ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING STATEMENTS TO THE EFFECTS REGARDING FIRE/EXPLOSION HAZARD AND HAZARD TO GROUND AND EVA CREWS. THE QUANTITY ON THIS FMEA APPEARS TO BE INCORRECT.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.18-74
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-275
NASA FMEA #: 03-2A-202120-3

SUBSYSTEM: ARCS
MDAC ID: 275
ITEM: MANIFOLD 3, ISOL VLV
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ P ] [ P ] [ P ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE UPGRADED TO A 3/1R PPP, 1/1 ABORT AND PLACED ON THE CIL. LOSS OF ALL THRUSTERS ON ONE MANIFOLD MAY RESULT IN THE INABILITY TO COMPLETE OMS OR ARCS DUMPS DURING RTLS OR TAL, RESULTING IN POSSIBLE VIOLATION OF ENTRY MASS PROPERTIES CONSTRAINTS OR OMS PROP TANK LANDING WEIGHT CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAWS 1/1 ABORT ISSUE BECAUSE OF THE UNIQUE SET OF CIRCUMSTANCES REQUIRED FOR A 1/1 ABORT CRIT TO BE POSSIBLE. FOR THE LOSS OF THREE PRIMARY THRUSTERS TO CAUSE POSSIBLE LOSS OF CREW/VEHICLE DURING RTLS & TAL ABORTS, THE PLANNED ENTRY X CG OF THE ORBITER MUST BE AT OR NEAR THE AFT X CG LIMIT (1109.0 INCHES) SUCH THAT THE EXTRA AMOUNT OF ARCS AND OMS PROP REMAINING IN THE TANKS, WHICH COULD NOT BE DUMPED DUE TO THIS VALVE FAILURE, CAUSES THE AFT X CG LIMIT TO BE VIOLATED. THE AFT LIMIT IS BASED ON ORBITER THERMAL CONSTRAINTS. IOA STILL RECOMMENDS A 1/1 ABORT CRIT TO COVER THIS WORST-CASE SCENARIO, AND FURTHER RECOMMENDS THAT SUCH AN OCCURRENCE BE PROTECTED AGAINST IN PRE-FLIGHT CG PLANNING. HOWEVER, IOA RECOGNIZES THAT THE SCENARIO REQUIRED FOR A 1/1 ABORT CRIT IS VERY UNIQUE.

REPORT DATE: 21 JULY 1988 C.18-75
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-276
NASA FMEA #: 03-2A-201080-1

NASA DATA:
BASELINE [ ]
NEW [x]

SUBSYSTEM: ARCS
MDAC ID: 276
ITEM: MANIFOLD 3, GROUND PURGE/DRAIN COUPLING

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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| IOA [2/1R] | [P] | [NA] | [P] | [x] |
| COMPARE [ ] | [N] | [N] | [ ] | [ ] |

RECOMMENDATIONS: (If different from NASA)

[2/1R] [F] [F] [P] [A] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE MODE AND IS ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING STATEMENTS TO THE EFFECTS REGARDING FIRE/EXPLOSION HAZARD AND HAZARD TO GROUND AND EVA CREWS. THE QUANTITY ON THIS FMEA APPEARS TO BE INCORRECT.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.18-76
APPENDIX C
ASESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-279
NASA FMEA #: 03-2A-202120-3

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 279
ITEM: MANIFOLD 4, ISOL VLV

LEAD ANALYST: C.D. PRUST

ASSESSMENT:
CRITICALITY
FLIGHT
HDW/FUNC

REDUNDANCY SCREENS
A   B   C

ITEM

NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ X ] *

IOA [ 3 /1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ / ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ P ] [ P ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE UPGRADED TO A
3/1R PPP, 1/1 ABORT AND PLACED ON THE CIL. LOSS OF ALL THRUSTERS
ON ONE MANIFOLD MAY RESULT IN THE INABILITY TO COMPLETE OMS OR
ARCS DUMPS DURING RTLS OR TAL, RESULTING IN POSSIBLE VIOLATION OF
ENTRY MASS PROPERTIES CONSTRAINTS OR OMS PROP TANK LANDING WEIGHT
CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAWS 1/1 ABORT ISSUE BECAUSE OF THE
UNIQUE SET OF CIRCUMSTANCES REQUIRED FOR A 1/1 ABORT CRIT TO BE
POSSIBLE. FOR THE LOSS OF THREE PRIMARY THRUSTERS TO CAUSE
POSSIBLE LOSS OF CREW/VEHICLE DURING RTLS & TAL ABORTS, THE
PLANNED ENTRY X CG OF THE ORBITER MUST BE AT OR NEAR THE AFT X CG
LIMIT (1109.0 INCHES) SUCH THAT THE EXTRA AMOUNT OF ARCS AND OMS
PROP REMAINING IN THE TANKS, WHICH COULD NOT BE DUMPED DUE TO THIS
VALVE FAILURE, CAUSES THE AFT X CG LIMIT TO BE VIOLATED. THE AFT
LIMIT IS BASED ON ORBITER THERMAL CONSTRAINTS. IOA STILL
RECOMMENDS A 1/1 ABORT CRIT TO COVER THIS WORST-CASE SCENARIO, AND
FURTHER RECOMMENDS THAT SUCH AN OCCURRENCE BE PROTECTED AGAINST IN
PRE-FLIGHT CG PLANNING. HOWEVER, IOA RECOGNIZES THAT THE SCENARIO
REQUIRED FOR A 1/1 ABORT CRIT IS VERY UNIQUE.

REPORT DATE: 21 JULY 1988   C.18-77
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-280
NASA FMEA #: 03-2A-201080-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 280
ITEM: MANIFOLD 4, GROUND PURGE/DRAIN COUPLING
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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COMPARE [ / ] [ N ] [ N ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ F ] [ F ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS. IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE MODE AND IS ADDRESSED ON OTHER QD FMEAS. IOA ALSO RECOMMENDS ADDING STATEMENTS TO THE EFFECTS REGARDING FIRE/EXPLOSION HAZARD AND HAZARD TO GROUND AND EVA CREWS. THE QUANTITY ON THIS FMEA APPEARS TO BE INCORRECT. FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.18-78
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-284
NASA FMEA #: 03-2A-201080-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 284
ITEM: MANIFOLD 5, GROUND PURGE/DRAIN COUPLING

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ F ] [ F ] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA AGREES WITH NASA/RI RATIONALE FOR FAILURE OF A AND B SCREENS.
IOA RECOMMENDS THAT "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE
ON THIS FMEA. THIS IS A CREDIBLE MODE AND IS ADDRESSED ON OTHER
QD FMEAS. IOA ALSO RECOMMENDS ADDING STATEMENTS TO THE EFFECTS
REGARDING FIRE/EXPLOSION HAZARD AND HAZARD TO GROUND AND EVA
CREWS. THE QUANTITY ON THIS FMEA APPEARS TO BE INCORRECT.
FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS
RECOMMENDATION THE "POPPET FAILS OPEN" BE ADDED AS A FAILURE MODE
ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS
ADDITION.

REPORT DATE: 21 JULY 1988 C.18-79
ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-286
NASA FMEA #: 03-2A-202112-1
SUBSYSTEM: ARCS
MDAC ID: 286
ITEM: MANIFOLD ISOL VLVS
LEAD ANALYST: C.D. PRUST

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| IOA | 1/1 | [ ] | [ ] | [ ] | [ ] | X |
| COMPARE | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |

RECOMMENDATIONS: (If different from NASA)

| 1/1 | [ ] | [ ] | [ ] | [ ] | [ ] | A | (ADD/DELETE) |

* CIL RETENTION RATIONALE: (If applicable)

| ADEQUATE | [ ] |
| INADEQUATE | [ ] |

REMARKS:
THIS FMEA/CIL COVERS ONLY THE BELLOWS LEAKAGE FAILURE MODE FOR THE PRIMARY MANIFOLD ISOLATION VALVES. IOA HAS NO ISSUE WITH THIS FAILURE MODE, HOWEVER DOES RECOMMEND THAT THE EFFECTS DISCUSS THE POSSIBLE EXPOSURE OF EVA AND GROUND CREWS TO PROP OR PROP VAPORS. NASA/RI DO NOT COVER STRUCTURAL FAILURE, RUPTURE, OR EXTERNAL LEAKAGE OF THE VALVE HOUSING ON THIS FMEA OR ELSEWHERE.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2A-202108-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.

REPORT DATE: 21 JULY 1988  C.18-80
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-286A
NASA FMEA #: 03-2A-202140-3
NASA DATA: BASELINE [ ] NEW [ ]

SUBSYSTEM: ARCS
MDAC ID: 286
ITEM: MANIFOLD ISOL VLVS

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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NASA [ 1 /1 ] [ ] [ ] [ ] [ ] [ X ] *
IOA [ 1 /1 ] [ ] [ ] [ ] [ ] [ X ]
COMPARE [ / ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ 1 /1 ] [ ] [ ] [ ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

THIS FMEA/CIL COVERS ONLY THE BELLOWS LEAKAGE FAILURE MODE FOR THE VERNIER MANIFOLD ISOLATION VALVE. IOA HAS NO ISSUE WITH THIS FAILURE MODE, HOWEVER DOES RECOMMEND THAT THE EFFECTS DISCUSS THE POSSIBLE EXPOSURE OF EVA AND GROUND CREWS TO PROP OR PROP VAPORS. NASA/RI DO NOT COVER STRUCTURAL FAILURE, RUPTURE, OR EXTERNAL LEAKAGE OF THE VALVE HOUSING ON THIS FMEA OR ELSEWHERE.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2A-202108-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.

REPORT DATE: 21 JULY 1988 C.18-81
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
NASA DATA: BASELINE [ ]
NASA FMEA #: NONE
ASSESSMENT ID: RCS-287
NEW [ ]

SUBSYSTEM: ARCS
MDAC ID: 287
ITEM: MANIFOLD ISOL VLVS

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL ITEM |
| FLIGHT | HDW/FUNC | A | B | C | | |
| NASA | [ ] | [ ] | [ ] | [ ] | [ ] |[ ] | \* |
| IOA | [ 1/1 ] | [ ] | [ ] | [ ] | [ ] | [ X ] |
| COMPARE | [ N/N ] | [ ] | [ ] | [ ] | [ ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)

[ 3/1R ] [ P ] [ P ] [ P ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA/RI DO NOT COVER THIS FAILURE MODE (RESTRICTED FLOW). IOA withdraws 1/1 CRIT, but maintains concern that restricted flow of prop to a thruster could result in burn-through. IOA recommends that the restricted flow failure mode be addressed on the FMEA/CIL.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 5/19/88 AGREED TO ADD "RESTRICTED FLOW" TO THE FAILURE MODES ON 03-2A-202140-1 (2/2, FAILS CLOSED, VERNIER MANIFOLD ISOL VALVE) AND 03-2A-202120-3 (3/1R PPP, FAILS CLOSED, PRIMARY MANIFOLD ISOL VALVES) DURING THE NEXT FMEA UPDATE ACTIVITY. IOA WITHDRAWS 1/1 ABORT ISSUE ON THE PRIMARY MANIFOLD ISOL VALVES (SEE ASSESSMENT SHEETS RCS-267, 271, 275, & 279 FOR RATIONALE).

REPORT DATE: 21 JULY 1988 C.18-82
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-290
NASA FMEA #: 03-2A-221310-1

SUBSYSTEM: ARCS
MDAC ID: 290
ITEM: THRUSTER BIPROP SOLENOID VLVS, PRIMARY, ALL AXES

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[1/1] [ ] [ ] [ ] [ ] [A] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
IOA FAILURE MODES ON ANALYSIS SHEET SHOULD NOT INCLUDE "FAILS ON".
IOA RECOMMENDS THAT THE FAILED OPEN MODE BE UPGRADED TO A 1/1
BECAUSE IT RESULTS IN LEAKAGE OF PROP. PER NSTS 22206, ANY SINGLE
FAILURE RESULTING IN PROP LEAKAGE SHOULD BE CLASSIFIED AS A 1/1.
PROP LEAKAGE PRESENTS A HAZARD TO THE GROUND CREW.

FINAL RESOLUTION: IOA WITHDRAWS 1/1 ISSUE AFTER DISCUSSION WITH
RCS SSM ON 5/19/88. SSM BELIEVES THAT THE CRIT ASSIGNED TO THIS
FAILURE MODE SHOULD REFLECT ONLY THE EFFECTS ON THE MISSION, CREW,
AND VEHICLE DURING FLIGHT, AND NOT THE POTENTIAL EFFECTS TO THE
GROUND CREW DURING NON-FLIGHT PHASES. IOA ACCEPTS THIS
PHILOSOPHY, BUT RECOMMENDS THAT THE CRIT BE UPGRADED TO A 1/1 PER
NSTS 22206 GROUNDRULES AND BECAUSE THIS FAILURE COULD CAUSE LOSS
OF LIFE DURING THE PRE-LAUNCH AND LANDING/SAFING PHASES. FROM A
LOSS OF THRUSTER STANDPOINT, IOA CONCURS WITH THE NASA
CRITICALITY, BUT RECOMMENDS A 1/1 ABORT CRIT. SEE ASSESSMENT
SHEETS RCS-293, 295, & 297. THE SSM STATES THAT THE WORST-CASE
EFFECT OF ZOTS RESULTING FROM THIS FAILURE WOULD BE THRUSTER
INTERNAL LEAKAGE. ZOTS WOULD NOT RUPTURE THE THRUSTER HOUSING.

REPORT DATE: 21 JULY 1988 C.18-83
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-291
NASA FMEA #: NONE

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: ARCS
MDAC ID: 291
ITEM: THRUSTER BIPROP SOLENOID VLVS, PRIMARY, ALL AXES

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 1/1 ] [ ] [ ] [ ] [ ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (STRUCTURAL FAILURE, RUPTURE, EXTERNAL LEAKAGE).

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2A-202108-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.

REPORT DATE: 21 JULY 1988 C.18-84
## APPENDIX C
### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 1/01/88  
**ASSESSMENT ID:** RCS-292  
**NASA FMEA #:** NONE  
**NASA DATA:**  
- BASELINE [ ]  
- NEW [ ]  

**SUBSYSTEM:** ARCS  
**MDAC ID:** 292  
**ITEM:** THRUSTER BIPROP SOLENOID VLVS, PRIMARY, ALL AXES  
**LEAD ANALYST:** C.D. PRUST  

### ASSESSMENT:

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### RECOMMENDATIONS:  (If different from NASA)

[ 3 / 1R ] [ F ] [ P ] [ P ] [ A ]  
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

**REMARKS:** NASA/RI DO NOT COVER THIS FAILURE MODE (RESTRICTED FLOW). IOA WITHDRAWN 1/1 CRIT, BUT MAINTAINS CONCERN THAT RESTRICTED FLOW OF PROP COULD RESULT IN BURN-THROUGH. IOA RECOMMENDS THAT THE RESTRICTED FLOW FAILURE MODE BE ADDRESSED ON THE FMEA/CIL. FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 5/19/88 AGREED TO ADD "RESTRICTED FLOW" TO THE FAILURE MODES ON 03-2A-221310-4 (3/1R FPP, FAILS CLOSED) DURING THE NEXT FMEA UPDATE ACTIVITY. IOA WITHDRAWN 1/1 ABORT ISSUE (SEE ASSESSMENT SHEETS RCS-293, 295, & 297 FOR RATIONALE).

**REPORT DATE:** 21 JULY 1988  
**C.18-85**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-293
NASA FMEA #: 03-2A-221310-4
NASA DATA: BASELINE [ ] NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 293
ITEM: THRUSTER BIPROP SOLENOID VLVS, PRIMARY, +X AXIS
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

NASA [ 3 /IR ] [ F ] [ P ] [ P ] [ X ] *
I/OA [ 3 /IR ] [ P ] [ P ] [ P ] [ ]
COMPARE [ / ] [ N ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ 3 /IR ] [ F ] [ P ] [ P ] [ ]
(ADD/DELETE)

*CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
I/OA RECOMMENDS THAT THIS FAILURE MODE BE UPGRADED TO A 3/IR FPP, 1/1 ABORT. THE LOSS OF ONE PRIMARY THRUSTER DURING AN RTLS OR TAL ABORT WOULD RESULT IN REDUCED OMS AND RCS PROP DUMPING CAPABILITY. INABILITY TO COMPLETE PLANNED OMS AND RCS PROP DUMPS COULD RESULT IN VIOLATION OF ENTRY MASS PROPERTIES CONSTRAINTS AND OMS PROP TANK LANDING WT CONSTRAINTS.

FINAL RESOLUTION: I/OA WITHDRAWS 1/1 ABORT ISSUE BECAUSE OF THE UNIQUE SET OF CIRCUMSTANCES REQUIRED FOR A 1/1 ABORT CRIT TO BE POSSIBLE. FOR THE LOSS OF ONE THRUSTER TO CAUSE POSSIBLE LOSS OF CREW/VEHICLE DURING RTLS & TAL ABORTS, THE PLANNED ENTRY X CG OF THE ORBITER MUST BE AT OR NEAR THE AFT X CG LIMIT (1109.0 INCHES) SUCH THAT THE EXTRA AMOUNT OF ARCS AND OMS PROP REMAINING IN THE TANKS, WHICH COULD NOT BE DUMPED DUE TO THIS THRUSTER FAILURE, CAUSES THE AFT X CG LIMIT TO BE VIOLATED. THE AFT LIMIT IS BASED ON ORBITER THERMAL CONSTRAINTS. I/OA STILL RECOMMENDS A 1/1 ABORT CRIT TO COVER THIS WORST-CASE SCENARIO, AND FURTHER RECOMMENDS THAT SUCH AN OCCURRENCE BE PROTECTED AGAINST IN PRE-FLIGHT CG PLANNING. HOWEVER, IOA RECOGNIZES THAT THE SCENARIO REQUIRED FOR A 1/1 ABORT CRIT IS VERY UNIQUE.

REPORT DATE: 21 JULY 1988 C.18-86
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-294
NASA FMEA #: 03-2A-221310-1

SUBSYSTEM: ARCS
MDAC ID: 294
ITEM: THRUSTER BIPROP SOLENOID VLVS, PRIMARY, +X AXIS

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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NASA [ 3 /1R ] [ F ] [ P ] [ P ] [ X ] *
IOA [ 1 /1 ] [ ] [ ] [ ] [ ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ 1 /1 ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT THE INTERNAL LEAKAGE FAILURE MODE BE UPGRADED TO A 1/1 BECAUSE IT RESULTS IN THE LEAKAGE OF PROP. PER NSTS 22206, A SINGLE FAILURE WHICH RESULTS IN PROP LEAKAGE SHOULD BE CLASSIFIED AS A 1/1. PROP LEAKAGE IS A HAZARD TO THE GROUND CREW.

FINAL RESOLUTION: IOA WITHDRAWS 1/1 ISSUE AFTER DISCUSSION WITH RCS SSM ON 5/19/88. SSM BELIEVES THAT THE CRIT ASSIGNED TO THIS FAILURE MODE SHOULD REFLECT ONLY THE EFFECTS ON THE MISSION, CREW, AND VEHICLE DURING FLIGHT, AND NOT THE POTENTIAL EFFECTS TO THE GROUND CREW DURING NON-FLIGHT PHASES. IOA ACCEPTS THIS PHILOSOPHY, BUT RECOMMENDS THAT THE CRIT BE UPGRADED TO A 1/1 PER NSTS 22206 GROUNDRULES AND BECAUSE THIS FAILURE COULD CAUSE LOSS OF LIFE DURING THE PRE-LAUNCH AND LANDING/SAVING PHASES. FROM A LOSS OF THRUSTER STANDPOINT, IOA CONCURS WITH THE NASA CRITICALITY, BUT RECOMMENDS A 1/1 ABORT CRIT. SEE ASSESSMENT SHEET RCS-293. THE SSM STATES THAT THE WORST-CASE EFFECT OF ZOTS RESULTING FROM THIS FAILURE WOULD BE THRUSTER INTERNAL LEAKAGE. ZOTS WOULD NOT RUPTURE THE THRUSTER HOUSING.

REPORT DATE: 21 JULY 1988 C.18-87
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-295
NASA FMEA #: 03-2A-221310-4

ASSESSMENT ID: RCS-295
NASA FMEA #: 03-2A-221310-4

SUBSYSTEM: ARCS
MDAC ID: 295
ITEM: THRUSTER BIPROP SOLENOID VLVS, PRIMARY, Y AXIS

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC
REDUNDANCY SCREENS
CIL
ITEM
NASA [ 3 /1R ] [ F ] [ P ] [ P ] [ X ] *
IOA [ 3 /1R ] [ P ] [ P ] [ P ] [ ]
COMPAR [ / ] [ N ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ F ] [ P ] [ P ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT THIS FAILURE MODE BE UPGRADED TO A 3/1R FPP, 1/1 ABORT. THE LOSS OF ONE PRIMARY THRUSTER DURING AN RTLS OR TAL ABORT WOULD RESULT IN REDUCED OMS AND RCS PROP DUMPING CAPABILITY. INABILITY TO COMPLETE PLANNED OMS AND RCS PROP DUMPS COULD RESULT IN VIOLATION OF ENTRY MASS PROPERTIES CONSTRAINTS AND OMS PROP TANK LANDING WT CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAWS 1/1 ABORT ISSUE BECAUSE OF THE UNIQUE SET OF CIRCUMSTANCES REQUIRED FOR A 1/1 ABORT CRIT TO BE POSSIBLE. FOR THE LOSS OF ONE THRUSTER TO CAUSE POSSIBLE LOSS OF CREW/VEHICLE DURING RTLS & TAL ABORTS, THE PLANNED ENTRY X CG OF THE ORBITER MUST BE AT OR NEAR THE AFT X CG LIMIT (1109.0 INCHES) SUCH THAT THE EXTRA AMOUNT OF ARCS AND OMS PROP REMAINING IN THE TANKS, WHICH COULD NOT BE DUMPED DUE TO THIS THRUSTER FAILURE, CAUSES THE AFT X CG LIMIT TO BE VIOLATED. THE AFT LIMIT IS BASED ON ORBITER THERMAL CONSTRAINTS. IOA STILL RECOMMENDS A 1/1 ABORT CRIT TO COVER THIS WORST-CASE SCENARIO, AND FURTHER RECOMMENDS THAT SUCH AN OCCURRENCE BE PROTECTED AGAINST IN PRE-FLIGHT CG PLANNING. HOWEVER, IOA RECOGNIZES THAT THE SCENARIO REQUIRED FOR A 1/1 ABORT CRIT IS VERY UNIQUE.

REPORT DATE: 21 JULY 1988  C.18-88
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-296
NASA FMEA #: 03-2A-221310-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 296
ITEM: THRUSTER BIPROP SOLENOID VLVS, PRIMARY, Y AXIS

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA RECOMMENDS THAT THE INTERNAL LEAKAGE FAILURE MODE BE UPGRADED TO A 1/1 BECAUSE IT RESULTS IN THE LEAKAGE OF PROP. PER NSTS 22206, A SINGLE FAILURE WHICH RESULTS IN PROP LEAKAGE SHOULD BE CLASSIFIED AS A 1/1. PROP LEAKAGE IS A HAZARD TO THE GROUND CREW.

FINAL RESOLUTION: IOA WITHDRAWS 1/1 ISSUE AFTER DISCUSSION WITH RCS SSM ON 5/19/88. SSM BELIEVES THAT THE CRIT ASSIGNED TO THIS FAILURE MODE SHOULD REFLECT ONLY THE EFFECTS ON THE MISSION, CREW, AND VEHICLE DURING FLIGHT, AND NOT THE POTENTIAL EFFECTS TO THE GROUND CREW DURING NON-FLIGHT PHASES. IOA ACCEPTS THIS PHILOSOPHY, BUT RECOMMENDS THAT THE CRIT BE UPGRADED TO A 1/1 PER NSTS 22206 GROUNDRULES AND BECAUSE THIS FAILURE COULD CAUSE LOSS OF LIFE DURING THE PRE-LAUNCH AND LANDING/SAFING PHASES. FROM A LOSS OF THRUSTER STANDPOINT, IOA CONCURS WITH THE NASA CRITICALITY, BUT RECOMMENDS A 1/1 ABORT CRIT. SEE ASSESSMENT SHEET RCS-295. THE SSM STATES THAT THE WORST-CASE EFFECT OF ZOTS RESULTING FROM THIS FAILURE WOULD BE THRUSTER INTERNAL LEAKAGE. ZOTS WOULD NOT RUPTURE THE THRUSTER HOUSING.

REPORT DATE: 21 JULY 1988 C.18-89
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-297
NASA FMEA #: 03-2A-221310-4

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 297
ITEM: THRUSTER BIPROP SOLENOID VLVS, PRIMARY, Z AXIS

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REDUNDANCY SCREENS
A B C

CIL ITEM
ITEM

NASA [ 3 /1R ] [ F ] [ P ] [ P ] [ X ] *

IOA [ 3 /1R ] [ P ] [ P ] [ P ] [ ]

COMPARE [ / ] [ N ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ F ] [ P ] [ P ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT THIS FAILURE MODE BE UPGRADED TO A 3/1R FPP, 1/1 ABORT. THE LOSS OF ONE PRIMARY THRUSTER DURING AN RTLS OR TAL ABORT WOULD RESULT IN REDUCED OMS AND RCS PROP DUMPING CAPABILITY. INABILITY TO COMPLETE PLANNED OMS AND RCS PROP DUMPS COULD RESULT IN VIOLATION OF ENTRY MASS PROPERTIES CONSTRAINTS AND OMS PROP TANK LANDING WT CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAWS 1/1 ABORT ISSUE BECAUSE OF THE UNIQUE SET OF CIRCUMSTANCES REQUIRED FOR A 1/1 ABORT CRIT TO BE POSSIBLE. FOR THE LOSS OF ONE THRUSTER TO CAUSE POSSIBLE LOSS OF CREW/VEHICLE DURING RTLS & TAL ABORTS, THE PLANNED ENTRY X CG OF THE ORBITER MUST BE AT OR NEAR THE AFT X CG LIMIT (1109.0 INCHES) SUCH THAT THE EXTRA AMOUNT OF ARCS AND OMS PROP REMAINING IN THE TANKS, WHICH COULD NOT BE DUMPED DUE TO THIS THRUSTER FAILURE, CAUSES THE AFT X CG LIMIT TO BE VIOLATED. THE AFT LIMIT IS BASED ON ORBITER THERMAL CONSTRAINTS. IOA STILL RECOMMENDS A 1/1 ABORT CRIT TO COVER THIS WORST-CASE SCENARIO, AND FURTHER RECOMMENDS THAT SUCH AN OCCURRENCE BE PROTECTED AGAINST IN PRE-FLIGHT CG PLANNING. HOWEVER, IOA RECOGNIZES THAT THE SCENARIO REQUIRED FOR A 1/1 ABORT CRIT IS VERY UNIQUE.

REPORT DATE: 21 JULY 1988 C.18-90
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-298
NASA FMEA #: 03-2A-221310-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 298
ITEM: THRUSTER BIPROP SOLENOID VLVS, PRIMARY, Z AXIS

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA recommends that the internal leakage failure mode be upgraded to a 1/1 because it results in the leakage of prop. per NSTS 22206, a single failure which results in prop leakage should be classified as a 1/1. Prop leakage is a hazard to the ground crew.

FINAL RESOLUTION: IOA withdraws 1/1 issue after discussion with RCS SSM on 5/19/88. SSM believes that the Crit assigned to this failure mode should reflect only the effects on the mission, crew, and vehicle during flight, and not the potential effects to the ground crew during non-flight phases. IOA accepts this philosophy, but recommends that the Crit be upgraded to a 1/1 per NSTS 22206 groundrules and because this failure could cause loss of life during the pre-launch and landing/safing phases. From a loss of thruster standpoint, IOA concurs with the NASA criticality, but recommends a 1/1 abort crit. See assessment sheet RCS-297. The SSM states that the worst-case effect of ZOTS resulting from this failure would be thruster internal leakage. ZOTS would not rupture the thruster housing.

REPORT DATE: 21 JULY 1988  C.18-91
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-301
NASA PMEA #: 03-2A-231310-3
SUBSYSTEM: ARCS
MDAC ID: 301
ITEM: THRUSTER BIPROP SOLENOID VLVS, VERNIERS, ALL AXES
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA FAILURE MODES ON ANALYSIS SHEET SHOULD NOT INCLUDE "FAILS ON". IOA RECOMMENDS THAT THE FAILED OPEN MODE BE UPGRADED TO A 1/1 BECAUSE IT RESULTS IN LEAKAGE OF PROP. PER NSTS 22206, ANY SINGLE FAILURE RESULTING IN PROP LEAKAGE SHOULD BE CLASSIFIED AS A 1/1. PROP LEAKAGE PRESENTS A HAZARD TO THE GROUND CREW. IOA ALSO RECOMMENDS THAT THE SUBASSEMBLY ITEMS INCLUDED ON THIS FMEA BE SEPARATED ONTO INDIVIDUAL FMEAS.

FINAL RESOLUTION: IOA WITHDRAWS 1/1 ISSUE AFTER DISCUSSION WITH RCS SSM ON 5/19/88. SSM BELIEVES THAT THE CRIT ASSIGNED TO THIS FAILURE MODE SHOULD REFLECT ONLY THE EFFECTS ON THE MISSION, CREW, AND VEHICLE DURING FLIGHT, AND NOT THE POTENTIAL EFFECTS TO THE GROUND CREW DURING NON-FLIGHT PHASES. IOA ACCEPTS THIS PHILOSOPHY, BUT RECOMMENDS THAT THE CRIT BE UPGRADED TO A 1/1 PER NSTS 22206 GROUNDRULES AND BECAUSE THIS FAILURE COULD CAUSE LOSS OF LIFE DURING THE PRE-LAUNCH AND LANDING/SAFING PHASES. FROM A LOSS OF VERNIERS STANDPOINT, IOA RECOMMENDS A CRIT 2/2. HOWEVER, IOA ACCEPTS NASA 1R CRIT SINCE IT IS ON THE CIL. THE NASA CRITS ASSIGNED TO THIS FAILURE MODE ARE INCONSISTENT BETWEEN THE FORWARD AND AFT RCS SYSTEMS.

REPORT DATE: 21 JULY 1988 C.18-92
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-303
NASA FMEA #: NONE

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM:
ARCS

MDAC ID:
303
ITEM:
THRUSTER BIPROP SOLENOID VLVS, VERNIERS, ALL AXES

LEAD ANALYST:
C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (STRUCTURAL FAILURE, RUPTURE, EXTERNAL LEAKAGE).

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2A-202108-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.

REPORT DATE: 21 JULY 1988 C.18-93
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-304
NASA FMEA #: 03-2A-231310-3

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 304
ITEM: THRUSTER BIPROP SOLENOID VLVS, VERNIERS, ALL AXES
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT THE INTERNAL LEAKAGE FAILURE MODE BE UPGRADED TO A 1/1 BECAUSE IT RESULTS IN LEAKAGE OF PROP. PER NSTS 22206, ANY SINGLE FAILURE RESULTING IN PROP LEAKAGE SHOULD BE CLASSIFIED AS A 1/1. PROP LEAKAGE PRESENTS A HAZARD TO THE GROUND CREW. IOA ALSO RECOMMENDS THAT THE SUBASSEMBLY ITEMS INCLUDED ON THIS FMEA BE SEPARATED ONTO INDIVIDUAL FMEAS.

FINAL RESOLUTION: IOA WITHDRAWS 1/1 ISSUE AFTER DISCUSSION WITH RCS SSM ON 5/19/88. SSM BELIEVES THAT THE CRIT ASSIGNED TO THIS FAILURE MODE SHOULD REFLECT ONLY THE EFFECTS ON THE MISSION, CREW, AND VEHICLE DURING FLIGHT, AND NOT THE POTENTIAL EFFECTS TO THE GROUND CREW DURING NON-FLIGHT PHASES. IOA ACCEPTS THIS PHILOSOPHY, BUT RECOMMENDS THAT THE CRIT BE UPGRADED TO A 1/1 PER NSTS 22206 GROUNDRULES AND BECAUSE THIS FAILURE COULD CAUSE LOSS OF LIFE DURING THE PRE-LAUNCH AND LANDING/SAFING PHASES. FROM A LOSS OF VERNIERS STANDPOINT, IOA RECOMMENDS A CRIT 2/2. HOWEVER, IOA ACCEPTS NASA 1R CRIT SINCE IT IS ON THE CIL. THE NASA CRITS ASSIGNED TO THIS FAILURE MODE ARE INCONSISTENT BETWEEN THE FORWARD AND AFT RCS SYSTEMS.

REPORT DATE: 21 JULY 1988 C.18-94
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  NASA DATA: 
ASSESSMENT ID: RCS-10002X  BASELINE [ ] NEW [ ]
NASA FMEA #: NONE
SUBSYSTEM: FRCS
MDAC ID: 10002
ITEM: HE ISOL VLV
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ F ] [ F ] [ A ]

* CIL RETENTION RATIONALE: (If applicable)

Adequate [ ]
Inadequate [ ]

REMARKS:

NASA/RI DO NOT COVER THIS FAILURE MODE (RESTRICTED FLOW). IOA
RECOMMENDS THAT THE RESTRICTED FLOW MODE BE ADDRESSED ON THE
FMEA/CIL AS A 2/1R PFF. INABILITY TO REPRESS FRCS PROP TANK AND
SUBSEQUENT INABILITY TO USE OR DEPLETE FRCS PROP COULD RESULT IN
VIOLATIONS OF ENTRY MASS PROPERTIES CONSTRAINTS. LOSS OF FLOW
THROUGH ONE VALVE NOT DETECTABLE DURING DUAL LEG OPERATION.
CONTAMINATION CAN EFFECT BOTH VALVES.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 5/19/88 AGREED TO ADD
"RESTRICTED FLOW" TO THE FAILURE MODES ON 03-2F-101020-4 (3/1R
PPP, FAILS CLOSED) DURING THE NEXT FMEA UPDATE ACTIVITY. IOA
WITHDRAWS 2/1R ISSUE (SEE ASSESSMENT SHEET RCS-104 FOR RATIONALE).
IOA ALSO withdraws B AND C SCREEN ISSUES. THIS FAILURE WOULD BE
DETECTABLE BEFORE LAUNCH AND ON-ORBIT SINCE ONLY ONE VALVE IS OPEN
AT A TIME DURING PAD PRE-PRESS AND ON-ORBIT. HOWEVER, IOA
RECOMMENDS THAT THE B SCREEN BE FAILED FOR PHASES WHEN BOTH VALVES
ARE USED SIMULTANEOUSLY (ASCENT AND ENTRY), WHEN THIS FAILURE
WOULD NOT BE DETECTABLE. IOA ACCEPTS C SCREEN PASSAGE BASED ON
THE QUESTIONABLE CREDIBILITY OF AN AMOUNT OF CONTAMINATION
SUFFICIENT TO BLOCK BOTH VALVES. HOWEVER, ANY UPSTREAM
CONTAMINATION COULD AFFECT ALL REDUNDANCY, AND IOA RECOMMENDS
FAILURE OF THE C SCREEN.

REPORT DATE: 21 JULY 1988 C.18-95
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10003X
NASA FMEA #: NONE
NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: FRCS
MDAC ID: 10003
ITEM: HE ISOL VLV

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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COMPARE [ N /N ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ 1/1 ] [ ] [ ] [ ] [ ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (STRUCTURAL FAILURE, RUPTURE, EXTERNAL LEAKAGE).

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE HELIUM LINE EXTERNAL LEAKAGE FMEA (03-2F-101013-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.
## APPENDIX C
### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 1/01/88  
**ASSESSMENT ID:** RCS-10005X  
**NASA FMEA #:** 03-2F-101095-3

**SUBSYSTEM:** FRCS  
**MDAC ID:** 10005  
**ITEM:** QUAD CHECK VALVE ASSEMBLY

**LEAD ANALYST:** C.D. PRUST

**NASA DATA:**

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**REDUNDANCY SCREENS**:  
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**RECOMMENDATIONS**: (If different from NASA)

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* **CIL RETENTION RATIONALE**: (If applicable)

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**REMARKS**:  
NASA ORIGINALLY DID NOT COVER THIS FAILURE (SINGLE INLET FILTER BLOCKAGE), BUT ADDED CIL PER IOA ISSUE. IOA RECOMMENDS CRIT 1/1. INABILITY TO REPRESS FRCS PROP TANK AND DEplete PROP COULD RESULT IN VIOLATION OF THE ENTRY X CG LIMIT.

**FINAL RESOLUTION**: IOA HELD MTG ON 6/2/88 WITH RCS SSM, AND MOD, BOEING, & RSOC PERSONNEL TO DISCUSS IOA ISSUE AND INCONSISTENCY BETWEEN RCS HDW CRIT AND GN&C FMEA 05-1-FC6242-1. SSM STATED THAT USE OF A FRCS DUMP FOR ENTRY X CG MANAGEMENT WAS NOT CONSIDERED IN RCS CRIT ASSIGNMENT AS WAS DONE IN IOA AND GN&C CRITS. A POST-DEORBIT FRCS DUMP IS USED TO MEET THE FWD X CG LIMIT (1076.7 IN). THEREFORE, IF A PLANNED DUMP IS NOT COMPLETED DUE TO BLOCKED CHECK VLV FILTER, THE X CG LIMIT MAY BE VIOLATED RESULTING IN LOSS OF CREW/VEHICLE. THE CRIT ASSIGNED TO THIS FAILURE MODE SHOULD REFLECT THE POTENTIAL ENTRY X CG LIMIT VIOLATION. IOA RELUCTANTLY WITHDRAWS ISSUE BASED ON PARTIAL ULLAGE CAPABILITY, THE "CONTINGENCY CG ENVELOPE", AND THE SSM'S JUDGMENT. HOWEVER, IOA STRONGLY RECOMMENDS EITHER A 1/1 FOR THIS FAILURE MODE, OR A FLIGHT RULE WHICH PROHIBITS RELIANCE ON A FRCS DUMP TO MEET THE ENTRY X CG LIMIT. ALSO, THE INCONSISTENCY BETWEEN THE RCS CRIT AND ABOVE GN&C FMEA SHOULD BE CORRECTED.

**REPORT DATE:** 21 JULY 1988 C.18-97
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10006X
NASA FMEA #: NONE
SUBSYSTEM: FRCS
MDAC ID: 10006
ITEM: QUAD CHECK VALVE ASSEMBLY
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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IOA [1/1] [ ] [ ] [ ] [ ] [ ] X
COMPARE [N/N] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[1/1] [ ] [ ] [ ] [ ] [ A ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (STRUCTURAL FAILURE, RUPTURE, EXTERNAL LEAKAGE).

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE HELIUM LINE EXTERNAL LEAKAGE FMEA (03-2F-101013-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87. IOA ALSO RECOMMENDS THAT THE EFFECTS OF POSSIBLE PROP LEAKAGE BE INCLUDED ON THIS CIL (CORROSION, FIRE, EXPLOSION, EXPOSURE OF EVA AND GROUND CREWS).

REPORT DATE: 21 JULY 1988 C.18-98
# APPENDIX C

## ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 1/01/88  
**ASSESSMENT ID:** RCS-10008X  
**NASA FMEA #:** NONE  
**SUBSYSTEM:** FRCS  
**MDAC ID:** 10008  
**ITEM:** PRESSURE RELIEF ASSEMBLY  
**LEAD ANALYST:** C.D. PRUST  

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**RECOMMENDATIONS:** (If different from NASA)

| ![Flight](image) | ![Inadequate](image) | ![Adequate](image) |
| ![Compare](image) | ![Inadequate](image) | ![Adequate](image) |

* **CIL RETENTION RATIONALE:** (If applicable)

**REMARKS:**

NASA/RI DO NOT COVER THIS FAILURE MODE (RESTRICTED FLOW).  
**FINAL RESOLUTION:** G. GRUSH (RCS SSM) ON 5/19/88 AGREED TO ADD "RESTRICTED FLOW" TO THE FAILURE MODES ON 03-2F-101060-3 (3/1R FNP, BURST DISK FAILS TO BURST) DURING THE NEXT FMEA UPDATE ACTIVITY.

**REPORT DATE:** 21 JULY 1988  
**C.18-99**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10009X
NASA FMEA #: 03-2F-101060-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 10009
ITEM: PRESSURE RELIEF ASSEMBLY

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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COMPARE [ / ] [ ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ 1 /1 ] [ ] [ ] [ ] [ ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FMEA COVERS ONLY THE BELLows LEAKAGE FAILURE MODE. IOA HAS NO ISSUE WITH THIS FAILURE MODE, HOWEVER DOES RECOMMEND ADDING STATEMENTS TO THE EFFECTS ABOUT POSSIBLE VIOLATION OF ENTRY MASS PROPERTIES CONSTRAINTS AND THE HAZARDS OF PROP LEAKAGE TO EVA CREW, VEHICLE, AND GROUND CREW. NASA/RI DO NOT COVER STRUCTURAL FAILURE, RUPTURE, OR EXTERNAL LEAKAGE OF THE VALVE HOUSING ON THIS FMEA OR ELSEWHERE.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE HELIUM LINE EXTERNAL LEAKAGE FMEA (03-2F-101013-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.

REPORT DATE: 21 JULY 1988 C.18-100
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10010X
NASA FMEA #: 03-2F-102120-3

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: FRCs
MDAC ID: 10010
ITEM: PROP TANK ISOL VLVS 1/2 & 3/4/5

LEAD ANALYST: C.D. PRUST

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ NA] [ P ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE (RELIEF DEVICE FAILS CLOSED) BE UPGRADED TO A 2/1R PNP AND PLACED ON THE CIL. THIS FAILURE COULD RESULT IN OVERPRESSURIZATION AND RUPTURE OF DOWNSTREAM PROP LINES. IOA NOW CLASSIFIES THIS FAILURE AS A 2/1R PNP SINCE A PREVIOUS FAILURE IS REQUIRED BEFORE THE VALVE WILL BE CLOSED.

FINAL RESOLUTION: G. GRUSH (RCS SSM) STATED ON 5/19/88 THAT THIS 3/3 FMEA WAS DELETED, AND THE FAILURE MODE LISTED AS A CAUSE ON THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2F-102108-1, 1/1). IOA ACCEPTS THIS AS ADEQUATE AND WITHDRAWS ISSUE, BUT RECOMMENDS THAT THIS FAILURE MODE BE ADDRESSED INDIVIDUALLY ON A SEPARATE FMEA TO ENSURE THAT IT RECEIVES PROPER ATTENTION (SUCH AS 03-2A-202140-3, 1/1, WHICH ADDRESSES "INTERNAL RELIEF SECTION OF VALVE FAILS CLOSED" AS A FAILURE MODE FOR THE VERNIER MANIFOLD ISOLATION VALVE).

REPORT DATE: 21 JULY 1988  C.18-101
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10012X
NASA FMEA #: 03-2F-102110-3

SUBSYSTEM: FRCS
MDAC ID: 10012
ITEM: MANIFOLD 1-4 ISOLATION VALVES

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

REMARKS:

IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE (RELIEF DEVICE FAILS CLOSED) BE UPGRADED TO A 1/1 AND PLACED ON THE CIL. THIS FAILURE COULD RESULT IN OVERPRESSURIZATION AND RUPTURE OF DOWNSTREAM PROP LINES.

FINAL RESOLUTION: G. GRUSH (RCS SSM) STATED ON 5/19/88 THAT THIS 3/3 FMEA WAS DELETED, AND THE FAILURE MODE LISTED AS A CAUSE ON THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2F-102108-1, 1/1). IOA ACCEPTS THIS AS ADEQUATE AND WITHDRAWS ISSUE, BUT RECOMMENDS THAT THIS FAILURE MODE BE ADDRESSED INDIVIDUALLY ON A SEPARATE FMEA TO ENSURE THAT IT RECEIVES PROPER ATTENTION (SUCH AS 03-2A-202140-3, 1/1, WHICH ADDRESSES "INTERNAL RELIEF SECTION OF VALVE FAILS CLOSED" AS A FAILURE MODE FOR THE VERNIER MANIFOLD ISOLATION VALVE).

REPORT DATE: 21 JULY 1988  C.18-102
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10014X
NASA FMEA #: NONE

SUBSYSTEM: FRCS
MDAC ID: 10014
ITEM: MANIFOLD 5 ISOLATION VALVE

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C ITEM

NASA [ / ] [ ] [ ] [ ] [ ] [ ] [ ] [ * ]
IOA [ 1 / 1 ] [ ] [ ] [ ] [ ] [ ] [ X ]
COMPARE [ N / N ] [ ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ 2 / 1R ] [ P ] [ NA ] [ P ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (RELIEF DEVICE FAILS TO RELIEVE). IOA RECOMMENDS THAT A 2/1R PNP CIL BE CREATED FOR THIS ITEM AND FAILURE MODE. THIS FAILURE COULD RESULT IN OVERPRESSURIZATION AND RUPTURE OF DOWNSTREAM PROP LINES. IOA NOW CLASSIFIES THIS FAILURE AS A 2/1R PNP SINCE A PREVIOUS FAILURE IS REQUIRED BEFORE THE VALVE WOULD BE CLOSED.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. THIS FAILURE MODE IS LISTED AS A CAUSE ON THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2F-102108-1, 1/1). IOA ACCEPTS THIS AS ADEQUATE, BUT RECOMMENDS THAT THIS FAILURE MODE BE ADDRESSED INDIVIDUALLY ON A SEPARATE FMEA TO ENSURE THAT IT RECEIVES PROPER ATTENTION (SUCH AS 03-2A-202140-3, WHICH ADDRESSES "INTERNAL RELIEF SECTION OF VALVE FAILS CLOSED" AS A FAILURE MODE FOR THE VERNIER MANIFOLD ISOLATION VALVE).

REPORT DATE: 21 JULY 1988 C.18-103
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10018X
NASA FMEA #: NONE
NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: FRCS
MDAC ID: 10018
ITEM: THRUSTER INJECTOR HEAD ASSEMBLY, PRIMARY

LEAD ANALYST: C.D. PRUST

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA/RI DO NOT COVER THIS ITEM AND FAILURE MODE (RESTRICTED FLOW), HOWEVER, NOTE ON 03-2F-12132-1 SAYS THAT THE INJECTOR FMEA WAS DELETED AND ADDED AS A CAUSE ON 03-2F-12132-1. IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE ADDRESSED INDEPENDENTLY ON THE CIL WITH A 1/1 CRITICALITY. THE INJECTOR IS AT THE SAME LEVEL OF DETAIL WITH OTHER THRUSTER COMPONENTS COVERED ON INDIVIDUAL FMEAS, AND SHOULD ALSO RECEIVE 1/1 ATTENTION. RESTRICTED FLOW OF THE INJECTOR COULD RESULT IN THRUSTER BURN-THROUGH.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. RESTRICTED FLOW OF THE INJECTOR HEAD ASSEMBLY IS ADEQUATELY COVERED ON 03-2F-12132-1 (1/1) WHICH INCLUDES "BLOCKED INJ ORIFICES" AS A CAUSE FOR THRUST CHAMBER BURN-THROUGH. HOWEVER, IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE ADDRESSED ON A SEPARATE 1/1 CIL TO ENSURE THAT THEY RECEIVE PROPER ATTENTION. IOA CONSIDERS THIS ITEM TO BE AT THE SAME LEVEL OF DETAIL AS OTHER THRUSTER COMPONENTS ADDRESSED INDIVIDUALLY ON FMEAS.

REPORT DATE: 21 JULY 1988   C.18-104
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10019X
NASA FMEA #: NONE

SUBSYSTEM: FRCS
MDAC ID: 10019
ITEM: THRUSTER INJECTOR HEAD ASSEMBLY, PRIMARY

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA/RI DO NOT COVER THIS ITEM AND FAILURE MODE (STRUCTURAL FAILURE, BURN-THROUGH), HOWEVER, NOTE ON 03-2F-121312-1 SAYS THAT THE INJECTOR FMEA WAS DELETED AND ADDED AS A CAUSE ON 03-2F-121312-1. IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE ADDRESSED INDEPENDENTLY ON THE CIL WITH A 1/1 CRITICALITY. THE INJECTOR IS AT THE SAME LEVEL OF DETAIL WITH OTHER THRUSTER COMPONENTS COVERED ON INDIVIDUAL FMEAS, AND SHOULD ALSO RECEIVE 1/1 ATTENTION.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. STRUCTURAL FAILURE/BURN-THROUGH OF THE INJECTOR ASSEMBLY IS COVERED ON 03-2F-121312-1 (1/1) WHICH INCLUDES "INJECTOR FRACTURE" AS A CAUSE FOR THRUST CHAMBER BURN-THROUGH. HOWEVER, IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE ADDRESSED ON A SEPARATE 1/1 CIL TO ENSURE THAT THEY RECEIVE PROPER ATTENTION. IOA CONSIDERS THIS ITEM TO BE AT THE SAME LEVEL OF DETAIL AS OTHER THRUSTER COMPONENTS ADDRESSED INDIVIDUALLY ON FMEAS.

REPORT DATE: 21 JULY 1988   C.18-105
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10020X
NASA FMEA #: NONE
NASA DATA: BASELINE [ ] NEW [ ]

SUBSYSTEM: ARCS
MDAC ID: 10020
ITEM: HE ISOL VLV

LEAD ANALYST: C.D. PRUST

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] | [ P ] | [ F ] | [ F ] | [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (RESTRICTED FLOW). IOA RECOMMENDS THAT THE RESTRICTED FLOW MODE BE ADDRESSED ON THE FMEA/CIL AS A 2/1R PFF. INABILITY TO REPRESS ARCS PROP TANK AND INABILITY TO USE OR DEPLETE ARCS PROP COULD RESULT IN LOSS OF ENTRY CONTROL AND VIOLATIONS OF ENTRY MASS PROPERTIES CONSTRAINTS. LOSS OF FLOW THROUGH ONE VALVE NOT DETECTABLE DURING DUAL LEG OPERATION, AND CONTAMINATION CAN AFFECT BOTH VALVES SIMULTANEOUSLY.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 5/19/88 AGREED TO ADD "RESTRICTED FLOW" TO THE FAILURE MODES ON 03-2A-201020-1 (2/1R PPP, FAILS CLOSED) DURING THE NEXT FMEA UPDATE ACTIVITY. IOA WITHDRAWS B AND C SCREEN ISSUES. THIS FAILURE WOULD BE DETECTABLE BEFORE LAUNCH AND ON ORBIT SINCE ONLY ONE VALVE IS OPEN AT A TIME DURING PAD PRE-PRESS AND ON ORBIT. HOWEVER, IOA RECOMMENDS THAT THE B SCREEN BE FAILED FOR PHASES WHEN BOTH VALVES ARE USED SIMULTANEOUSLY (ASCENT AND ENTRY), WHEN THIS FAILURE WOULD NOT BE DETECTABLE. IOA ACCEPTS C SCREEN PASSAGE BASED ON THE QUESTIONABLE CREDIBILITY OF AN AMOUNT OF CONTAMINATION SUFFICIENT TO BLOCK BOTH VALVES. HOWEVER, ANY UPSTREAM CONTAMINATION COULD AFFECT ALL REDUNDANCY, AND IOA RECOMMENDS FAILURE OF THE C SCREEN.

REPORT DATE: 21 JULY 1988 C.18-106
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10021X
NASA FMEA #: NONE
SUBSYSTEM: ARCS
MDAC ID: 10021
ITEM: HE ISOL VLV
LEAD ANALYST: C.D. PRUST

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (STRUCTURAL FAILURE, RUPTURE, EXTERNAL LEAKAGE).

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE HELIUM LINE EXTERNAL LEAKAGE FMEA (03-2A-201013-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
NASA DATA:
ASSESSMENT ID: RCS-10024X
BASELINE [ ]
NASA FMEA #: NONE
NEW [ ]

SUBSYSTEM: ARCS
MDAC ID: 10024
ITEM: QUAD CHECK VALVE ASSEMBLY

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C

NASA [ / ] [ ] [ ] [ ] [ ] [ ] *
IOA [ 1 / 1 ] [ ] [ ] [ ] [ ] [ X ]
COMPARE [ N / N ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ 1 / 1 ] [ ] [ ] [ ] [ ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (STRUCTURAL FAILURE,
RUPTURE, EXTERNAL LEAKAGE).

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD
THIS VALVE BODY TO THE HELIUM LINE EXTERNAL LEAKAGE FMEA (03-2A-
201013-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS
ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87. IOA ALSO
RECOMMENDS THAT THE EFFECTS OF POSSIBLE PROP LEAKAGE BE INCLUDED
ON THE FMEA (CORROSION, FIRE, EXPLOSION, EXPOSURE OF EVA AND
GROUND CREWS).

REPORT DATE: 21 JULY 1988 C.18-108
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10026X
NASA FMEA #: NONE

SUBSYSTEM: ARCS
MDAC ID: 10026
ITEM: PRESSURE RELIEF ASSEMBLY

LEAD ANALYST: C.D. PRUST

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RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ F ] [ NA ] [ P ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (RESTRICTED FLOW).
FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 5/19/88 AGREED TO ADD "RESTRICTED FLOW" TO THE FAILURE MODES ON 03-2A-201060-3 (3/1R FNP, BURST DISK FAILS TO RUPTURE) DURING THE NEXT FMEA UPDATE ACTIVITY.

REPORT DATE: 21 JULY 1988  C.18-109
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10027X
NASA FMEA #: 03-2A-201060-1

SUBSYSTEM: ARCS
MDAC ID: 10027
ITEM: PRESSURE RELIEF ASSEMBLY

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY
FLIGHT HDW/FUNC

NASA [ ] [ ] [ ] [ ] [ X ] *
IOA [ ] [ ] [ ] [ ] [ X ]
COMPARE [ / ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ ] [ ] [ ] [ ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FMEA COVERS ONLY THE BELLOWS LEAKAGE FAILURE MODE. IOA HAS NO ISSUE WITH THIS FAILURE MODE, HOWEVER DOES RECOMMEND ADDING STATEMENTS TO THE EFFECTS ABOUT POSSIBLE VIOLATION OF ENTRY MASS PROPERTIES CONSTRAINTS AND THE HAZARDS OF PROP LEAKAGE TO EVA CREW, VEHICLE, AND GROUND CREW. NASA/RI DO NOT COVER STRUCTURAL FAILURE, RUPTURE, OR EXTERNAL LEAKAGE OF THE VALVE HOUSING ON THIS FMEA OR ELSEWHERE.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 12/15/87 AGREED TO ADD THIS VALVE BODY TO THE HELIUM LINE EXTERNAL LEAKAGE FMEA (03-2A-201013-1, 1/1) WITH CORRESPONDING RETENTION RATIONALE. THIS WAS ALSO AN ACTION ITEM FROM THE RCS PRCB ON 12/23/87.

REPORT DATE: 21 JULY 1988 C.18-110
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10028X
NASA FMEA #: NONE

SUBSYSTEM: ARCS
MDAC ID: 10028
ITEM: PROP TANK ISOL VLVS 3/4/5

LEAD ANALYST: C.D. PRUST

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IOA [ 2 /1R ] [ P ] [ F ] [ F ] [ X ]

COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ P ] [ F ] [ P ] [ A ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA NOW CLASSIFIES C SCREEN AS "PASS". NASA/RI DO NOT COVER THIS FAILURE MODE (RESTRICTED FLOW). IOA RECOMMENDS A 3/1R PFP FOR RESTRICTED FLOW OF THE PROP TANK ISOL 3/4/5 VALVES. RESTRICTED FLOW THROUGH ONE 3/4/5 VALVE WOULD NOT BE DETECTABLE DURING DUAL LEG OPERATION. IOA DISCLAIMS 2/1R CRIT, BUT MAINTAINS CONCERN THAT RESTRICTED FLOW OF PROP TO A THRUSTER COULD RESULT IN BURN-THROUGH.

FINAL RESOLUTION: G. GRUSH (RCS SSM) ON 5/19/88 AGREED TO ADD "RESTRICTED FLOW" TO THE FAILURE MODES ON 03-2A-202110-1 (3/1R PPP, FAILS CLOSED), AND TO UPGRADE THE B SCREEN TO "FAIL" DURING THE NEXT FMEA UPDATE ACTIVITY.

REPORT DATE: 21 JULY 1988 C.18-111
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10029X
NASA FMEA #: 03-2A-202110-2

SUBSYSTEM: ARCS
MDAC ID: 10029
ITEM: PROP TANK ISOL VLV 1/2

LEAD ANALYST: C.D. PRUST

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RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ NA] [ P ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT THIS FAILURE MODE (RELIEF DEVICE FAILS CLOSED) BE UPGRADED TO A 2/1R PNP FOR THE 1/2 VALVE AND PLACED ON THE CIL. THIS FAILURE COULD RESULT IN OVERPRESSURIZATION AND RUPTURE OF THE DOWNSTREAM PROP LINES. IOA NOW CLASSIFIES THIS FAILURE AS A 2/1R PNP SINCE A PREVIOUS FAILURE IS REQUIRED BEFORE THE VALVE WOULD BE CLOSED.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. THIS FAILURE MODE IS LISTED AS A CAUSE ON THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2F-102108-1, 1/1). IOA ACCEPTS THIS AS ADEQUATE, BUT RECOMMENDS THAT THIS FAILURE MODE BE ADDRESSED INDIVIDUALLY ON A SEPARATE FMEA TO ENSURE THAT IT RECEIVES PROPER ATTENTION (SUCH AS 03-2A-202140-3, WHICH ADDRESSES "INTERNAL RELIEF SECTION OF VALVE FAILS CLOSED" AS A FAILURE MODE FOR THE VERNIER MANIFOLD ISOLATION VALVE).

REPORT DATE: 21 JULY 1988 C.18-112
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10035X
NASA FMEA #: 03-2A-202120-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 10035
ITEM: MANIFOLD 1-4 ISOL VALVES

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FLIGHT | HDW/FUNC | A | B | C |
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| COMPARE | [ N /N ] | [ ] | [ ] | [ ] | [ ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ NA] [ P ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
IOA RECOMMENDS THAT THIS FAILURE MODE (RELIEF DEVICE FAILS CLOSED) BE UPGRADED TO A 2/1R PNP AND PLACED ON THE CIL. THIS FAILURE COULD RESULT IN OVERPRESSURIZATION AND RUPTURE OF THE DOWNSTREAM PROP LINES. IOA NOW CLASSIFIES THIS FAILURE AS A 2/1R PNP SINCE A PREVIOUS FAILURE IS REQUIRED BEFORE THE VALVE WOULD BE CLOSED.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. THIS FAILURE MODE IS LISTED AS A CAUSE ON THE PROP LINE EXTERNAL LEAKAGE FMEA (03-2F-102108-1, 1/1). IOA ACCEPTS THIS AS ADEQUATE, BUT RECOMMENDS THAT THIS FAILURE MODE BE ADDRESSED INDIVIDUALLY ON A SEPARATE FMEA TO ENSURE THAT IT RECEIVES PROPER ATTENTION (SUCH AS 03-2A-202140-3, WHICH ADDRESSES "INTERNAL RELIEF SECTION OF VALVE FAILS CLOSED" AS A FAILURE MODE FOR THE VERNIER MANIFOLD ISOLATION VALVE).

REPORT DATE: 21 JULY 1988 C.18-113
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10040X
NASA FMEA #: NONE

SUBSYSTEM: ARCS
MDAC ID: 10040
ITEM: THRUSTER INJECTOR HEAD ASSY, PRIMARY
LEAD ANALYST: C.D. PRUST

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* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
NASA/RI DO NOT COVER THIS ITEM AND FAILURE (RESTRICTED FLOW). IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE ADDRESSED ON THE FMEA/CIL WITH A 1/1 CRITICALITY. THE INJECTOR IS AT THE SAME LEVEL OF DETAIL AS OTHER THRUSTER COMPONENTS WHICH ARE COVERED ON INDIVIDUAL FMEA, AND SHOULD ALSO RECEIVE 1/1 ATTENTION. RESTRICTED FLOW OF THE INJECTOR COULD RESULT IN THRUSTER BURN-THROUGH.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. RESTRICTED FLOW OF THE INJECTOR ASSEMBLY IS COVERED ON 03-2A-221312-1 (1/1) WHICH INCLUDES "BLOCKED INJ ORIFICES" AS A CAUSE FOR THRUST CHAMBER BURN-THROUGH. HOWEVER, IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE ADDRESSED ON A SEPARATE 1/1 CIL TO ENSURE THAT THEY RECEIVE PROPER ATTENTION. IOA CONSIDERS THIS ITEM TO BE AT THE SAME LEVEL OF DETAIL AS OTHER THRUSTER COMPONENTS ADDRESSED INDIVIDUALLY ON FMEAS.

REPORT DATE: 21 JULY 1988 C.18-114
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10041X
NASA FMEA #: NONE

SUBSYSTEM: ARCS
MDAC ID: 10041
ITEM: THRUSTER INJECTOR HEAD ASSY, PRIMARY

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

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REMARKS:

NASA/RI DO NOT COVER THIS ITEM AND FAILURE (STRUCTURAL FAILURE, BURN-THROUGH). IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE ADDRESSED ON THE FMEA/CIL WITH A 1/1 CRITICALITY. THE INJECTOR IS AT THE SAME LEVEL OF DETAIL AS OTHER THRUSTER COMPONENTS WHICH ARE COVERED ON INDIVIDUAL FMEA, AND SHOULD ALSO RECEIVE 1/1 ATTENTION.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. STRUCTURAL FAILURE/BURN-THROUGH OF THE INJECTOR ASSEMBLY IS COVERED ON 03-2A-221312-I (1/1) WHICH INCLUDES "INJECTOR FRACTURE" AS A CAUSE FOR THRUST CHAMBER BURN-THROUGH. HOWEVER, IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE ADDRESSED ON A SEPARATE 1/1 CIL TO ENSURE THAT THEY RECEIVE PROPER ATTENTION. IOA CONSIDERS THIS ITEM TO BE AT THE SAME LEVEL OF DETAIL AS OTHER THRUSTER COMPONENTS ADDRESSED INDIVIDUALLY ON FMEAS.

REPORT DATE: 21 JULY 1988  C.18-115
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10042X
NASA FMEA #: NONE

SUBSYSTEM: MDAC
MDAC ID: 10042
ITEM: THRUSTER BIPROP SOLENOID VALVE, PRIMARY, ALL AXES

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY

REdundancy Screens

CIL

CRITICALITY

FLIGHT

HDW/FUNC

A

B

C

NASA [ ] [ ] [ ] [ ] [ ] [ ] *

IOA [ 1 / 1 ] [ ] [ ] [ ] [ ] [ X ]

COMPARE [ N / N ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ 1 / 1 ] [ ] [ ] [ ] [ ] [ A ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:

NASA/RI DO NOT COVER THIS FAILURE MODE (DELAYED OPERATION, ONE VALVE OPENS SLOWLY OR LATE). IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE ADDRESSED ON THE FMEA/CIL WITH A 1/1 CRIT. SUCH A FAILURE COULD RESULT IN ZOTS CAUSING THRUSTER RUPTURE AND LEAKAGE OF PROP.


REPORT DATE: 21 JULY 1988 C.18-116
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10043X
NASA FMEA #: NONE

SUBSYSTEM: ARCS
MDAC ID: 10043
ITEM: THRUSTER BIPROP SOLENOID VALVE, PRIMARY, ALL AXES

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 1/1 ] [ ] [ ] [ ] [ ] [ A ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA/RI DO NOT COVER THIS FAILURE MODE (DELAYED OPERATION, ONE VALVE OPENS SLOWLY OR LATE). IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE ADDRESSED ON THE FMEA/CIL WITH A 1/1 CRIT. SUCH A FAILURE COULD RESULT IN ZOTS CAUSING THRUSTER RUPTURE AND LEAKAGE OF PROP.


REPORT DATE: 21 JULY 1988 C.18-117
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10116X
NASA FMEA #: 03-2F-121310-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: FRCS
MDAC ID: 10116
ITEM: THRUSTER BIPROP SOLENOID VALVE, PRIMARY, ALL AXES

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REdundancy Screens
A
B
C

ITEM

NASA [ 3 /3 ] [ ] [ ] [ ] [ ] [ ] [ ]

IOA [ 1 /1 ] [ ] [ ] [ ] [ ] [ ] [ ]

COMPARcE [ N /N ] [ ] [ ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ 1 /1 ] [ ] [ ] [ ] [ ] [ ] [ A ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE (PREMATURE OPERATION DURING GROUND C/O TRICKLE CURRENT TEST) BE UPGRADED TO A 1/1 AND PLACED ON THE CIL. FIRING OF A THRUSTER ON THE GROUND COULD RESULT IN LOSS OF LIFE DUE TO EXPOSURE TO PROP, PROP VAPORS, OR THRUSTER PLUME.

FINAL RESOLUTION: IOA WITHDRAWS 1/1 ISSUE AFTER DISCUSSION WITH G. GRUSH (RCS SSM) ON 5/19/88. SSM IS NOT CONCERNED THAT THE RCS FMEA/CIL COVER FAILURES WHICH AFFECT ONLY GROUND TURNAROUND PHASES AND, THEREFORE, DOES NOT AGREE WITH A CRIT 1/1 UPGRADE FOR THIS FAILURE. SSM IS ONLY CONCERNED THAT THE RCS FMEA/CIL SHOULD COVER FAILURES WHICH AFFECT MISSION, CREW, AND VEHICLE DURING FLIGHT PHASES. IOA WILL ACCEPT SSM'S PHILOSOPHY. HOWEVER, PER IOA'S INTERPRETATION, NSTS 22206 WOULD REQUIRE THAT THIS FAILURE BE CLASSIFIED AS A 1/1. THIS TEST IS PERFORMED DURING OPS-9, WHICH OVERLAPS THE IOA DEFINITION OF THE PRE-LAUNCH PHASE. THEREFORE, IOA RECOMMENDS THAT THIS FAILURE, WHICH COULD RESULT IN LOSS OF LIFE ON THE GROUND, BE CLASSIFIED AS A 1/1.

REPORT DATE: 21 JULY 1988   C.18-118
ASSESSMENT DATE: 1/01/88
ASSESSMENT ID: RCS-10138X
NASA FMEA #: 03-2A-221310-3
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 10138
ITEM: THRUSTER BIPROP SOLENOID VALVE, PRIMARY, ALL AXES
LEAD ANALYST: C.D. PRUST

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ 1 /1 ] [ ] [ ] [ ] [ ] [ A ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA recommends that this item and failure mode (premature operation during ground C/O trickle current test) be upgraded to a 1/1 and placed on the CIL. Firing of a thruster on the ground could result in loss of life due to exposure to prop, prop vapors, or thruster plume.

FINAL RESOLUTION: IOA withdraws 1/1 issue after discussion with G. Grush (RCS SSM) on 5/19/88. SSM is not concerned that the RCS FMEA/CIL cover failures which affect only ground turnaround phases and, therefore, does not agree with a CRIT 1/1 upgrade for this failure. SSM is only concerned that the RCS FMEA/CIL should cover failures which affect mission, crew, and vehicle during flight phases. IOA will accept SSM's philosophy. However, per IOA's interpretation, NSTS 22206 would require that this failure be classified as a 1/1. This test is performed during OPS-9, which overlaps the IOA definition of the pre-launch phase. Therefore, IOA recommends that this failure, which could result in loss of life on the ground, be classified as a 1/1.

REPORT DATE: 21 JULY 1988 C.18-119
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-321
NASA FMEA #: 05-6KF-2252 -2
SUBSYSTEM: FRCS
MDAC ID: 321
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. DIODE FAILING SHORT ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-323
NASA FMEA #: 05-6KF-2252 -2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 323
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. DIODE FAILING SHORT ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-121
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-388
NASA FMEA #: 05-6KF-2253 -1

SUBSYSTEM: FRCS
MDAC ID: 388
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C 

NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-406
NASA FMEA #: 05-6KF-2253 -1
SUBSYSTEM: FRCS
MDAC ID: 406
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ N ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-410
NASA FMEA #: 05-6KF-2253 -1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 410
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-124
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-420
NASA FMEA #: 05-6KF-2253 -1

SUBSYSTEM: FRCS
MDAC ID: 420
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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NASA  [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA   [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-125
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-424
NASA FMEA #: 05-6KF-2254 -1
SUBSYSTEM: FRCS
MDAC ID: 424
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

*CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988  C.18-126
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-442
NASA FMEA #: 05-6KF-2254 -1

SUBSYSTEM: FRCS
MDAC ID: 442
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *

IOA [ 3 /3 ] [ ] [ ] [ ] [ ]

COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-446
NASA FMEA #: 05-6KF-2254-1

SUBSYSTEM: FRCS
MDAC ID: 446
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

| CRITICALITY | REDUNDANCY SCREENS | CIL |
| HDW/FUNC   | A | B | C | ITEM |
| FLIGHT     |   |   |   |     |
| NASA       | [ 2/1R] | [ P ] | [ F ] | [ P ] | [ X ] * |
| IOA        | [ 3/3 ] | [ ]  | [ ]  | [ ]  | [ ]    |
| COMPARE    | [ N/N ] | [ N ] | [ N ] | [ N ] | [ N ]   |

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-456
NASA FMEA #: 05-6KF-2254 -1

NASA DATA:
BASELINE [ ]
NEW [ N ]

NASA FMEA #: 05-6KF-2254 -1

SUBSYSTEM: FRCS
MDAC ID: 456
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY
FLIGHT HDW/FUNC

NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ X ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDRAWN THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-472
NASA FMEA #: 05-6KF-2126 -1
SUBSYSTEM: FRCS
MDAC ID: 472
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

WITH THE LOSS OF THIS RELAY, VALVE CANNOT BE OPENED. INABILITY TO OPEN VALVE PREVENTS OPERATION OF JETS REQUIRED FOR TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (TANK ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-130
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-473
NASA FMEA #: 05-6KF-2126 -2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 473
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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NASA [ 2 /1R ]
IOA [ 3 /3 ]
COMPARE [ N /N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS, COUPLED WITH THE LOSS OF ALL HARDWARE REDUNDANCY PREVENTS ISOLATION OF A THRUSTER LEAK.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-131
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-475
NASA FMEA #: 05-6KF-2126A-2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 475
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REDUNDANCY SCREENS
A  B  C

CIL
ITEM

NASA  [ 3 /1R ]  [ P ]  [ F ]  [ P ]  [ X ] *
IOA  [ 3 /1R ]  [ P ]  [ F ]  [ P ]  [ X ]

COMPARE  [ / ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (TANK ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988  C.18-132
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-477
NASA FMEA #: 05-6KF-2126A-2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 477
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES INABILITY TO OPEN THE VALVE. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (TANK ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-478
NASA FMEA #: 05-6KF-2126 -1

SUBSYSTEM: FRCS
MDAC ID: 478
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:
WITH THE LOSS OF THIS RELAY, VALVE CANNOT BE OPENED. INABILITY TO OPEN VALVE PREVENTS OPERATION OF JETS REQUIRED FOR TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (TANK ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-134
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-479
NASA FMEA #: 05-6KF-2126 -2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 479
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS, COUPLED WITH THE LOSS OF ALL HARDWARE REDUNDANCY PREVENTS ISOLATION OF A THRUSTER LEAK.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-135
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-481
NASA FMEA #: 05-6KF-2126A-2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 481
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILED ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (TANK ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-483
NASA FMEA #: 05-6KF-2126A-2

SUBSYSTEM: FRCS
MDAC ID: 483
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES INABILITY TO OPEN THE VALVE. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (TANK ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-484
NASA FMEA #: 05-6KF-2127A-1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 484
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
WITH THE LOSS OF THIS RELAY, VALVE CANNOT BE OPENED. INABILITY TO OPEN VALVE PREVENTS OPERATION OF JETS REQUIRED TO EXPEL PROPELLANTS TO MEET LANDING CG LIMITS. ALSO THERE IS NO REDUNDANCY FOR MANIFOLD 5 (VERNERS - 2/2). IOA ORIGINALLY FAILED THIS B SCREEN SINCE CREW CANNOT DETECT FAILURE (EXCEPT VIA MCA STATUS) UNTIL AFTER CLOSING THE VALVE, WHICH IS TOO LATE TO RECOVER BY NOT CLOSING THE VALVE.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (TANK ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN, AND SINCE ANOTHER FAILURE IS REQUIRED TO CAUSE THE CREW TO CLOSE THE VALVE IN THE FIRST PLACE. ALSO, NSTS 22206 (2.3.4.B.2.B) SAYS THAT AN ITEM NOT USED DURING ANY NOMINAL MISSION PHASE SHOULD HAVE AN "NA" B SCREEN. THIS ITEM IS SINCE THE VALVE IS NOT NOMINALLY CLOSED. SO IOA CONCURS WITH A "PASS" B SCREEN, SINCE "P" AND "NA" ARE NON-CILS.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-485
NASA FMEA #: 05-6KF-2127A-2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 485
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF ALL REDUNDANCY PREVENTS ISOLATION OF A THRUSTER LEAK.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-487
NASA FMEA #: 05-6KF-2127-2

SUBSYSTEM: FRCS
MDAC ID: 487
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILED ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEously.
**APPENDIX C**

**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 1/29/88  
**ASSESSMENT ID:** FRCS-489  
**NASA FMEA #:** 05-6KF-2127 -2  
**SUBSYSTEM:** FRCS  
**MDAC ID:** 489  
**ITEM:** RELAY  
**LEAD ANALYST:** D. HARTMAN

**NASA DATA:**

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| IOA [ 2 /1R ] | [ P ] | [ F ] | [ P ] | [ X ] |
| COMPARE     | / | / | / | / |

**RECOMMENDATIONS:** (If different from NASA)

| / | / | / | / | / | / |

* CIL RETENTION RATIONALE: (If applicable)

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**REMARKS:**

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES INABILITY TO OPEN THE VALVE. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.

**FINAL RESOLUTION:** IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

**REPORT DATE** 21 JULY 1988  
**C.18-141**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-490
NASA FMEA #: 05-6KF-2127A-1
SUBSYSTEM: FRCS
MDAC ID: 490
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
WITH THE LOSS OF THIS RELAY, VALVE CANNOT BE OPENED. INABILITY TO OPEN VALVE PREVENTS OPERATION OF JETS REQUIRED TO EXPEL PROPELLANTS TO MEET LANDING CG LIMITS. ALSO THEIR IS NO REDUNDANCY FOR MANIFOLD 5 (VERNERS - 2/2).

IOA ORIGINALLY FAILED THIS B SCREEN SINCE CREW CANNOT DETECT FAILURE (EXCEPT VIA MCA STATUS) UNTIL AFTER CLOSING THE VALVE, WHICH IS TOO LATE TO RECOVER BY NOT CLOSING THE VALVE.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (TANK ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN, AND SINCE ANOTHER FAILURE IS REQUIRED TO CAUSE THE CREW TO CLOSE THE VALVE IN THE FIRST PLACE. ALSO, NSTS 22206 (2.3.4.B.2.B) SAYS THAT AN ITEM NOT USED DURING ANY NOMINAL MISSION PHASE SHOULD HAVE AN "NA" B SCREEN. THIS ITEM IS SINCE THE VALVE IS NOT NOMINALLY CLOSED. SO IOA CONCURS WITH A "PASS" B SCREEN, SINCE "P" AND "NA" ARE NON-CILS.

REPORT DATE 21 JULY 1988 C.18-142
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-491
NASA FMEA #: 05-6KF-2127A-2

SUBSYSTEM: FRCS
MDAC ID: 491
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA contains multiple failures. This, coupled with the loss of all hardware redundancy prevents isolation of a thruster leak.

FINAL RESOLUTION: IOA withdrew this issue, accepting the higher NASA CRIT which is due to a conservative interpretation of NSTS 22206 redundancy groundrules. IOA retains a concern of the low probability of multiple failures occurring simultaneously. IOA will not dispute NASA's more conservative (failed) B screen.

REPORT DATE 21 JULY 1988 C.18-143
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-493
NASA FMEA #: 05-6KF-2127 -2
SUBSYSTEM: FRCS
MDAC ID: 493
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILED ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-495
NASA FMEA #: 05-6KF-2127 -2

SUBSYSTEM: FRCS
MDAC ID: 495
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FLIGHT | HDW/FUNC | A | B | C |
| NASA [ 2 /1R ] | [ P ] | [ F ] | [ P ] | [ X ] * |
| IOA [ 2 /1R ] | [ P ] | [ F ] | [ P ] | [ X ] |

COMPARE [ / ] [ ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(REPORT DATE 21 JULY 1988)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES INABILITY TO OPEN THE VALVE. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-145
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-496
NASA FMEA #: 05-6KF-2083 -1
NASA DATA: BASELINE [ ] NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 496
ITEM: RESISTOR, 1.2K 2W
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF ALL REDUNDANCY TO MONITOR VALVE POSITION MAY LEAD TO FALSELY FAILING THE VALVE CLOSED.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-146
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-498
NASA FMEA #: 05-6KF-2083 -1

SUBSYSTEM: FRCS
MDAC ID: 498
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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COMPARE [ /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF ALL REDUNDANCY TO MONITOR VALVE POSITION MAY LEAD TO FALSELY FAILING THE VALVE CLOSED.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-500
NASA FMEA #: 05-6KF-2083 -1
SUBSYSTEM: FRCS
MDAC ID: 500
ITEM: RESISTOR, 1.2K 2W
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF ALL REDUNDANCY TO MONITOR VALVE POSITION MAY LEAD TO FALSELY FAILING THE VALVE CLOSED.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-148
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-514
NASA FMEA #: 05-6KF-2084 -1

SUBSYSTEM: FRCS
MDAC ID: 514
ITEM: RESISTOR, 1.2K 2W
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF ALL REDUNDANCY TO MONITOR VALVE POSITION MAY LEAD TO FALSELY FAILING THE VALVE CLOSED.

FINAL RESOLUTION: IOA WITHDRAW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-149
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-516
NASA FMEA #: 05-6KF-2084 -1
SUBSYSTEM: FRCS
MDAC ID: 516
ITEM: RESISTOR, 1.2K 2W
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ N ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF ALL REDUNDANCY TO MONITOR VALVE POSITION MAY LEAD TO FALSELY FAILING THE VALVE CLOSED.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-150
ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-518
NASA FMEA #: 05-6KF-2084 -1

SUBSYSTEM: FRCS
MDAC ID: 518
ITEM: RESISTOR, 1.2K 2W
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF ALL REDUNDANCY TO MONITOR VALVE POSITION MAY LEAD TO FALSELY FAILING THE VALVE CLOSED.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-151
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-568
NASA FMEA #: 05-6KF-2255F-1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 568
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-152
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-569
NASA FMEA #: 05-6KF-2255F-2

SUBSYSTEM: FRCS
MDAC ID: 569
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILED SHORT DIODE CAUSES EXCESSIVE MOTOR OPERATION (CONTINUOUS POWER THAT OPENS THE VALVE SLIGHTLY THEN CLOSES IT, CONSTANTLY REPEATING ITSELF). MOTOR DAMAGE WOULD LIKELY CAUSE THE VALVE TO CLOSE, CAUSING LOSS OF JETS ON ASSOCIATED MANIFOLD. REDUNDANCY PROVIDED BY JETS ON ANOTHER MANIFOLD. LOSS OF REDUNDANCY CAUSES THE INABILITY TO EXPEL PROPELLANTS TO MEET CG CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-572
NASA FMEA #: 05-6KF-2255 -1
NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 572
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEously.

REPORT DATE 21 JULY 1988 C.18-154
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-576
NASA FMEA #: 05-6KF-2255E-1
NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 576
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-577
NASA FMEA #: 05-6KF-2255E-2

SUBSYSTEM: FRCS
MDAC ID: 577
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILED SHORT DIODE CAUSES EXCESSIVE MOTOR OPERATION (CONTINUOUS POWER THAT OPENS THE VALVE SLIGHTLY THEN CLOSES IT, CONSTANTLY REPEATING ITSELF). MOTOR DAMAGE WOULD LIKELY CAUSE THE VALVE TO CLOSE, CAUSING LOSS OF JETS ON ASSOCIATED MANIFOLD. REDUNDANCY PROVIDED BY JETS ON ANOTHER MANIFOLD. LOSS OF REDUNDANCY CAUSES THE INABILITY TO EXPEL PROPELANTS TO MEET CG CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-156
ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-578
NASA FMEA #: 05-6KF-2255 -1

SUBSYSTEM: FRCS
MDAC ID: 578
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ]

ADD/DELETE

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-581
NASA FMEA #: 05-6KF-2268 -2
SUBSYSTEM: FRCS
MDAC ID: 581
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

*CIL RETENTION RATIONALE: (If applicable)

Adequate [ ]

Inadequate [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-158
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-583
NASA FMEA #: 05-6KF-2268-2

SUBSYSTEM: FRCS
MDAC ID: 583
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

Adequate [ ]

Inadequate [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDRAW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE: 21 JULY 1988  C.18-159
ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-590
NASA FMEA #: 05-6KF-2255F-1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 590
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-591
NASA FMEA #: 05-6KF-2255F-2

SUBSYSTEM: FRCS
MDAC ID: 591
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(REM/DEL)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILED SHORT DIODE CAUSES EXCESSIVE MOTOR OPERATION (CONTINUOUS POWER THAT OPENS THE VALVE SLIGHTLY THEN CLOSES IT, CONSTANTLY REPEATING ITSELF). MOTOR DAMAGE WOULD LIKELY CAUSE THE VALVE TO CLOSE, CAUSING LOSS OF JETS ON ASSOCIATED MANIFOLD. REDUNDANCY PROVIDED BY JETS ON ANOTHER MANIFOLD. LOSS OF REDUNDANCY CAUSES THE INABILITY TO EXPEL PROPELLANTS TO MEET CG CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-161
ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-594
NASA FMEA #: 05-6KF-2255-1

SUBSYSTEM: FRCS
MDAC ID: 594
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-162
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-598
NASA FMEA #: 05-6KF-2255E-1
SUBSYSTEM: FRCS
MDAC ID: 598
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY

REDUNDANCY SCREENS

CIL

FLIGHT HDW/FUNC A B C ITEM

NASA [ 3 /1R ] [ P ] [ F ] [ P ] [ X ] *

IOA [ 3 /3 ] [ ] [ ] [ ] [ ]

COMPARE [ /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-163
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-599
NASA FMEA #: 05-6KF-2255E-2

SUBSYSTEM: FRCS
MDAC ID: 599
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILED SHORT DIODE CAUSES EXCESSIVE MOTOR OPERATION (CONTINUOUS POWER THAT OPENS THE VALVE SLIGHTLY THEN CLOSES IT, CONSTANTLY REPEATING ITSELF). MOTOR DAMAGE WOULD LIKELY CAUSE THE VALVE TO CLOSE, CAUSING LOSS OF JETS ON ASSOCIATED MANIFOLD. REDUNDANCY PROVIDED BY JETS ON ANOTHER MANIFOLD. LOSS OF REDUNDANCY CAUSES THE INABILITY TO EXPEL PROPELLANTS TO MEET CG CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDRAW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-600
NASA FMEA #: 05-6KF-2255 -1

SUBSYSTEM: FRCS
MDAC ID: 600
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ N ]

ITEM

NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988  C.18-165
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-603
NASA FMEA #: 05-6KF-2268 -2

SUBSYSTEM: FRCS
MDAC ID: 603
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY |
FLIGHT |
HDW/FUNC |

REDUNDANCY SCREENS |
A | B | C |

NASA [3 /1R] | [P] | [P] | [P] | [X] * |
IOA [3 /3] | [ ] | [ ] | [ ] | [ ] |
COMPARE [ /N ] | [N ] | [N ] | [N ] | [N ] |

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-166
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-605
NASA FMEA #: 05-6KF-2268 -2

SUBSYSTEM: FRCS
MDAC ID: 605
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-612
NASA FMEA #: 05-6KF-2255F-1
SUBSYSTEM: FRCS
MDAC ID: 612
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

NASA DATA:
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NEW [ N ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-168
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-613
NASA FMEA #: 05-6KF-2255F-2

SUBSYSTEM: FRCS
MDAC ID: 613
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILED SHORT DIODE CAUSES EXCESSIVE MOTOR OPERATION (CONTINUOUS POWER THAT OPENS THE VALVE SLIGHTLY THEN CLOSES IT, CONSTANTLY REPEATING ITSELF). MOTOR DAMAGE WOULD LIKELY CAUSE THE VALVE TO CLOSE, CAUSING LOSS OF JETS ON ASSOCIATED MANIFOLD. REDUNDANCY PROVIDED BY JETS ON ANOTHER MANIFOLD. LOSS OF REDUNDANCY CAUSES THE INABILITY TO EXPEL PROPELLANTS TO MEET CG CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-169
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-616
NASA FMEA #: 05-6KF-2255 -1
NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 616
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-170
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-620
NASA FMEA #: 05-6KF-2255E-1

SUBSYSTEM: FRCS
MDAC ID: 620
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-171
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-621
NASA FMEA #: 05-6KF-2255E-2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 621
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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IOA [ 3 /3 ] [ ] [ ] [ ] [ ] [ ]
COMPAR [ /N ] [ N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILED SHORT DIODE CAUSES EXCESSIVE MOTOR OPERATION (CONTINUOUS POWER THAT OPENS THE VALVE SLIGHTLY THEN CLOSES IT, CONSTANTLY REPEATING ITSELF). MOTOR DAMAGE WOULD LIKELY CAUSE THE VALVE TO CLOSE, CAUSING LOSS OF JETS ON ASSOCIATED MANIFOLD. REDUNDANCY PROVIDED BY JETS ON ANOTHER MANIFOLD. LOSS OF REDUNDANCY CAUSES THE INABILITY TO EXPEL PROPELLANTS TO MEET CG CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-172
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-622
NASA FMEA #: 05-6KF-2255 -1
NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 622
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FLIGHT | HDW/FUNC | A | B | C | ITEM |
| NASA | [ 2 /1R ] | [ P ] | [ F ] | [ P ] | [ X ] * |
| IOA | [ 3 /3 ] | [ ] | [ ] | [ ] | [ ] |
| COMPARE | [ N /N ] | [ N ] | [ N ] | [ N ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-173
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-625
NASA FMEA #: 05-6KF-2268 -2
SUBSYSTEM: FRCS
MDAC ID: 625
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-174
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCSC-627
NASA FMEA #: 05-6KF-2268-2

SUBSYSTEM: FRCSC
MDAC ID: 627
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-634
NASA FMEA #: 05-6KF-2255F-1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 634
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS -635
NASA FMEA #: 05-6KF -2255F -2
SUBSYSTEM: FRCS
MDAC ID: 635
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILED SHORT DIODE CAUSES EXCESSIVE MOTOR OPERATION (CONTINUOUS POWER THAT OPENS THE VALVE SLIGHTLY THEN Closes IT, CONSTANTLY REPEATING ITSELF). MOTOR DAMAGE WOULD LIKELY CAUSE THE VALVE TO CLOSE, CAUSING LOSS OF JETS ON ASSOCIATED MANIFOLD. REDUNDANCY PROVIDED BY JETS ON ANOTHER MANIFOLD. LOSS OF REDUNDANCY CAUSES THE INABILITY TO EXPEL PROPELLANTS TO MEET CG CONSTRAINTS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-638
NASA FMEA #: 05-6KF-2255 -1

SUBSYSTEM: FRCS
MDAC ID: 638
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-178
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-642
NASA FMEA #: 05-6KF-2255E-1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 642
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILED SHORT DIODE CAUSES EXCESSIVE MOTOR OPERATION (CONTINUOUS POWER THAT OPENS THE VALVE SLIGHTLY THEN CLOSES IT, CONSTANTLY REPEATING ITSELF). MOTOR DAMAGE WOULD LIKELY CAUSE THE VALVE TO CLOSE, CAUSING FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  NASA DATA:  
ASSESSMENT ID: FRCS-643  BASELINE [ ]  
NASA FMEA #: 05-6KF-2255E-2  NEW [ N ]  

SUBSYSTEM: FRCS  
MDAC ID: 643  
ITEM: DIODE  
LEAD ANALYST: D. HARTMAN

ASSESSMENT:  

<p>| CRITICALLY  | REDUNDANCY SCREENS | CIL |</p>
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RECOMMENDATIONS: (If different from NASA)  
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)  
ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:  
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILED SHORT DIODE CAUSES EXCESSIVE MOTOR OPERATION (CONTINUOUS POWER THAT OPENS THE VALVE SLIGHTLY THEN CLOSES IT, CONSTANTLY REPEATING ITSELF). MOTOR DAMAGE WOULD LIKELY CAUSE THE VALVE TO CLOSE, CAUSING LOSS OF JETS ON ASSOCIATED MANIFOLD. REDUNDANCY PROVIDED BY JETS ON ANOTHER MANIFOLD. LOSS OF REDUNDANCY CAUSES THE INABILITY TO EXPEL PROPELLANTS TO MEET CG CONSTRAINTS.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988  C.18-180
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-644
NASA FMEA #: 05-6KF-2255 -1

SUBSYSTEM: FRCS
MDAC ID: 644
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS
FLIGHT HDW/FUNC A B C

NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-181
APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: FRCS-647  
NASA FMEA #: 05-6KF-2268 -2

SUBSYSTEM: FRCS  
MDAC ID: 647  
ITEM: DIODE  
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS:  (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLEFailures OCCURRING SIMULTANEOUSLY.

REPORT DATE  21 JULY 1988  C.18-182
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-649
NASA FMEA #: 05-6KF-2268 -2
SUBSYSTEM: FRCS
MDAC ID: 649
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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*CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-668
NASA FMEA #: 05-6KF-2208 -1
NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 668
ITEM: DRIVER, HYBRID

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, IF DRIVER FAILS OPEN, LOSE CAPABILITY TO MONITOR VALVE STATUS WITH THE SWITCH TALKBACK. MDM DISCRETES PROVIDE REDUNDANCY. LOSS OF THIS REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-184
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-669
NASA FMEA #: 05-6KF-2208 -2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 669
ITEM: DRIVER, HYBRID

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO OPEN ISOLATION VALVE. THIS COUPLED WITH THE LOSS OF HARDWARE REDUNDANCY MAY CAUSE LOSS OF JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-185
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  NASA DATA: BASELINE [ ]  NEW [ N ]
ASSESSMENT ID: FRCS-670  NASA FMEA #: 05-6KF-2208 -1
SUBSYSTEM: FRCS  MDAC ID: 670
ITEM: DRIVER, HYBRID  LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, IF DRIVER FAILS OPEN, LOSE CAPABILITY TO MONITOR VALVE STATUS WITH THE SWITCH TALKBACK. MDM DISCRETES PROVIDE REDUNDANCY. LOSS OF THIS REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988  C.18-186
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-672
NASA FMEA #: 05-6KF-2208 -1
NASA DATA: BASELINE [ ] NEW [ N ]
SUBSYSTEM: FRCS
MDAC ID: 672
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, IF DRIVER FAILS
OPEN, LOSE CAPABILITY TO MONITOR VALVE STATUS WITH THE SWITCH
TALKBACK. MDM DISCRETES PROVIDE REDUNDANCY. LOSS OF THIS
REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED,
POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S
HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS
22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW
PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA
WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-187
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-673
NASA FMEA #: 05-6KF-2208 -2
SUBSYSTEM: FRCS
MDAC ID: 673
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO OPEN ISOLATION VALVE. THIS COUPLED WITH THE LOSS OF HARDWARE REDUNDANCY MAY CAUSE LOSS OF JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988  C.18-188
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-674
NASA FMEA #: 05-6KF-2208 -1

SUBSYSTEM: FRCS
MDAC ID: 674
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, IF DRIVER FAILS OPEN, LOSE CAPABILITY TO MONITOR VALVE STATUS WITH THE SWITCH TALKBACK. MDM DISCRETES PROVIDE REDUNDANCY. LOSS OF THIS REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-676
NASA FMEA #: 05-6KF-2208 -1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 676
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

| ADEQUATE [ ] |
| INADEQUATE [ ] |

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, IF DRIVER FAILS OPEN, LOSE CAPABILITY TO MONITOR Valve STATUS WITH THE SWITCH TALKBACK. MDM DISCRETES PROVIDE REDUNDANCY. LOSS OF THIS REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-190
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-677
NASA FMEA #: 05-6KF-2208 -2

SUBSYSTEM: FRCS
MDAC ID: 677
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO OPEN ISOLATION VALVE. THIS COUPLED WITH THE LOSS OF HARDWARE REDUNDANCY MAY CAUSE LOSS OF JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988  C.18-191
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-678
NASA FMEA #: 05-6KF-2208 -I

SUBSYSTEM: FRCS
MDAC ID: 678
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, IF DRIVER FAILS OPEN, LOSE CAPABILITY TO MONITOR VALVE STATUS WITH THE SWITCH TALKBACK. MDM DISCRETES PROVIDE REDUNDANCY. LOSS OF THIS REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GRNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-192
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-680
NASA FMEA #: 05-6KF-2208 -1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 680
ITEM: DRIVER, HYBRID

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, IF DRIVER FAILS
OPEN, LOSE CAPABILITY TO MONITOR VALVE STATUS WITH THE SWITCH
TALKBACK. MDM DISCRETES PROVIDE REDUNDANCY. LOSS OF THIS
REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED,
POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDRAWN THIS ISSUE, ACCEPTING NASA'S
HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS
22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW
PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA
WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988  C.18-193
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-681
NASA FMEA #: 05-6KF-2208 -2
SUBSYSTEM: FRCS
MDAC ID: 681
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

NASA DATA:
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ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO OPEN ISOLATION VALVE. THIS COUPLED WITH THE LOSS OF HARDWARE REDUNDANCY MAY CAUSE LOSS OF JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-194
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-682
NASA FMEA #: 05-6KF-2208 -1

SUBSYSTEM: FRCS
MDAC ID: 682
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL

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IOA [ 3 /3 ] [ ] [ ] [ ] [ ] [ ]

COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, IF DRIVER FAILS OPEN, LOSE CAPABILITY TO MONITOR VALVE STATUS WITH THE SWITCH TALKBACK. MDM DISCRETES PROVIDE REDUNDANCY. LOSS OF THIS REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-195
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-702
NASA FMEA #: 05-6KF-2128A-1
SUBSYSTEM: FRCS
MDAC ID: 702
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N / ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO OPEN ISOLATION VALVE. THIS, COUPLED WITH THE
LOSS OF HARDWARE REDUNDANCY MAY CAUSE INABILITY TO EXPEL
PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED
FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS
BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-196
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-703
NASA FMEA #: 05-6KF-2128A-2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 703
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, RELAY FAILING HIGH CREATES INABILITY TO CLOSE THE VALVE. THIS, COUPLED WITH THE LOSS OF ALL HARDWARE REDUNDANCY PREVENTS ISOLATION OF A THRUSTER LEAK.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-705
NASA FMEA #: 05-6KF-2128 -2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 705
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. LOSE CAPABILITY TO OPEN THE VALVE. THIS, COUPLED WITH THE LOSS OF ALL HARDWARE REDUNDANCY MAY CAUSE LOSS OF JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-198
**APPENDIX C**

**ASSESSMENT WORKSHEET**

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**RECOMMENDATIONS:** (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

**REMARKS:**

LOSE CAPABILITY TO OPEN ISOLATION VALVE. THIS, COUPLED WITH THE LOSS OF HARDWARE REDUNDANCY MAY CAUSE INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-707
NASA FMEA #: 05-6KF-2128A-2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 707
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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| COMPARE | [ N /N ] | [ N ] | [ N ] | [ N ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, RELAY FAILING HIGH CREATES INABILITY TO CLOSE THE VALVE. THIS, COUPLED WITH THE LOSS OF ALL HARDWARE REDUNDANCY PREVENTS ISOLATION OF A THRUSTER LEAK.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: FRCS-709  
NASA FMEA #: 05-6KF-2128 -2

NASA DATA: 
BASELINE [ ]  
NEW [ N ]

SUBSYSTEM: FRCS  
MDAC ID: 709  
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)  
ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. LOSE CAPABILITY TO OPEN THE VALVE. THIS, COUPLED WITH THE LOSS OF ALL HARDWARE REDUNDANCY MAY CAUSE LOSS OF JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988  C.18-201
APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: FRCS-710  
NASA FMEA #: 05-6KF-2128A-1  
SUBSYSTEM: FRCS  
MDAC ID: 710  
ITEM: RELAY  
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO OPEN ISOLATION VALVE. THIS, COUPLED WITH THE LOSS OF HARDWARE REDUNDANCY MAY CAUSE INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-711
NASA FMEA #: 05-6KF-2128A-2
SUBSYSTEM: FRCS
MDAC ID: 711
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REduNDANCY SCREENS

A   B   C

NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, RELAY FAILING HIGH CREATES INABILITY TO CLOSE THE VALVE. THIS, COUPLED WITH THE LOSS OF ALL HARDWARE REDUNDANCY PREVENTS ISOLATION OF A THRUSTER LEAK.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-203
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-713
NASA FMEA #: 05-6KF-2128 -2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 713
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY
FLIGHT HDW/FUNC 
REDUNDANCY SCREENS A B C
CIL ITEM

NASA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ / ] [ ] [ N ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. LOSE CAPABILITY TO OPEN THE VALVE. THIS, COUPLED WITH THE LOSS OF ALL HARDWARE REDUNDANCY MAY CAUSE LOSS OF JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.
APPENDIX C
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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO OPEN ISOLATION VALVE. THIS, COUPLED WITH THE LOSS OF HARDWARE REDUNDANCY MAY CAUSE INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDRAWED THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-205
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-715
NASA FMEA #: 05-6KF-2128A-2

NASA DATA: BASELINE [ ] NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 715
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, RELAY FAILING HIGH CREATES INABILITY TO CLOSE THE VALVE. THIS, COUPLED WITH THE LOSS OF ALL HARDWARE REDUNDANCY PREVENTS ISOLATION OF A THRUSTER LEAK.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-206
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-717
NASA FMEA #: 05-6KF-2128 -2
NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 717
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

| ADEQUATE [ ] |
| INADEQUATE [ ] |

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. LOSE CAPABILITY TO OPEN THE VALVE. THIS, COUPLED WITH THE LOSS OF ALL HARDWARE REDUNDANCY MAY CAUSE LOSS OF JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-207
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-718
NASA FMEA #: 05-6KF-2089 -1
NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 718
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]

COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF
CAPABILITY TO MONITOR VALVE STATUS MAY LEAD TO FALSELY FAILING
THE VALVE CLOSED POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S
HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS
22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW
PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA
WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-208
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-732
NASA FMEA #: 05-6KF-2089 -1

SUBSYSTEM: FRCS
MDAC ID: 732
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

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| IOA  | 3 /3  |   |   |   |   |   |
| COMPARE | N /N | N | N | N |   | N |

RECOMMENDATIONS: (If different from NASA)

|        | / |   |   |   |

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF CAPABILITY TO MONITOR VALVE STATUS MAY LEAD TO FALSELY FAILING THE VALVE CLOSED POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988  C.18-209
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-746
NASA FMEA #: 05-6KF-2089 -1
SUBSYSTEM: FRCS
MDAC ID: 746
ITEM: RESISTOR, 1.2K 2W
LEAD ANALYST: D. HARTMAN

ASSESMENT:

CRITICALLY
FLIGHT
HDW/FUNC

REDUNDANCY SCREENS

CIL
ITEM

NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF
CAPABILITY TO MONITOR VALVE STATUS MAY LEAD TO FALSELY FAILING
THE VALVE CLOSED POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S
HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS
22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW
PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA
WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-210
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  NASA DATA:
ASSESSMENT ID: FRCS-760  BASELINE [ ]
NASA FMEA #: 05-6KF-2089 -1  NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 760
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF
CAPABILITY TO MONITOR VALVE STATUS MAY LEAD TO FALSELY FAILING
THE VALVE CLOSED POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S
HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS
22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW
PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA
WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE  21 JULY 1988    C.18-211
# APPENDIX C
## ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 1/29/88

**ASSESSMENT ID:** FRCS-880

**NASA FMEA #:** 05-6KF-2155 -1

**SUBSYSTEM:** MANIFOLD 1, OX & FU ISOL VLV SWITCH TALKBACK

**LEAD ANALYST:** D. HARTMAN

**ASSESSMENT:**

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- **IOA** [3/IR] [P] [P] [P] [ ]

**COMPARE** [N/ ] [ ] [N] [ ] [N] [ ]

**RECOMMENDATIONS:** (If different from NASA)

- [ ] [ ] [ ] [ ] [ ]

*(ADD/DELETE)*

**CIL RETENTION RATIONALE:** (If applicable)

- **ADEQUATE** [ ]
- **INADEQUATE** [ ]

**REMARKS:**

NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF ACCURATE INDICATION OF VALVE STATUS WITH SWITCH TALKBACK COUPLED WITH THE LOSS OF REDUNDANCY (MDM DISCRETES) MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

**FINAL RESOLUTION:** IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

**REPORT DATE** 21 JULY 1988 C.18-212
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-881
NASA FMEA #: 05-6KF-2155 -1
NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 881
ITEM: MANIFOLD 2, OX & FU ISOL VLV SWITCH TALKBACK

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF ACCURATE INDICATION OF VALVE STATUS WITH SWITCH TALKBACK COUPLED WITH THE LOSS OF REDUNDANCY (MDM DISCRETES) MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988  C.18-213
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-882
NASA FMEA #: 05-6KF-2155 -1
SUBSYSTEM: FRCS
MDAC ID: 882
ITEM: MANIFOLD 3, OX & FU ISOL VLV SWITCH TALKBACK
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ N ]

CRITICALITY REDUNDANCY SCREENS

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

(ADD/DELETE)

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF ACCURATE INDICATION OF VALVE STATUS WITH SWITCH TALKBACK COUPLED WITH THE LOSS OF REDUNDANCY (MDM DISCRETES) MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-214
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-883
NASA FMEA #: 05-6KF-2155 -1
SUBSYSTEM: FRCS
MDAC ID: 883
ITEM: MANIFOLD 4, OX & FU ISOL VLV SWITCH TALKBACK
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY CIL
FLIGHT HDW/FUNC A B C ITEM
NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /1R ] [ P ] [ P ] [ P ] [ ]
COMPARE [ N / ] [ ] [ N ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. HOWEVER, LOSS OF ACCURATE INDICATION OF VALVE STATUS WITH SWITCH TALKBACK COUPLED WITH THE LOSS OF REDUNDANCY (MDM DISCRETES) MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-215
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-885
NASA FMEA #: 05-6KF-2179 -1
NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 885
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 1. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 3. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-216
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-886
NASA FMEA #: 05-6KF-2179 -2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 886
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-217
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-887
NASA FMEA #: 05-6KF-2180 -1

SUBSYSTEM: FRCS
MDAC ID: 887
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 1. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 3. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-889
NASA FMEA #: 05-6KF-2179 -1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 889
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /2 ] [ ] [ ] [ ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
LOSE JETS ON MANIFOLD 2. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 4. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988

C.18-219
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-890
NASA FMEA #: 05-6KF-2179 -2
NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 890
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C  
ASSESSMENT WORKSHEET  

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: FRCS-891  
NASA FMEA #: 05-6KF-2180 -i  

NASA DATA:  
BASELINE [ ]  
NEW [ N ]  

SUBSYSTEM: FRCS  
MDAC ID: 891  
ITEM: CONTROLLER, REMOTE POWER  
LEAD ANALYST: D. HARTMAN  

ASSESSMENT:  
CRITICALITY REDUNDANCY SCREENS CIL ITEM  
FLIGHT HDW/FUNC A B C ITEM  
NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *  
IOA [ 2 /2 ] [ ] [ ] [ ] [ X ]  
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]  

RECOMMENDATIONS: (If different from NASA)  
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* CIL RETENTION RATIONALE: (If applicable)  
ADEQUATE [ ]  
INADEQUATE [ ]  

REMARKS:  
LOSE JETS ON MANIFOLD 2. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 4. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.  

REPORT DATE 21 JULY 1988 C.18-221
**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 1/29/88  
**ASSESSMENT ID:** FRCS-894  
**NASA FMEA #:** 05-6KF-2179 -2  

**SUBSYSTEM:** FRCS  
**MDAC ID:** 894  
**ITEM:** CONTROLLER, REMOTE POWER  

**LEAD ANALYST:** D. HARTMAN  

**ASSESSMENT:**  

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**RECOMMENDATIONS:** (If different from NASA)  

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* CIL RETENTION RATIONALE: (If applicable)  

ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**  
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.  

**FINAL RESOLUTION:** IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRC-901
NASA FMEA #: 05-6KF-2179 -2
NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCs
MDAC ID: 901
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
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REMARKS:
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FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-223
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-902
NASA FMEA #: 05-6KF-2180 -1

SUBSYSTEM: FRCS
MDAC ID: 902
ITEM: CONTROLLER, REMOTE POWER
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C ITEM

NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /2 ] [ ] [ ] [ ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 4. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 2. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-224
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-904
NASA FMEA #: 05-6KF-2179 -1
SUBSYSTEM: FRCS
MDAC ID: 904
ITEM: CONTROLLER, REMOTE POWER
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 4. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 2. JETS REQUIRED TO EXPEL PROPELLANTRS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-906
NASA FMEA #: 05-6KF-2183 -2
SUBSYSTEM: FRCS
MDAC ID: 906
ITEM: CONTROLLER, REMOTE POWER
LEAD ANALYST: D. HARTMAN

NASA DATA:
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NEW [ N ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-908
NASA FMEA #: 05-6KF-2183 -2

SUBSYSTEM: FRCS
MDAC ID: 908
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING THE HIGHER NASA CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCurring SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-909
NASA FMEA #: 05-6KF-2260 -1
SUBSYSTEM: FRCS
MDAC ID: 909
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 1. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 3. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-228
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-913
NASA FMEA #: 05-6KF-2259 -1

SUBSYSTEM: FRCS
MDAC ID: 913
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 1. REDUNDANCY PROVIDED BY MANIFOLD 3 JETS. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-229
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-915
NASA FMEA #: 05-6KF-2260 -1
NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 915
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 2. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 4. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-230
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-919
NASA FMEA #: 05-6KF-2259 -1

SUBSYSTEM: FRCS
MDAC ID: 919
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
  ADEQUATE [ ]
  INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 2. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 4. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-231
**APPENDIX C**  
**ASSESSMENT WORKSHEET**

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**NASA DATA:**  
BASELINE [ ]  
NEW [ N ]  

**ASSESSMENT:**

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**RECOMMENDATIONS:**  
(If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**

LOSE JETS ON MANIFOLD 4 AND 5. REDUNDANCY FOR MANIFOLD 4 JETS PROVIDED BY JETS ON MANIFOLD 2. JETS REQUIRED TO EXPEL PROPPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-943
NASA FMEA #: 05-6KF-2260 -1
SUBSYSTEM: FRCS
MDAC ID: 943
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 4. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 2. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN. IOA WILL NOT DISPUTE NASA’S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988  C.18-233
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-947
NASA FMEA #: 05-6KF-2214 -1
SUBSYSTEM: FRCS
MDAC ID: 947
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 1. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 3. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.
**APPENDIX C**

**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 1/29/88  
**ASSESSMENT ID:** FRCS-948  
**NASA FMEA #:** 05-6KF-2214-2

**SUBSYSTEM:** FRCS  
**MDAC ID:** 948  
**ITEM:** DRIVER, HYBRID  
**LEAD ANALYST:** D. HARTMAN

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

| ADEQUATE [ ] |
| INADEQUATE [ ] |

**REMARKS:**

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

**FINAL RESOLUTION:** IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

**REPORT DATE** 21 JULY 1988  
**C.18-235**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-949
NASA FMEA #: 05-6KF-2214 -1
SUBSYSTEM: FRCS
MDAC ID: 949
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 2. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 4. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-236
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-950
NASA FMEA #: 05-6KF-2214 -2

SUBSYSTEM: FRCS
MDAC ID: 950
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
**APPENDIX C**

**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 1/29/88

**ASSESSMENT ID:** FRCS-952

**NASA FMEA #:** 05-6KF-2214 -2

**SUBSYSTEM:** FRCS

**MDAC ID:** 952

**ITEM:** DRIVER, HYBRID

**LEAD ANALYST:** D. HARTMAN

**ASSESSMENT:**

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**IOA [ 3 /2R ] [ P ] [ P ] [ P ]**

**COMPARE [ /N ] [ ] [ N ] [ ] [ N ]**

**RECOMMENDATIONS:** (If different from NASA)

[ ]

**REMARKS:**

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

**FINAL RESOLUTION:** IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

**REPORT DATE** 21 JULY 1988 C.18-238
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-954
NASA FMEA #: 05-6KF-2214 -2
SUBSYSTEM: FRCS
MDAC ID: 954
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  NASA DATA:
ASSESSMENT ID: FRCS-955  BASELINE [ ]
NASA FMEA #: 05-6KF-2214 -2  NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 955
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-956
NASA FMEA #: 05-6KF-2214 -1
SUBSYSTEM: FRCS
MDAC ID: 956
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 4. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 2. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-241
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-958
NASA FMEA #: 05-6KF-2220 -2
SUBSYSTEM: FRCS
MDAC ID: 958
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDRAW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-242
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-959
NASA FMEA #: 05-6KF-2009 -1
SUBSYSTEM: FRCS
MDAC ID: 959
ITEM: FUSE, 2A
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ N ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD I. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 3. JETS REQUIRED FOR TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-243
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-960
NASA FMEA #: 05-6KF-2008 -1
SUBSYSTEM: FRCS
MDAC ID: 960
ITEM: FUSE, 1A
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 1. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 3. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-244
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-961
NASA FMEA #: 05-6KF-2007 -1

SUBSYSTEM: FRCS
MDAC ID: 961
ITEM: FUSE, 1A
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 1. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 3. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-245
**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 1/29/88  
**ASSESSMENT ID:** FRCS-962  
**NASA FMEA #:** 05-6KF-2009 -1  
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**SUBSYSTEM:** FRCS  
**MDAC ID:** 962  
**ITEM:** FUSE, 2A  
**LEAD ANALYST:** D. HARTMAN

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)  
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)  
ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**  
LOSE JETS ON MANIFOLD 2. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 4. JETS REQUIRED FOR TO EXPEL PROPELLANTS TO MEET CG LIMITS.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

**REPORT DATE** 21 JULY 1988  
C.18-246
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-963
NASA FMEA #: 05-6KF-2008 -1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 963
ITEM: FUSE, 1A

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 2. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 4. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-247
APPENDIX C 
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88 
ASSESSMENT ID: FRCS-964 
NASA FMEA #: 05-6KF-2007 -1 
NASA DATA: 
BASELINE [ ] 
NEW [ N ]

SUBSYSTEM: FRCS 
MDAC ID: 964 
ITEM: FUSE, 1A 

LEAD ANALYST: D. HARTMAN 

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 2. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 4. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-248
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-965
NASA FMEA #: 05-6KF-2009 -1

SUBSYSTEM: FRCS
MDAC ID: 965
ITEM: FUSE, 1A

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 4. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 2. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-249
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-966
NASA FMEA #: 05-6KF-2008 -1
SUBSYSTEM: FRCS
MDAC ID: 966
ITEM: FUSE, 1A
LEAD ANALYST: D. HARTMAN

NASA DATA:
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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 3. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 1. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-250
**APPENDIX C**

**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 1/29/88  
**ASSESSMENT ID:** FRCS-967  
**NASA FMEA #:** 05-6KF-2007 -1

**NASA DATA:**  
BASELINE [ ]  
NEW [ N ]

**SUBSYSTEM:** FRCS  
**MDAC ID:** 967  
**ITEM:** FUSE, 1A

**LEAD ANALYST:** D. HARTMAN

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

**REMARKS:**

LOSE JETS ON MANIFOLD 3. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 1. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

**REPORT DATE**  21 JULY 1988  
**C.18-251**
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
NASA DATA:
NASA FMEA #: 05-6KF-2008 -i
ASSESSMENT ID: FRCS-970
SUBSYSTEM: FRCS
MDAC ID: 970
ITEM: FUSE, 1A
LEAD ANALYST: D. HARTMAN

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 4. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 2. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-252
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-972
NASA FMEA #: 05-6KF-2130 -1

SUBSYSTEM: FRCS
MDAC ID: 972
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 1. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 3. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-253
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-974
NASA FMEA #: 05-6KF-2130 -1
SUBSYSTEM: FRCS
MDAC ID: 974
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS:  (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS OF MANIFOLD 2. REDUNDANCY PROVIDED BY JETS ON MANIFOLD 4. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988  C.18-254
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-976
NASA FMEA #: 05-6KF-2130-1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 976
ITEM: RELAY, LATCHING

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE JETS ON MANIFOLD 4. REDUNDANCY PROVIDED BY JETS ON MANIFOLD
2. JETS REQUIRED TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED
FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN
WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  NASA DATA:  BASELINE [ ]
ASSESSMENT ID:  FRCS-1144  NASA FMEA #:  NONE  NEW [ ]
SUBSYSTEM:  FRCS  NASA FEA:  NONE
MDAC ID:  1144  ITEM:  CHAMBER PRESSURE (Pc) SENSOR, THRUSTERS F5L, F5R
ITEM:  FRCS 1144
LEAD ANALYST:  D. HARTMAN

ASSESSMENT:

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IOA [ 3 /2R ] [ P ] [ P ] [ P ] [ ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS:  (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE:  (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
VERNIER THRUSTERS CHAMBER PRESSURE SENSORS NOT ADDRESSED BY A
FMEA.  IOA RECOMMENDS THEIR INCLUSION INTO A FMEA.  NOTE:
PRIMARY SENSORS CONTAINED IN 03-2F-121314-2 FMEA.
FINAL RESOLUTION:  IOA WITHDREW THIS ISSUE, BECAUSE THIS ITEM IS
WITHIN THE VERNIER THRUSTER ASSEMBLY AND SO IS CONSIDERED TO BE
COVERED BY THE THRUSTER'S FMEA.  IOA MAINTAINS A CONCERN THAT
THIS ITEM SHOULD BE COVERED SEPARATELY.

REPORT DATE  21 JULY 1988  C.18-256
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-1145
NASA FMEA #: NONE

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: FRCS
MDAC ID: 1145
ITEM: CHAMBER PRESSURE (Pc) SENSOR, THRUSTERS F5L, F5R

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ ] / [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
VERNIER THRUSTERS CHAMBER PRESSURE SENSORS NOT ADDRESSED BY A FMEA. IOA RECOMMENDS THEIR INCLUSION INTO A FMEA. NOTE: PRIMARY SENSORS CONTAINED IN 03-2F-121314-1 FMEA.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE THIS ITEM IS WITHIN THE VERNIER THRUSTER ASSEMBLY AND SO IS CONSIDERED TO BE COVERED BY THE THRUSTER'S FMEA. IOA MAINTAINS A CONCERN THAT THIS ITEM SHOULD BE COVERED SEPARATELY.

REPORT DATE 21 JULY 1988  C.18-257
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-1154
NASA FMEA #: NONE

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: FRCS
MDAC ID: 1154
ITEM: OX OR FU INJECTOR TEMP SENSOR, THRUSTERS F5L, F5R

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
VERNIER THRUSTERS INJECTOR TEMPERATURE SENSORS NOT ADDRESSED BY A FMEA. IOA RECOMMENDS THEIR INCLUSION INTO A FMEA. NOTE: PRIMARY SENSORS CONTAINED IN 03-2F-121315-2 FMEA.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE THIS ITEM IS WITHIN THE VERNIER THRUSTER ASSEMBLY AND SO IS CONSIDERED TO BE COVERED BY THE THRUSTER'S FMEA. IOA MAINTAINS A CONCERN THAT THIS ITEM SHOULD BE COVERED SEPARATELY.

REPORT DATE 21 JULY 1988 C.18-258
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-1155
NASA FMEA #: NONE
NASA DATA: BASELINE [ ] NEW [ ]

SUBSYSTEM: FRCS
MDAC ID: 1155
ITEM: OX OR FU INJECTOR TEMP SENSOR, THRUSTERS F5L, F5R

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FLIGHT | A | B | C | ITEM |
| HDW/FUNC | | | |

NASA [ / ] [ ] [ ] [ ] [ ] [ ] *
IOA [ 3/2R ] [ P ] [ P ] [ P ] [ ]
COMPARE [ N/N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
VERNIER THRUSTERS INJECTOR TEMPERATURE SENSORS NOT ADDRESSED BY A FMEA. IOA RECOMMENDS THEIR INCLUSION INTO A FMEA. NOTE: PRIMARY SENSORS CONTAINED IN 03-2F-121315-1 FMEA.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE THIS ITEM IS WITHIN THE VERNIER THRUSTER ASSEMBLY AND SO IS CONSIDERED TO BE COVERED BY THE THRUSTER'S FMEA. IOA MAINTAINS A CONCERN THAT THIS ITEM SHOULD BE COVERED SEPARATELY.

REPORT DATE 21 JULY 1988 C.18-259
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-1300
NASA FMEA #: 03-2F-103345-2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 1300
ITEM: THERMOSTAT, VERNIER THRUSTERS, ALL AXES

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

THIS FAILURE MAY CAUSE LOSS OF MISSION OPERATONS. NOTE: VERNIER THRUSTERS THERMAL SWITCH NOT SPECIFICALLY ADDRESSED ON THIS FMEA. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE THIS ITEM IS WITHIN THE VERNIER THRUSTER ASSEMBLY, AND SO IS CONSIDERED TO BE COVERED BY THE THRUSTER'S FMEA. IOA MAINTAINS A CONCERN THAT THIS ITEM SHOULD BE COVERED SEPARATELY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11005X
NASA FMEA #: 05-6KF-2032-2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11005
ITEM: MANIFOLD 5, OX & FU ISOL VLV SWITCH

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. LOSE CAPABILITY TO OPEN THE VALVE. THIS CAUSES LOSS OF VERNIERS THUS MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988  C.18-261
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  NASA DATA:
ASSESSMENT ID: FRCS-11007X  BASELINE [ ]
NASA FMEA #: 05-6KF-2032 -2  NEW [ N ]
SUBSYSTEM: FRCS
MDAC ID: 11007
ITEM: MANIFOLD 5, OX & FU ISOL VLV SWITCH
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

| [ / ] | [ ] | [ ] | [ ] | [ ] |

* CIL RETENTION RATIONALE: (If applicable)

| ADEQUATE | INADEQUATE |

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. LOSE CAPABILITY TO CLOSE THE VALVE TO ISOLATE A THRUSTER LEAK.
FINAL RESOLUTION: IOA WITHDRAW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988  C.18-262
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11008X
NASA FMEA #: 05-6KF-2090 -1

SUBSYSTEM: FRCS
MDAC ID: 11008
ITEM: RESISTOR, 1.2K 2W
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALLY
REDUNDANCY SCREENS
FLIGHT HDW/FUNC A B C

NASA [ 3 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /2R ] [ P ] [ P ] [ P ] [ ]

COMPARE [ /N ] [ ] [ N ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE STATUS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-263
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
NASA DATA:
ASSessment ID: FRCS-11017X
NASA FMEA #: 05-6KF-2156 -1
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11017
ITEM: EVENT INDICATOR

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE STATUS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCurring SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988  C.18-264
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11019X
NASA FMEA #: 05-6KF-2177-2
SUBSYSTEM: FRCS
MDAC ID: 11019
ITEM: CONTROLLER, REMOTE POWER
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GrouNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-265
APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: FRCS-11020X  
NASA FMEA #: 05-6KF-2178 -I  

SUBSYSTEM: FRCS  
MDAC ID: 11020  
ITEM: CONTROLLER, REMOTE POWER  
LEAD ANALYST: D. HARTMAN  

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
FAILURE CAUSES THE INABILITY TO OPEN THE ISOLATION VALVE TO PERFORM MISSION OPERATIONS
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE A SECOND FAILURE IS REQUIRED TO CAUSE THE CREW TO CLOSE THE NORMALLY-OPEN VALVE IN THE FIRST PLACE.

REPORT DATE 21 JULY 1988  
C.18-266
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRC-11021X
NASA FMEA #: 05-6KF-2178 -2

SUBSYSTEM: FRCS
MDAC ID: 11021
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 3 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11022X
NASA FMEA #: 05-6KF-2210A-1
SUBSYSTEM: FRCS
MDAC ID: 11022
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ N ]

ASSESSMENT:
CRITICALITY
REDUNDANCY SCREENS
CIL

FLIGHT
HDW/FUNC
A    B    C

NASA [ 3 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /2R ] [ P ] [ P ] [ P ] [ ]

COMPARE [ /N ] [ ] [ N ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE
LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY
PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE
VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S
HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS
22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW
PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA
WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-268
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11024X
NASA FMEA #: 05-6KF-2210 -1

SUBSYSTEM: FRCS
MDAC ID: 11024
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE CAUSES LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

REPORT DATE 21 JULY 1988 C.18-269
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11025X
NASA FMEA #: 05-6KF-2210 -2
SUBSYSTEM: FRCS
MDAC ID: 11025
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

Adequate [ ]
Inadequate [ ]

REMARKS:

THIS FAILURE CAUSES THE INABILITY TO OPEN THE VALVE, CAUSING LOSS OF VERNIERS FOR MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE A SECOND FAILURE IS REQUIRED TO CAUSE THE CREW TO CLOSE THE NORMALLY-OPEN VALVE IN THE FIRST PLACE.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11027X
NASA FMEA #: 05-6KF-2213 -2

SUBSYSTEM: FRCS
MDAC ID: 11027
ITEM: DRIVER, HYBRID

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-271
### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 1/29/88  
**ASSESSMENT ID:** FRCS-11029X  
**NASA FMEA #:** 05-6KF-2212 -2  
**SUBSYSTEM:** FRCS  
**MDAC ID:** 11029  
**ITEM:** DRIVER, HYBRID  
**LEAD ANALYST:** D. HARTMAN

#### ASSESSMENT:

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**RECOMMENDATIONS:** (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS DRIVER FAILED HIGH CAUSES INABILITY TO OPEN THE ISOLATION VALVE. THIS CAUSES LOSS OF VERNIERS THUS MISSION OPERATIONS.  
**FINAL RESOLUTION:** IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY. IOA WILL NOT DISPUTE NASA'S MORE CONSERVATIVE (FAILED) B SCREEN.

**REPORT DATE** 21 JULY 1988  
**C.18-272**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  NASA DATA: 
ASSESSMENT ID: FRCS-11030X  BASELINE [ ]
NASA FMEA #: 05-6KF-2211 -1  NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11030
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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| IOA [ 2 /2 ]   | [ ]   | [ ]   | [ ]   | [ N ] |
| COMPARE [ N /N ] | [ N ] | [ N ] | [ N ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE CAUSES THE INABILITY TO OPEN THE VALVE FOR VERNIERS, THUS CAUSING LOSS OF MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE A SECOND FAILURE IS REQUIRED TO CAUSE THE CREW TO CLOSE THE NORMALLY-OPEN VALVE IN THE FIRST PLACE.
**ASSESSMENT DATE:** 1/29/88  
**NASA DATA:**  
**BASELINE** [ ]  
**NEW** [ N ]  

**SUBSYSTEM:** FRCS  
**MDAC ID:** 11031  
**ITEM:** DRIVER, HYBRID  

**LEAD ANALYST:** D. HARTMAN  

**ASSESSMENT:**  

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**RECOMMENDATIONS:** (If different from NASA)  
[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)  

* CIL RETENTION RATIONALE: (If applicable)  
ADEQUATE [ ]  
INADEQUATE [ ]  

**REMARKS:**  
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11032X
NASA FMEA #: 05-6KF-2113A-1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11032
ITEM: DRIVER, HYBRID

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE CAUSES THE INABILITY TO OPEN THE VALVE, CAUSING LOSS OF VERNIERS THUS MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE A SECOND FAILURE IS REQUIRED TO CAUSE THE CREW TO CLOSE THE NORMALLY-OPEN VALVE IN THE FIRST PLACE.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11033X
NASA FMEA #: 05-6KF-2113A-2

SUBSYSTEM: FRCS
MDAC ID: 11033
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. LOSE CAPABILITY TO CLOSE THE VALVE TO ISOLATE A THRUSTER LEAK.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-276
ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11034X
NASA FMEA #: 05-6KF-2224 -1
SUBSYSTEM: FRCS
MDAC ID: 11034
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ] [ ] [ ]

*(ADD/DELETE)*

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:

THIS FAILURE CAUSES THE INABILITY TO OPEN THE VALVE, CAUSING LOSS OF VERNIERS THUS MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE A SECOND FAILURE IS REQUIRED TO CAUSE THE CREW TO CLOSE THE NORMALLY-OPEN VALVE IN THE FIRST PLACE.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11035X
NASA FMEA #: 05-6KF-2224-2
SUBSYSTEM: FRCS
MDAC ID: 11035
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
  ADEQUATE [ ]
  INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-278
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11036X
NASA FMEA #: 05-6KF-2257 -1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11036
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-279
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11038X
NASA FMEA #: 05-6KF-2257A-1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11038
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REdundancy Screens
A B C

NASA [ 3 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]

COMPARc [ /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11070X
NASA FMEA #: 05-6KF-2258 -1

SUBSYSTEM: FRCS
MDAC ID: 11070
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

| CRITICALITY | REDUNDANCY SCREENS | CIL |
| FLIGHT | HDW/FUNC | A | B | C |
| NASA | [ 3 /2R ] | [ P ] | [ P ] | [ P ] | [ ] * |
| IOA | [ 2 /2 ] | [ ] | [ ] | [ ] | [ X ] |
| COMPARE | [ N /N ] | [ N ] | [ N ] | [ N ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE CAUSES THE INABILITY TO OPEN THE ISOLATION VALVE, CAUSING LOSS OF VERNIERS THUS MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDRAWN THIS ISSUE, BECAUSE A SECOND FAILURE IS REQUIRED TO CAUSE THE CREW TO CLOSE THE NORMALLY-OPEN VALVE IN THE FIRST PLACE.

REPORT DATE 21 JULY 1988 C.18-281
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11077X
NASA FMEA #: 05-6KF-2280 -2

SUBSYSTEM: FRCS
MDAC ID: 11077
ITEM: CIRCUIT BREAKER
LEAD ANALYST: D. HARTMAN

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NASA [ 3 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S HIGHER CRIT WHICH IS DUE TO A CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988  C.18-282
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11081X
NASA FMEA #: 05-6KF-2026 -2
SUBSYSTEM: FRCS
MDAC ID: 11081
ITEM: HE OX & FU ISOL VLV A OR B SWITCH
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ N ]

CRITICALITY
FLIGHT
HDW/FUNC
REdundancy Screens
CIL
ITEM

NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N / ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
WITH VALVE CLOSED, A SHORT ACROSS CLOSE CONTACTS PREVENTS FURTHER VALVE MOVEMENT. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDRAW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (HE PRESS ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-283
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11082X
NASA FMEA #: 05-6KF-2026 -2

SUBSYSTEM: FRCS
MDAC ID: 11082
ITEM: HE OX & FU ISOL VLV A OR B SWITCH

LEAD ANALYST: D. HARTMAN

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IOA [ ] [ / ] [ ] [ ] [ ] [ ] [ X ]
COMPARISON [ ] [ N ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ ] [ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
WITH VALVE CLOSED, A SHORT ACROSS CLOSE CONTACTS PREVENTS FURTHER VALVE MOVEMENT. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (HE PRESS ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-284
ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11096X
NASA FMEA #: 05-6KF-2030 -2
SUBSYSTEM: FRCS
MDAC ID: 11096
ITEM: MANIFOLD 1, OX & FU ISOL VLV SWITCH 30
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11097
ITEM: MANIFOLD 1, OX & FU ISOL VLV SWITCH 30

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ N / ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-286
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11101X
NASA FMEA #: 05-6KF-2030 -2
NASDA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11101
ITEM: MANIFOLD 2, OX & FU ISOL VLV SWITCH 31

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADoquate [ ]
INADEbATE [ ]

REMARKS:
THIS FAILURE CAUSES LOSS INABILITY TO OPEN THE VALVE. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-287
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11102X
NASA FMEA #: 05-6KF-2030 -2
NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11102
ITEM: MANIFOLD 2, OX & FU ISOL VLV SWITCH 31

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE CAUSES LOSS INABILITY TO OPEN THE VALVE. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-288
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11106X
NASA FMEA #: 05-6KF-2030 -2
NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11106
ITEM: MANIFOLD 3, OX & FU ISOL VLV SWITCH 32

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE CAUSES INABILITY TO OPEN THE VALVE. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-289
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11107X
NASA FMEA #: 05-6KF-2030 -2
SUBSYSTEM: FRCS
MDAC ID: 11107
ITEM: MANIFOLD 3, OX & FU ISOL VLV SWITCH 32
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

THIS FAILURE CAUSES INABILITY TO OPEN THE VALVE. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDRAW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988  C.18-290
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-1111X
NASA FMEA #: 05-6KF-2030 -2

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11111
ITEM: MANIFOLD 4, OX & FU ISOL VLV SWITCH 33

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE CAUSES INABILITY TO OPEN TH VALVE. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VLV STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-291
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
NASA DATA: NASA FMEA #: 05-6KF-2030-2
ASSESSMENT ID: FRCS-11112X NASA DATA: BASELINE [ ]
MDAC ID: 11112 NEW [ N ]
ITEM: MANIFOLD 4, OX & FU ISOL VLV SWITCH 33

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE CAUSES INABILITY TO OPEN TH VALVE. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (MANIFOLD ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-292
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11115X
NASA FMEA #: 05-6KF-2035 -1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11115
ITEM: RJDFIB F1 MANIFOLD LOGIC SWITCH 7

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED
FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN
WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-293
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11119X
NASA FMEA #: 05-6KF-2035 -1

SUBSYSTEM: FRCS
MDAC ID: 11119
ITEM: RJDF1B F1 MANIFOLD LOGIC SWITCH 7

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11120X
NASA PMEA #: 05-6KF-2036 -1
BASELINE  [ ]
NEW     [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11120
ITEM: RJDFS1B F1 MANIFOLD DRIVER SWITCH 8

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY
FLIGHT HDW/FUNC

REDUNDANCY SCREENS
A   B   C

CIL ITEM

NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N / ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSS OF ALL REDUNDANT JETS CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-295
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11124X
NASA FMEA #: 05-6KF-2036 -1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11124
ITEM: RJDF1B F1 MANIFOLD DRIVER SWITCH 8

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ N / ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSS OF ALL REDUNDANT JETS CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-296
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11125X
NASA FMEA #: 05-6KF-2035 -1

SUBSYSTEM: FRCS
MDAC ID: 11125
ITEM: RJDFIA F2 MANIFOLD LOGIC SWITCH 7

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N / ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988   C.18-297
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11129X
NASA FMEA #: 05-6KF-2035 -1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11129
ITEM: RJDF1A F2 MANIFOLD LOGIC SWITCH 7

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-298
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11130X
NASA FMEA #: 05-6KF-2036-1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11130
ITEM: RJDF1A F2 MANIFOLD DRIVER SWITCH 8

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED
FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN
WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-299
## APPENDIX C
### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 1/29/88  
**ASSESSMENT ID:** FRCS-11134X  
**NASA FMEA #:** 05-6KF-2036 -1  

**BASELINE [ ] NEW [ N ]**

**NASA DATA:**

**BASELINE [ ]**  
**NEW [ N ]**

**SUBSYSTEM:** FRCS  
**MDAC ID:** 11134  
**ITEM:** RJDF1A F2 MANIFOLD DRIVER SWITCH 8

**LEAD ANALYST:** D. HARTMAN

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)

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* **CIL RETENTION RATIONALE:** (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**

LOSE CAPABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.

**FINAL RESOLUTION:** IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

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**REPORT DATE** 21 JULY 1988  
C.18-300
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11135X
NASA FMEA #: 05-6KF-2035 -1

SUBSYSTEM: FRCS
MDAC ID: 11135
ITEM: RJDF2A F3 MANIFOLD LOGIC SWITCH 5
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11139X
NASA FMEA #: 05-6KF-2035 -1

NASA DATA:
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11139
ITEM: RJDF2A F3 MANIFOLD DRIVER SWITCH 5

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
LOSE CAPABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-302
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-1140X
NASA FMEA #: 05-6KF-2036 -1

SUBSYSTEM: FRCS
MDAC ID: 11140
ITEM: RJDF2A F3 MANIFOLD DRIVER SWITCH 6

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-303
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11144X
NASA FMEA #: 05-6KF-2036 -1
BASELINE [ ]
NEW [ N ]

SUBSYSTEM: FRCS
MDAC ID: 11144
ITEM: RJDF2A F3 MANIFOLD DRIVER SWITCH 6

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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COMPARE [ N / ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-304
APPENDIX C
ASSESSMENT WORKSHEET

ASSessment Date: 1/29/88  ASSESSMENT ID: FRCS-11150X
NASA FMEA #: 05-6KF-2036-1

SUBSYSTEM: FRCS  MDAC ID: 11150
ITEM: RJDF2A F4/F5 MANIFOLD DRIVER SWITCH 13

LEAD ANALYST: D. HARTMAN

ASSessment:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)  ADEQUATE [ ]
                                           INADEQUATE [ ]

REMARKS:
LOSS OF ALL REDUNDANT JETS CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988    C.18-305
APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
NASA DATA: 
ASSESSMENT ID: FRCS-11154X  
NASA FMEA #: 05-6KF-2036 -1

SUBSYSTEM: FRCS  
MDAC ID: 11154  
ITEM: RJDF2A F4/F5 MANIFOLD DRIVER SWITCH 13

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS:  (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

LOSS OF ALL REDUNDANT JETS CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  NASA DATA:  
ASSESSMENT ID: FRCS-11196X  BASELINE [ ]  
NASA FMEA #: NONE  NEW [ ]  

SUBSYSTEM: FRCS  
MDAC ID: 11196  
ITEM: SIGNAL CONDITIONER OF3  

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS: SIGNAL CONDITIONER NOT ADDRESSED BY A FMEA. IOA RECOMMENDS ITS INCLUSION INTO A FMEA.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE THIS IS NOT A DEDICATED SIGNAL CONDITIONER AND IS COVERED BY THE GN&C SUBSYSTEM.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11202X
NASA FMEA #: NONE
SUBSYSTEM: FRCS
MDAC ID: 11202
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

Adequate [ ]

Inadequate [ ]

REMARKS:
DIODES NOT ADDRESSED BY A FMEA. IOA RECOMMENDS THEIR INCLUSION INTO A FMEA.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THESE DIODES ARE PART OF THE HELIUM PRESSURE ISOLATION VALVE AND ARE COVERED BY THE VALVE'S FMEA, AND BECAUSE THE ASSOCIATED HARDWARE CIL ISSUE (HE PRESS ISO VALVE STUCK CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-308
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11205X
NASA FMEA #: NONE
NASA DATA: BASELINE [ ]
NEW [ ]

SUBSYSTEM: FRCS
MDAC ID: 11205
ITEM: MICROSWITCH
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FLIGHT | HDW/FUNC | A | B | C |
| NASA | [ ] / | [ ] | [ ] | [ ] | [ ] |
| IOA | [ 3 /1R ] | [ P ] | [ P ] | [ P ] | [ ] |
| COMPARE | [ N /N ] | [ N ] | [ N ] | [ N ] | [ ] |

RECOMMENDATIONS: (If different from NASA)
[ ] / [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
MICROSWITCHES NOT ADDRESSED BY A FMEA. IOA RECOMMENDS THEIR INCLUSION INTO A FMEA.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THESE MICRO (OR LIMIT) SWITCHES ARE PART OF A VALVE AND ARE CONSIDERED TO BE COVERED BY THE VALVE'S FMEA, AND BECAUSE THE ASSOCIATED HARDWARE CIL ISSUE (VALVE STUCK CLOSED) HAS BEEN WITHDRAWN. HOWEVER, IOA MAINTAINS A CONCERN FOR COMPLETENESS AND RECOMMENDS THAT VALVE LIMIT OR MICROSWITCHES BE COVERED IN A SEPARATE FMEA.

REPORT DATE 21 JULY 1988 C.18-309
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11206X
NASA FMEA #: NONE
NASA DATA:
BASELINE [ ]
NEW [ ]
SUBSYSTEM: FRCS
MDAC ID: 11206
ITEM: MICROSWITCH
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
MICROSWITCHES NOT ADDRESSED BY A FMEA. IOA RECOMMENDS THEIR INCLUSION INTO A FMEA.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THESE MICRO (OR LIMIT) SWITCHES ARE PART OF A VALVE AND ARE CONSIDERED TO BE COVERED BY THE VALVE'S FMEA, AND BECAUSE THE ASSOCIATED HARDWARE CIL ISSUE (VALVE STUCK CLOSED) HAS BEEN WITHDRAWN. HOWEVER, IOA MAINTAINS A CONCERN FOR COMPLETENESS AND RECOMMENDS THAT VALVE LIMIT OR MICROSITCHES BE COVERED IN A SEPARATE FMEA.
APPENDIX C
ASSESSMENT WORKSHEET

ASSessment Date: 1/29/88  
Assessment ID: FRCS-11211X  
NASA FMEA #: 05-6KF-2252 -3  

SubSystem: FRCS  
MDAC ID: 11211  
Item: Diode  

Lead Analyst: D. Hartman  

Assessment:

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Recommendations: (If different from NASA)

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* CIL Retention Rationale: (If applicable)

Adequate [ ]

Inadequate [ ]

Remarks:

No differences in criticality. B screen should be "NA" because isolation of a leak is a standby function.

Final Resolution: IOA withdrew this issue, accepting NASA's more conservative interpretation of NSTS 22206 redundancy groundrules. IOA retains a concern of the low probability of the multiple failures occurring simultaneously. IOA will not dispute NASA's more conservative (failed) B screen.

Report Date 21 July 1988 C.18-311
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11212X
NASA FMEA #: 05-6KF-2252 -3

SUBSYSTEM: FRCS
MDAC ID: 11212
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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*(ADD/DELETE)*

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:
NO DIFFERENCES IN CRITICALITY. B SCREEN SHOULD BE "NA" BECAUSE ISOLATION OF A LEAK IS A STANDBY FUNCTION.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF THE MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-312
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11213X
NASA FMEA #: NONE
SUBSYSTEM: FRCS
MDAC ID: 11213
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSS OF ALL REDUNDANT JETS CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988  C.18-313
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  NASA DATA:
ASSESSMENT ID: FRCS-11214X  BASELINE [ ]
NASA FMEA #: NONE  NEW [ ]

SUBSYSTEM: FRCS
MDAC ID: 11214
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSS OF ALL REDUNDANT JETS CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988  C.18-314
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11215X
NASA FMEA #: NONE
SUBSYSTEM: FRCS
MDAC ID: 11215
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSS OF ALL REDUNDANT JETS CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11216X
NASA FMEA #: NONE
SUBSYSTEM: FRCS
MDAC ID: 11216
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSS OF ALL REDUNDANT JETS CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-316
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11217X
NASA FMEA #: NONE
SUBSYSTEM: FRCS
MDAC ID: 11217
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ] [ ] [ ]

(add/delete)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

LOSS OF ALL REDUNDANT JETS CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET CG LIMITS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE THE ASSOCIATED FRCS HARDWARE CIL ISSUE (THRUSTER FAILED CLOSED) HAS BEEN WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-317
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: FRCS-11221X
NASA FMEA #: 05-6KF-2258 -3

SUBSYSTEM: FRCS
MDAC ID: 11221
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE CAUSES THE INABILITY TO OPEN THE VALVE, CAUSING LOSS OF VERNIERS THUS MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE A SECOND FAILURE IS REQUIRED TO CAUSE THE CREW TO CLOSE THE NORMALLY-OPEN VALVE IN THE FIRST PLACE.

REPORT DATE 21 JULY 1988 C.18-318
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1323
NASA FMEA #: 05-6KA-2252-2

SUBSYSTEM: ARCS
MDAC ID: 1323
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADECATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-319
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1325
NASA FMEA #: 05-6KA-2252-2

SUBSYSTEM: ARCS
MDAC ID: 1325
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

*(ADD/DELETE)*

*CIL RETENTION RATIONALE: (If applicable)*

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
## APPENDIX C
### ASSESSMENT WORKSHEET

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(If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

### REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-321
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1335
NASA FMEA #: 05-6KA-2252-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1335
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[  / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

Adequate [ ]
Inadequate [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-322
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1478
NASA FMEA #: 05-6KA-2207-1

SUBSYSTEM: ARCS
MDAC ID: 1478
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

Adequate [ ]
Inadequate [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-323
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1479
NASA FMEA #: 05-6KA-2207-2
SUBSYSTEM: ARCS
MDAC ID: 1479
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-324
APPENDIX C
ASSESSMENT WORKSHEET

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**RECOMMENDATIONS:** (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

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**REMARKS:**

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988   C.18-325
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1481
NASA FMEA #: 05-6KA-2219-2
SUBSYSTEM: ARCS
MDAC ID: 1481
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988   C.18-326
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1484
NASA FMEA #: 05-6KA-2207-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1484
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1485
NASA FMEA #: 05-6KA-2207-2
SUBSYSTEM: ARCS
MDAC ID: 1485
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-328
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1486
NASA FMEA #: 05-6KA-2219-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1486
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-329
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1487
NASA FMEA #: 05-6KA-2219-2

SUBSYSTEM: ARCS
MDAC ID: 1487
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1496
NASA FMEA #: 05-6KA-2208-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1496
ITEM: DRIVER, HYBRID

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE STATUS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-331
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1498
NASA FMEA #: 05-6KA-2208-1
SUBSYSTEM: ARCS
MDAC ID: 1498
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

NASA FMEA #: 05-6KA-2208-1

ASSESSMENT:

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| IOA   | [ 3 /3 ]   | [ ]   | [ ]   | [ ]   | [ ]     |
| COMPARE| [ N /N ]  | [ N ] | [ N ] | [ N ] | [ N ]   |

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE STATUS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-332
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1500
NASA FMEA #: 05-6KA-2208-1

SUBSYSTEM: ARCS
MDAC ID: 1500
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE []
NEW [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE STATUS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-333
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1502
NASA FMEA #: 05-6KA-2208-1
SUBSYSTEM: ARCS
MDAC ID: 1502
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1502
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC
A B C

NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE STATUS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-334
### APPENDIX C
#### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 1/29/88
**ASSESSMENT ID:** ARCS-1504
**NASA FMEA #:** 05-6KA-2208-1

**NASA DATA:**
- BASELINE [ ]
- NEW [ X ]

**SUBSYSTEM:** ARCS
**MDAC ID:** 1504
**ITEM:** DRIVER, HYBRID

**LEAD ANALYST:** D. HARTMAN

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)

[ / ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

**REMARKS:**

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE STATUS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

**REPORT DATE** 21 JULY 1988  C.18-335
### APPENDIX C

#### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 1/29/88  
**ASSESSMENT ID:** ARCS-1506  
**NASA FMEA #:** 05-6KA-2208-1  
**SUBSYSTEM:** ARCS  
**MDAC ID:** 1506  
**ITEM:** DRIVER, HYBRID  
**LEAD ANALYST:** D. HARTMAN  

#### ASSESSMENT:

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**RECOMMENDATIONS:** (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

- ADEQUATE [ ]
- INADEQUATE [ ]

**REMARKS:**

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE STATUS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

**FINAL RESOLUTION:** IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

**REPORT DATE** 21 JULY 1988  
**C.18-336**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1508
NASA FMEA #: 05-6KA-2208-1

SUBSYSTEM: ARCS
MDAC ID: 1508
ITEM: DRIVER, HYBRID

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE STATUS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-337
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1510
NASA FMEA #: 05-6KA-2208-1
SUBSYSTEM: ARCS
MDAC ID: 1510
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE STATUS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-338
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1542
NASA FMEA #: 05-6KA-2136-2

SUBSYSTEM: ARCS
MDAC ID: 1542
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

Adequate [ ]

Inadequate [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES INABILITY TO CLOSE THE 1/2 VALVE. THIS PREVENTS CROSSFEED CAPABILITY THUS LOSS OF MISSION OPERATIONS. INABILITY TO CROSSFEED MAY CAUSE INCOMPLETE OMS ABORT DUMP.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-339
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1544
NASA FMEA #: 05-6KA-2136-2
SUBSYSTEM: ARCS
MDAC ID: 1544
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

CRITICALITY
REDUNDANCY SCREENS
FLIGHT
HDW/FUNC A B C

NASA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ] *
IOA [ 3 /2R ] [ P ] [ P ] [ P ] [ X ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES INABILITY TO CLOSE THE 1/2 VALVE. THIS PREVENTS CROSSFEED CAPABILITY THUS LOSS OF MISSION OPERATIONS. INABILITY TO CROSSFEED MAY CAUSE INCOMPLETE OMS ABORT DUMP.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-340
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1545
NASA FMEA #: 05-6KA-2126-I

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1545
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO CLOSE TANK ISOLATION 1/2 VALVE. THIS PREVENTS CROSSFEED OPERATIONS THUS LOSS OF MISSION. INABILITY TO CROSSFEED DURING AN RTLS/TAL ABORT MAY CAUSE INCOMPLETE OMS ABORT DUMP.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE THIS FAILURE PREVENTS CROSSFEEDING TO MANIFOLDS 1 & 2, BUT NOT TO MANIFOLDS 3, 4, & 5.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1546
NASA FMEA #: 05-6KA-2126-2
SUBSYSTEM: ARCS
MDAC ID: 1546
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
NASA DATA:  
NASA FMEA #: 05-6KA-2126-1  
BASELINE [ ]  
NEW [ X ]  

SUBSYSTEM: ARCS  
MDAC ID: 1547  
ITEM: RELAY  

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO CLOSE VALVE. THIS PREVENTS CROSSFEED OPERATIONS THUS LOSS OF MISSION. INABILITY TO CROSSFEED DURING AN RTLS/TAL ABORT MAY CAUSE INCOMPLETE OMS ABORT DUMP.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE THIS FAILURE PREVENTS CROSSFEEDING TO MANIFOLDS 1 & 2, BUT NOT TO MANIFOLDS 3, 4, & 5.

REPORT DATE 21 JULY 1988  
C.18-343
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1548
NASA FMEA #: 05-6KA-2126-2
SUBSYSTEM: ARCS
MDAC ID: 1548
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

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| IOA  | [ 3 /1R ] | [ P ] | [ F ] | [ P ] | [ X ] |

COMPARE [ / ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-344
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1550
NASA FMEA #: 05-6KA-2137-2

SUBSYSTEM: ARCS
MDAC ID: 1550
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES THE INABILITY TO CLOSE 3/4/5 VALVE. THIS PREVENTS CROSSFEED CAPABILITY THUS LOSS OF MISSION OPERATIONS. INABILITY TO CROSSFEED DURING RTLS/TAL MAY CAUSE INCOMPLETE OMS ABORT DUMP. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1551
NASA FMEA #: 05-6KA-2127-1
SUBSYSTEM: ARCS
MDAC ID: 1551
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

RECOMMENDATIONS: (If different from NASA)

CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C ITEM
NASA [ 2 /2 ] [ ] [ ] [ ] [ ] [ X ] *
IOA [ 2 /2 ] [ ] [ ] [ ] [ ] [ X ]
COMPARE [ / ] [ ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
DISAGREE WITH BOTH. INABILITY TO CLOSE VALVE PREVENTS ISOLATION OF A LEAK.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA HAD MISSED THE FACT THAT NASA HAD ADDED A 1/1 ABORT TO THIS FMEA.

REPORT DATE 21 JULY 1988 C.18-346
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1552
NASA FMEA #: 05-6KA-2127-2
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1552
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE WILL CLOSE THE VALVE AND CAUSE INABILITY TO RE-OPEN IT. REDUNDANCY PROVIDED BY SECOND LEG OF 3/4/5 AND CROSSFEED LEG. LOSS OF ALL REDUNDANCY PREVENTS PROPELLANTS TO BE EXPELLED TO MEET LANDING WEIGHT CONSTRAINTS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-347
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
NASA DATA:
ASSESSMENT ID: ARCS-1554 BASELINE [ ]
NASA FMEA #: 05-6KA-2137-2 NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1554
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| PLIGHT | HDW/FUNC | A | B | C |
| NASA | [ 2 /1R ] | [ P ] | [ F ] | [ P ] | [ X ] * |
| IOA | [ 2 /2 ] | [ ] | [ ] | [ ] | [ X ] |
| COMPARE | [ /N ] | [ N ] | [ N ] | [ N ] | [ ] |

RECOMMENDATIONS: (If different from NASA)
[ ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES THE INABILITY TO CLOSE 3/4/5 VALVE. THIS PREVENTS CROSSFEED CAPABILITY THUS LOSS OF MISSION OPERATIONS. INABILITY TO CROSSFEED DURING RTLS/TAL MAY CAUSE INCOMPLETE OMS ABORT DUMP. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-348
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1555
NASA FMEA #: 05-6KA-2127-1
SUBSYSTEM: ARCS
MDAC ID: 1555
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1555
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
DISAGREE WITH BOTH. INABILITY TO CLOSE VALVE PREVENTS ISOLATION OF A LEAK.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA HAD MISSED THE FACT THAT NASA HAD ADDED A 1/1 ABORT TO THIS FMEA.

REPORT DATE 21 JULY 1988  C.18-349
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1556
NASA FMEA #: 05-6KA-2127-2

SUBSYSTEM: ARCS
MDAC ID: 1556
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE WILL CLOSE THE VALVE AND CAUSE INABILITY TO RE-OPEN IT. REDUNDANCY PROVIDED BY SECOND LEG OF 3/4/5 AND CROSSFEED LEG. LOSS OF ALL REDUNDANCY PREVENTS PROPELLANTS TO BE EXPELLED TO MEET LANDING WEIGHT CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-350
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1557
NASA FMEA #: 05-6KA-2133-1
SUBSYSTEM: ARCS
MDAC ID: 1557
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. FAILURE CAUSES INABILITY TO CROSSFEED WITH THE GPC. REDUNDANCY PROVIDED WITH SWITCH AND OTHER GPC COMMANDS. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO CROSSFEED, THUS LOSS OF MISSION.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1558
NASA FMEA #: 05-6KA-2133-2
SUBSYSTEM: ARCS
MDAC ID: 1558
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. LOSE CAPABILITY TO CLOSE THE VALVE TO ISOLATE A THRUSTER LEAK. NOTE: NASA FMEA INCORRECTLY IDENTIFIES RELAY 56V76A116K44. IT SHOULD BE 56V76A116K46.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-352
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1559
NASA FMEA #: 05-6KA-2133-1

SUBSYSTEM: ARCS
MDAC ID: 1559
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. FAILURE CAUSES INABILITY TO CROSSFEED WITH THE GPC. REDUNDANCY PROVIDED WITH SWITCH AND OTHER GPC COMMANDS. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO CROSSFEED, THUS LOSS OF MISSION.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-353
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1560
NASA FMEA #: 05-6KA-2133-2

SUBSYSTEM: ARCS
MDAC ID: 1560
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

<p>| CRITICALITY | REDUNDANCY SCREENS | CIL ITEM |</p>
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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. LOSE CAPABILITY TO CLOSE THE VALVE TO ISOLATE A THRUSTER LEAK.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1562
NASA FMEA #: 05-6KA-2132-2

SUBSYSTEM: ARCS
MDAC ID: 1562
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-355
APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: ARCS-1564  
NASA FMEA #: 05-6KA-2132-2  

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: ARCS  
MDAC ID: 1564  
ITEM: RELAY  

LEAD ANALYST: D. HARTMAN  

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)  
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* CIL RETENTION RATIONALE: (If applicable)  
ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:  
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1565
NASA FMEA #: 05-6KA-2133-1

SUBSYSTEM: ARCS
MDAC ID: 1565
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS
FLIGHT HDW/FUNC A B C

NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ X ] *
IOA [ 3 /2R ] [ P ] [ F ] [ P ] [ X ]
COMPARE [ /N ] [ ] [ N ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

Adequate [ ]
Inadequate [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. FAILURE CAUSES INABILITY TO CROSSFEED WITH THE GPC. REDUNDANCY PROVIDED WITH SWITCH AND OTHER GPC COMMANDS. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO CROSSFEED, THUS LOSS OF MISSION.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1566
NASA FMEA #: 05-6KA-2133-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1566
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. LOSE CAPABILITY TO CLOSE THE VALVE TO ISOLATE A THRUSTER LEAK.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-358
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1567
NASA FMEA #: 05-6KA-2133-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1567
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. FAILURE CAUSES INABILITY TO CROSSFEED WITH THE GPC. REDUNDANCY PROVIDED WITH SWITCH AND OTHER GPC COMMANDS. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO CROSSFEED, THUS LOSS OF MISSION.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-359
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
NASA DATA:
ASSESSMENT ID: ARCS-1568
NASA FMEA #: 05-6KA-2133-2
SUBSYSTEM: ARCS
MDAC ID: 1568
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. LOSE CAPABILITY TO CLOSE THE VALVE TO ISOLATE A THRUSTER LEAK.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-360
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1570
NASA FMEA #: 05-6KA-2132-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1570
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-361
ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1572
NASA FMEA #: 05-6KA-2132-2

SUBSYSTEM: ARCS
MDAC ID: 1572
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1574
NASA FMEA #: 05-6KA-2128A-2
SUBSYSTEM: ARCS
MDAC ID: 1574
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REDUNDANCY SCREENS
A B C

CIL ITEM

NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ] [ ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. WITH RELAY FAILED HIGH, LOSE CAPABILITY TO CLOSE VALVE. THIS, COUPLED WITH THE LOSS OF ALL HARDWARE REDUNDANCY, MAY PREVENT ISOLATION OF A THRUSTER LEAK.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1576
NASA FMEA #: 05-6KA-2128-2
NASA DATA: BASELINE [ ] NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1576
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ] INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE WILL CLOSE THE VALVE AND CAUSE INABILITY TO RE-OPEN IT CAUSING LOSS OF JETS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY PREVENTS PROPELLANTS TO BE EXPELLED TO MEET LANDING WEIGHT CONSTRAINTS. LOSS OF MANIFOLD THRUSTERS DURING RTLS/TAL ABORT COULD RESULT IN INABILITY TO COMPLETE A PROPELLANT DUMP (1/1 ABORT)

FINAL RESOLUTION: IOA WITHDRAW THIS ISSUE, BECAUSE IT WAS DEPENDENT ON A HARDWARE ISSUE (MANIFOLD ISOLATION VALVE FAILED CLOSE), WHICH WAS WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-364
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1578
NASA FMEA #: 05-6KA-2128A-2
NASA ID:
SUBSYSTEM: ARCS
MDAC ID: 1578
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. WITH RELAY FAILED HIGH, LOSE CAPABILITY TO CLOSE VALVE. THIS, COUPLED WITH THE LOSS OF ALL HARDWARE REDUNDANCY, MAY PREVENT ISOLATION OF A THRUSTER LEAK.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1580
NASA FMEA #: 05-6KA-2128-2
NASA DATA: BASELINE [ ] NEW [ X ]
SUBSYSTEM: ARCS
MDAC ID: 1580
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILRE WILL CLOSE THE VALVE AND CAUSE INABILITY TO RE-OPEN IT CAUSING LOSS OF JETS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY PREVENTS PROPELLANTS TO BE EXPPELLED TO MEET LANDING WEIGHT CONSTRAINTS. LOSS OF MANIFOLD THRUSTERS DURING RTLS/TAL ABORT COULD RESULT IN INABILITY TO COMPLETE A PROPELLANT DUMP (1/1 ABORT)

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IT WAS DEPENDENT ON A HARDWARE ISSUE (MANIFOLD ISOLATION VALVE FAILED CLOSE), WHICH WAS WITHDRAWN.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1582
NASA FMEA #: 05-6KA-2128A-2

SUBSYSTEM: ARCS
MDAC ID: 1582
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. WITH RELAY FAILED HIGH, LOSE CAPABILITY TO CLOSE VALVE. THIS, COUPLED WITH THE LOSS OF ALL HARDWARE REDUNDANCY, MAY PREVENT ISOLATION OF A THRUSTER LEAK.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1584
NASA FMEA #: 05-6KA-2128-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1584
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE WILL CLOSE THE VALVE AND CAUSE INABILITY TO RE-OPEN IT CAUSING LOSS OF JETS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY PREVENTS PROPELLANTS TO BE EXPULLED TO MEET LANDING WEIGHT CONSTRAINTS. LOSS OF MANIFOLD THRUSTERS DURING RTLS/TAL ABORT COULD RESULT IN INABILITY TO COMPLETE A PROPELLANT DUMP (1/1 ABORT)

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IT WAS DEPENDENT ON A HARDWARE ISSUE (MANIFOLD ISOLATION VALVE FAILED CLOSE), WHICH WAS WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-368
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1586
NASA FMEA #: 05-6KA-2128-2
SUBSYSTEM: ARCS
MDAC ID: 1586
ITEM: RELAY
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE WILL CLOSE THE VALVE AND CAUSE INABILITY TO RE-OPEN IT CAUSING LOSS OF JETS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY PREVENTS PROPELLANTS TO BE EXPELLED TO MEET LANDING WEIGHT CONSTRAINTS. LOSS OF MANIFOLD THRUSTERS DURING RTLS/TAL ABORT COULD RESULT IN INABILITY TO COMPLETE A PROPELLANT DUMP (1/1 ABORT). FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IT WAS DEPENDENT ON A HARDWARE ISSUE (MANIFOLD ISOLATION VALVE FAILED CLOSE), WHICH WAS WITHDRAWN.

REPORT DATE 21 JULY 1988 C.18-369
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1588
NASA FMEA #: 05-6KA-2128A-2

SUBSYSTEM: ARCS
MDAC ID: 1588
ITEM: RELAY

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. WITH RELAY FAILED HIGH, LOSE ABILITY TO CLOSE VALVE. THIS, COUPLED WITH THE LOSS OF ALL HARDWARE REDUNDANCY, MAY PREVENT ISOLATION OF A THRUSTER LEAK.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-370
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1589
NASA FMEA #: 05-6KA-2081-1

NASA DATA: BASELINE [ ] NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1589
ITEM: RESISTOR, 12K 1/4W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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ADOPT/DELETE

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE NASA CONSIDERED THE GPC SOFTWARE'S USE OF THE MEASUREMENT PROVIDED THROUGH THIS RESISTOR. THIS LED TO NASA ASSIGNING A 1/1 ABORT CRITICALITY, WHICH PUTS THIS FMEA ON THE CIL LIST.

REPORT DATE 21 JULY 1988 C.18-371
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1591
NASA FMEA #: 05-6KA-2081-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1591
ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REduNDANCY SCREENS
A
B
C

CIL
ITEM

NASA [ 3 /3 ] [ ] [ ] [ ] [ ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ] [ ]
COMPARE [ / ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE NASA CONSIDERED THE GPC SOFTWARE'S USE OF THE MEASUREMENT PROVIDED THROUGH THIS RESISTOR. THIS LED TO NASA ASSIGNING A 1/1 ABORT CRITICALITY, WHICH PUTS THIS FMEA ON THE CIL LIST.

REPORT DATE 21 JULY 1988 C.18-372
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1593
NASA FMEA #: 05-6KA-2083-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1593
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-373
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  NASA DATA:
ASSESSMENT ID: ARCS-1595  BASELINE [ ]
NASA FMEA #: 05-6KA-2083-1  NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1595
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE
LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY
PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE
VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE
CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-374
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1599
NASA FMEA #: 05-6KA-2083-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1599
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1603
NASA FMEA #: 05-6KA-2081-1
SUBSYSTEM: ARCS
MDAC ID: 1603
ITEM: RESISTOR, 12K 1/4W
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE NASA CONSIDERED THE GPC SOFTWARE'S USE OF THE MEASUREMENT PROVIDED THROUGH THIS RESISTOR. THIS LED TO NASA ASSIGNING A 1/1 ABORT CRITICALITY, WHICH PUTS THIS FMEA ON THE CIL LIST.

REPORT DATE 21 JULY 1988 C.18-376
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1604
NASA FMEA #: 05-6KA-2081-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1604
ITEM: RESISTOR, 12K 1/4W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO DIFFERENCES, EXCEPT FOR NASA'S 1/1 ABORT CRITICALITY.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE NASA CONSIDERED THE GPC SOFTWARE'S USE OF THE MEASUREMENT PROVIDED THROUGH THIS RESISTOR. THIS LED TO NASA ASSIGNING A 1/1 ABORT CRITICALITY, WHICH PUTS THIS FMEA ON THE CIL LIST.

REPORT DATE 21 JULY 1988 C.18-377
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1605
NASA FMEA #: 05-6KA-2081-1

SUBSYSTEM: ARCS
MDAC ID: 1605
ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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IOA [3/3] [ ] [ ] [ ] [ ] [ ]

COMPARE [ / ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE NASA CONSIDERED THE GPC SOFTWARE'S USE OF THE MEASUREMENT PROVIDED THROUGH THIS RESISTOR. THIS LED TO NASA ASSIGNING A 1/1 ABORT CRITICALITY, WHICH PUTS THIS FMEA ON THE CIL LIST.

REPORT DATE 21 JULY 1988 C.18-378
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1607
NASA FMEA #: 05-6KA-2086-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1607
ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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*CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE NASA CONSIDERED THE GPC SOFTWARE'S USE OF THE MEASUREMENT PROVIDED THROUGH THIS RESISTOR. THIS LED TO NASA ASSIGNING A 1/1 ABORT CRITICALITY, WHICH PUTS THIS FMEA ON THE CIL LIST.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1609
NASA FMEA #: 05-6KA-2084-1
NASA DATA: BASELINE [ ] NEW [ X ]
SUBSYSTEM: ARCS
MDAC ID: 1609
ITEM: RESISTOR, 1.2K 2W
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-380
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1611
NASA FMEA #: 05-6KA-2086-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1611
ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE NASA CONSIDERED THE GPC SOFTWARE'S USE OF THE MEASUREMENT PROVIDED THROUGH THIS RESISTOR. THIS LED TO NASA ASSIGNING A 1/1 ABORT CRITICALITY, WHICH PUTS THIS FMEA ON THE CIL LIST.

REPORT DATE 21 JULY 1988 C.18-381
### APPENDIX C

**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 1/29/88  
**ASSESSMENT ID:** ARCS-1619  
**NASA FMEA #:** 05-6KA-2086-1  

**NASA DATA:**  
- BASELINE [ ]  
- NEW [ X ]  

**SUBSYSTEM:** ARCS  
**MDAC ID:** 1619  
**ITEM:** RESISTOR, 5.1K 1/4W  

**LEAD ANALYST:** D. HARTMAN

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)  
[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)  
ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**  
THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE NASA CONSIDERED THE GPC SOFTWARE'S USE OF THE MEASUREMENT PROVIDED THROUGH THIS RESISTOR. THIS LED TO NASA ASSIGNING A 1/1 ABORT CRITICALITY, WHICH PUTS THIS FMEA ON THE CIL LIST.

**REPORT DATE** 21 JULY 1988  
C.18-382
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1621
NASA FMEA #: 05-6KA-2084-1

SUBSYSTEM: ARCS
MDAC ID: 1621
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1623
NASA FMEA #: 05-6KA-2086-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1623
ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REDUNDANCY SCREENS
A B C

CIL
ITEM

NASA [ 3 /3 ] [ ] [ ] [ ] [ ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ] [ ]
COMPARE [ / ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE NASA CONSIDERED THE GPC SOFTWARE'S USE OF THE MEASUREMENT PROVIDED THROUGH THIS RESISTOR. THIS LED TO NASA ASSIGNING A 1/1 ABORT CRITICALITY, WHICH PUTS THIS FMEA ON THE CIL LIST.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1624
NASA FMEA #: 05-6KA-2086-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1624
ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO DIFFERENCES, EXCEPT FOR NASA'S 1/1 ABORT CRITICALITY.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE NASA CONSIDERED THE GPC SOFTWARE'S USE OF THE MEASUREMENT PROVIDED THROUGH THIS RESISTOR. THIS LED TO NASA ASSIGNING A 1/1 ABORT CRITICALITY, WHICH PUTS THIS FMEA ON THE CIL LIST.

REPORT DATE 21 JULY 1988 C.18-385
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1625
NASA FMEA #: 05-6KA-2084-1

SUBSYSTEM: ARCS
MDAC ID: 1625
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REDUNDANCY SCREENS
A   B   C

CIL
ITEM

NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-386
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1627
NASA FMEA #: 05-6KA-2086-1
SUBSYSTEM: ARCS
MDAC ID: 1627
ITEM: RESISTOR, 5.1K 1/4W
LEAD ANALYST: D. HARTMAN

Asessment:

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Recommendations: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL Retention Rationale: (If applicable)

Adequate [ ]
Inadequate [ ]

Remarks:

This failure may cause loss of accurate indication of the valve position. Redundancy provided. Loss of all redundancy may lead to falsely failing the valve closed, possibly effecting mission operations.

Final Resolution: IOA withdrew this issue, because NASA considered the GPC software's use of the measurement provided through this resistor. This led to NASA assigning a 1/1 abort criticality, which puts this FMEA on the CIL list.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1631
NASA FMEA #: 05-6KA-2086-1

SUBSYSTEM: ARCS
MDAC ID: 1631
ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDRAW THIS ISSUE, BECAUSE NASA CONSIDERED THE GPC SOFTWARE'S USE OF THE MEASUREMENT PROVIDED THROUGH THIS RESISTOR. THIS LED TO NASA ASSIGNING A 1/1 ABDOT CRITICALITY, WHICH PUTS THIS FMEA ON THE CIL LIST.

REPORT DATE 21 JULY 1988 C.18-388
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1633
NASA FMEA #: 05-6KA-2086-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1633
ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE NASA CONSIDERED THE GPC SOFTWARE'S USE OF THE MEASUREMENT PROVIDED THROUGH THIS RESISTOR. THIS LED TO NASA ASSIGNING A 1/1 ABORT CRITICALITY, WHICH PUTS THIS FMEA ON THE CIL LIST.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1635
NASA FMEA #: 05-6KA-2086-1
NASA DATA:

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SUBSYSTEM: ARCS
MDAC ID: 1635
ITEM: RESISTOR, 5.1K 1/4W
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

 Adequate [ ]
 Inadequate [ ]

REMARKS:

This failure may cause loss of accurate indication of the valve position. Redundancy provided. Loss of all redundancy may lead to falsely failing the valve closed, possibly effecting mission operations.

FINAL RESOLUTION: IOA withdrew this issue, because NASA considered the GPC software's use of the measurement provided through this resistor. This led to NASA assigning a 1/1 abort criticality, which puts this FMEA on the CIL list.

REPORT DATE 21 JULY 1988 C.18-390
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1637
NASA FMEA #: 05-6KA-2084-1

SUBSYSTEM: ARCS
MDAC ID: 1637
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]

COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ] [ ]

(RECOMMENDATIONS)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1643
NASA FMEA #: 05-6KA-2103-1
SUBSYSTEM: ARCS
MDAC ID: 1643
ITEM: RESISTOR, 1.2K 2W
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDRAWN THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-392
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1645
NASA FMEA #: 05-6KA-2103-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1645
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1649
NASA FMEA #: 05-6KA-2103-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1649
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE
LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY
PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE
VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE
CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-394
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1661
NASA PMEA #: 05-6KA-2103-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1661
ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

ADD/DELETE

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1663
NASA FMEA #: 05-6KA-2103-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1663
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FLIGHT HDW/FUNC | A | B | C |
| NASA [ 2 /1R ] | [ P ] | [ F ] | [ P ] | [ X ] *
| IOA [ 3 /3 ] | [ ] | [ ] | [ ] | [ ]
| COMPARE [ N /N ] | [ N ] | [ N ] | [ N ] | [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FALL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-396
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1667
NASA FMEA #: 05-6KA-2103-1

NASA DATA:
BASELINE [ ]
NEW [ x ]

SUBSYSTEM: ARCS
MDAC ID: 1667
ITEM: RESISTOR, 1.2K 2W
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-397
**APPENDIX C**

**ASSESSMENT WORKSHEET**

ASSESSMENT DATE: 1/29/88

ASSESSMENT ID: ARCS-1683

NASA FMEA #: 05-6KA-2089-1

SUBSYSTEM: ARCS

MDAC ID: 1683

ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

**REMARKS:**

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-398
### APPENDIX C
**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 1/29/88  
**ASSESSMENT ID:** ARCS-1697  
**NASA FMEA #:** 05-6KA-2089-1  

**NASA DATA:**  
- **BASELINE** [ ]  
- **NEW** [ X ]

**SUBSYSTEM:** ARCS  
**MDAC ID:** 1697  
**ITEM:** RESISTOR, 1.2K 2W  
**LEAD ANALYST:** D. HARTMAN  

**ASSESSMENT:**

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**RECOMMENDATIONS:**  
(If different from NASA)  
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* **CIL RETENTION RATIONALE:**  
(If applicable)  
Adequate [ ]  
Inadequate [ ]

**REMARKS:**  
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.  
**FINAL RESOLUTION:** IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1711
NASA FMEA #: 05-6KA-2089-1

SUBSYSTEM: ARCS
MDAC ID: 1711
ITEM: RESISTOR, 1.2K 2W
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
Adequate [ ]
Inadequate [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-400
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1725
NASA FMEA #: 05-6KA-2089-1

SUBSYSTEM: ARCS
MDAC ID: 1725
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988   C.18-401
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1858
NASA FMEA #: 05-6KA-2154-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1858
ITEM: L/R OX & FU TK ISOL VLV 3/4/5 A OR B SWITCH TALKBACK

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-402
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1859
NASA FMEA #: 05-6KA-2155-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1859
ITEM: MANIFOLD 1, 2, 3, 4, 5, L/R OX & FU VLV SWITCH
TALKBACK

LEAD ANALYST: D. HARTMAN
ASSESSMENT:

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM
NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /1R ] [ P ] [ P ] [ P ] [ ]
COMPARE [ N / ] [ ] [ N ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE
LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY
PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE
VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE
CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1872
NASA FMEA #: 05-6KA-2179-2

SUBSYSTEM: ARCS
MDAC ID: 1872
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS RPC INADVERTENTLY OPERATING ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-404
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  NASA DATA:  BASELINE [ ]
ASSESSMENT ID: ARCS-1874  NEW [ X ]
NASA FMEA #: 05-6KA-2179-2

SUBSYSTEM: ARCS
MDAC ID: 1874
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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*CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS RPC INADVERTENTLY OPERATING ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-405
**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 1/29/88  
**NASA DATA:**  
**ASSESSMENT ID:** ARCS-1880  
**NASA FMEA #:** 05-6KA-2179-2  
**SUBSYSTEM:** ARCS  
**MDAC ID:** 1880  
**ITEM:** CONTROLLER, REMOTE POWER  
**LEAD ANALYST:** D. HARTMAN

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**RECOMMENDATIONS:** (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
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**REMARKS:**

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS RPC INADVERTENTLY OPERATING ALONE HAS NO EFFECT.  
**FINAL RESOLUTION:** IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1884
NASA FMEA #: 05-6KA-2179-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1884
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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* CIL RETENTION RATIONALE: (If applicable)


REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS RPC INADVERTENTLY OPERATING ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1889
NASA FMEA #: 05-6KA-2179-2
NASA DATA:
BASELINE [ ]
NEW [ X ]
SUBSYSTEM: ARCS
MDAC ID: 1889
ITEM: CONTROLLER, REMOTE POWER
LEAD ANALYST: D. HARTMAN

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS RPC INADVERTENTLY OPERATING ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1891
NASA FMEA #: 05-6KA-2179-2
SUBSYSTEM: ARCS
MDAC ID: 1891
ITEM: CONTROLLER, REMOTE POWER
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS RPC INADVERTENTLY OPERATING ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988  C.18-409
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1896
NASA FMEA #: 05-6KA-2179-2
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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS RPC INADVERTENTLY OPERATING ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1900
NASA FMEA #: 05-6KA-2179-2

NASADA (
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1900
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS RPC INADVERTENTLY OPERATING ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDRAW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-411
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1904
NASA FMEA #: 05-6KA-2184-2

NASA DATA:
BASELINE [   ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1904
ITEM: CONTROLLER, REMOTE POWER
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
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REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS RPC INADVERTENTLY OPERATING ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-412
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1906
NASA FMEA #: 05-6KA-2184-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1906
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS RPC INADVERTENTLY OPERATING ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-413
**APPENDIX C**

**ASSESSMENT WORKSHEET**

ASSESSMENT DATE: 1/29/88

ASSESSMENT ID: ARCS-1980

NASA FMEA #: 05-6KA-2214-2

SUBSYSTEM: ARCS

MDAC ID: 1980

ITEM: DRIVER, HYBRID

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS DRIVER OPERATING ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1982
NASA FMEA #: 05-6KA-2214-2
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1982
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS DRIVER OPERATING ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988  C.18-415
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1984
NASA FMEA #: 05-6KA-2214-2
SUBSYSTEM: ARCS
MDAC ID: 1984
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

NASA DATA:
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NEW [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS DRIVER OPERATING ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1986
NASA FMEA #: 05-6KA-2214-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1986
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS DRIVER OPERATING ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-417
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1988
NASA FMEA #: 05-6KA-2214-2
SUBSYSTEM: ARCS
MDAC ID: 1988
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS DRIVER OPERATING ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988  C.18-418
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1990
NASA FMEA #: 05-6KA-2214-2
SUBSYSTEM: ARCS
MDAC ID: 1990
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

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| IOA [ 3 /2R ] | [ P ] | [ P ] | [ P ] | [ ] |

COMPARE [ /N ] [ ] [ N ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS DRIVER OPERATING ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1992
NASA FMEA #: 05-6KA-2214-2

SUBSYSTEM: ARCS
MDAC ID: 1992
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:
CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 3 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /2R ] [ P ] [ P ] [ P ] [ ]

COMPARE [ /N ] [ ] [ N ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS DRIVER OPERATING ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988 C.18-420
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1994
NASA FMEA #: 05-6KA-2214-2

SUBSYSTEM: ARCS
MDAC ID: 1994
ITEM: DRIVER, HYBRID

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
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REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS DRIVER OPERATING ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-1996
NASA FMEA #: 05-6KA-2220-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 1996
ITEM: DRIVER, HYBRID

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988  C.18-422
## APPENDIX C
### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 1/29/88  
**ASSESSMENT ID:** ARCS-1998  
**NASA FMEA #:** 05-6KA-2220-2  
**SUBSYSTEM:** ARCS  
**MDAC ID:** 1998  
**ITEM:** DRIVER, HYBRID  
**LEAD ANALYST:** D. HARTMAN

### ASSESSMENT:

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### RECOMMENDATIONS:

(If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

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\text{Adequate} \quad [ ] \quad \text{Inadequate} \quad [ ]
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### REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.
ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-2000
NASA FMEA #: 05-6KA-2185-2
SUBSYSTEM: ARCS
MDAC ID: 2000
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

NASA DATA:
Baseline [ ]
New [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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*(ADD/DELETE)*

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS DRIVER INADVERTENTLY OPERATING ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEously.
APPENDIX C  
ASSESSMENT WORKSHEET  

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: ARCS-2002  
NASA FMEA #: 05-6KA-2185-2  

NASA DATA:  
BASELINE [ ]  
NEW [ X ]  

SUBSYSTEM: ARCS  
MDAC ID: 2002  
ITEM: DRIVER, HYBRID  

LEAD ANALYST: D. HARTMAN  

ASSESSMENT:  

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RECOMMENDATIONS: (If different from NASA)  
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* CIL RETENTION RATIONALE: (If applicable)  
ADEQUATE [ ]  
INADEQUATE [ ]  

REMARKS:  
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS DRIVER INADVERTENTLY OPERATING ALONE HAS NO EFFECT.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES. IOA RETAINS A CONCERN OF THE LOW PROBABILITY OF MULTIPLE FAILURES OCCURRING SIMULTANEOUSLY.

REPORT DATE 21 JULY 1988    C.18-425
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-2334
NASA FMEA #: NONE
NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: ARCS
MDAC ID: 2334
ITEM: THERMOSTAT, PRIMARY THRUSTERS, +X AXIS

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
PROPELLANT IN JET MAY FREEZE. IF JET IS REQUIRED, ORBITER ORIENT ITSELF TOWARD SOLAR HEATING. THIS MAY AFFECT MISSION OPERATIONS. IOA RECOMMENDS THE PRIMARY THRUSTER THERMOSTATS BE INCORPORATED INTO A FMEA.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE THESE THERMOSTATS ARE WITHIN THE PRIMARY THRUSTER ASSEMBLY, AND SO IS CONSIDERED TO BE COVERED BY THAT HARDWARE THRUSTER'S FMEA. IOA MAINTAINS A CONCERN THAT THIS ITEM SHOULD BE COVERED SEPARATELY.

REPORT DATE 21 JULY 1988 C.18-426
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-2336
NASA FMEA #: NONE
SUBSYSTEM: ARCS
MDAC ID: 2336
ITEM: THERMOSTAT, PRIMARY THRUSTERS, Y AXIS
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
PROPELLANT IN JET MAY FREEZE. IF JET IS REQUIRED, ORBITER ORIENT ITSELF TOWARD SOLAR HEATING. THIS MAY AFFECT MISSION OPERATIONS. IOA RECOMMENDS THE PRIMARY THRUSTER THERMOSTATS BE INCORPORATED INTO A FMEA.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE THESE THERMOSTATS ARE WITHIN THE PRIMARY THRUSTER ASSEMBLY, AND SO IS CONSIDERED TO BE COVERED BY THAT HARDWARE THRUSTER'S FMEA. IOA MAINTAINS A CONCERN THAT THIS ITEM SHOULD BE COVERED SEPARATELY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-2338
NASA FMEA #: NONE
NASA FMEA #: NONE
SUBSYSTEM: ARCS
MDAC ID: 2338
ITEM: THERMOSTAT, PRIMARY THRUSTERS, Z AXIS
LEAD ANALYST: D. HARTMAN

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COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
PROPELLANT IN JET MAY FREEZE. IF JET IS REQUIRED, ORBITER ORIENT ITSELF TOWARD SOLAR HEATING. THIS MAY AFFECT MISSION OPERATIONS. IOA RECOMMENDS THE PRIMARY THRUSTER THERMOSTATS BE INCORPORATED INTO A FMEA.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE THESE THERMOSTATS ARE WITHIN THE PRIMARY THRUSTER ASSEMBLY, AND SO IS CONSIDERED TO BE COVERED BY THAT HARDWARE THRUSTER'S FMEA. IOA MAINTAINS A CONCERN THAT THIS ITEM SHOULD BE COVERED SEPARATELY.

REPORT DATE 21 JULY 1988 C.18-428
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-2340
NASA FMEA #: NONE

SUBSYSTEM: ARCS
MDAC ID: 2340
ITEM: THERMOSTAT, VERNIER THRUSTERS, ALL AXES

LEAD ANALYST: D. HARTMAN

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
PROPELLANT IN JET MAY FREEZE. NO REDUNDANCY PROVIDED. THIS MAY EFFECT MISSION OPERATIONS. IOA RECOMMENDS THIS FAILURE BE INCORPORATED INTO A FMEA.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE THESE THERMOSTATS ARE WITHIN THE VERNIER THRUSTER ASSEMBLY, AND SO IS CONSIDERED TO BE COVERED BY THAT HARDWARE THRUSTER'S FMEA. IOA MAINTAINS A CONCERN THAT THIS ITEM SHOULD BE COVERED SEPARATELY.

REPORT DATE 21 JULY 1988 C.18-429
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12004X
NASA FMEA #: 05-6KA-2032-2

SUBSYSTEM: ARCS
MDAC ID: 12004
ITEM: MANIFOLD #5, L/R OX & FU ISOL VLV SWITCH

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. INABILITY TO CLOSE THE VALVE PREVENTS ISOLATION OF A THRUSTER LEAK.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12005X
NASA FMEA #: 05-6KA-2032-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12005
ITEM: MANIFOLD #5, L/R OX & FU ISOL VLV SWITCH

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. INABILITY TO CLOSE THE VALVE PREVENTS ISOLATION OF A THRUSTER LEAK.
FINAL RESOLUTION: IOA WITHDRAW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-431
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12006X
NASA FMEA #: 05-6KA-2032-2

SUBSYSTEM: ARCS
MDAC ID: 12006
ITEM: MANIFOLD #5, L/R OX & FU ISOL VLV SWITCH

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. INABILITY TO CLOSE THE VALVE PREVENTS ISOLATION OF A THRUSTER LEAK.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-432
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12008X
NASA FMEA #: 05-6KA-2090-1

SUBSYSTEM: ARCS
MDAC ID: 12008
ITEM: RESISTOR, 1.2K 2W
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-433
ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12016X
NASA FMEA #: 05-6KA-2156-1

SUBSYSTEM: ARCS
MDAC ID: 12016
ITEM: EVENT INDICATOR

LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 3 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /2R ] [ P ] [ P ] [ P ] [ ]

COMPARE [ /N ] [ ] [ N ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE POSITION. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-434
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12019X
NASA FMEA #: 05-6KA-2177-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12019
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-435
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12020X
NASA FMEA #: 05-6KA-2178-1
SUBSYSTEM: ARCS
MDAC ID: 12020
ITEM: CONTROLLER, REMOTE POWER
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSOCIATION:
CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C

NASA [ 3 /2R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /2 ] [ ] [ ] [ ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO OPEN THE ISOLATION VALVE. THIS PREVENTS VERNIER OPERATION THUS LOSS OF MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE. THE MANIFOLD 5 VALVE IS NOMINALLY ALWAYS OPEN, SO ANOTHER FAILURE (LEAK) IS REQUIRED TO CAUSE THE CREW TO close THE VALVE BEFORE AN "INABILITY TO OPEN VALVE" FAILURE HAS AN EFFECT.
ALSO, IOA HAD IMPROPERLY TIED THIS FAILURE TO THE HARDWARE FMEA FOR MANIFOLD 5 VALVE FAILED CLOSED, WHICH IS A CRIT 2/2.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12021X
NASA FMEA #: 05-6KA-2178-2

SUBSYSTEM: ARCS
MDAC ID: 12021
ITEM: CONTROLLER, REMOTE POWER

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-437
ASSESSMENT DATE: 1/29/88

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12022
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY Cause LOSS OF ACCURATE INDICATION OF THE VALVE STATUS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-438
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12024X
NASA FMEA #: 05-6KA-2210-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12024
ITEM: DRIVER, HYBRID

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C

NASA [ 3 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /2R ] [ P ] [ P ] [ P ] [ ]
COMPARE [ /N ] [ ] [ N ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE LOSS OF ACCURATE INDICATION OF THE VALVE STATUS. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY MAY LEAD TO FALSELY FAILING THE VALVE CLOSED, POSSIBLY EFFECTING MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDRAW THIS ISSUE, ACCEPTING NASA’S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12025X
NASA FMEA #: 05-6KA-2210-2

SUBSYSTEM: ARCS
MDAC ID: 12025
ITEM: DRIVER, HYBRID

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
THIS FAILURE CAUSES INABILITY TO OPEN THE ISOLATION VALVE WHICH CAUSES LOSS OF MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE. THE MANIFOLD 5 VALVE IS NOMINALLY ALWAYS OPEN, SO ANOTHER FAILURE (LEAK) IS REQUIRED TO CAUSE THE CREW TO CLOSE THE VALVE BEFORE AN "INABILITY TO OPEN VALVE" FAILURE HAS AN EFFECT.
ALSO, IOA HAD IMPROPERLY TIED THIS FAILURE TO THE HARDWARE FMEA FOR MANIFOLD 5 VALVE FAILED CLOSED, WHICH IS A CRIT 2/2.

REPORT DATE 21 JULY 1988 C.18-440
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12027X
NASA FMEA #: 05-6KA-2213-2

SUBSYSTEM: ARCS
MDAC ID: 12027
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12029X
NASA FMEA #: 05-6KA-2212-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12029
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-442
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12030X
NASA FMEA #: 05-6KA-2211-1
SUBSYSTEM: ARCS
MDAC ID: 12030
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12030
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS
FLIGHT HDW/FUNC A B C
NASA [ 3 /2R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /2 ] [ ] [ ] [ ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO OPEN THE ISOLATION VALVE. THIS PREVENTS VERNIER OPERATION THUS LOSS OF MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE. THE MANIFOLD 5 VALVE IS NOMINALLY ALWAYS OPEN, SO ANOTHER FAILURE (LEAK) IS REQUIRED TO CAUSE THE CREW TO CLOSE THE VALVE BEFORE AN "INABILITY TO OPEN VALVE" FAILURE HAS AN EFFECT.
ALSO, IOA HAD IMPROPERLY TIED THIS FAILURE TO THE HARDWARE FMEA FOR MANIFOLD 5 VALVE FAILED CLOSED, WHICH IS A CRIT 2/2.

REPORT DATE 21 JULY 1988 C.18-443
**APPENDIX C**  
**ASSESSMENT WORKSHEET**

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: ARCS-12031X  
NASA FMEA #: 05-6KA-2211-2  

**NASA DATA:**  
BASELINE [ ]  
NEW [ X ]

**SUBSYSTEM:** ARCS  
**MDAC ID:** 12031  
**ITEM:** DRIVER, HYBRID  
**LEAD ANALYST:** D. HARTMAN

**ASSESSMENT:**

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- IOA [ 3 /3 ]  
- COMPARE [ /N ]

**RECOMMENDATIONS:**  
(If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE:  
(If applicable)

| ADEQUATE [ ] | INADEQUATE [ ] |

**REMARKS:**

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

**FINAL RESOLUTION:** IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  
C.18-444
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12032X
NASA FMEA #: 05-6KA-2213A-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12032
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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IOA [ 2 /2 ] [ ] [ ] [ ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO OPEN THE ISOLATION VALVE. THIS PREVENTS VERNIER OPERATION THUS LOSS OF MISSION OPERATIONS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE. THE MANIFOLD 5 VALVE IS NOMINALLY ALWAYS OPEN, SO ANOTHER FAILURE (LEAK) IS REQUIRED TO CAUSE THE CREW TO CLOSE THE VALVE BEFORE AN "INABILITY TO OPEN VALVE" FAILURE HAS AN EFFECT.
ALSO, IOA HAD IMPROPERLY TIED THIS FAILURE TO THE HARDWARE FMEA FOR MANIFOLD 5 VALVE FAILED CLOSED, WHICH IS A CRIT 2/2.

REPORT DATE 21 JULY 1988 C.18-445
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12033X
NASA FMEA #: 05-6KA-2213A-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12033
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-446
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12034X
NASA FMEA #: 05-6KA-2224-1
SUBSYSTEM: ARCS
MDAC ID: 12034
ITEM: DRIVER, HYBRID
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO OPEN THE ISOLATION VALVE. THIS PREVENTS VERNIER OPERATION THUS LOSS OF MISSION OBJECTIVES.
FINAL RESOLUTION: IOA WITHDRAWN THIS ISSUE. THE MANIFOLD 5 VALVE IS NOMINALLY ALWAYS OPEN, SO ANOTHER FAILURE (LEAK) IS REQUIRED TO CAUSE THE CREW TO CLOSE THE VALVE BEFORE AN "INABILITY TO OPEN VALVE" FAILURE HAS AN EFFECT.
ALSO, IOA HAD IMPROPERLY TIED THIS FAILURE TO THE HARDWARE FMEA FOR MANIFOLD 5 VALVE FAILED CLOSED, WHICH IS A CRIT 2/2.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12035X
NASA FMEA #: 05-6KA-2224-2

SUBSYSTEM: ARCS
MDAC ID: 12035
ITEM: DRIVER, HYBRID

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12036X
NASA FMEA #: 05-6KA-2257-1
SUBSYSTEM: ARCS
MDAC ID: 12036
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12037X
NASA FMEA #: 05-6KA-2257-2

SUBSYSTEM: ARCS
MDAC ID: 12037
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

THIS FAILURE CAUSES THE INABILITY TO OPEN THE VALVE. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY CAUSES LOSS OF MISSION OPERATIONS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE. THE MANIFOLD 5 VALVE IS NOMINALLY ALWAYS OPEN, SO ANOTHER FAILURE (LEAK) IS REQUIRED TO CAUSE THE CREW TO CLOSE THE VALVE BEFORE AN "INABILITY TO OPEN VALVE" FAILURE HAS AN EFFECT. ALSO, THE VALVE WILL NOT NEED TO BE OPENED AFTER A LEAK, ANYWAY.

REPORT DATE 21 JULY 1988 C.18-450
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12038X
NASA FMEA #: 05-6KA-2257A-1

SUBSYSTEM: ARCS
MDAC ID: 12038
ITEM: DIODE

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12052X
NASA FMEA #: 05-6KA-2258-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12052
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILTY TO OPEN THE VALVE. THIS PREVENTS VERNIER OPERATION THUS LOSS OF MISSION OBJECTIVES
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE. THE MANIFOLD 5 VALVE IS NOMINALLY ALWAYS OPEN, SO ANOTHER FAILURE (LEAK) IS REQUIRED TO CAUSE THE CREW TO CLOSE THE VALVE BEFORE AN "INABILITY TO OPEN VALVE" FAILURE HAS AN EFFECT.
ALSO, IOA HAD IMPROPERLY TIED THIS FAILURE TO THE HARDWARE FMEA FOR MANIFOLD 5 VALVE FAILED CLOSED, WHICH IS A CRIT 2/2.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12072X
NASA FMEA #: 05-6KA-2280-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12072
ITEM: CIRCUIT BREAKER

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO OPEN THE VALVE. THIS PREVENTS VERNIER OPERATION THUS LOSS OF MISSION OBJECTIVES

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE. THE MANIFOLD 5 VALVE IS NOMINALLY ALWAYS OPEN, SO ANOTHER FAILURE (LEAK) IS REQUIRED TO CAUSE THE CREW TO CLOSE THE VALVE BEFORE AN "INABILITY TO OPEN VALVE" FAILURE HAS AN EFFECT.

ALSO, IOA HAD IMPROPERLY TIED THIS FAILURE TO THE HARDWARE FMEA FOR MANIFOLD 5 VALVE FAILED CLOSED, WHICH IS A CRIT 2/2.

REPORT DATE 21 JULY 1988 C.18-453
ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12073X
NASA FMEA #: 05-6KA-2280-2

SUBSYSTEM: ARCS
MDAC ID: 12073
ITEM: CIRCUIT BREAKER

LEAD ANALYST: D. HARTMAN

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IOA [ 3 /3 ] [ ] [ ] [ ] [ ]

COMPARE [ /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-454
APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
NASA DATA:  
ASSESSMENT ID: ARCS-12082X  
BASELINE [ ]  
NASA FMEA #: 05-6KA-2028-2  
NEW [ X ]

SUBSYSTEM: ARCS  
MDAC ID: 12082  
ITEM: L/R OX & FU TK ISOL VLV 1/2 SWITCH

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)  
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* CIL RETENTION RATIONALE: (If applicable)  
ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:
SWITCH FAILED SHORT ACROSS OPEN CONTACTS CAUSES INABILITY TO CLOSE THE VALVE. THIS PREVENTS CROSSFEED CAPABILITY THUS LOSS OF MISSION. INABILITY TO CROSSFEED DURING AN RTLS/TAL ABORT MAY CAUSE INCOMPLETE OMS ABORT DUMP.
FINAL RESOLUTION: IOA RELUCTANTLY WITHDREW THIS ISSUE, BECAUSE IOA HAD MISINTERPRETED NASA'S TOGGLE SWITCH FAILURE MODE FOR THIS FMEA. IOA STILL RECOMMENDS CONSIDERING IOA'S FAILURE MODE.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12083X
NASA FMEA #: 05-6KA-2028-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12083
ITEM: L/R OX & FU TK ISOL VLV 1/2 SWITCH

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C

NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /2 ] [ ] [ ] [ ] [ X ]

COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
SWITCH FAILED SHORT ACROSS OPEN CONTACTS CAUSES INABILITY TO CLOSE THE VALVE. THIS PREVENTS CROSSFEED CAPABILITY THUS LOSS OF MISSION. INABILITY TO CROSSFEED DURING AN RTLS/TAL ABORT MAY CAUSE INCOMPLETE OMS ABORT DUMP.
FINAL RESOLUTION: IOA RELUCTANTLY WITHDREW THIS ISSUE, BECAUSE IOA HAD MISINTERPRETED NASA'S TOGGLE SWITCH FAILURE MODE FOR THIS FMEA. IOA STILL RECOMMENDS CONSIDERING IOA'S FAILURE MODE.

REPORT DATE 21 JULY 1988 C.18-456
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
NASA DATA:
ASSESSMENT ID: ARCS-12084X
BASELINE [ ]
NASA FMEA #: 05-6KA-2028-2
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12084
ITEM: L/R OX & FU TK ISOL VLV 1/2 SWITCH

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
SWITCH FAILED SHORT ACROSS OPEN CONTACTS CAUSES INABILITY TO CLOSE THE VALVE. THIS PREVENTS CROSSFEED CAPABILITY THUS LOSS OF MISSION. INABILITY TO CROSSFEED DURING AN RTLS/TAL ABORT MAY CAUSE INCOMPLETE OMS ABORT DUMP.
FINAL RESOLUTION: IOA RELUCTANTLY WITHDREW THIS ISSUE, BECAUSE IOA HAD MISINTERPRETED NASA'S TOGGLE SWITCH FAILURE MODE FOR THIS FMEA. IOA STILL RECOMMENDS CONSIDERING IOA'S FAILURE MODE.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12086X
NASA FMEA #: 05-6KA-2253-1
SUBSYSTEM: ARCS
MDAC ID: 12086
ITEM: DIODE - LIMIT SWITCH (OPEN CIRCUIT)
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-458
**APPENDIX C**
**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 1/29/88  
**NASA DATA:**  
**ASSESSMENT ID:** ARCS-12088X  
**BASELINE [ ]**  
**NASA FMEA #:** 05-6KA-2253-1  
**NEW [ X ]**  

**SUBSYSTEM:** ARCS  
**MDAC ID:** 12088  
**ITEM:** DIODE - LIMIT SWITCH (CLOSED CIRCUIT)  
**LEAD ANALYST:** D. HARTMAN  

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
  
ADEQUATE [ ]

INADEQUATE [ ]

**REMARKS:**  
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

**FINAL RESOLUTION:** IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  
C.18-459
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12098X
NASA FMEA #: 05-6KA-2253E-1
SUBSYSTEM: ARCS
MDAC ID: 12098
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-460
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12099X
NASA FMEA #: 05-6KA-2253E-2

NASA DATA:
BASELINE [ ]
NEW [ x ]

SUBSYSTEM: ARCS
MDAC ID: 12099
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES INABILITY TO CLOSE THE VALVE THUS PREVENTING CROSSFEED OPERATIONS. INABILITY TO CROSSFEED DURING RTLS/TAL ABORT MAY CAUSE INCOMPLETE OMS ABORT DUMP.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-461
**APPENDIX C**

**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 1/29/88

**ASSESSMENT ID:** ARCS-12100X

**NASA FMEA #:** 05-6KA-2253F-1

**SUBSYSTEM:** ARCS

**MDAC ID:** 12100

**ITEM:** DIODE - MANUAL CLOSE/OPEN INHIBIT

**LEAD ANALYST:** D. HARTMAN

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

**REMARKS:**

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

**FINAL RESOLUTION:** IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

**REPORT DATE** 21 JULY 1988  C.18-462
**APPENDIX C**  
**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 1/29/88  
**ASSessment ID:** ARCS-12101X  
**NASA FMEA #:** 05-6KA-2253F-2  
**NASA DATA:**  
- BASELINE [ ]  
- NEW [ X ]

**SUBSYSTEM:** ARCS  
**MDAC ID:** 12101  
**ITEM:** DIODE - MANUAL CLOSE/OPEN INHIBIT

**LEAD ANALYST:** D. HARTMAN

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* **CIL RETENTION RATIONALE:** (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

**REMARKS:**

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

**FINAL RESOLUTION:** IOA WITHDRAW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

**REPORT DATE** 21 JULY 1988  
**C.18-463**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12103X
NASA FMEA #: 05-6KA-2029-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12103
ITEM: L/R OX & FU TK ISOL VLV 3/4/5 A OR B SWITCH

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C

NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /2 ] [ ] [ ] [ ] [ ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
SWITCH FAILED SHORT ACROSS OPEN CONTACTS CAUSES INABILITY TO CLOSE THE VALVE. THIS PREVENTS CROSSFEED CAPABILITY THUS LOSS OF MISSION. INABILITY TO CROSSFEED DURING AN RTLS/TAL ABORT MAY CAUSE INCOMPLETE OMS ABORT DUMP.
FINAL RESOLUTION: IOA RELUCTANTLY WITHDREW THIS ISSUE, BECAUSE IOA HAD MISINTERPRETED NASA'S TOGGLE SWITCH FAILURE MODE FOR THIS FMEA. IOA STILL RECOMMENDS CONSIDERING IOA'S FAILURE MODE.

REPORT DATE 21 JULY 1988 C.18-464
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12104X
NASA FMEA #: 05-6KA-2029-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12104
ITEM: L/R OX & FU TK ISOL VLV 3/4/5 A OR B SWITCH

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

| CRITICALITY | REDUNDANCY SCREENS | CIL |
| FLIGHT | A | B | C | ITEM |
| HDW/FUNC | | | | |
| NASA | [ 3 /1R ] | [ P ] | [ P ] | [ P ] | [ ] | * |
| IOA | [ 2 /2 ] | [ ] | [ ] | [ ] | [ X ] |

COMPARE [ N / N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
SWITCH FAILED SHORT ACROSS OPEN CONTACTS CAUSES INABILITY TO CLOSE THE VALVE. THIS PREVENTS CROSSFEED CAPABILITY THUS LOSS OF MISSION. INABILITY TO CROSSFEED DURING AN RTLS/TAL ABORT MAY CAUSE INCOMPLETE OMS ABORT DUMP.

FINAL RESOLUTION: IOA RELUCTANTLY WITHDREW THIS ISSUE, BECAUSE IOA HAD MISINTERPRETED NASA'S TOGGLE SWITCH FAILURE MODE FOR THIS FMEA. IOA STILL RECOMMENDS CONSIDERING IOA'S FAILURE MODE.

REPORT DATE 21 JULY 1988  C.18-465
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12105X
NASA FMEA #: 05-6KA-2029-2

SUBSYSTEM: ARCS
MDAC ID: 12105
ITEM: L/R OX & FU TK ISOL VLV 3/4/5 A OR B SWITCH
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 3 /1R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /2 ] [ ] [ ] [ ] [ ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
SWITCH FAILED SHORT ACROSS OPEN CONTACTS CAUSES INABILITY TO CLOSE THE VALVE. THIS PREVENTS CROSSFEED CAPABILITY THUS LOSS OF MISSION. INABILITY TO CROSSFEED DURING AN RTLS/TAL ABORT MAY CAUSE INCOMPLETE OMS ABORT DUMP.
FINAL RESOLUTION: IOA RELUCTANTLY WITHDREW THIS ISSUE, BECAUSE IOA HAD MISINTERPRETED NASA'S TOGGLE SWITCH FAILURE MODE FOR THIS FMEA. IOA STILL RECOMMENDS CONSIDERING IOA'S FAILURE MODE.

REPORT DATE 21 JULY 1988 C.18-466
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12107X
NASA FMEA #: 05-6KA-2254-1
NASA DATA: BASELINE [ ] NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12107
ITEM: DIODE - LIMIT SWITCH (OPEN CIRCUIT)

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDRAW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-467
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
NASA DATA:
ASSESSMENT ID: ARCS-12109X
NASA FMEA #: 05-6KA-2254-1
SUBSYSTEM: ARCS
MDAC ID: 12109
ITEM: DIODE - LIMIT SWITCH (CLOSE CIRCUIT)
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12119X
NASA FMEA #: 05-6KA-2254E-1
SUBSYSTEM: ARCS
MDAC ID: 12119
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-469
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12120X
NASA FMEA #: 05-6KA-2254E-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12120
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES THE INABILITY TO CLOSE THE VALVE THUS PREVENTING CROSSFEED OPERATIONS. INABILITY TO CROSSFEED DURING AN RTLS/TAL ABORT MAY CAUSE AN INCOMPLETE OMS ABORT DUMP.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12121X
NASA FMEA #: 05-6KA-2254F-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12121
ITEM: DIODE - MANUAL CLOSE/OPEN INHIBIT

LEAD ANALYST: D. HARTMAN

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| IOA  | [ 3 /3 ]  | [ ]   | [ ]   | [ ]   | [ ]    |

COMPARE [ /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / N ] [ ] [ ] [ ] [ ]
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-471
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12122X
NASA FMEA #: 05-6KA-2254F-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12122
ITEM: DIODE - MANUAL CLOSE/OPEN INHIBIT

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES THE VALVE TO CLOSE. REDUNDANCY PROVIDED. LOSS OF ALL REDUNDANCY CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET LANDING WEIGHT CONSTRAINTS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD WITH IOA'S FAILURE SCENARIO.

REPORT DATE 21 JULY 1988   C.18-472
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12126X
NASA FMEA #: 05-6KA-2039-2

NASA DATA:
BASELINE [ ] NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12126
ITEM: L/R OX & FU CROSSFEED VLV 1/2 SWITCH 32, 34

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE WILL CLOSE THE VALVE AND CAUSE INABILITY TO RE-OPEN IT. THIS PREVENTS CROSSFEED CAPABILITY THUS LOSS OF MISSION. INABILITY TO CROSSFEED MAY CAUSE INCOMPLETE OMS ABORT DUMP DURING RTLS/TAL - 1/1 ABORT.

FINAL RESOLUTION: IOA RELUCTANTLY WITHDREW THIS ISSUE, BECAUSE IOA HAD MISINTERPRETED NASA'S TOGGLE SWITCH FAILURE MODE FOR THIS FMEA. IOA STILL RECOMMENDS CONSIDERING IOA'S FAILURE MODE.

REPORT DATE 21 JULY 1988  C.18-473
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12127X
NASA FMEA #: 05-6KA-2039-2

SUBSYSTEM: ARCS
MDAC ID: 12127
ITEM: L/R OX & FU CROSSFEED VLV 1/2 SWITCH 32, 34
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE WILL CLOSE THE VALVE AND CAUSE INABILITY TO RE-OPEN IT. THIS PREVENTS CROSSFEED CAPABILITY THUS LOSS OF MISSION. INABILITY TO CROSSFEED MAY CAUSE INCOMPLETE OMS ABORT DUMP DURING RTLS/TAL - 1/1 ABORT.

FINAL RESOLUTION: IOA RELUCTANTLY WITHDREW THIS ISSUE, BECAUSE IOA HAD MISINTERPRETED NASA'S TOGGLE SWITCH FAILURE MODE FOR THIS FMEA. IOA STILL RECOMMENDS CONSIDERING IOA'S FAILURE MODE.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12130X
NASA FMEA #: 05-6KA-2261-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12130
ITEM: DIODE - LIMIT SWITCH (OPEN CIRCUIT)

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12132X
NASA FMEA #: 05-6KA-2261-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12132
ITEM: DIODE - LIMIT SWITCH (CLOSED CIRCUIT)

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-476
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12142X
NASA FMEA #: 05-6KA-2261E-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12142
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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COMPARE [ /N ] [ N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-477
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12143X
NASA FMEA #: 05-6KA-2261E-2

SUBSYSTEM: ARCS
MDAC ID: 12143
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REduNDANCY SCREENS
A   B   C

CIL
ITEM

NASA [ ] [ ] [ ] [ ] [ ] [ X ] *
IOA [ ] [ ] [ ] [ ] [ ] [ X ]

COMPARE [ ] [ ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES THE INABILITY TO CLOSE THE VALVE TO ISOLATE A THRUSTER LEAK.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD WITH IOA'S FAILURE SCENARIO.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12144X
NASA FMEA #: 05-6KA-2261F-1

BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12144
ITEM: DIODE - MANUAL CLOSE/OFF INHIBIT

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

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ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-479
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12145X
NASA FMEA #: 05-6KA-2261F-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12145
ITEM: DIODE - MANUAL CLOSE/OPEN INHIBIT

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-480
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
NASA DATA:
ASSESSMENT ID: ARCS-12147X
NASA FMEA #: 05-6KA-2039-2
SUBSYSTEM: ARCS
MDAC ID: 12147
ITEM: L/R OX & FU CROSSFEED VLV 3/4/5 SWITCH 33, 35
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE WILL CLOSE THE VALVE AND CAUSE INABILITY TO RE-OPEN IT. THIS PREVENTS CROSSFEED CAPABILITY THUS LOSS OF MISSION. INABILITY TO CROSSFEED MAY CAUSE INCOMPLETE OMS ABORT DUMP DURING RTLS/TAL - 1/1 ABORT.
FINAL RESOLUTION: IOA RELUCTANTLY WITHDREW THIS ISSUE, BECAUSE IOA HAD MISINTERPRETED NASA'S TOGGLE SWITCH FAILURE MODE FOR THIS FMEA. IOA STILL RECOMMENDS CONSIDERING IOA'S FAILURE MODE.

REPORT DATE 21 JULY 1988
C.18-481
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12148X
NASA FMEA #: 05-6KA-2039-2

SUBSYSTEM: ARCS
MDAC ID: 12148
ITEM: L/R OX & FU CROSSFEED VLV 3/4/5 SWITCH 33, 35
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE WILL CLOSE THE VALVE AND CAUSE INABILITY TO RE-OPEN IT. THIS PREVENTS CROSSFEED CAPABILITY THUS LOSS OF MISSION. INABILITY TO CROSSFEED MAY CAUSE INCOMPLETE OMS ABORT DUMP DURING RTLS/TAL - 1/1 ABORT.

FINAL RESOLUTION: IOA RELUCTANTLY WITHDRAW THIS ISSUE, BECAUSE IOA HAD MISINTERPRETED NASA'S TOGGLE SWITCH FAILURE MODE FOR THIS FMEA. IOA STILL RECOMMENDS CONSIDERING IOA'S FAILURE MODE.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12151X
NASA FMEA #: 05-6KA-2261-1
SUBSYSTEM: ARCS
MDAC ID: 12151
ITEM: DIODE - LIMIT SWITCH (OPEN CIRCUIT)
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-483
ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12153X
NASA FMEA #: 05-6KA-2261-1

SUBSYSTEM: ARCS
MDAC ID: 12153
ITEM: DIODE - LIMIT SWITCH (CLOSED CIRCUIT)
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C
NASA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12163X
NASA FMEA #: 05-6KA-2261E-1

SUBSYSTEM: ARCS
MDAC ID: 12163
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

| ADEQUATE [ ] |
| INADEQUATE [ ] |

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-485
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12164X
NASA FMEA #: 05-6KA-2261E-2

NASA DATA:
BASELINE [  ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12164
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT

LEAD ANALYST: D. HARTMAN

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NASA  [ 3 /1R ] [ P ] [ F ] [ P ] [ X ] *
IOA   [ 3 /1R ] [ P ] [ F ] [ P ] [ X ]

COMPARE [ / ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES THE INABILITY TO CLOSE THE VALVE TO ISOLATE A THRUSTER LEAK.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD WITH IOA'S FAILURE SCENARIO..

REPORT DATE 21 JULY 1988 C.18-486
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12165X
NASA FMEA #: 05-6KA-2261F-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12165
ITEM: DIODE - MANUAL CLOSE/OPEN INHIBIT

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
COMPARE [ /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
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 adequate [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-487
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12166X
NASA FMEA #: 05-6KA-2261F-2

SUBSYSTEM: ARCS
MDAC ID: 12166
ITEM: DIODE - MANUAL CLOSE/OPEN INHIBIT

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-488
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12192X
NASA FMEA #: 05-6KA-2255-1

SUBSYSTEM: ARCS
MDAC ID: 12192
ITEM: DIODE - LIMIT SWITCH (OPEN CIRCUIT)

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12194X
NASA FMEA #: 05-6KA-2255-1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12194
ITEM: DIODE - LIMIT SWITCH (CLOSE CIRCUIT)

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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IOA [ 3 /3 ] [ ] [ ] [ ] [ ]
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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-490
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12204X
NASA FMEA #: 05-6KA-2255E-1

SUBSYSTEM: ARCS
MDAC ID: 12204
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT
LEAD ANALYST: D. HARTMAN

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
NASA DATA:
ASSESSMENT ID: ARCS-12205X
NASA FMEA #: 05-6KA-2255E-2

SUBSYSTEM: ARCS
MDAC ID: 12205
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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COMPARE [ / ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES INABILITY TO CLOSE THE VALVE TO ISOLATE A THRUSTER LEAK. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD WITH IOA'S FAILURE SCENARIO.

REPORT DATE 21 JULY 1988 C.18-492
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12206X
NASA FMEA #: 05-6KA-2255F-1

NASA DATA:

BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12206
ITEM: DIODE - MANUAL CLOSE/OPEN INHIBIT

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12207X
NASA FMEA #: 05-6KA-2255F-2

SUBSYSTEM: ARCS
MDAC ID: 12207
ITEM: DIODE - MANUAL CLOSE/OPEN INHIBIT

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE INABILITY TO OPEN THE VALVE IF COMMAND WAS FROM THE GPC. LOSS OF ALL REDUNDANCY TO OPEN THE VALVE PREVENT PROPELLANTS TO BE EXPelled TO MEET LANDING CONSTRAINTS.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD WITH IOA'S FAILURE SCENARIO.

REPORT DATE 21 JULY 1988 C.18-494
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12208X
NASA FMEA #: 05-6KA-2255-1

SUBSYSTEM: ARCS
MDAC ID: 12208
ITEM: DIODE - LIMIT SWITCH (OPEN CIRCUIT)
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-495
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12210X
NASA FMEA #: 05-6KA-2255-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12210
ITEM: DIODE - LIMIT SWITCH (CLOSE CIRCUIT)

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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IOA [ 3 /3 ] [ ] [ ] [ ] [ ]

COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS:
(If different from NASA)
[ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-496
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
NASA DATA:

ASSESSMENT ID: ARCS-12220X
BASELINE [ ] NEW [ X ]

NASA FMEA #: 05-6KA-2255E-1

SUBSYSTEM: ARCS
MDAC ID: 12220
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT

LEAD ANALYST: D. HARTMAN

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COMPARE [ /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-497
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12221X
NASA FMEA #: 05-6KA-2255E-2
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12221
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT

LEAD ANALYST: D. HARTMAN

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COMPARE [ / ] [ ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES INABILITY TO CLOSE THE VALVE TO ISOLATE A THRUSTER LEAK.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD WITH IOA'S FAILURE SCENARIO..

REPORT DATE 21 JULY 1988 C.18-498
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
NASA DATA:
ASSESSMENT ID: ARCS-12222X
NASA FMEA #: 05-6KA-2255F-1

SUBSYSTEM: ARCS
MDAC ID: 12222
ITEM: DIODE - MANUAL CLOSE/OPEN INHIBIT

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-499
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12223X
NASA FMEA #: 05-6KA-2255F-2

SUBSYSTEM: ARCS
MDAC ID: 12223
ITEM: DIODE - MANUAL CLOSE/OPEN INHIBIT
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE INABILITY TO OPEN THE VALVE IF COMMAND WAS FROM THE GPC. LOSS OF ALL REDUNDANCY TO OPEN THE VALVE PREVENT PROPELLANTS TO BE EXPPELED TO MEET LANDING CONS
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD WITH IOA'S FAILURE SCENARIO..

REPORT DATE 21 JULY 1988  C.18-500
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88

NASA DATA:

ASSESSMENT ID: ARCS-12224X

BASELINE [ ]

NASA FMEA #: 05-6KA-2255-1

NEW [ X ]

SUBSYSTEM: ARCS

MDAC ID: 12224

ITEM: DIODE - LIMIT SWITCH (OPEN CIRCUIT)

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-501
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12226X
NASA FMEA #: 05-6KA-2255-1
SUBSYSTEM: ARCS
MDAC ID: 12226
ITEM: DIODE - LIMIT SWITCH (CLOSE CIRCUIT)
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-502
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
NASA DATA: BASELINE [ ]
ASSESSMENT ID: ARCS-12236X NEW [ X ]
NASA FMEA #: 05-6KA-2255E-1

SUBSYSTEM: ARCS
MDAC ID: 12236
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT

LEAD ANALYST: D. HARTMAN
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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-503
ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12237X
NASA FMEA #: 05-6KA-2255E-2

SUBSYSTEM: ARCS
MDAC ID: 12237
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES INABILITY TO CLOSE THE VALVE TO ISOLATE A THRUSTER LEAK.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD WITH IOA'S FAILURE SCENARIO..

REPORT DATE 21 JULY 1988 C.18-504
APPENDIX C
ASSESSMENT WORKSHEET

ASSessment DATE: 1/29/88
ASSessment ID: ARCS-12238X
NASA FMEA #: 05-6KA-2255F-1

SUBSYSTEM: ARCS
MDAC ID: 12238
ITEM: DIODE - MANUAL CLOSE/OPEN INHIBIT

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  NASA DATA:
ASSESSMENT ID: ARCS-12239X  BASELINE [ ]
NASA FMEA #: 05-6KA-2255F-2  NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12239
ITEM: DIODE - MANUAL CLOSE/OPEN INHIBIT

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE MAY CAUSE INABILITY TO OPEN THE VALVE IF COMMAND WAS FROM THE GPC. LOSS OF ALL REDUNDANCY TO OPEN THE VALVE PREVENT PROPELLANTS TO BE EXPPELED TO MEET LANDING CONS

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD WITH IOA'S FAILURE SCENARIO.

REPORT DATE 21 JULY 1988 C.18-506
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12240X
NASA FMEA #: 05-6KA-2255-1

NASA DATA:
BASELINE [   ]
NEW [  X  ]

SUBSYSTEM: ARCS
MDAC ID: 12240
ITEM: DIODE - LIMIT SWITCH (OPEN CIRCUIT)

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [   ]
INADEQUATE [   ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988  C.18-507
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12242X
NASA FMEA #: 05-6KA-2255-1

SUBSYSTEM: ARCS
MDAC ID: 12242
ITEM: DIODE - LIMIT SWITCH (CLOSE CIRCUIT)

LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

| NASA | [ 2/1R ] | [ P ] | [ F ] | [ P ] | [ X ] | *
| IOA  | [ 3/3 ]  | [ ]   | [ ]   | [ ]   | [ ]   |

COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988 C.18-508
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12252X
NASA FMEA #: 05-6KA-2255E-1

SUBSYSTEM: ARCS
MDAC ID: 12252
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONTAINS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12253X
NASA FMEA #: 05-6KA-2255E-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12253
ITEM: DIODE - MANUAL OPEN/CLOSE INHIBIT

LEAD ANALYST: D. HARTMAN

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IOA [ 3 /1R ] [ P ] [ F ] [ P ] [ X ]

COMPARE [ / ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE CAUSES INABILITY TO CLOSE THE VALVE TO ISOLATE A THRUSTER LEAK.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD WITH IOA'S FAILURE SCENARIO..

REPORT DATE 21 JULY 1988 C.18-510
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12254X
NASA FMEA #: 05-6KA-2255F-1

SUBSYSTEM: ARCS
MDAC ID: 12254
ITEM: DIODE - MANUAL CLOSE/OPEN INHIBIT
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FAILURES. THIS FAILURE ALONE HAS NO EFFECT.
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12255X
NASA FMEA #: 05-6KA-2255F-2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: ARCS
MDAC ID: 12255
ITEM: DIODE - MANUAL CLOSE/OPEN INHIBIT

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NASA FMEA CONSIDERS MULTIPLE FailURES. THIS FAILURE MAY CAUSE INABILITY TO OPEN THE VALVE IF COMMAND WAS FROM THE GPC. LOSS OF ALL REDUNDANCY TO OPEN THE VALVE PREVENT PROPELLANTS TO BE EXPELLED TO MEET LANDING CONS

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD WITH IOA'S FAILURE SCENARIO..

REPORT DATE 21 JULY 1988 C.18-512
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12256X
NASA FMEA #: 05-6KA-2035-1

SUBSYSTEM: ARCS
MDAC ID: 12256
ITEM: RJDA1B L1/L5/R1 MANIFOLD LOGIC SWITCH 3

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO DIFFERENCES FOR MANIFOLDS 1-4. NASA FMEA SHOULD INCLUDE BOTH MANIFOLD 5 EFFECTS ALSO (2/2).
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12260X
NASA FMEA #: 05-6KA-2035-1

SUBSYSTEM: ARCS
MDAC ID: 12260
ITEM: RJDA1B L1/L5/R1 MANIFOLD LOGIC SWITCH 3

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO DIFFERENCES FOR MANIFOLDS 1-4. NASA FMEA SHOULD INCLUDE BOTH MANIFOLD 5 EFFECTS ALSO (2/2)..
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD.

REPORT DATE 21 JULY 1988 C.18-514
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12276X
NASA FMEA #: 05-6KA-2035-1
NASA DATA:
BASELINE [ ]
NEW [ X ]
SUBSYSTEM: ARCS
MDAC ID: 12276
ITEM: RJDA2B L3/R3/R5 MANIFOLD LOGIC SWITCH 3
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO DIFFERENCES FOR MANIFOLDS 1-4. NASA FMEA SHOULD INCLUDE BOTH MANIFOLD 5 EFFECTS ALSO (2/2).:
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD.

REPORT DATE 21 JULY 1988 C.18-515
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12280X
NASA FMEA #: 05-6KA-2035-1
SUBSYSTEM: ARCS
MDAC ID: 12280
ITEM: RJDA2B L3/R3/R5 MANIFOLD LOGIC SWITCH 3
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NO DIFFERENCES FOR MANIFOLDS 1-4. NASA FMEA SHOULD INCLUDE BOTH MANIFOLD 5 EFFECTS ALSO (2/2).

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE IOA'S AND NASA'S CRITS AND SCREENS ARE THE SAME. IOA STILL RECOMMENDS MODIFYING NASA'S EFFECTS FIELD.

REPORT DATE 21 JULY 1988 C.18-516
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12329X
NASA FMEA #: NONE
SUBSYSTEM: ARCS
MDAC ID: 12329
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

THIS FAILED OPEN DIODE CAUSES INABILITY TO OPEN THE VALVE. REDUNDANCY PROVIDED BY OTHER VALVE. LOSS OF THIS CAUSES INABILITY TO EXPEL PROPELLANTS TO MEET LANDING WEIGHT CONSTRAINTS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE THESE DIODES ARE WITHIN THE HELIUM PRESSURE ISO VALVE ASSEMBLY, AND SO IS CONSIDERED TO BE COVERED BY THAT HARDWARE VALVE'S FMEA. IOA MAINTAINS A CONCERN THAT THIS ITEM SHOULD BE COVERED SEPARATELY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12332X
NASA FMEA #: NONE
NASA DATA:

SUBSYSTEM: ARCS
MDAC ID: 12332
ITEM: MICROSWITCH

LEAD ANALYST: D. HARTMAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
The MICROSWITCH failure across the close contacts will not allow the valve to be closed. This prevents crossfeed capability thus loss of mission operations. Inability to crossfeed during RTLS/TAL may cause incomplete OMS abort dump.

FINAL RESOLUTION: IOA withdrew this issue, because these (LIMIT) MICROSWITCHES are within the Tank ISO Valve 1/2 assembly, and so is considered to be covered by that valve's FMEA. IOA maintains a concern that this item should be covered separately.

REPORT DATE 21 JULY 1988 C.18-518
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88
ASSESSMENT ID: ARCS-12344X
NASA FMEA #: 05-6KA-2258-3
SUBSYSTEM: ARCS
MDAC ID: 12344
ITEM: DIODE
LEAD ANALYST: D. HARTMAN

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C
NASA [ 3 /2R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /2 ] [ ] [ ] [ ] [ ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSE CAPABILITY TO OPEN THE VALVE. THIS PREVENTS VERNIER OPERATION THUS LOSS OF MISSION OBJECTIVES
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE. THE MANIFOLD 5 VALVE IS NOMINALLY ALWAYS OPEN, SO ANOTHER FAILURE (LEAK) IS REQUIRED TO CAUSE THE CREW TO CLOSE THE VALVE BEFORE AN "INABILITY TO OPEN VALVE" FAILURE HAS AN EFFECT.
ALSO, IOA HAD IMPROPERLY TIED THIS FAILURE TO THE HARDWARE FMEA FOR MANIFOLD 5 VALVE FAILED CLOSED, WHICH IS A CRIT 2/2.

REPORT DATE 21 JULY 1988 C.18-519
SECTION C.19

COMMUNICATIONS AND TRACKING SUBSYSTEM
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88
ASSESSMENT ID: COMTRK-1045
NASA FMEA #: 05-2G-21500-1

SUBSYSTEM: COMM & TRACK
MDAC ID: 1045
ITEM: NETWORK SIGNAL PROCESSOR, DL SECTION
LEAD ANALYST: A.W. ADDIS

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSS OF ACTIVE NSP DOWNLINK COULD CAUSE MINIMUM DURATION FLIGHT BECAUSE ONLY ONE NSP PATH WOULD REMAIN FOR INSIGHT INTO VEHICLE SYSTEMS VIA TELEMETRY. IOA ACCEPTS NASA FMEA CRITICALITY BASED ON ACCOMPLISHING FM DOWNLINK OF TELEMETRY DATA THROUGH USE OF A CABLE KIT WHICH ALLOWS USE OF THE FM SIGNAL PROCESSOR AND FM TRANSMITTER FOR DOWNLINKING DATA AFTER FAILURE OF SECOND NSP.

REPORT DATE 26 JULY 1988 C.19-2
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88
NASA DATA:
ASSESSMENT ID: COMTRK-1046
NASA FMEA #: 05-2G-21500-1
SUBSYSTEM: COMM & TRACK
MDAC ID: 1046
ITEM: NETWORK SIGNAL PROCESSOR, DL SECTION
LEAD ANALYST: A.W. ADDIS

ASSESSMENT:

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COMPARE [ N / ] [ ] [ N ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSS OF ACTIVE NSP DOWNLINK COULD CAUSE MINIMUM DURATION FLIGHT BECAUSE ONLY ONE NSP PATH WOULD REMAIN FOR INSIGHT INTO VEHICLE SYSTEMS VIA TELEMETRY. IOA ACCEPTS NASA FMEA CRITICALITY BASED ON ACCOMPLISHING FM DOWNLINK OF TELEMETRY DATA THROUGH USE OF A CABLE KIT WHICH ALLOWS USE OF THE FM SIGNAL PROCESSOR AND FM TRANSMITTER FOR DOWNLINKING DATA AFTER FAILURE OF SECOND NSP.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88
ASSESSMENT ID: COMTRK-1051
NASA FMEA #: 05-2G-21801-1
SUBSYSTEM: COMM & TRACK
MDAC ID: 1051
ITEM: NSP ENCRYPTION MODE SWITCH
LEAD ANALYST: A.W. ADDIS

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
SAME FAILURE MODES (e.g., FAIL MID-TRAVEL) COULD PREVENT SELECTION OF "NSP ENCRYPTION SELECT" FUNCTIONS FOR SELECTION OF "T/R" OR "REV" ENCRYPTION/DECRYPTION OF NSP DATA. THERE IS NO HARDWARE OR COMMAND REDUNDANCY FOR THE SWITCH'S FUNCTION.

IOA CRITICALITY AGREES WITH NASA FMEA/CIL 05-2G-21801-2 (CRIT-2/2) FOR COMPLETE SWITCH FAILURE. SWITCH HAS DUAL SET OF CONTACTS THAT MUST BE INVOLVED IN THE FAILURE.

REPORT DATE 26 JULY 1988 C.19-4
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88
ASSESSMENT ID: COMTRK-1052
NASA FMEA #: 05-2G-21801-2
SUBSYSTEM: COMM & TRACK
MDAC ID: 1052
ITEM: NSP ENCRYPTION MODE SWITCH
LEAD ANALYST: A.W. ADDIS

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM & TRACK
MDAC ID: 1052
ITEM: NSP ENCRYPTION MODE SWITCH
LEAD ANALYST: A.W. ADDIS

ASSESSMENT:

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| IOA      | [ 2 /2 ]  | [ ]   | [ ]   | [ ]   | [ X ]   |
| COMPARE  | [ /N ]    | [ N ] | [ N ] | [ N ] | [ ]     |

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
SAME FAILURE MODES COULD PREVENT PROPER SELECTION OF "NSP ENCRYPTION SELECT" FUNCTIONS "T/R" OR "REV" ENCRYPTION/DECRYPTION OF NSP DATA. THERE IS NOT HARDWARE OR COMMAND REDUNDANCY FOR THE SWITCH'S FUNCTION. RECOMMEND FMEA UPGRADE TO 2/2 (CIL STATUS). AFTER NASA FMEA/CIL REEVALUATION, NASA REASSIGNED CRITICALITY FROM 2/1R TO 2/2. IOA AND NASA NOW AGREE.

REPORT DATE 26 JULY 1988 C.19-5
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88
ASSESSMENT ID: COMTRK-1053
NASA FMEA #: 05-2G-21802-1

SUBSYSTEM: COMM & TRACK
MDAC ID: 1053
ITEM: NSP ENCRYPTION SELECT SWITCH

LEAD ANALYST: A.W. ADDIS

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
SAME FAILURE MODES (e.g., FAIL MID-TRAVEL) COULD PREVENT SELECTION OF "NSP ENCRYPTION SELECT" FUNCTIONS FOR SELECTION OF "T/R" OR "REV" ENCRYPTION/DECRYPTION OF NSP DATA. THERE IS NO HARDWARE OR COMMAND REDUNDANCY FOR THE SWITCH'S FUNCTION. IOA CRITICALITY AGREES WITH NASA FMEA/CIL 05-2G-21802-2 (CRIT-2/2) FOR COMPLETE SWITCH FAILURE. SWITCH HAS DUAL SET OF CONTACTS THAT MUST BE INVOLVED IN THE FAILURE.

REPORT DATE 26 JULY 1988 C.19-6
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88
ASSESSMENT ID: COMTRK-1054
NASA FMEA #: 05-2G-21802-2

SUBSYSTEM: COMM & TRACK
MDAC ID: 1054
ITEM: NSP ENCRYPTION SELECT SWITCH

LEAD ANALYST: A.W. ADDIS

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
SAME FAILURE MODES COULD PREVENT PROPER SELECTION OF "NSP ENCRYPTION SELECT" FUNCTIONS "T/R" OR "REV" ENCRYPTION/DECRYPTION OF NSP DATA. THERE IS NOT HARDWARE OR COMMAND REDUNDANCY FOR THE SWITCH'S FUNCTION. RECOMMEND FMEA UPGRADE TO 2/2 (CIL STATUS). AFTER NASA FMEA/CIL REEVALUATION, NASA REASSIGNED CRITICALITY FROM 2/1R TO 2/2. IOA AND NASA NOW AGREE.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88
ASSESSMENT ID: COMTRK-1056
NASA FMEA #: 05-2G-21803-2
SUBSYSTEM: COMM & TRACK
MDAC ID: 1056
ITEM: ENCRYPTION ZEROIZE/NORMAL SWITCH
LEAD ANALYST: A.W. ADDIS

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
BRIDGING SHORT IN SWITCH COULD CAUSE INADVERTENT ZEROIZING OF THE KEY, CAUSING LOSS OF ENCRYPTION/DECRYPTION CAPABILITY AND LOSS OF MISSION. IOA ACCEPTS NASA REVISED CRITICALITY 3/2R BASED ON NON Viable FAILURE FOR BOTH SETS OF CONTACTS TO FAIL SINCE SWITCH IS NOT USED DURING FLIGHT.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88
ASSESSMENT ID: COMTRK-1068
NASA FMEA #: 05-6PG-22000-2

SUBSYSTEM: COMM & TRACK
MDAC ID: 1068
ITEM: UPLINK BLOCK SWITCH

LEAD ANALYST: A.W. ADDIS

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS
FLIGHT HDW/FUNC A B C

NASA [ 2 /2 ] [ ] [ ] [ ] [ X ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
IOA 1068 ASSIGNS 2/1R FOR ORBIT OPS - LOSS OF MISSION PLUS POSSIBLE LOSS OF CREW/VEHICLE FOR FAILURE OF ALL PATHS FOR STATE VECTOR UPDATE. (NASA FMEA WRITEUP ACKNOWLEDGES THE 1R FUNCTIONAL CRITICALITY BUT FMEA ASSIGNS FUNCTIONAL CRITICALITY 2).
IOA ACCEPTS THE NASA CRITICALITY BASED ON ORBITER WIRING CHANGES WHICH PREVENTS LOSS OF STATE VECTOR UPDATE UPON SWITCH FAILURE.

REPORT DATE 26 JULY 1988 C.19-9
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4001
NASA FMEA #: 05-2R-5100-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4001
ITEM: KU BD EA-1 (INTERFACE AND CONTROL UNIT)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALLY.

REPORT DATE 26 JULY 1988  C.19-10
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4002
NASA FMEA #: 05-2R-5200-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4002
ITEM: KU BD EA-2 (RADAR SIGNAL PROCESSOR)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALLY.

REPORT DATE 26 JULY 1988 C.19-11
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
NASA DATA:
ASSESSMENT ID: COMTRK-4002A
NASA FMEA #: 05-2R-5200-2
SUBSYSTEM: COMM AND TRACK
MDAC ID: 4002
ITEM: KU BD EA-2 (RADAR SIGNAL PROCESSOR)
LEAD ANALYST: W.C. LONG

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COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALLY.

REPORT DATE 26 JULY 1988 C.19-12
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4003
NASA FMEA #: 05-2R-5400-1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 4003
ITEM: KU BD SPA (SIGNAL PROCESSOR ASSY)
LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

CRITICALLY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 2 /2 ] [ ] [ ] [ ] [ X ] *
IOA [ 3 /1R ] [ P ] [ P ] [ P ] [ ]

COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALLY.

REPORT DATE 26 JULY 1988 C.19-13
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4003A
NASA FMEA #: 05-2R-5400-2
SUBSYSTEM: COMM AND TRACK
MDAC ID: 4003
ITEM: KU BD SPA (SIGNAL PROCESSOR ASSY)
LEAD ANALYST: W.C. LONG

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COMPARE [ N / ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALLY.

REPORT DATE 26 JULY 1988 C.19-14
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4005
NASA FMEA #: 05-2R-5300-1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 4005
ITEM: KU BD DEA (DEPLOYED ELECTRONIC ASSY)
LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALLY.

REPORT DATE 26 JULY 1988 C.19-15
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4005B
NASA FMEA #: 05-2R-5300-3
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4005
ITEM: KU BD DEA (DEPLOYED ELECTRONIC ASSY)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FAULTY | FLIGHT HDW/FUNC | A | B | C | ITEM |
| NASA | [ 2 /2 ] | [ ] | [ ] | [ ] | [ X ] | *
| IOA | [ 3 /1R ] | [ P ] | [ P ] | [ P ] | [ ] |
| COMPARE | [ N /N ] | [ N ] | [ N ] | [ N ] | [ N ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4006
NASA FMEA #: 05-2R-5300-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4006
ITEM: KU BD DEA (DEPLOYED ELECTRONIC ASSY)
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR
AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION
COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE
SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE
APPROACH TO ASSIGNING CRITICALLY.

REPORT DATE 26 JULY 1988  C.19-17
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4007
NASA FMEA #: 05-2R-5300-1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 4007
ITEM: KU BD DMA (DEPLOYED MECHANICAL ASSY)
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-18
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4009
NASA FMEA #: 05-2R-5300-1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 4009
ITEM: KU BD DMA (DEPLOYED MECHANICAL ASSY)
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALLY.

REPORT DATE 26 JULY 1988 C.19-19
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4010
NASA FMEA #: 05-2R-5300-4

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4010
ITEM: KU BD DMA (DEPLOYED MECHANICAL ASSY)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

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REMARKS:

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REPORT DATE 26 JULY 1988  C.19-20
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4011
NASA FMEA #: 05-2R-5100-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4011
ITEM: KU BD COMM UP/FORWARD LINK MODE 1

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
NASA DATA:
ASSESSMENT ID: COMTRK-4012
BASELINE [ ]
NASA FMEA #: 05-2R-5100-1
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4012
ITEM: KU BD COMM UP/FORWARD LINK MODE 1

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]

INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-22
**APPENDIX C**

**ASSESSMENT WORKSHEET**

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**SUBSYSTEM:** COMM AND TRACK  
**MDAC ID:** 4013  
**ITEM:** KU BD COMM UP/FORWARD LINK MODE 1

**LEAD ANALYST:** W.C. LONG

**ASSESSMENT:**

| CRITICALLY REDUNDANCY CIL |
|---------------------------|----------------------|
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| NASA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ] * | |
| IOA [ 3 /1R ] [ P ] [ P ] [ P ] | |
| COMPARE [ N / ] [ ] [ ] [ ] [ N ] | |

**RECOMMENDATIONS:** (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

**REMARKS:**

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**REPORT DATE** 26 JULY 1988  
C.19-23
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4014
NASA FMEA #: 05-2R-5100-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4014
ITEM: KU BD COMM UP/FORWARD LINK MODE 2

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988  C.19-24
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4015
NASA FMEA #: 05-2R-5100-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4015
ITEM: KU BD COMM UP/FORWARD LINK MODE 2

LEAD ANALYST: W.C. LONG

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| IOA         | [ 3 /1R ] | [ P ] | [ P ] | [ P ] | [ ]    |
| COMPARE     | [ N / ]    | [ ]   | [ ]   | [ ]   | [ N ]   |

RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-25
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88  NASA DATA:
ASSESSMENT ID: COMTRK-4016  BASELINE [ ]
NASA FMEA #: 05-2R-5100-1  NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4016
ITEM: KU BD COMM UP/FORWARD LINK MODE 2

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988  C.19-26
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4017
NASA FMEA #: 05-2R-5100-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4017
ITEM: KU BD COMM DOWN/RETURN LINK MODE 1
LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
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REMARKS:
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4018
NASA FMEA #: 05-2R-5100-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4018
ITEM: KU BD COMM DOWN/RETURN LINK MODE 1 CHANNEL1
LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: CONTRK-4019
NASA FMEA #: 05-2R-5100-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4019
ITEM: KU BD COMM DOWN/RETURN LINK MODE 1 CHANNEL 2

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ] *
IOA [ 3 /2R ] [ P ] [ P ] [ P ] [ ]

COMPARE [ N /N ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
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REMARKS:
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REPORT_DATE 26 JULY 1988  C.19-29
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4020
NASA FMEA #: 05-2R-5100-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4020
ITEM: KU BD COMM DOWN/RETURN LINK MODE 1 CHANNEL 3

LEAD ANALYST: W.C. LONG

ASESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ] *
IOA [ 3 /2R ] [ P ] [ P ] [ P ] [ ]
COMPARE [ N /N ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4021
NASA FMEA #: 05-2R-5100-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4021
ITEM: KU BD COMM DOWN/RETURN LINK MODE 2
LEAD ANALYST: W.C. LONG

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ADEQUATE [ X ]
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4022
NASA FMEA #: 05-2R-5100-1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 4022
ITEM: KU BD COMM DOWN/RETURN LINK MODE 2 CHANNEL 1
LEAD ANALYST: W.C. LONG

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ADEQUATE [ X ]
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REPORT DATE 26 JULY 1988  C.19-32
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4023
NASA FMEA #: 05-2R-5100-1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4023
ITEM: KU BD COMM DOWN/RETURN LINK MODE 2 CHANNEL 2

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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ADEQUATE [ X ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-33
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4024
NASA FMEA #: 05-2R-5100-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4024
ITEM: KU BD COMM DOWN/RETURN LINK MODE 2 CHANNEL 3

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE SEvere NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALLY.

REPORT DATE 26 JULY 1988 C.19-34
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4025
NASA FMEA #: 05-2R-5112-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4025
ITEM: KU A PWR SW (REF NAVAIDS RR)

LEAD ANALYST: W.C. LONG

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IOA [ 3 /1R ]
COMPARE [ N /N ]

RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4026
NASA FMEA #: 05-2R-5112-2

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4026
ITEM: KU A PWR SW (REF NAVAIDS RR)

LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88  NASA DATA:
ASSESSMENT ID: COMTRK-4027  BASELINE [ ]
NASA FMEA #: 05-2R-5113-1  NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4027
ITEM: KU A MODE SW (REF NAVAIDS RR)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4028
NASA FMEA #: 05-2R-5113-2

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4028
ITEM: KU A MODE SW (REF NAVAIDS RR)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4035
NASA FMEA #: 05-2R-5107-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4035
ITEM: KU BD A ANT STEERING SW

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

FAILURE TO SWITCH WOULD PREVENT SELECTION OF OPTIMUM ANTENNA STEERING MODE. NOT CRITICAL FUNCTION. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALITY.
ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4035A
NASA FMEA #: 05-2R-5107-2

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4035
ITEM: KU BD A ANT STEERING SW
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO SWITCH WOULD PREVENT SELECTION OF OPTIMUM ANTENNA STEERING MODE. NOT CRITICAL FUNCTION. NASA FMEA 05-2R-5107-2 WAS COMBINED WITH 5107-1 AND DELETED DURING THE NASA REEVALUATION.
APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4036
NASA FMEA #: 05-2R-5107-1
ASSESSMENT ID: COMTRK-4036
NASA FMEA #: 05-2R-5107-1

SUBSYSTEM:  COMM AND TRACK
MDAC ID: 4036
ITEM: KU BD A ANT STEERING SW

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
OPEN/SHORT FAILURE COULD RESULT IN LOSS OF KUCOMM. ANALYSIS ONLY COVERED COMM FUNCTION. WHEN INCLUDING BOTH RADAR AND COMM FUNCTIONS CRITICALITY IS IN AGREEMENT. RADAR FUNCTION COVERED UNDER SEPARATE FMEA, 7000 SERIES. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4041
NASA FMEA #: NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4041
ITEM: KU BD ANT A PYRO ARM/SAFE SW

LEAD ANALYST: W.C. LONG

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IOA [ 1/1 ] [ ] [ ] [ ] [ ] [ X ]

COMPARE [ N /N ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA KUCOMM FMEA. SHOULD BE COVERED IN NASA FMEA.
IOA AGREES WITH THE NEWLY GENERATED NASA FMEA/CIL 05-6EI-2001-1 (2/24/88, CRITICALITY 1/1), WHICH ADDRESSES THIS IOA CRITICALITY ASSESSMENT.

REPORT DATE 26 JULY 1988 C.19-42
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4042
NASA FMEA #:

NASA DATA: BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4042
ITEM: KU BD ANT A PYRO ARM/SAFE SW

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA KUCOMM FMEA. SHOULD BE COVERED IN NASA FMEA.
IOA ACCEPTS THE NASA GENERATED FMEA 05-6EI-2001-2 (2/24/88, CRITICALITY 3/1R), WHICH ADDRESSES THIS IOA CRITICALITY ASSESSMENT.

REPORT DATE 26 JULY 1988 C.19-43
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4043
NASA FMEA #: NEW

SUBSYSTEM: COMM AND TRACK
MDAC ID: 4043
ITEM: KU BD ANT A PYRO JETT/SAFE SW

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA KUCOMM FMEA. SHOULD BE COVERED IN NASA FMEA. IOA AGREES WITH THE NEWLY GENERATED NASA FMEA/CIL 05-6EI-2002-1 (2/24/88, CRITICALITY 1/1), WHICH ADDRESSES THIS IOA CRITICALITY ASSESSMENT.

REPORT DATE 26 JULY 1988 C.19-44
**APPENDIX C**

**ASSESSMENT WORKSHEET**

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-4044
NASA FMEA #:

**NASA DATA:**
BASELINE [ ]
NEW [ ]

**SUBSYSTEM:** COMM AND TRACK
MDAC ID: 4044
ITEM: KU BD ANT A PYRO JETT/SAFE SW
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA KUCOMM FMEA. SHOULD BE COVERED IN NASA FMEA. IOA AGREES WITH THE NEWLY GENERATED NASA FMEA/CIL 05-6EI-2002-2 (2/24/88, CRITICALITY 1/1), WHICH ADDRESSES THIS IOA CRITICALITY ASSESSMENT.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/10/88
ASSESSMENT ID: COMTRK-4514
NASA FMEA #: COMTRK-4514
SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 4514
ITEM: CIRCUIT BREAKER, 3A
LEAD ANALYST: A.W. ADDIS

NASA DATA:
BASELINE [ ]
NEW [ ]

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ ] [ ] [ ] [ ] [ ] [ ] [ ]
IOA [ 2 /1R ] [ P ] [ F ] [ P ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ ] [ ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO CORRESPONDING FMEA IN FMEA/CIL PACKET.
IOA AGREES WITH THE NEWLY GENERATED NASA FMEA/CIL 05-6EI-2000-1 (2/24/88, CRITICALITY 1/1RB), WHICH ADDRESSES THIS IOA CRITICALITY ASSESSMENT.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88
ASSESSMENT ID: COMTRK-5010
NASA FMEA #: 05-2B-22104-1

SUBSYSTEM: COMM & TRACK
MDAC ID: 5010
ITEM: UHF SIMPLEX POWER SWITCH

LEAD ANALYST: A.W. ADDIS

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FLIGHT | HDW/FUNC | A | B | C | ITEM |
| NASA | [ 2 /1R ] | [ ] | [ ] | [ ] | [ X ] | *
| IOA | [ 3 /1R ] | [ P ] | [ F ] | [ P ] | [ X ] |
| COMPARE | [ N / ] | [ N ] | [ N ] | [ N ] | [ ] |

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
CONTACT-TO-CONTACT BRIDGING SHORT HOLDING A FAILED PA IN THE UHF RF TRANSMIT CIRCUIT COULD PREVENT UHF USE FOR ATC/LANDING OPS. FAILS SCREEN B BECAUSE FAILURE WOULD NOT BE DETECTABLE. NASA ASSIGNED CRITICALITY OF 3/3 FOR EVA AND 2/1R FOR OTHER MISSION PHASES. NASA FMEA 05-2B-22104-1 WAS ASSIGNED THE HIGHEST CRITICALITY OF 2/1R. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-47
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88
ASSESSMENT ID: COMTRK-5502
NASA FMEA #: 05-6PB-22107-2

SUBSYSTEM: COMM & TRACK
MDAC ID: 5502
ITEM: CIRCUIT BREAKER, UHF, MNC

LEAD ANALYST: A.W. ADDIS

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 3 /2R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 3 /2R ] [ P ] [ F ] [ P ] [ X ]

COMPARE [ / ] [ ] [ N ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REPORT DATE 26 JULY 1988 C.19-48

REMARKS:

BOTH CIRCUIT BREAKERS (CB13, CB18) ARE NORMALLY CLOSED. ONE
(CB18) COULD FAIL OPEN AND CONDITION WOULD NOT BE DETECTED IN
FLIGHT BECAUSE OTHER (CB13) WOULD BE PROVIDING POWER TO BOTH XCVR
AND TO PA, SO FAILS SCREEN B. IOA 5502 COVERS EVA OPS;
IOA 5503 COVERS FLIGHT OPS VOICE COMM WITH GROUND. IOA ACCEPTS
NASA FMEA SCREEN B PASS CRITERIA ON THE BASIS THAT CIRCUIT
BREAKERS COULD BE ROUTINELY CYCLED ON AND OFF TO CHECK OPERATION
DURING FLIGHT. ALTHOUGH THIS IS NOT A NORMAL PROCEDURE, IT COULD
ACCOMPISH THE IN-FLIGHT READILY DETECTABLE FAILURE REQUIREMENT.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88  NASA DATA:
ASSESSMENT ID: COMTRK-5503  BASELINE [ ]
NASA FMEA #: 05-6PB-22107-2  NEW [ X ]
SUBSYSTEM:  COMM & TRACK
MDAC ID:  5503
ITEM:  CIRCUIT BREAKER, UHF, MNC
LEAD ANALYST: A.W. ADDIS

ASSESSMENT:

| CRITICALITY | REDUNDANCY SCREENS | CIL |
| FLIGHT       | HDW/FUNC | A | B | C | ITEM |
|             |          | [ ] | [ ] | [ ] | [ ] |
| NASA        | [ 3 /2R ] | [ P ] | [ P ] | [ P ] | [ ] | * |
| IOA         | [ 3 /1R ] | [ P ] | [ F ] | [ P ] | [ X ] |
| COMPARE     | [ /N ]    | [ ] | [ N ] | [ ] | [ N ] |

RECOMMENDATIONS:  (If different from NASA)

| [ / ] | [ ] | [ ] | [ ] | [ ] |

(ADD/DELETE)

* CIL RETENTION RATIONALE:  (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

BOTH CIRCUIT BREAKERS (CB13, CB18) ARE NORMALLY CLOSED. ONE (CB18) COULD FAIL OPEN AND CONDITION WOULD NOT BE DETECTED IN FLIGHT BECAUSE OTHER (CB13) WOULD BE PROVIDING POWER TO BOTH XCVR AND TO PA, SO FAILS SCREEN B. IOA 5502 COVERS EVA OPS; IOA 5503 COVERS FLIGHT OPS VOICE COMM WITH GROUND. IOA ACCEPTS NASA FMEA SCREEN B PASS CRITERIA ON THE BASIS THAT CIRCUIT BREAKERS COULD BE ROUTINELY CYCLED ON AND OFF TO CHECK OPERATION DURING FLIGHT. ALTHOUGH THIS IS NOT A NORMAL PROCEDURE, IT COULD ACCOMPLISH THE IN-FLIGHT READILY DETECTABLE FAILURE REQUIREMENT.
## APPENDIX C
### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 3/03/88  
**ASSESSMENT ID:** COMTRK-7026A  
**NASA FMEA #:** 05-2R-5100-2

**NASA DATA:**  
BASELINE [ ]  
NEW [ X ]

**SUBSYSTEM:** COMM AND TRACK  
**MDAC ID:** 7026  
**ITEM:** RENDEZVOUS RADAR

**LEAD ANALYST:** W.C. LONG

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONAL: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**

Analysis only covered KU-band radar function. When both radar and comm functions are combined, criticality is in agreement. KUCOMM functions covered under separate FMEA, 4000 series. Stowed antenna causes loss of KUB-band RR function. IOA agrees with NASA FMEA/CIL criticality 2/2 for radar function. Overlooked during initial review since main FMEA pertained to KU comm and radar criticality showed up as a secondary part of the FMEA as a 2/2 criticality.

---

**REPORT DATE** 26 JULY 1988  
**C.19-50**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-7027A
NASA FMEA #: 05-2R-5100-2
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 7027
ITEM: RENDEZVOUS RADAR
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED KU-BAND RADAR FUNCTION. WHEN BOTH RADAR AND COMM FUNCTIONS ARE COMBINED, CRITICALITY IS IN AGREEMENT. KUCOMM FUNCTIONS COVERED UNDER SEPARATE FMEA, 4000 SERIES. STOWED ANTENNA CAUSES LOSS OF KU-BAND RR FUNCTION. IOA AGREES WITH NASA FMEA/CIL CRITICALITY 2/2 FOR RADAR FUNCTION. OVERLOOKED DURING INITIAL REVIEW SINCE MAIN FMEA PERTAINED TO KU COMM AND RADAR CRITICALITY SHOWED UP AS A SECONDARY PART OF THE FMEA AS A 2/2 CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-7028A
NASA FMEA #: 05-2R-5100-2

SUBSYSTEM: COMM AND TRACK
MDAC ID: 7028
ITEM: RR EA-1 (INTERFACE AND CONTROL UNIT) [REF KU COMM]

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED KU-BAND RADAR FUNCTION. WHEN BOTH RADAR AND COMM FUNCTIONS ARE COMBINED, CRITICALITY IS IN AGREEMENT. KU COMM FUNCTIONS COVERED UNDER SEPARATE FMEA, 4000 SERIES. STOWED ANTENNA CAUSES LOSS OF KU-BAND RR FUNCTION. IOA AGREES WITH NASA FMEA/CIL CRITICALITY 2/2 FOR RADAR FUNCTION. OVERLOOKED DURING INITIAL REVIEW SINCE MAIN FMEA PERTAINED TO KU COMM AND RADAR CRITICALITY SHOWED UP AS A SECONDARY PART OF THE FMEA AS A 2/2 CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-52
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-7034
NASA FMEA #: NASA DATA:

BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 7034
ITEM: RR DMA (DEPLOYED MECHANICAL ASSY) [REF KU COMM]

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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COMPARE [ N/N ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA KU-BAND RADAR FMEA. FAILURE TO START/STOP COULD RESULT IN LOSS OF RADAR FUNCTION.
IOA AGREES WITH NASA FMEA/CIL 05-2R-5300-1 (CRIT-2/2) FOR RADAR FUNCTION. OVERLOOKED DURING INITIAL ASSESSMENT DUE TO SEVERAL CRITICALITIES AND FUNCTION BEING INCLUDED ON ONE FMEA.

REPORT DATE 26 JULY 1988 C.19-53
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-7038
NASA FMEA #: COMTRK-7038

SUBSYSTEM: COMM AND TRACK
MDAC ID: 7038
ITEM: KU-BAND POWER SWITCH (REF KU-BAND COMM)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

[ ] / [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA KU-BAND RADAR FMEA. FAILURE TO REMAIN CLOSED COULD RESULT IN LOSS OF KU-BAND SYSTEM. LOSS OF RADAR WOULD RESULT IN LOSS OF MISSION.

IOA AGREES WITH NASA FMEA/CIL 05-2R-5112-1 (CRIT-2/2) FOR RADAR FUNCTION. FAILURE MODE "OPEN" PRESENTS SAME EFFECT AS FAILS TO REMAIN CLOSED.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
ASSESSMENT ID: COMTRK-7044
NASA FMEA #: 05-2R-5104-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 7044
ITEM: SLEW AZIMUTH CONTROL SWITCH (REF KU-BAND COMM)
LEAD ANALYST: W.C. LONG

ASSESSMENT:

| CRITICALLY REDUNDANCY CIL |
|---------------------------|-------------------|------------------|
| FLIGHT HDW/FUNC A B C ITEM |
| NASA [ 3/1R ] [ P ] [ P ] [ P ] [ ] * |
| IOA [ 2/2 ] [ ] [ ] [ ] [ X ] |
| COMPARE [ N/N ] [ N ] [ N ] [ N ] [ N ] |

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED KU-BAND RADAR FUNCTION. WHEN BOTH RADAR AND COMM FUNCTIONS ARE COMBINED, CRITICACITY IS IN AGREEMENT. KUCOMM FUNCTIONS COVERED UNDER SEPARATE FMEA, 4000 SERIES. STOWED ANTENNA CAUSES LOSS OF KUB-BAND RR FUNCTION. IOA ACCEPTS NASA FMEA CRITICACITY 3/2R FOR RADAR FUNCTION. NORMALLY RADAR EMPLOYS AUTOMATIC ANTENNA TRACKING/SLEWING SO THAT USE OF MANUAL SLEWING REQUIRES A PRIOR FAILURE.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/03/88
NASA DATA:
ASSESSMENT ID: COMTRK-7046
NASA FMEA #: 05-2R-5104-1
NASA FMEA #: 05-2R-5104-1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 7046
ITEM: SLEW ELEV CONTROL SWITCH (REF KU-BAND COMM)
LEAD ANALYST: W.C. LONG
ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
ANALYSIS ONLY COVERED KU-BAND RADAR FUNCTION. WHEN BOTH RADAR AND COMM FUNCTIONS ARE COMBINED, CRITICALITY IS IN AGREEMENT.
KUCOMM FUNCTIONS COVERED UNDER SEPARATE FMEA, 4000 SERIES.
STOWED ANTENNA CAUSES LOSS OF KU-BAND RR FUNCTION. IOA ACCEPTS NASA FMEA CRITICALITY 3/2R FOR RADAR FUNCTION. NORMALLY RADAR EMPLOYS AUTOMAATIC ANTENNA TRACKING/SLEWING SO THAT USE OF MANUAL SLEWING REQUIRES A PRIOR FAILURE.

REPORT DATE 26 JULY 1988 C.19-56
ASSESSMENT DATE: 3/04/88
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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*CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW USUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR USE OF VARIOUS GROUND RULE INTERPRETATIONS IN DETERMINING THE SYSTEM LEVEL OF REDUNDANCY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/04/88
ASSESSMENT ID: COMTRK-8001A
NASA FMEA #: 1.2.18

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
INADEQUATE [ ]

REMARKS:
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW USUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR USE OF VARIOUS GROUND RULE INTERPRETATIONS IN DETERMINING THE SYSTEM LEVEL OF REDUNDANCY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/04/88
ASSESSMENT ID: COMTRK-8001B
NASA FMEA #: 1.2.21

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW USUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR USE OF VARIOUS GROUND RULE INTERPRETATIONS IN DETERMINING THE SYSTEM LEVEL OF REDUNDANCY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/04/88
ASSESSMENT ID: COMTRK-8001C
NASA FMEA #: 1.2.22

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSSES OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF
ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW
AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF
VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW
WINDOW VIEWING, EVA AND COAS FOR CREW USUAL INSPECTION AND RMS
JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR
USE OF VARIOUS GROUND RULE INTERPRETATIONS IN DETERMINING THE
SYSTEM LEVEL OF REDUNDANCY.

REPORT DATE 26 JULY 1988 C.19-60
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/04/88
ASSESSMENT ID: COMTRK-8001D
NASA FMEA #: 1.2.23
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

CRITICALITY REDUNDANCY SCREENS
FLIGHT HDW/FUNC A B C
NASA [ 2 /2 ] [ ] [ ] [ ] [ X ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

*CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW USUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR USE OF VARIOUS GROUND RULE INTERPRETATIONS IN DETERMINING THE SYSTEM LEVEL OF REDUNDANCY.

REPORT DATE 26 JULY 1988 C.19-61
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/04/88
ASSESSMENT ID: COMTRK-8001E
NASA FMEA #: 1.2.1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

LOSS OF OUTPUT COVERS ALL VSU FUNCTIONS. ONLY THE WORST CASE FUNCTION WAS ANALYSED.

WINDOW VIEWING, EVA AND COAS FOR CREW USUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEEPH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-62
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8001F
NASA FMEA #: 1.2.3

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSS OF OUTPUT COVERS ALL VSU FUNCTIONS. ONLY THE WORST CASE FUNCTION WAS ANALYSED.
WINDOW VIEWING, EVA AND COAS FOR CREW USUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8001G
NASA FMEA #: 1.2.4

NASA DATA:
BASELINE [ ]
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SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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| COMPARE [ N /N ] | [ N ] | [ N ] | [ N ] | [ N ] | [ N ] | [ ] | |

RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-64
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8001H
NASA FMEA #: 1.2.5
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)
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REPORT DATE 26 JULY 1988 C.19-65
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8001I
NASA FMEA #: 1.2.6
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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REPORT DATE 26 JULY 1988 C.19-66
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
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NASA FMEA #: 1.2.7

NASA DATA:
BASELINE [ ]
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SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)
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REPORT DATE 26 JULY 1988 C.19-67
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8001K
NASA FMEA #: 1.2.8

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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ADEQUATE [ ]
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REPORT DATE 26 JULY 1988 C.19-68
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8001L
NASA FMEA #: 1.2.9
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
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REPORT DATE 26 JULY 1988 C.19-69
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8001M
NASA FMEA #: 1.2.10
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
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REPORT DATE 26 JULY 1988 C.19-70
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
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NASA FMEA #: 1.2.11
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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| FLY | ITEM |
| HDW/FUNC | A | B | C |
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| IOA [ 2 /1R ] [ P ] [ p ] [ p ] [ p ] [ X ] |
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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-80010
NASA FMEA #: 1.2.12

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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COMPARISON: [ N/N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

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REPORT DATE 26 JULY 1988 C.19-72
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8001P
NASA FMEA #: 1.2.13
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

CRITICALITY REDUNDANCY SCREENS CIL
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COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8001Q
NASA FMEA #: 1.2.14
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-74
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8001R
NASA FMEA #: 1.2.15

ASSESSMENT ID: COMTRK-8001R
NASA FMEA #: 1.2.15

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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ADEQUATE [ ]
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8001S
NASA FMEA #: 1.2.16

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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ADEQUATE [ ]
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REPORT DATE 26 JULY 1988 C.19-76
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8001T
NASA FMEA #: 1.2.17

NASA DATA:
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SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
LOSS OF OUTPUT COVERS ALL VSU FUNCTIONS. ONLY THE WORST CASE FUNCTION WAS ANALYSED.
WINDOW VIEWING, EVA AND COAS FOR CREW USUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-77
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8001U
NASA FMEA #: 1.2.19
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)
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REPORT DATE 26 JULY 1988 C.19-78
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8001V
NASA FMEA #: 1.2.20

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8001
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

NASA DATA:
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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-79
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
NASA DATA:
ASSESSMENT ID: COMTRK-8002
NASA FMEA #: 1.2.2
NASA DATA:
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NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR USE OF VARIOUS GROUND RULE INTERPRETATIONS IN DETERMINING THE SYSTEM LEVEL OF REDUNDANCY.

REPORT DATE 26 JULY 1988 C.19-80
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002A
NASA FMEA #: 1.2.18
NASA ID:

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

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REPORT DATE 26 JULY 1988 C.19-81
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
NASA DATA:
NASA FMEA #: 1.2.21

ASSESSMENT ID: COMTRK-8002B NASA FMEA #:

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR USE OF VARIOUS GROUND RULE INTERPRETATIONS IN DETERMINING THE SYSTEM LEVEL OF REDUNDANCY.

REPORT DATE 26 JULY 1988 C.19-82
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002C
NASA FMEA #: 1.2.22
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW.

IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR USE OF VARIOUS GROUND RULE INTERPRETATIONS IN DETERMINING THE SYSTEM LEVEL OF REDUNDANCY.

REPORT DATE 26 JULY 1988  C.19-83
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002D
NASA FMEA #: 1.2.23
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
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REMARKS:

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REPORT DATE 26 JULY 1988 C.19-84
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002E
NASA FMEA #: 1.2.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
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REMARKS:
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REPORT DATE 26 JULY 1988  C.19-85
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002F
NASA FMEA #: 1.2.3

NASA DATA:
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SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002G
NASA FMEA #: 1.2.4

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
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REMARKS:
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### APPENDIX C
#### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 3/05/88  
**ASSESSMENT ID:** COMTRK-8002H  
**NASA FMEA #:** 1.2.5  

**NASA DATA:**  
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- NEW [ x ]

**SUBSYSTEM:** COMM AND TRACK  
**MDAC ID:** 8002  
**ITEM:** VIDEO SWITCHING UNIT

**LEAD ANALYST:** W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

**ADEQUATE [ ]**  
**INADEQUATE [ ]**

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**REPORT DATE** 26 JULY 1988  
**C.19-88**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002I
NASA FMEA #: 1.2.6
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

NASA DATA:
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* CIL RETENTION RATIONALE: (If applicable)
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002J
NASA FMEA #: 1.2.7

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

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INADEQUATE [ ]

REMARKS:
FAILS TO SWITCH RESULTS IN LOSS OF OUTPUT. LOSS OF OUTPUT COVERS ALL VSU FUNCTIONS. ONLY THE WORST CASE FUNCTION WAS ANALysED. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPETH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.
### APPENDIX C
#### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 3/05/88  
**NASA DATA:**  
**BASELINE** [ ]  
**NEW** [ X ]  

**ASSIGNMENT ID:** COMTRK-8002K  
**NASA FMEA #:** 1.2.8

**SUBSYSTEM:** COMM AND TRACK  
**MDAC ID:** 8002  
**ITEM:** VIDEO SWITCHING UNIT  

**LEAD ANALYST:** W.C. LONG

**ASSESSMENT:**

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* CIL RETENTION RATIONALE: (If applicable)  
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**REMARKS:**  
FAILS TO SWITCH RESULTS IN LOSS OF OUTPUT. LOSS OF OUTPUT COVERS ALL VSU FUNCTIONS. ONLY THE WORST CASE FUNCTION WAS ANALYSED. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

**REPORT DATE** 26 JULY 1988  
**C.19-91**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002L
NASA FMEA #: 1.2.9
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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| HDW/FUNC | A | B | C |
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COMPARE [ N /N ]
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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
FAILS TO SWITCH RESULTS IN LOSS OF OUTPUT. LOSS OF OUTPUT COVERS ALL VSU FUNCTIONS. ONLY THE WORST CASE FUNCTION WAS ANALYSED. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-92
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002M
NASA FMEA #: 1.2.10

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
FAILS TO SWITCH RESULTS IN LOSS OF OUTPUT. LOSS OF OUTPUT COVERS ALL VSU FUNCTIONS. ONLY THE WORST CASE FUNCTION WAS ANALYSED. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-93
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002N
NASA FMEA #: 1.2.11

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
FAILS TO SWITCH RESULTS IN LOSS OF OUTPUT. LOSS OF OUTPUT COVERS ALL VSU FUNCTIONS. ONLY THE WORST CASE FUNCTION WAS ANALYSED.
NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEEPHT ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-80020
NASA FMEA #: 1.2.12

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
FAILS TO SWITCH RESULTS IN LOSS OF OUTPUT. LOSS OF OUTPUT COVERS ALL VSU FUNCTIONS. ONLY THE WORST CASE FUNCTION WAS ANALYSED. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002P
NASA FMEA #: 1.2.13

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
FAILS TO SWITCH RESULTS IN LOSS OF OUTPUT. LOSS OF OUTPUT COVERS ALL VSU FUNCTIONS. ONLY THE WORST CASE FUNCTION WAS ANALYSED. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

REPORT DATE 26 JULY 1988   C.19-96
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002Q
NASA FMEA #: 1.2.14

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
FAILS TO SWITCH RESULTS IN LOSS OF OUTPUT. LOSS OF OUTPUT COVERS ALL VSU FUNCTIONS. ONLY THE WORST CASE FUNCTION WAS ANALYSED. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002R
NASA FMEA #: 1.2.15
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

CRITICALITY
FLIGHT
HDW/FUNC

NASA [ 3 /3 ]
IOA [ 2 /1R ]
COMPARE [ N /N ]

RECOMMENDATIONS: (If different from NASA)

[ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
Fails to switch results in loss of output. Loss of output covers all VSU functions. Only the worst case function was analysed.
NASA in agreement with IOA criticality designations for LRU level analysis. NASA made an in-depth analysis to the LRU component level so that the IOA LRU level analysis resulted in a more severe criticality.

REPORT DATE 26 JULY 1988 C.19-98
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002S
NASA FMEA #: 1.2.16

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
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REMARKS:
FAILS TO SWITCH RESULTS IN LOSS OF OUTPUT. LOSS OF OUTPUT COVERS ALL VSU FUNCTIONS. ONLY THE WORST CASE FUNCTION WAS ANALYSED. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-99
ASSESSMENT DATE: 3/05/88  
ASSESSMENT ID: COMTRK-8002T  
NASA FMEA #: 1.2.17  
SUBSYSTEM: COMM AND TRACK  
ITEM: VIDEO SWITCHING UNIT  
LEAD ANALYST: W.C. LONG  

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)  
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REMARKS:
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002U
NASA FMEA #: 1.2.19
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
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REMARKS:
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REPORT DATE 26 JULY 1988 C.19-101
APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8002V
NASA FMEA #: 1.2.20

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8002
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
FAILS TO SWITCH RESULTS IN LOSS OF OUTPUT. LOSS OF OUTPUT COVERS ALL VSU FUNCTIONS. ONLY THE WORST CASE FUNCTION WAS ANALYSED. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEEPHT ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

REPORT DATE 26 JULY 1988  C.19-102
## APPENDIX C  
### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 3/05/88  
**ASSESSMENT ID:** COMTRK-8003  
**NASA FMEA #:** 1.2.2  
**SUBSYSTEM:** COMM AND TRACK  
**MDAC ID:** 8003  
**ITEM:** VIDEO SWITCHING UNIT  
**LEAD ANALYST:** W.C. LONG

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**RECOMMENDATIONS:** (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]  
INADEQUATE [ ]

**REMARKS:**  
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR USE OF VARIOUS GROUND RULE INTERPRETATION IN DETERMINING THE SYSTEM LEVEL OF REDUNDANCY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003A
NASA FMEA #: 1.2.18

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR USE OF VARIOUS GROUND RULE INTERPRETATION IN DETERMINING THE SYSTEM LEVEL OF REDUNDANCY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003B
NASA FMEA #: 1.2.21
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR USE OF VARIOUS GROUND RULE INTERPRETATION IN DETERMINING THE SYSTEM LEVEL OF REDUNDANCY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSessment DATE: 3/05/88
ASSessment ID: COMTRK-8003C
nasa FMEA #: 1.2.22
subsystem: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003D
NASA FMEA #: 1.2.23

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR USE OF VARIOUS GROUND RULE INTERPRETATION IN DETERMINING THE SYSTEM LEVEL OF REDUNDANCY.

REPORT DATE 26 JULY 1988  C.19-107
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003E
NASA FMEA #: 1.2.1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C

NASA [ 3 /2R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ N /N ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
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REMARKS:
INTERNAL ELECTRICAL OPEN/SHORT CIRCUIT COULD RESULT IN LOSS OF OUTPUT.
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003F
NASA FMEA #: 1.2.3
ASSESSMENT ID: NASA FMEA #:
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)
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REMARKS:
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REPORT DATE 26 JULY 1988 C.19-109
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003G
NASA FMEA #: 1.2.4

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
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REPORT DATE 26 JULY 1988 C.19-110
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003H
NASA FMEA #: 1.2.5
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

NASA DATA:
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NEW [ X ]

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
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REMARKS:
INTERNAL ELECTRICAL OPEN/SHORT CIRCUIT COULD RESULT IN LOSS OF OUTPUT.
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-111
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003I
NASA FMEA #: 1.2.6

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
INTERNAL ELECTRICAL OPEN/SHORT CIRCUIT COULD RESULT IN LOSS OF OUTPUT.
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
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REPORT DATE 26 JULY 1988 C.19-112
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003J
NASA FMEA #: 1.2.7
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT ITEM
HDW/FUNC A B C
NASA [ 3 /2R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N /N ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
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REPORT DATE 26 JULY 1988  C.19-113
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003K
NASA FMEA #: 1.2.8

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003L
NASA PMEA #: 1.2.9
NASA FMEA #: 1.2.9
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988  C.19-115
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003M
NASA FMEA #: 1.2.10
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-116
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003N
NASA FMEA #: 1.2.11

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

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IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N /N ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-117
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-80030
NASA FMEA #: 1.2.12

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
INTERNAL ELECTRICAL OPEN/SHORT CIRCUIT COULD RESULT IN LOSS OF OUTPUT.
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPT ANLYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-118
APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88  
ASSESSMENT ID: COMTRK-8003P  
NASA FMEA #: 1.2.13  
NASA DATA:  
BASELINE [  ]  
NEW [ X ]  
SUBSYSTEM: COMM AND TRACK  
MDAC ID: 8003  
ITEM: VIDEO SWITCHING UNIT  
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:
INTERNAL ELECTRICAL OPEN/SHORT CIRCUIT COULD RESULT IN LOSS OF OUTPUT.
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-119
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003Q
NASA FMEA #: 1.2.14

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 3 /2R ] [ P ] [ P ] [ P ] [ ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N /N ] [ ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

INTERNAL ELECTRICAL OPEN/SHORT CIRCUIT COULD RESULT IN LOSS OF OUTPUT.
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
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REPORT DATE 26 JULY 1988  C.19-120
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003R
NASA FMEA #: 1.2.15
ASSESSMENT ID: COMTRK-8003R
NASA FMEA #: 1.2.15
NASA DATA:
BASELINE [ ]
NEW [ X ]
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
INTERNAL ELECTRICAL OPEN/SHORT CIRCUIT COULD RESULT IN LOSS OF OUTPUT.
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEEPH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-121
### APPENDIX C

### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 3/05/88  
**NASA DATA:**  
**ASSESSMENT ID:** COMTRK-8003S  
**NASA FMEA #:** 1.2.16  
**SUBSYSTEM:** COMM AND TRACK  
**MDAC ID:** 8003  
**ITEM:** VIDEO SWITCHING UNIT  
**LEAD ANALYST:** W.C. LONG  

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**RECOMMENDATIONS:** (If different from NASA)  
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* CIL RETENTION RATIONALE: (If applicable)  
ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**  
INTERNAL ELECTRICAL OPEN/SHORT CIRCUIT COULD RESULT IN LOSS OF OUTPUT.  
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

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**REPORT DATE** 26 JULY 1988  
**C.19-122**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003T
NASA FMEA #: 1.2.17

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
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LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-123
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8003U
NASA FMEA #: 1.2.19
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
INTERNAL ELECTRICAL OPEN/SHORT CIRCUIT COULD RESULT IN LOSS OF OUTPUT.
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REPORT DATE 26 JULY 1988 C.19-124
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
NASA DATA:
ASSESSMENT ID: COMTRK-8003V
BASELINE [ ]
NASA FMEA #: 1.2.20
NEW [ ]
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8003
ITEM: VIDEO SWITCHING UNIT
LEAD ANALYST: W.C. LONG

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COMPARE [ N /N ] [ ] [ ] [ ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
INTERNAL ELECTRICAL OPEN/SHORT CIRCUIT COULD RESULT IN LOSS OF OUTPUT.
LOSS OF VCU COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
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REPORT DATE 26 JULY 1988 C.19-125
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8008
NASA FMEA #: 2.1.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8008
ITEM: TV CAMERA A (FWD P/L BAY)

LEAD ANALYST: W.C. LONG

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IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF TVC COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING OF P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE.

IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-126
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8008A
NASA FMEA #: 2.1.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8008
ITEM: TV CAMERA A (FWD P/L BAY)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF TVC COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING OF P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE.

IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8008B
NASA FMEA #: 2.1.3.1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8008
ITEM: TV CAMERA A (FWD P/L BAY)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS:
(If different from NASA)

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(REPORT DATE 26 JULY 1988 C.19-128)
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8008C
NASA FMEA #: 2.1.5
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8008
ITEM: TV CAMERA A (FWD P/L BAY)
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF TVC COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING OF P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988  C.19-129
APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88  
ASSESSMENT ID: COMTRK-8008D  
NASA FMEA #: 2.2.1  
SUBSYSTEM: COMM AND TRACK  
MDAC ID: 8008  
ITEM: TV CAMERA A (FWD P/L BAY)  
LEAD ANALYST: W.C. LONG  

NASA DATA:  
BASELINE [ ]  
NEW [ X ]  

SUBSYSTEM DATA:  
BASELINE [ ]  
NEW [ X ]

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF TVC COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING OF P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988  C.19-130
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8008E
NASA FMEA #: 2.2.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8008
ITEM: TV CAMERA A (FWD P/L BAY)

LEAD ANALYST: W.C. LONG

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INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-131
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
NASA DATA:
ASSESSMENT ID: COMTRK-8008F
NASA FMEA #: 2.2.3.1

BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8008
ITEM: TV CAMERA A (FWD P/L BAY)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988  C.19-132
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8008G
NASA FMEA #: 2.2.5

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8008
ITEM: TV CAMERA A (FWD P/L BAY)

LEAD ANALYST: W.C. LONG

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| IOA         | [ 2 /1R ]          | [ P ] | [ P ] | [ P ] | [ X ] |
| COMPARE     | [ /N ]             | [ N ] | [ N ] | [ N ] | [ ] |

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
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INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-133
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
NASA DATA:
BASELINE [ ]
NEW [ X ]

NASA FMEA #: 2.3.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8008
ITEM: TV CAMERA A (FWD P/L BAY)

LEAD ANALYST: W.C. LONG

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ADEQUATE [ X ]
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REPORT DATE 26 JULY 1988 C.19-134
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8008I
NASA FMEA #: 2.3.2

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8008
ITEM: TV CAMERA A (FWD P/L BAY)

LEAD ANALYST: W.C. LONG

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ADEQUATE [ X ]
INADEQUATE [ ]

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8008J
NASA FMEA #: 2.3.3.1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8008
ITEM: TV CAMERA A (FWD P/L BAY)

LEAD ANALYST: W.C. LONG

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ADEQUATE [ X ]
INADEQUATE [   ]

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REPORT DATE 26 JULY 1988 C.19-136
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8008K
NASA FMEA #: 2.3.5

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8008
ITEM: TV CAMERA A (FWD P/L BAY)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
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|            | A      | B      | C      | |
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| IOA       | [2/IR]| [P]    | [P]    | [P]    | [X]  |
| COMPARE   | [N]    | [N]    | [N]    | [N]    | [ ]  |

RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-137
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8009
NASA FMEA #: 2.1.1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8009
ITEM: TV CAMERA C (AFT P/L BAY)
LEAD ANALYST: W.C. LONG

NASADA DATA:
BASELINE [ ]
NEW [ X ]

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NASA [ 2 /2 ] [ ] [ ] [ ] [ ] [ X ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
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REPORT DATE 26 JULY 1988 C.19-138
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8009A
NASA FMEA #: 2.1.2

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8009
ITEM: TV CAMERA C (AFT P/L BAY)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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*CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [X]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-139
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8009B
NASA FMEA #: 2.1.3.1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8009
ITEM: TV CAMERA C (AFT P/L BAY)

LEAD ANALYST: W.C. LONG

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REPORT DATE 26 JULY 1988 C.19-140
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8009C
NASA FMEA #: 2.1.5
NASA DATA: BASELINE [ ] NEW [ X ]
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8009
ITEM: TV CAMERA C (AFT P/L BAY)
LEAD ANALYST: W.C. LONG

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ADEQUATE [ X ]
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8009D
NASA FMEA #: 2.2.1
ASSESSMENT ID: COMTRK-8009D
NASA FMEA #: 2.2.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8009
ITEM: TV CAMERA C (AFT P/L BAY)

LEAD ANALYST: W.C. LONG

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ADEQUATE [ ]

INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-142
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8009E
NASA FMEA #: 2.2.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8009
ITEM: TV CAMERA C (AFT P/L BAY)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF TVC COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING OF P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE REDUNDANCY EXISTS VIA CREW WINDOW VIEWING,
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IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88  NASA DATA:
ASSESSMENT ID: COMTRK-8009F  BASELINE [   ]
NASA FMEA #: 2.2.3.1  NEW [ X ]
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8009
ITEM: TV CAMERA C (AFT P/L BAY)
LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988  C.19-144
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8009G
NASA FMEA #: 2.2.5

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8009
ITEM: TV CAMERA C (AFT P/L BAY)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

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ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8009H
NASA FMEA #: 2.3.1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8009
ITEM: TV CAMERA C (AFT P/L BAY)
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

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REPORT DATE  26 JULY 1988   C.19-146
## APPENDIX C
### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 3/05/88  
**ASSESSMENT ID:** COMTRK-8009I  
**NASA FMEA #:** 2.3.2  
**SUBSYSTEM:** COMM AND TRACK  
**MDAC ID:** 8009  
**ITEM:** TV CAMERA C (AFT P/L BAY)  
**LEAD ANALYST:** W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]

INADEQUATE [ ]

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REPORT DATE 26 JULY 1988  C.19-147
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8009J
NASA FMEA #: 2.3.3.1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8009
ITEM: TV CAMERA C (AFT P/L BAY)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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ITEM
FLIGHT
HDW/FUNC
A
B
C

NASA [ 2 /2 ] [ ] [ ] [ ] [ ] [ X ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ ] [ X ]

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RECOMMENDATIONS: (If different from NASA)
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ADEQUATE [ X ]
INADEQUATE [ ]

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88  
ASSESSMENT ID: COMTRK-8009K  
NASA FMEA #: 2.3.5  
SUBSYSTEM: COMM AND TRACK  
MDAC ID: 8009  
ITEM: TV CAMERA C (AFT P/L BAY)  
LEAD ANALYST: W. C. LONG

NASA DATA:
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: COMM AND TRACK  
MDAC ID: 8009  
ITEM: TV CAMERA C (AFT P/L BAY)  
LEAD ANALYST: W. C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
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REPORT DATE 26 JULY 1988  C.19-149
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8010
NASA FMEA #: 2.1.1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8010
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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| COMPARE | [ /N ] | [ N ] | [ N ] | [ N ] | [ ] | [ ] |

RECOMMENDATIONS: (If different from NASA)

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REPORT DATE 26 JULY 1988 C.19-150
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8010A
NASA FMEA #: 2.1.2
NASA DATA: BASELINE [ ] NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8010
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
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## APPENDIX C
### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 3/05/88  
**NASA DATA:**

**ASSESSMENT ID:** COMTRK-8010B  
**MDAC ID:** 8010  
**ITEM:** TV CAMERAS D (RMS STBD POSITION FWD)

**LEAD ANALYST:** W.C. LONG

**SUBSYSTEM:** COMM AND TRACK

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**RECOMMENDATIONS:** (If different from NASA)

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* **CIL RETENTION RATIONALE:** (If applicable)

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8010C
NASA FMEA #: 2.1.5
NASA DATA:
BASELINE [ ] NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8010
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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REPORT DATE 26 JULY 1988 C.19-153
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8010D
NASA FMEA #: 2.2.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8010
ITEM: TV CAMERA D (RMS STBD POSITION FWD)
LEAD ANALYST: W.C. LONG

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8010E
NASA FMEA #: 2.2.2
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8010
ITEM: TV CAMERA D (RMS STBD POSITION FWD)
LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8010F
NASA FMEA #: 2.2.3.1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8010
ITEM: TV CAMERA D (RMS STBD POSITION FWD)
LEAD ANALYST: W.C. LONG

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REPORT DATE 26 JULY 1988 C.19-156
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8010G
NASA FMEA #: 2.2.5

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8010
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF TVC COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING OF P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-157
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
NASA DATA:
ASSESSMENT ID: COMTRK-8010H
NASA FMEA #: 2.3.1
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8010
ITEM: TV CAMERA D (RMS STBD POSITION FWD)
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-158
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8010I
NASA FMEA #: 2.3.2

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8010
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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*CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [x] INADEQUATE [ ]

REMARKS:
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8010J
NASA FMEA #: 2.3.3.1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8010
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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| COMPARE| [ /N ]  | [ N ]| [ N ]| [ N ] | [ ] |

RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-160
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8010K
NASA FMEA #: 2.3.5

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8010
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

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INADEQUATE [ ]

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8011
NASA FMEA #: 2.1.1

NASA DATA:
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SUBSYSTEM: MDAC ID:
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-162
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8011A
NASA FMEA #: 2.1.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM:
MDAC ID: 8011
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
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REMARKS:
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CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE
CRITICALITY.

REPORT DATE 26 JULY 1988  C.19-163
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8011B
NASA FMEA #: 2.1.3.1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM:
MDAC ID: 8011
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8011C
NASA FMEA #: 2.1.5

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM:
MDAC ID: 8011
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

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REPORT DATE 26 JULY 1988 C.19-165
ASSESSMENT DATE: 3/05/88
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM:
MDAC ID: 8011
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

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REMARKS:
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REPORT DATE 26 JULY 1988 C.19-166
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8011E
NASA FMEA #: 2.2.2

SUBSYSTEM:
MDAC ID: 8011
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

Adequate [X]
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88  NASA DATA:  NASA FMEA #:  2.2.3.1
ASSESSMENT ID:  COMTRK-8011F  BASELINE [ ]  NEW [ X ]
SUBSYSTEM:  MDAC ID:  8011
ITEM:  TV CAMERA D (RMS STBD POSITION FWD)
LEAD ANALYST:  W.C. LONG

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ADEQUATE [ X ]
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REPORT DATE 26 JULY 1988  C.19-168
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8011G
NASA FMEA #: 2.2.5

ASSESSMENT ID: COMTRK-8011G
NASA FMEA #: 2.2.5

SUBSYSTEM:
MDAC ID: 8011
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

NASA DATA:
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NEW [ X ]

SUBSYSTEM: [ ]
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ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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EVA AND COAS FOR CREW VISUAL INSEPCTION AND RMS JETTISON TO ALLOW
P/L BAY DOOR CLOSURE.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL
CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE
CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-169
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88  NASA DATA:
ASSESSMENT ID: COMTRK-8011H  BASELINE [   ]
NASA FMEA #: 2.3.1  NEW [ X ]

SUBSYSTEM:
MDAC ID: 8011
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF TVC COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING OF P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE REDUNDANCY EXISTS VIA CREW WINDOW VIEWING,
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IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988  C.19-170
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8011I
NASA FMEA #: 2.3.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM:
MDAC ID: 8011
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF TVC COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING OF P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSEPTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE.

IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988  C.19-171
**APPENDIX C**  
**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 3/05/88  
**ASSESSMENT ID:** COMTRK-8011J  
**NASA FMEA #:** 2.3.3.1  

**NASA DATA:**  
BASELINE [ ]  
NEW [ X ]

**SUBSYSTEM:**  
**MDAC ID:** 8011  
**ITEM:** TV CAMERA D (RMS STBD POSITION FWD)

**LEAD ANALYST:** W.C. LONG

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**RECOMMENDATIONS:** (If different from NASA)  
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)  
ADEQUATE [ X ]  
INADEQUATE [ ]

**REMARKS:**  
LOSS OF TVC COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING OF P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSEPCTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE.  
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

**REPORT DATE**  26 JULY 1988  
**C.19-172**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8011K
NASA FMEA #: 2.3.5

SUBSYSTEM:
MDAC ID: 8011
ITEM: TV CAMERA D (RMS STBD POSITION FWD)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF TVC COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING OF P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSEPCTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-173
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8014
NASA FMEA #: 2.1.7
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8014
ITEM: PAN AND TILT UNIT (TVC A POSITION)
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8014A
NASA FMEA #: 2.2.7

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8014
ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8014B
NASA FMEA #: 2.3.7

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8014
 ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

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IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-176
**APPENDIX C**

**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 3/05/88
**ASSESSMENT ID:** COMTRK-8014C
**NASA FMEA #:** 2.4.1.1

**NASAl DATA:**
- BASELINE [ ]
- NEW [ X ]

**SUBSYSTEM:** COMM AND TRACK
**MDAC ID:** 8014
**ITEM:** PAN AND TILT UNIT (TVC A POSITION)

**LEAD ANALYST:** W.C. LONG

**ASSESSMENT:**

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- IOA [ 2/1R ]
- COMARE [ /N ]

**RECOMMENDATIONS:**

| [ ] | [ ] | [ ] | [ ] |

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

- ADEQUATE [ X ]
- INADEQUATE [ ]

**REMARKS:**

- PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
- IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

**REPORT DATE** 26 JULY 1988  
C.19-177
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8014D
NASA FMEA #: 2.4.1.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8014
ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REDUNDANCY SCREENS
A B C

NASA [ 2 /2 ] [ ] [ ] [ ] [ X ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8014E
NASA FMEA #: 2.4.2.1
ASSESSMENT WORKSHEET

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8014
ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-179
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
NASA DATA: BASELINE [ ]
NASA FMEA #: 2.4.2.2 NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8014
ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-180
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8014G
NASA FMEA #: 2.4.3

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8014
ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-181
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8015
NASA FMEA #: 2.1.7

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8015
ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY

FLIGHT

HDW/FUNC

REDUNDANCY SCREENS

CIL

ITEM

NASA [ 2 /2 ] [ ] [ ] [ ] [ ] [ X ] *

IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]

INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS
STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE
LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY
EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL
INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST
CASE CONDITION.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL
CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE
CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-182
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8015A
NASA FMEA #: 2.2.7
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8015
ITEM: PAN AND TILT UNIT (TVC A POSITION)
LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988  C.19-183
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
NASA DATA:
ASSESSMENT ID: COMTRK-8015B NASA FMEA #: 2.3.7
BASELINE [ ] NEW [ X ]
SUBSYSTEM: COMM AND TRACK MDAC ID: 8015
ITEM: PAN AND TILT UNIT (TVC A POSITION)
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS
STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE
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EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL
INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST
CASE CONDITION.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL
CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE
CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-184
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8015C
NASA FMEA #: 2.4.1.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8015
ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

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COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-185
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
NASA DATA:
ASSESSMENT ID: COMTRK-8015D
NASA FMEA #: 2.4.1.2
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8015
ITEM: PAN AND TILT UNIT (TVC A POSITION)
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988  C.19-186
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8015E
NASA FMEA #: 2.4.2.1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8015
ITEM: PAN AND TILT UNIT (TVC A POSITION)
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
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REPORT DATE 26 JULY 1988  C.19-187
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8015F
NASA FMEA #: 2.4.2.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8015
ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS
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REPORT DATE 26 JULY 1988 C.19-188
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8015G
NASA FMEA #: 2.4.3

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8015
ITEM: PAN AND TILT UNIT (TVC A POSITION)
LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:
CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C ITEM
NASA [ 2/2 ] [ ] [ ] [ ] [ X ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS
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CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88  NASA DATA:
ASSESSMENT ID: COMTRK-8015H  BASELINE [ ]
NASA FMEA #: 2.4.4.2  NEW [ X ]

SUBSYSTEM:  COMM AND TRACK
MDAC ID: 8015
ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
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REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS
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REPORT DATE 26 JULY 1988  C.19-190
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8016
NASA FMEA #: 2.1.7
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8016
ITEM: PAN AND TILT UNIT (TVC A POSITION)
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ERRATIC/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST VERSA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
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REPORT DATE 26 JULY 1988    C.19-191
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
NASA DATA:
ASSESSMENT ID: COMTRK-8016A
NASA FMEA #: 2.2.7
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8016
ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ERRATIC/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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REPORT DATE 26 JULY 1988  C.19-192
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8016B
NASA FMEA #: 2.3.7
NASA DATA:
BASELINE [ ]
NEW [ X ]
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8016
ITEM: PAN AND TILT UNIT (TVC A POSITION)
LEAD ANALYST: W.C. LONG
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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

Adequate [ X ]
Inadequate [ ]

REMARKS:
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8016C
NASA FMEA #: 2.4.1.1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8016
ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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| COMPARE | [ /N ] | [ N ] | [ N ] | [ N ] | [ ] |

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-194
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8016D
NASA FMEA #: 2.4.1.2

NASA DATA:
BASELINE [  ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8016
ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

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| COMPARE [ /N ] | [ N ] | [ N ] | [ N ] | [ ] |

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ERRATIC/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8016E
NASA FMEA #: 2.4.2.1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8016
ITEM: PAN AND TILT UNIT (TVC A POSITION)
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ERRATIG/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988  C.19-196
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8016F
NASA FMEA #: 2.4.2.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8016
ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ERRATIC/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
NASA DATA:
ASSESSMENT ID: COMTRK-8016G
NASA FMEA #: 2.4.3
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8016
ITEM: PAN AND TILT UNIT (TVC A POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 2 /2 ] [ ] [ ] [ ] [ ] [ X ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ERRATIC/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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REPORT DATE 26 JULY 1988 C.19-198
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8017
NASA FMEA #: 2.1.7
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8017
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FLIGHT | HDW/FUNC | A | B | C | ITEM |
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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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REPORT DATE 26 JULY 1988 C.19-199
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8017A
NASA FMEA #: 2.2.7

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8017
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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REPORT DATE 26 JULY 1988 C.19-200
**APPENDIX C**  
**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 3/05/88  
**NASA DATA:**  
**ASSESSMENT ID:** COMTRK-8017B  
**NASA FMEA #:** 2.3.7  
**BASELINE [ ] NEW [ X ]**

**SUBSYSTEM:** COMM AND TRACK  
**MDAC ID:** 8017  
**ITEM:** PAN AND TILT UNIT (TVC B POSITION)

**LEAD ANALYST:** W.C. LONG

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**RECOMMENDATIONS:** (If different from NASA)  

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* CIL RETENTION RATIONALE: (If applicable)  

ADEQUATE [ X ]

INADEQUATE [ ]

**REMARKS:**

PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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**REPORT DATE** 26 JULY 1988  
C.19-201
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8017C
NASA FMEA #: 2.4.1.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8017
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8017D
NASA ID #: 8017
SUBSYSTEM: COMM AND TRACK
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
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REPORT DATE 26 JULY 1988  C.19-203
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8017E
NASA FMEA #: 2.4.2.1

NASA DATA:
BASELINE [ ]
NEW [X ]

SUBSYSTEM:
COMM AND TRACK

MDAC ID:
8017

ITEM:
PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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REPORT DATE 26 JULY 1988 C.19-204
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8017F
NASA FMEA #: 2.4.2.2

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8017.
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
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REPORT DATE 26 JULY 1988 C.19-205
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8017G
NASA FMEA #: 2.4.3

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8017
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8018
NASA FMEA #: 2.1.7

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8018
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
LOSS OF CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS
STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE
LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXIST
VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION
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CONDITION.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL
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CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-207
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8018A
NASA FMEA #: 2.2.7

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8018
ITEM: PAN AND TILT UNIT (TVC B POSITION)
LEAD ANALYST: W.C. LONG

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COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8018B
NASA FMEA #: 2.3.7

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8018
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8018C
NASA FMEA #: 2.4.1.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8018
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8018D
NASA FMEA #: 2.4.1.2
NASA DATA:
BASELINE [  ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8018
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)
  ADEQUATE [ X ]
  INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-211
ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8018E
NASA FMEA #: 2.4.2.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8018
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C ITEM

NASA [ 2 /2 ] [ ] [ ] [ ] [ X ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

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ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: CONTRK-8018F
NASA FMEA #: 2.4.2.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8018
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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ADEQUATE [ X ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-213
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8018G
NASA FMEA #: 2.4.3

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8018
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALLY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

| NASA | [ 2 /2 ] | [ ] | [ ] | [ ] | [ ] | [ X ] * |
| IOA  | [ 2 /1R ] | [ P ] | [ P ] | [ P ] | [ ] | [ X ] |

COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
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REPORT DATE 26 JULY 1988 C.19-214
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8018H
NASA FMEA #: 2.4.4.2

NAS DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM:
COMM AND TRACK
MDAC ID:
8018
ITEM:
PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-215
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8019
NASA FMEA #: 2.1.7

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8019
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ERRATIC/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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REPORT DATE 26 JULY 1988 C.19-216
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8019A
NASA FMEA #: 2.2.7
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8019
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-217
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88

ASSESSMENT ID: COMTRK-8019B

NASA FMEA #: 2.3.7

SUBSYSTEM: COMM AND TRACK

ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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REPORT DATE 26 JULY 1988 C.19-218
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8019C
NASA FMEA #: 2.4.1.1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8019
ITEM: PAN AND TILT UNIT (TVC B POSITION)
LEAD ANALYST: W.C. LONG

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APPENDIX C
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ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8019D
NASA FMEA #: 2.4.1.2

NASA DATA:
BASELINE [
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8019
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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REPORT DATE 26 JULY 1988 C.19-220
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8019E
NASA FMEA #: 2.4.2.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8019
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

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ADEQUATE [ X ]
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REMARKS:
ERRATIC/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
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REPORT DATE 26 JULY 1988 C.19-221
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8019F
NASA FMEA #: 2.4.2.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8019
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988   C.19-222
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8019G
NASA FMEA #: 2.4.3
NASA DATA:
BASELINE [ ]
NEW [ X ]

NASA FMEA #: 2.4.3

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8019
ITEM: PAN AND TILT UNIT (TVC B POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL ITEM

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-223
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8020
NASA FMEA #: 2.1.7
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8020
ITEM: PAN AND TILT UNIT (TVC C POSITION)
LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:
CRITICALITY REDUNDANCY SCREENS CIL ITEM
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IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8020A
NASA FMEA #: 2.2.7
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8020
ITEM: PAN AND TILT UNIT (TVC C POSITION)
LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

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ADEQUATE [ X ]
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REPORT DATE 26 JULY 1988  C.19-225
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8020B
NASA FMEA #: 2.3.7

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8020
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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ADEQUATE [ X ]
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8020C
NASA FMEA #: 2.4.1.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8020
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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ADEQUATE [ X ]
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8020D
NASA FMEA #: 2.4.1.2

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8020
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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ADEQUATE [ x ]
INADEQUATE [ ]

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8020E
NASA FMEA #: 2.4.2.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8020
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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REPORT DATE 26 JULY 1988 C.19-229
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8020F
NASA FMEA #: 2.4.2.2
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8020
ITEM: PAN AND TILT UNIT (TVC C POSITION)
LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
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NASA DATA:
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NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8020
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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REPORT DATE 26 JULY 1988 C.19-231
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88  
ASSESSMENT ID: COMTRK-8021  
NASA FMEA #: 2.1.7

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: COMM AND TRACK  
MDAC ID: 8021  
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

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FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. Unlike CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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REPORT DATE 26 JULY 1988  C.19-232
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8021A
NASA FMEA #: 2.2.7
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8021
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
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ASSESSMENT ID: COMTRK-8021B
NASA FMEA #: 2.3.7
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8021
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT RMS
STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE
LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY
EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL
INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST
CASE CONDITION.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL
CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE
CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-234
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8021C
NASA FMEA #: 2.4.1.1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8021
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-235
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8021D
NASA FMEA #: 2.4.1.2
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8021
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-236
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8021E
NASA FMEA #: 2.4.2.1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8021
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
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REMARKS:
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REPORT DATE 26 JULY 1988 C.19-237
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8021F
NASA FMEA #: 2.4.2.2
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8021
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-238
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8021G
NASA FMEA #: 2.4.3

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8021
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
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REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
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CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-239
APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88  
ASSESSMENT ID: COMTRK-8021H  
NASA FMEA #: 2.4.4.2

SUBSYSTEM: COMM AND TRACK  
MDAC ID: 8021  
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988  C.19-240
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8021I
NASA FMEA #: 2.4.4.1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8021
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
ONLY WORST CASE CONDITION ANALYSED.
NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-241
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8022
NASA FMEA #: 2.1.7

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8022
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ERRATIC/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
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REPORT DATE 26 JULY 1988 C.19-242
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8022A
NASA FMEA #: 2.2.7
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8022
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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ADEQUATE [ X ]
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REPORT DATE 26 JULY 1988 C.19-243
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8022B
NASA FMEA #: 2.3.7
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8022
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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REPORT DATE 26 JULY 1988 C.19-244
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8022C
NASA FMEA #: 2.4.1.1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8022
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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REPORT DATE 26 JULY 1988 C.19-245
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8022D
NASA FMEA #: 2.4.1.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8022
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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REMARKS:
ERRATIC/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-246
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8022E
NASA FMEA #: 2.4.2.1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8022
ITEM: PAN AND TILT UNIT (TVC C POSITION)
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
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REMARKS:
ERRATIC/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988  C.19-247
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8022F
NASA FMEA #: 2.4.2.2
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8022
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

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REMARKS:

ERRATIC/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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REPORT DATE 26 JULY 1988 C.19-248
ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8022G
NASA FMEA #: 2.4.3

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8022
ITEM: PAN AND TILT UNIT (TVC C POSITION)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

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REMARKS:

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8023
NASA FMEA #: 2.1.7
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8023
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)
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INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
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REPORT DATE 26 JULY 1988  C.19-250
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8023A
NASA FMEA #: 2.2.7
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8023
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)
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REMARKS:
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REPORT DATE 26 JULY 1988 C.19-251
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8023B
NASA FMEA #: 2.3.7

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8023
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
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REPORT DATE 26 JULY 1988 C.19-252
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8023C
NASA FMEA #: 2.4.1.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8023
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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REPORT DATE 26 JULY 1988 C.19-253
**APPENDIX C**

**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 3/05/88

**ASSESSMENT ID:** COMTRK-8023D

**NASA FMEA #:** 2.4.1.2

**SUBSYSTEM:** COMM AND TRACK

**MDAC ID:** 8023

**ITEM:** PAN AND TILT UNIT (TVC D POSITION)

**LEAD ANALYST:** W.C. LONG

**NASA DATA:**

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**SUBSYSTEM:** COMM AND TRACK

**MDAC ID:** 8023

**ITEM:** PAN AND TILT UNIT (TVC D POSITION)

**LEAD ANALYST:** W.C. LONG

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**COMPARE** | [ /N ] | [ N ] | [ N ] | [ N ] | [ ] |

**RECOMMENDATIONS:** (If different from NASA)

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(ADD/DELETE)

* **CIL RETENTION RATIONALE:** (If applicable)

| ADEQUATE | [ X ] |
| INADEQUATE | [ ] |

**REMARKS:**

PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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**REPORT DATE** 26 JULY 1988 C.19-254
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8023E
NASA FMEA #: 2.4.2.1
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8023
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
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REPORT DATE 26 JULY 1988  C.19-255
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8023F
NASA FMEA #: 2.4.2.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8023
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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| COMPARE     | /N                 | [ N ] | [ N ] | [ N ] | [ ] |

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
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REMARKS:
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REPORT DATE 26 JULY 1988  C.19-256
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8023G
NASA FMEA #: 2.4.3
NASA DATA:
BASELINE [ ]
NEW [ X ]
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8023
ITEM: PAN AND TILT UNIT (TVC D POSITION)
LEAD ANALYST: W.C. LONG

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| IOA [ 2 /1R ] | [ P ] | [ P ] | [ P ] | [ X ] |
| COMPARE [ /N ] | [ N ] | [ N ] | [ N ] | [ ] |

RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

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REPORT DATE 26 JULY 1988 C.19-257
ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8024
NASA FMEA #: 2.1.7
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8024
ITEM: PAN AND TILT UNIT (TVC D POSITION)
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8024A
NASA FMEA #: 2.2.7
NASA DATA:
BASELINE [   ]
NEW [  X  ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8024
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [   ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS
STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE
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CASE CONDITION.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL
CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE
CRITICALITY.

REPORT DATE 26 JULY 1988  C.19-259
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8024B
NASA FMEA #: 2.3.7
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8024
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REDUNDANCY SCREENS
A
B
C

ITEM

NASA [ 2 /2 ] [ ] [ ] [ ] [ ] [ X ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS
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REPORT DATE 26 JULY 1988 C.19-260
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8024C
NASA FMEA #: 2.4.1.1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8024
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
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REPORT DATE 26 JULY 1988 C.19-261
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8024D
NASA FMEA #: 2.4.1.2

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8024
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
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REPORT DATE 26 JULY 1988  C.19-262
**APPENDIX C**  
**ASSESSMENT WORKSHEET**

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**SUBSYSTEM:** COMM AND TRACK  
**MDAC ID:** 8024  
**ITEM:** PAN AND TILT UNIT (TVC D POSITION)

**LEAD ANALYST:** W.C. LONG

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**RECOMMENDATIONS:** *(If different from NASA)*

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* **CIL RETENTION RATIONALE:** *(If applicable)*

ADEQUATE [ X ]  
INADEQUATE [ ]

**REMARKS:**

FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.  
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IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

**REPORT DATE** 26 JULY 1988  
**C.19-263**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8024F
NASA FMEA #: 2.4.2.2

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8024
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS
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REPORT DATE 26 JULY 1988 C.19-264
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8024G
NASA FMEA #: 2.4.3

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8024
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [ X ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
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REPORT DATE 26 JULY 1988 C.19-265
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8024H
NASA FMEA #: 2.4.4.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8024
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
FAILURE TO START/STOP COULD RESULT IN LOSS OF CCTV AND MISSION.
LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS
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REPORT DATE 26 JULY 1988 C.19-266
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8025
NASA FMEA #: 2.1.7

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8025
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

ERRATIC/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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REPORT DATE 26 JULY 1988  C.19-267
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8025A
NASA FMEA #: 2.2.7
NASA DATA:
BASELINE [ ]
NEW [ x ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8025
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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| IOA [ 2 /1R ] | [ p ] | [ p ] | [ p ] | [ x ] |
| COMPARE [ /N ] | [ N ] | [ N ] | [ N ] | [ ] |

RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ x ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-268
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8025B
NASA FMEA #: 2.3.7

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8025
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ 2 /2 ] [ ] [ ] [ ] [ X ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [ X ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-269
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8025C
NASA FMEA #: 2.4.1.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8025
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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| IOA | [ 2/1R ] | [ P ] | [ P ] | [ P ] | [ X ] |
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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-270
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8025D
NASA FMEA #: 2.4.1.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8025
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ERRATIC/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-271
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8025E
NASA FMEA #: 2.4.2.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8025
ITEM: PAN AND TILT UNIT (TVC D POSITION)
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
ERRATIC/INTERMITTANT OPERATION COULD RESULT IN LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

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REPORT DATE 26 JULY 1988 C.19-272
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8025F
NASA FMEA #: 2.4.2.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8025
ITEM: PAN AND TILT UNIT (TVC D POSITION)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

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* 

REPORT DATE 26 JULY 1988 C.19-273
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8025G
NASA FMEA #: 2.4.3
ASSESSMENT ID: COMTRK-8025G
NASA FMEA #: 2.4.3
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8025
ITEM: PAN AND TILT UNIT (TVC D POSITION)
LEAD ANALYST: W. C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-274
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8033
NASA FMEA #: 2.1.6.1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8033
ITEM: MONOCHROME LENS ASSEMBLY (TVC A FWD P/L BAY)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF OUTPUT COULD CAUSE LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. ONLY WORST CASE CONDITION WAS ANALYSED.

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REPORT DATE 26 JULY 1988 C.19-275
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8033A
NASA FMEA #: 2.1.6.4
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8033
ITEM: MONOCROME LENS ASSEMBLY (TVC A FWD P/L BAY)
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

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REPORT DATE 26 JULY 1988 C.19-276
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8033B
NASA FMEA #: 2.1.6.3

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8033
ITEM: MONOCROME LENS ASSEMBLY (TVC A FWD P/L BAY)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
ONLY WORST CASE CONDITION WAS ANALYSED.
NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-277
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8034
NASA FMEA #: 2.1.6.2
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8034
ITEM: MONOCHROME LENS ASSEMBLY (TVC A FWD P/L BAY)
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
PHYSICAL BINDING/JAMMING COULD CAUSE LOSS OF CCTV AND MISSION.
LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS
STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE
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CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-278
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8035
NASA FMEA #: 2.1.6.1
NASA DATA: BASELINE [ ] NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8035
ITEM: MONOCHROME LENS ASSEMBLY (TVC B KEEL/EVA AFT P/L BAY)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

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IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-279
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8035A
NASA FMEA #: 2.1.6.4

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8035
ITEM: MONOCHROME LENS ASSEMBLY (TVC B KEEL/EVA AFT P/L BAY)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-280
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8035B
NASA FMEA #: 2.1.6.3

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8035
ITEM: MONOCHROME LENS ASSEMBLY (TVC B KEEL/EVA AFT P/L BAY)

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
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REPORT DATE 26 JULY 1988  C.19-281
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8036
NASA FMEA #: 2.1.6.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8036
ITEM: MONOCHROME LENS ASSEMBLY (TVC B KEEL/EVA AFT P/L BAY)

LEAD ANALYST: W.C. LONG

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IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8037
NASA FMEA #: 2.1.6.1
NASA DATA:
BASELINE [ ]
NEW [ X ]
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8037
ITEM:
MONOCHROME LENS ASSEMBLY (TVC C AFT P/L BAY)
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

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REPORT DATE 26 JULY 1988 C.19-283
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8037A
NASA FMEA #: 2.1.6.4
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8037
ITEM: MONOCHROME LENS ASSEMBLY (TVC C AFT P/L BAY)
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:

LOSS OF OUTPUT COULD CAUSE LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

*
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8037B
NASA FMEA #: 2.1.6.3
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8037
ITEM: MONOCHROME LENS ASSEMBLY (TVC C AFT P/L BAY)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FLIGHT | HDW/FUNC | A | B | C | ITEM |
| NASA | [ 3 /3 ] | [ ] | [ ] | [ ] | [ X ] |
| IOA | [ 2 /1R ] | [ P ] | [ P ] | [ P ] | [ X ] |
| COMPARE | [ N /N ] | [ N ] | [ N ] | [ N ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)
[ ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
ONLY WORST CASE CONDITION ANALYSED.
NASA IN AGREEMENT WITH IOA CRITICALITY DESIGNATIONS FOR LRU LEVEL ANALYSIS. NASA MADE AN INDEEPTH ANALYSIS TO THE LRU COMPONENT LEVEL SO THAT THE IOA LRU LEVEL ANALYSIS RESULTED IN A MORE SEVERE CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8038
NASA FMEA #: 2.1.6.2

ASSESSMENT ID: COMTRK-8038
NASA FMEA #: 2.1.6.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8038
ITEM: MONOCHROME LENS ASSEMBLY (TVC C AFT P/L BAY)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING/JAMMING COULD CAUSE LOSS OF CCTV AND MISSION.
LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS
STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE
LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA
CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND
RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE
CONDITION.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL
CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE
CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8039
NASA FMEA #: 2.1.6.1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8039
ITEM: MONOCHROME LENS ASSEMBLY (TVC D FWD P/L BAY)

LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:
CRITICALITY
FLIGHT HDW/FUNC

REDUNDANCY SCREENS
A B C

CIL ITEM

NASA [ 2 /2 ] [ ] [ ] [ ] [ X ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
LOSS OF OUTPUT COULD CAUSE LOSS OF CCTV AND MISSION. LOSS OF ALL
CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND
MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF
VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW
VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON
TO ALLOW P/L BAY DOOR CLOSURE. ONLY WORST CASE CONDITION WAS
ANALYSED.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL
CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE
CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-287
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8039A
NASA FMEA #: 2.1.6.4

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8039
ITEM: MONOCHROME LENS ASSEMBLY (TVC D FWD P/L BAY)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
  ADEQUATE [ X ]
  INADEQUATE [ ]

REMARKS:
LOSS OF OUTPUT COULD CAUSE LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. ONLY WORST CASE CONDITION WAS ANALYSED.

IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-288
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8040
NASA FMEA #: 2.1.6.2

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8040
ITEM: MONOCHROME LENS ASSEMBLY (TVC D FWD P/L BAY)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING/JAMMING COULD CAUSE LOSS OF CCTV AND MISSION.
LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS
STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE
LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA
CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND
RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE
CONDITION.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL
CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE
CRITICALITY.

REPORT DATE 26 JULY 1988  C.19-289
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
NASA DATA:
ASSESSMENT ID: COMTRK-8056
NASA FMEA #: 2.2.6.2
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8056
ITEM: COLOR LEN ASSEMBLY (TVC C)
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING/JAMMING COULD CAUSE LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION.

IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-290
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8056A
NASA FMEA #: 2.2.8.1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8056
ITEM: COLOR LENS ASSEMBLY (TVC C)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

| CRITICALITY | REDUNDANCY SCREENS | CIL |
| FLIGHT | A | B | C | ITEM |
| HDW/FUNC |

NASA [ 2 /2 ] [ ] [ ] [ ] [ ] [ X ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ /N ] [ N ] [ N ] [ N ] [ ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
PHYSICAL BINDING/JAMMING COULD CAUSE LOSS OF CCTV AND MISSION.
LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS
STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE
LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA
CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND
RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE
CONDITION.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL
CRITICALITIES (2/2 AND 3/IR), AND IOA COMBINED TO OBTAIN ONE
CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-291
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8060
NASA FMEA #: 2.2.6.2
NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8060
ITEM: COLOR LENS ASSEMBLY (TVC D)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
PHYSICAL BINDING/JAMMING COULD CAUSE LOSS OF CCTV AND MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD PREVENT RMS STOW AND MONITORING P/L BAY DOOR LATCHES RESULTING IN POSSIBLE LOSS OF VEHICLE AND CREW. UNLIKE CCTV REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION AND RMS JETTISON TO ALLOW P/L BAY DOOR CLOSURE. WORST CASE CONDITION. ONLY WORST CASE CONDITION WAS ANALYSED. IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8060A
NASA FMEA #: 2.2.8.1

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COM and TRACK
MDAC ID: 8060
ITEM: COLOR LENS ASSEMBLY (TVC D)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
Physical binding/jamming could cause loss of CCTV and mission. Loss of all capability to perform CCTV function could prevent RMS stow and monitoring P/L bay door latches resulting in possible loss of vehicle and crew. Unlike CCTV redundancy exists via crew window viewing, EVA and COAS for crew visual inspection and RMS jettison to allow P/L bay door closure. Worst case condition. Only worst case condition was analysed. IOA accepts NASA worst case criticality. NASA assigned dual criticalities (2/2 and 3/IR), and IOA combined to obtain one criticality.

REPORT DATE 26 JULY 1988  C.19-293
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8069
NASA FMEA #: 05-6PK-20402-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8069
ITEM: TV PWR CNTL UNIT SWITCH

LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ X ]
NEW [ ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA ACCEPTS NASA REVISED 3/1R CRITICALITY BASED ON GCIL
REDUNDANCY. GCIL CAN SELECT CCTV MNA OR MNB POWER THROUGH
DEDICATED DRIVERS THUS PROVIDING TWO LEVELS OF REDUNDANCY FOR
THIS ITEM.

REPORT DATE 26 JULY 1988 C.19-294
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8070
NASA FMEA #: 05-6PK-20402-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8070
ITEM: TV PWR CNTL UNIT SWITCH
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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| HDW/FUNC | NASA [ 3 /2R ] | [ P ] | [ P ] | [ P ] | [ ] | [ X ] | *
| IOA [ 2 /1R ] | [ P ] | [ P ] | [ P ] | [ P ] | [ X ] |
| COMPARE [ N /N ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA ACCEPTS NASA REVISED 3/1R CRITICALITY BASED ON GCIL REDUNDANCY. GCIL CAN SELECT CCTV MNA OR MNB POWER THROUGH DEDICATED DRIVERS THUS PROVIDING TWO LEVELS OF REDUNDANCY FOR THIS ITEM.

REPORT DATE 26 JULY 1988  C.19-295
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8074
NASA FMEA #: 

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8074
ITEM: TV SYNC SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO FMEA PRESENTLY AVAILABLE, BUT NASA PLANS TO HAVE A FMEA 3/1R (NON-CIL) GENERATED FOR THIS ITEM. IOA ACCEPTS NASA PLANNED FMEA CRITICALITY 3/1R BASED ON CONSIDERATION THAT RMS JETTISON REPRESENTS A SECOND LEVEL OF REDUNDANCY FOR RMS MOVEMENT MONITORING AND THAT TWO LATCH SENSE DETECTORS PROVIDE TWO LEVELS OF REDUNDANCY FOR P/L BAY DOOR LATCH MONITORING.

REPORT DATE 26 JULY 1988 C.19-296
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8077
NASA FMEA #: 05-6PK-20501-1

NASA DATA:
BASELINE [X]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8077
ITEM: TV CAMERA POWER SWITCH (TVC A)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY
FLIGHT HDW/FUNC

REDUNDANCY SCREENS
A  B  C

ITEM

NASA [3/3] [ ] [ ] [ ] [ ] [ ] *
IOA [2/IR] [P] [P] [P] [P] [X]
COMPARE [N/N] [N] [N] [N] [N] [N]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA accepts NASA revised 3/IR criticality based on consideration that RMS jettison represents a second level of redundancy for RMS movement monitoring and that two latch sense detectors provide two levels of redundancy for P/L bay door latch monitoring.

REPORT DATE 26 JULY 1988 C.19-297
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8078
NASA FMEA #: 05-6PK-20501-I
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8078
ITEM: TV CAMERA POWER SWITCH (TVC A)
LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ X ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8078
ITEM: TV CAMERA POWER SWITCH (TVC A)
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA ACCEPTS NASA REVISED 3/1R CRITICALITY BASED ON CONSIDERATION THAT RMS JETTISON REPRESENTS A SECOND LEVEL OF REDUNDANCY FOR RMS MOVEMENT MONITORING AND THAT TWOLatch SENSE DETECTORS PROVIDE TWO LEVELS OF REDUNDANCY FOR P/L BAY DOOR LATCH MONITORING.

REPORT DATE 26 JULY 1988 C.19-298
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8079
NASA FMEA #: 05-6PK-20501-I

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8079
ITEM: TV CAMERA POWER SWITCH (TVC B)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA ACCEPTS NASA REVISED 3/1R CRITICALITY BASED ON CONSIDERATION THAT RMS JETTISON REPRESENTS A SECOND LEVEL OF REDUNDANCY FOR RMS MOVEMENT MONITORING AND THAT TWO LATCH SENSE DETECTORS PROVIDE TWO LEVELS OF REDUNDANCY FOR P/L BAY DOOR LATCH MONITORING.

REPORT DATE 26 JULY 1988 C.19-299
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8080
NASA FMEA #: 05-6PK-20501-1
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8080
ITEM: TV CAMERA POWER SWITCH (TVC B)
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA ACCEPTS NASA REVISED 3/1R CRITICALITY BASED ON CONSIDERATION THAT RMS JETTISON REPRESENTS A SECOND LEVEL OF REDUNDANCY FOR RMS MOVEMENT MONITORING AND THAT TWO LATCH SENSE DETECTORS PROVIDE TWO LEVELS OF REDUNDANCY FOR P/L BAY DOOR LATCH MONITORING.

REPORT DATE 26 JULY 1988 C.19-300
### APPENDIX C
### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 3/05/88  
**ASSESSMENT ID:** COMTRK-8081  
**NASA FMEA #:** 05-6PK-20501-1  
**NASA DATA:**  
BASELINE [ X ]  
NEW [ ]  

**SUBSYSTEM:** COMM AND TRACK  
**MDAC ID:** 8081  
**ITEM:** TV CAMERA POWER SWITCH (TVC C)  
**LEAD ANALYST:** W.C. LONG  

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)  
[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* **CIL RETENTION RATIONALE:** (If applicable)  
ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**  
IOA ACCEPTS NASA REVISED 3/1R CRITICALITY BASED ON CONSIDERATION THAT RMS JETTISON REPRESENTS A SECOND LEVEL OF REDUNDANCY FOR RMS MOVEMENT MONITORING AND THAT TWO LATCH SENSE DETECTORS PROVIDE TWO LEVELS OF REDUNDANCY FOR P/L BAY DOOR LATCH MONITORING.

**REPORT DATE** 26 JULY 1988  
**C.19-301**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8082
NASA FMEA #: 05-6PK-20501-1

NASA DATA:
BASELINE [ x ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8082
ITEM: TV CAMERA POWER SWITCH (TVC C)

LEAD ANALYST: W.C. LONG

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| IOA [ 2 /1R ] | [ P ] | [ P ] | [ P ] | [ P ] | [ X ] |
| COMPARE [ N /N ] | [ N ] | [ N ] | [ N ] | [ N ] | [ ] |

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)

Adequate [ ]
Inadequate [ ]

REMARKS:
IOA accepts NASA revised 3/1R criticality based on consideration that RMS jettison represents a second level of redundancy for RMS movement monitoring and that two latch sense detectors provide two levels of redundancy for P/L bay door latch monitoring.

REPORT DATE 26 JULY 1988 C.19-302
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8083
NASA FMEA #: 05-6PK-20501-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8083
ITEM: TV CAMERA POWER SWITCH (TVC D)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM
NASA [ 3 /3 ] [ ] [ ] [ ] [ ] [ ] [ ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

IOA ACCEPTS NASA REVISED 3/1R CRITICALITY BASED ON CONSIDERATION THAT RMS JETTISON REPRESENTS A SECOND LEVEL OF REDUNDANCY FOR RMS MOVEMENT MONITORING AND THAT TWO LATCH SENSE DETECTORS PROVIDE TWO LEVELS OF REDUNDANCY FOR P/L BAY DOOR LATCH MONITORING.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8084
NASA FMEA #: 05-6PK-20501-1

NASA DATA:
BASELINE [ X ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8084
ITEM: TV CAMERA POWER SWITCH (TVC D)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA ACCEPTS NASA REVISED 3/IR CRITICALITY BASED ON CONSIDERATION THAT RMS JETTISON REPRESENTS A SECOND LEVEL OF REDUNDANCY FOR RMS MOVEMENT MONITORING AND THAT TWO LATCH SENSE DETECTORS PROVIDE TWO LEVELS OF REDUNDANCY FOR P/L BAY DOOR LATCH MONITORING.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8095
NASA FMEA #: COMTRK-8095
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8095
ITEM: TV CAMERA CMD FOCUS SWITCH
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

[ ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COMPARE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW.
IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20250-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988  C.19-305
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8096
NASA FMEA #: COMTRK-8096
NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8096
ITEM: TV CAMERA CMD FOCUS SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ ] / [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:

NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW.

IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20250-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-306
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8097
NASA FMEA #: 

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8097
ITEM: TV CAMERA CMD ZOOM SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW. IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20251-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988  C.19-307
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8098
NASA FMEA #: 
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8098
ITEM: TV CAMERA CMD ZOOM SWITCH
LEAD ANALYST: W.C. LONG

NASA DATA:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW.
IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20251-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-308
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8099
NASA FMEA #: 

NASA DATA: 
BASELINE [ ] 
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8099
ITEM: TV CAMERA CMD IRIS SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FLIGHT | HDW/FUNC | A | B | C | ITEM |
| NASA | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ]* |
| IOA | [ 2/IR ] | [ P ] | [ P ] | [ P ] | [ X ] |
| COMPARE | [ N/N ] | [ N ] | [ N ] | [ N ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW.
IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20252-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-309
ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8100
NASA FMEA #: NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8100
ITEM: TV CAMERA CMD IRIS SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW.

IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20252-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-310
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8101
NASA FMEA #: 

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8101
ITEM: TV CAMERA CMD TILT SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW.

IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20214-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-311
**APPENDIX C**

**ASSESSMENT WORKSHEET**

ASSESSMENT DATE: 3/05/88  
ASSESSMENT ID: COMTRK-8102  
NASA FMEA #:  

**NASA DATA:**  
BASELINE [ ]  
NEW [ ]  

**SUBSYSTEM:** COMM AND TRACK  
MDAC ID: 8102  
ITEM: TV CAMERA CMD TILT SWITCH  

LEAD ANALYST: W.C. LONG  

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)  
[ ] / [ ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)  
ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**
NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW. IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20214-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988  
C.19-312
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8103
NASA FMEA #: 

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8103
ITEM: TV CAMERA CMD PAN SWITCH
LEAD ANALYST: W.C. LONG

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| FLIGHT | A | B | C | ITEM |
| HDW/FUNC | | | | |

NASA [ ] [ ] [ ] [ ] [ ] [ ] *

IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA) [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [ ] INADEQUATE [ ]

REMARKS:

NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW.

IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05- 6PK-20215-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8104
NASA FMEA #: COMTRK-8104

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8104
ITEM: TV CAMERA CMD PAN SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS:  (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW.

IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20215-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE  26 JULY 1988    C.19-314
### APPENDIX C

#### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 3/05/88  
**ASSESSMENT ID:** COMTRK-8123  
**NASA FMEA #:**  
**NASA ID:**  
**BASELINE [ ]**  
**NEW [ ]**  
**SUBSYSTEM:** COMM AND TRACK  
**MDAC ID:** 8123  
**ITEM:** TV VIDEO INPUT PBI [TVC A FWD BAY SELECT] SW  
**LEAD ANALYST:** W.C. LONG  
**ASSESSMENT:** CRITICALITY REDUNDANCY SCREENS CIL  
**FLIGHT ITEM HDW/FUNC A B C**  
**BASELINE [ ]**  
**NEW [ ]**  
**NASA [ ]**  
**IOA [ ]**  
**COMPARE [ ]**  
**RECOMMENDATIONS:** (If different from NASA)  
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**[ ]**  
**[ ]**  
**[ ]** * (ADD/DELETE)  

* CIL RETENTION RATIONALE: (If applicable)  
**ADEQUATE [ ]**  
**INADEQUATE [ ]**  

**REMARKS:**  
NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW. IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20227-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8124
NASA FMEA #: COMTRK-8124
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8124
ITEM: TV VIDEO INPUT PBI [TVC A SELECT] SW
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW.

IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20227-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988  C.19-316
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8125
NASA FMEA #: NEW [ ]

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8125
ITEM: TV VIDEO INPUT PBI [TVC B KEEL/EVA SELECT] SW

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

| ADEQUATE [ ] |
| INADEQUATE [ ] |

REMARKS:
NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW.
IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20228-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-317
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8126
NASA FMEA #: 

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8126
ITEM: TV VIDEO INPUT PBI [TVC B SELECT] SW

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW.

IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20228-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-318
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8127
NASA FMEA #: 

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM:
COMM AND TRACK
MDAC ID: 8127
ITEM:
TV VIDEO INPUT PBI [TVC C AFT BAY SELECT] SW

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ ]

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION
WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY.
SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF
VEHICLE AND CREW.
IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-
6PK-20260-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR
2/2.

REPORT DATE 26 JULY 1988 C.19-319
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8128
NASA FMEA #: 

NASA DATA: 
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8128
ITEM: TV VIDEO INPUT PBI [TVC C SELECT] SW

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW.

IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20260-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-320
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8129
NASA FMEA #:

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8129
ITEM: TV VIDEO INPUT PBI [TVC D RMS STBD SELECT] SW

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW.
IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20229-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-321
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8130
NASA FMEA #: NASA DATA:
COMTRK-8130
NASA FMEA #: BASELINE [ ]
ASSESSMENT ID: COMTRK-8130
NASA DATA:
BASELINE [ ]
NEW [ ]
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8130
ITEM: TV VIDEO INPUT PBI [TVC D SELECT] SW
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COMPARABLE NASA CCTV FMEA. FAILURE TO PROVIDE THIS FUNCTION WOULD RESULT IN LOSS OF TVC. UP CMD PROVIDES UNLIKE REDUNDANCY. SECOND FAILURE COULD RESULT IN LOSS OF CCTV FUNCTION AND LOSS OF VEHICLE AND CREW.

IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20229-2. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8243
NASA FMEA #:

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8243
ITEM: TVC A MONOCHROME LENS ASSY FOCUS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL ITEM
FLIGHT HDW/FUNC A B C

NASA [ ] [ ] [ ] [ ] [ ] [ ] *
IOA [2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988 C.19-323
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8244
NASA FMEA #: NASA DATA:
BASELINE [ ] NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8244
ITEM: TVC A MONOCROME LENS ASSY FOCUS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERRIDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.
**APPENDIX C**

**ASSESSMENT WORKSHEET**

ASSESSMENT DATE: 3/05/88  
ASSESSMENT ID: COMTRK-8245  
NASA FMEA #:  

**NASA DATA:**  
BASELINE [ ]  
NEW [ ]  

**SUBSYSTEM:**  
COMM AND TRACK  
MDAC ID: 8245  
ITEM: TVC B MONOCHROME LENS ASSY FOCUS CONTROL SWITCH  

**LEAD ANALYST:** W.C. LONG  

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**

NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROL MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988  
C.19-325
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8246
NASA FMEA #: COMTRK-8246
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8246
ITEM: TVC B MONOCHROME LENS ASSY FOCUS CONTROL SWITCH
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERRIDDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.

REPORT DATE 26 JULY 1988 C.19-326
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8247
NASA DATA:
BASELINE [ ]
NEW [ ]

NASA FMEA #:

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8247
ITEM: TVC C MONOCHROME LENS ASSY FOCUS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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| IOA | [ 2 /1R ] | [ P ] | [ P ] | [ P ] | [ X ] |
| COMPARE | [ N /N ] | [ N ] | [ N ] | [ N ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

*CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988 C.19-327
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8248
NASA FMEA #: 

NASA DATA: 
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8248
ITEM: TVC C MONOCHROME LENS ASSY FOCUS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERRIDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.

REPORT DATE 26 JULY 1988 C.19-328
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8249
NASA FMEA #: NASA DATA:
SUBSYSTEM: COMM AND TRACK NASA Baseline [ ]
MDAC ID: 8249 NASA New [ ]
ITEM: TVC D MONOCHROME LENS ASSY FOCUS CONTROL SWITCH
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ] INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988 C.19-329
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8250
NASA FMEA #: NASA DATA:
BASELINE [ ] NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8250
ITEM: TVC D MONOCHROME LENS ASSY FOCUS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERRIDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.

REPORT DATE 26 JULY 1988 C.19-330
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8259
NASA FMEA #: 

NASA DATA: 
BASELINE [ ] 
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8259
ITEM: TVC A MONOCHROME LENS ASSY ZOOM CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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| COMPARE | [ N /N ] | [ N ] | [ N ] | [ N ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988 C.19-331
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8260
NASA FMEA #: COMTRK-8260
NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8260
ITEM: TVC A MONOCROME LENS ASSY ZOOM CONTROL SWITCH

LEAD ANALYST: W.C. LONG

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IOA [ ] [ ] [ ] [ ] [ ] [ ]

COMPARE [ ] [ ] [ ] [ ] [ ] [ ]

RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERIDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.

REPORT DATE 26 JULY 1988 C.19-332
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8261
NASA FMEA #: COMTRK-8261
NASA DATA: BASELINE [ ] NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8261
ITEM: TVC B MONOCHROME LEN ASSY ZOOM CONTROL SWITCH

LEAD ANALYST: W.C. LONG

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IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] *(ADD/DELETE)*

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988 C.19-333
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8262
NASA FMEA #: NASA DATA:
NASA FMEA #: BASELINE [ ] NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8262
ITEM: TVC B MONOCHROME LENS ASSY ZOOM CONTROL SWITCH

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-334
## APPENDIX C
### ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 3/05/88  
**ASSESSMENT ID:** COMTRK-8263  
**NASA ID #:** NASA FMEA #:

**SUBSYSTEM:** COMM AND TRACK  
**MDAC ID:** 8263  
**ITEM:** TVC C MONOCROME LENS ASSY ZOOM CONTROL SWITCH  
**LEAD ANALYST:** W.C. LONG

### ASSESSMENT:

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**RECOMMENDATIONS:** (If different from NASA)  

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*(ADD/DELETE)*

**CIL RETENTION RATIONALE:** (If applicable)  

**ADEQUATE** [ ]  

**INADEQUATE** [ ]

### REMARKS:

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8264
NASA FMEA #: 

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8264
ITEM: TVC C MONOCHROME LENS ASSY ZOOM CONTROL SWITCH

LEAD ANALYST: W. C. LONG

ASSESSMENT:

CRITICALITY
FLIGHT HDW/FUNC

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IOA [ 2/1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:

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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8265
NASA FMEA #:  

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8265
ITEM: TVC D MONOCROME LENS ASSY ZOOM CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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COMPARE [ N/N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-337
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8266
NASA FMEA #: [ ]
NASA DATA: [ ]
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8266
ITEM: TVC D MONOCROME LENS ASSY ZOOM CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

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REPORT DATE 26 JULY 1988 C.19-338
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8275
NASA FMEA #: 

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8275
ITEM: TVC A MONOCHROME LENS ASSY IRIS CONTROL SWITCH
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-339
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8276
NASA FMEA #: NASA DATA:
SUBSYSTEM: COMM AND TRACK NASA DATA:
MDAC ID: 8276 BASELINE [ ]
ITEM: TVC A MONOCHROME LENS ASSY IRIS CONTROL SWITCH
NEW [ ]

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERRIDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8277
NASA FMEA #:
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8277
ITEM: TVC B MONOCHROME LENS ASSY IRIS CONTROL SWITCH
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988 C.19-341
APPENDIX C
ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 3/05/88
**ASSESSMENT ID:** COMTRK-8278
**NASA FMEA #:**

**SUBSYSTEM:** COMM AND TRACK
**MDAC ID:** 8278
**ITEM:** TVC B MONOCHROME LENS ASSY IRIS CONTROL SWITCH

**LEAD ANALYST:** W.C. LONG

**NASA DATA:**

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**RECOMMENDATIONS:** (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

| ADEQUATE [ ] |
| INADEQUATE [ ] |

**REMARKS:**

NO COUNTERPART NASA CCTV FMEA. FAILAURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERRIDDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.

REPORT DATE 26 JULY 1988 C.19-342
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8279
NASA FMEA #:
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8279
ITEM: TVC C MONOCHROME LENS ASSY IRIS CONTROL SWITCH
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988 C.19-343
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8280
NASA FMEA #: NASA DATA:
SUBSYSTEM: COMM AND TRACK NASA /
MDAC ID: 8280 BASELINE [ ]
ITEM: TVC C MONOCROME LENS ASSY IRIS CONTROL SWITCH NEW [ ]
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERRIDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.

REPORT DATE 26 JULY 1988 C.19-344
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8281
NASA FMEA #: 

NASA DATA:
BASELINE [ ]
NEW [ ]

ASSIGNED SUBSYSTEM:
COMM AND TRACK
MDAC ID:
8281
ITEM:
TVC D MONOCROME LENS ASSY IRIS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY
FLIGHT

HDW/FUNC

REDUNDANCY SCREENS

A

B

C

CIL

ITEM

NASA [ ] [ ] [ ] [ ] [ ] [ ] [ ] *

IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REMARKS:

* 

REPORT DATE 26 JULY 1988 C.19-345
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8282
NASA FMEA #: 
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8282
ITEM: TVC D MONOCROME LEN ASSY IRIS CONTROL SWITCH
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ] INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-346
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8303
NASA FMEA #: 

NASA DATA: 
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8303
ITEM: TVC A COLOR LENS ASSY FOCUS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8304
NASA FMEA #: NASA DATA:
BASELINE [ ] NEW [ ]
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8304
ITEM: TVC A COLOR LENS ASSY FOCUS CONTROL SWITCH
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ] INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-348
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8305
NASA FMEA #: COMM AND TRACK
ITEM: TVC A COLOR LENS ASSY ZOOM CONTROL SWITCH
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
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REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988 C.19-349
**APPENDIX C**

**ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 3/05/88  
**NASA DATA:**  
**ASSESSMENT ID:** COMTRK-8306  
**NASA FMEA #:**  
**SUBSYSTEM:** COMM AND TRACK  
**MDAC ID:** 8306  
**ITEM:** TVC A COLOR LENS ASSY ZOOM CONTROL SWITCH  
**LEAD ANALYST:** W.C. LONG  

**ASSESSMENT:**

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**RECOMMENDATIONS:** (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**

NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERRIDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.

**REPORT DATE 26 JULY 1988 C.19-350**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8307
NASA FMEA #:

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8307
ITEM: TVC A COLOR LENS ASSY IRIS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

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| COMPARE | [ N /N ] | [ N ] | [ N ] | [ N ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

Adequate [ ]

Inadequate [ ]

REMARKS:

NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988 C.19-351
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8308
NASA FMEA #: COMTRK-8308

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8308
ITEM: TVC A COLOR LENS ASSY IRIS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERRIDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.

REPORT DATE 26 JULY 1988 C.19-352
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8309
NASA FMEA #:

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8309
ITEM: TVC B COLOR LENS ASSY FOCUS CONTROL SWITCH
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988 C.19-353
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8310
NASA DATA:
NASA FMEA #:
NASA FMEA #: COMTRK-8310
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8310
ITEM: TVC B COLOR LENS ASSY FOCUS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERidden BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.

REPORT DATE 26 JULY 1988 C.19-354
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8311
NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8311
ITEM: TVC B COLOR LENS ASSY ZOOM CONTROL SWITCH
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988 C.19-355
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8312
NASA FMEA #: NASA DATA:
SUBSYSTEM: COMM AND TRACK BASELINE [ ]
MDAC ID: 8312 NEW [ ]
ITEM: TVC B COLOR LENS ASSY ZOOM CONTROL SWITCH
LEAD ANALYST: W.C. LONG

ASSESSMENT:

| CRITICALLY | REDUNDANCY | CIL |
| FLIGHT | SCREENS | ITEM |
| HDW/FUNC | A | B | C |

NASA [ / ] [ ] [ ] [ ] [ ] [ ] *
IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERRIDDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.

REPORT DATE 26 JULY 1988 C.19-356
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8313
NASA FMEA #: COMTRK-8313
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8313
ITEM: TVC B COLOR LENS ASSY IRIS CONTROL SWITCH
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988 C.19-357
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8314
NASA FMEA #:

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8314
ITEM: TVC B COLOR LENS ASSY IRIS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8315
NASA FMEA #: NASA DATA:
BASELINE [ ] NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8315
ITEM: TVC C COLOR LENS ASSY FOCUS CONTROL SWITCH
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988 C.19-359
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8316
NASA FMEA #: 

NASA DATA: BASELINE [ ] NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8316
ITEM: TVC C COLOR LENS ASSY FOCUS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERRIDDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.

REPORT DATE 26 JULY 1988 C.19-360
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8317
NASA FMEA #: 

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8317
ITEM: TVC C COLOR LENS ASSY ZOOM CONTROL SWITCH

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-361
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8318
NASA FMEA #:               NASA DATA:
BASELINE [ ]                NEW [ ]

SUBSYSTEM:                  COM AND TRACK
MDAC ID: 8318
ITEM:  TVC C COLOR LENNS ASSY ZOOM CONTROL SWITCH

LEAD ANALYST: W.C. LONG

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IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-362
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88  
ASSESSMENT ID: COMTRK-8319  
NASA FMEA #:  
NASA DATA:  
BASELINE [ ]  
NEW [ ]  
SUBSYSTEM:  
COMM AND TRACK  
MDAC ID: 8319  
ITEM: TVC C COLOR LENS ASSY IRIS CONTROL SWITCH  
LEAD ANALYST: W.C. LONG  
ASSESSMENT:  

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RECOMMENDATIONS: (If different from NASA)  
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* CIL RETENTION RATIONALE: (If applicable)  
ADEQUATE [ ]  
INADEQUATE [ ]  

REMARKS:  
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988  
C.19-363
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8320
NASA FMEA #: ComTRK-8320
NASA DATA: BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8320
ITEM: TVC COLOR LENS ASSY IRIS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-364
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8321
NASA FMEA #:

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8321
ITEM: TVC D COLOR LENS ASSY FOCUS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
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REPORT DATE 26 JULY 1988 C.19-365
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8322
NASA FMEA #: NASA DATA:
BASELINE [ ] NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8322
ITEM: TVC D COLOR LENS ASSY FOCUS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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| COMPARE [ N /N ] | [ N ] [ N ] [ N ] | [ N ] |

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERRIDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8323
NAS FMEA #: 

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8323
ITEM: TVC D COLOR LENS ASSY ZOOM CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

CRITICALITY REDUNDANCY SCREENS CIL
FLIGHT HDW/FUNC A B C ITEM

NASA [ ] [ ] [ ] [ ] [ ] *
IOA [ 2/1R ] [ P ] [ P ] [ P ] [ X ]
COMPARE [ N/N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)
[ ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988 C.19-367
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8324
NASA FMEA #: COMTRK-8324
SUBSYSTEM: COMM AND TRACK
MDAC ID: 8324
ITEM: TVC D COLOR LENS ASSY ZOOM CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:

NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERRIDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.

REPORT DATE 26 JULY 1988 C.19-368
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88  NASA DATA: BASELINE [ ]
ASSESSMENT ID: COMTRK-8325  NEW [ ]
NASA FMEA #: [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8325
ITEM: TVC D COLOR LEN ASSY IRIS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO UNLIKELY FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF PAYLOAD BAY LOCATED CCTV COMPONENTS ARE NOT EXERCISED DURING FLIGHT, THEREFORE THEY CANNOT EXPERIENCE A "FAILURE TO SWITCH".

REPORT DATE 26 JULY 1988  C.19-369
### APPENDIX C

**ASSESSMENT WORKSHEET**

ASSESSMENT DATE: 3/05/88

ASSESSMENT ID: COMTRK-8326

NASA FMEA #: 8326

**SUBSYSTEM:** COMM AND TRACK

**MDAC ID:**

**ITEM:** TVC D COLOR LENS ASSY IRIS CONTROL SWITCH

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:

NO COUNTERPART NASA CCTV FMEA. FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF CCTV AND SUBSEQUENT LOSS OF VEHICLE AND CREW. WITHDRAWN DUE TO IMPROBABLE FAILURE MODE. CONTROLS MOUNTED ON CHASSIS OF CCTV COMPONENTS ARE MOMENTARY SWITCHES THAT CAN BE OVERRIDEN BY GROUND UPLINK AND CREW COMMANDS. "OPEN OR SHORT TO CASE" WILL NOT PREVENT TV CAMERA AND LENS OPERATION, AND SHORTED CONTACTS ARE UNLIKELY. SINCE THE CARGO BAY CCTV COMPONENTS CONTROLS ARE NOT PLANNED FOR USE DURING FLIGHT, NASA DID NOT GENERATE FMEA'S FOR THEM.

REPORT DATE 26 JULY 1988 C.19-370
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8328
NASA FMEA #: 

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8328
ITEM: RMS WRIST TVC COLOR LEN ASSY FOCUS CONTROL
SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
[ / ] [ ] [ ] [ ] [ ]

* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COUNTERPART NASA CCTV FMEA. LOSS OF ALL CAPABILITY TO PERFORM THIS FUNCTION COULD RESULT IN LOSS OF MISSION.
THIS MDAC FMEA ID-8328 WAS PREVIOUSLY INCLUDED IN THE CIL LIST BY AN ERRONEOUS "X" PLACED IN THE "IOA/CIL ITEM" SLOT ON THE ASSESSMENT WORKSHEET.

REPORT DATE 26 JULY 1988 C.19-371
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8363
NASA FMEA #: 

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8363
ITEM: CONSOLE MONITOR PWR SW

LEAD ANALYST: W.C. LONG

ASSESSMENT:

| CRITICALLY | REDUNDANCY SCREENS | CIL |
| HDW/FUNC | A | B | C | ITEM |
| NASA [ ] [ ] [ ] [ ] [ ] [ ] [ ] | [ ] [ ] [ ] [ ] [ ] [ ] [ ] |
| IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ] | [ N ] [ N ] [ N ] [ N ] [ N ] |

RECOMMENDATIONS: (If different from NASA)
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)
Adequate [ ]
Inadequate [ ]

REMARKS:
NO FMEA PRESENTLY AVAILABLE, BUT NASA PLANS TO HAVE A FMEA 3/1R (NON-CIL) GENERATED FOR THIS ITEM. IOA ACCEPTS NASA PLANNED FMEA CRITICALITY 3/1R BASED ON CONSIDERATION THAT RMS JETTISON REPRESENTS A SECOND LEVEL OF REDUNDANCY FOR RMS MOVEMENT MONITORING AND THAT TWO LATCH SENSE DETECTORS PROVIDE TWO LEVELS OF REDUNDANCY FOR P/L BAY DOOR LATCH MONITORING.

REPORT DATE 26 JULY 1988 C.19-372
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8364
NASA FMEA #: COMTRK-8364

SUBSYSTEM: COMM AND TRACK
MDAC ID: 3764
ITEM: CONSOLE MONITOR PWR SW

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NO FMEA PRESENTLY AVAILABLE, BUT NASA PLANS TO HAVE A FMEA 3/IR (NON-CIL) GENERATED FOR THIS ITEM. IOA ACCEPTS NASA PLANNED FMEA CRITICALITY 3/IR BASED ON CONSIDERATION THAT RMS JETTISON REPRESENTS A SECOND LEVEL OF REDUNDANCY FOR RMS MOVEMENT MONITORING AND THAT TWO LATCH SENSE DETECTORS PROVIDE TWO LEVELS OF REDUNDANCY FOR P/L BAY DOOR LATCH MONITORING.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8368
NASA FMEA #:

BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8368
ITEM: CONSOLE MONITOR SYNC SW

LEAD ANALYST: W.C. LONG

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IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ X ]

COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]

INADEQUATE [ ]

REMARKS:
NO FMEA PRESENTLY AVAILABLE, BUT NASA PLANS TO HAVE A FMEA 3/IR (NON-CIL) GENERATED FOR THIS ITEM. IOA ACCEPTS NASA PLANNED FMEA CRITICALITY 3/IR BASED ON CONSIDERATION THAT RMS JETTISON REPRESENTS A SECOND LEVEL OF REDUNDANCY FOR RMS MOVEMENT MONITORING AND THAT TWO LATCH SENSE DETECTORS PROVIDE TWO LEVELS OF REDUNDANCY FOR P/L BAY DOOR LATCH MONITORING.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8374
NASA FMEA #: COMTRK-8374

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8374
ITEM: CONSOLE MONITOR SOURCE SW

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO FMEA PRESENTLY AVAILABLE, BUT NASA PLANS TO HAVE A FMEA 3/1R (NON-CIL) GENERATED FOR THIS ITEM. IOA ACCEPTS NASA PLANNED FMEA CRITICALITY 3/1R BASED ON CONSIDERATION THAT RMS JETTISON REPRESENTS A SECOND LEVEL OF REDUNDANCY FOR RMS MOVEMENT MONITORING AND THAT TWO LATCH SENSE DETECTORS PROVIDE TWO LEVELS OF REDUNDANCY FOR P/L BAY DOOR LATCH MONITORING.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8376
NASA FMEA #: COMTRK-8376
NASA DATA: BASELINE [ ] NEW [ ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 8376
ITEM: CONSOLE MONITOR BRIGHTNESS AND CONTRAST CONTROL SW

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

NO FMEA PRESENTLY AVAILABLE, BUT NASA PLANS TO HAVE A FMEA 3/1R (NON-CIL) GENERATED FOR THIS ITEM. IOA ACCEPTS NASA PLANNED FMEA CRITICALITY 3/1R BASED ON CONSIDERATION THAT RMS JETTISON REPRESENTS A SECOND LEVEL OF REDUNDANCY FOR RMS MOVEMENT MONITORING AND THAT TWO LATCH SENSE DETECTORS PROVIDE TWO LEVELS OF REDUNDANCY FOR P/L BAY DOOR LATCH MONITORING.

REPORT DATE 26 JULY 1988 C.19-376
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8505
NASA FMEA #: 05-6PK-20201-1

SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 8505
ITEM: CB 39 FWD BAY TVC & P/T (3A)

LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
OPEN FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT IN LOSS OF VEHICLE AND CREW.

IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20115-1. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-377
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8507
NASA FMEA #: 05-6PK-20202-1

SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 8507
ITEM: CB 40 FWD BAY TVC HTR (3A)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:

ONE FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT IN LOSS OF VEHICLE AND CREW.

IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20116-1. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-378
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8509
NASA FMEA #: 05-6PK-20202-1

NASA DATA:
BASELINE [ X ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 8509
ITEM: CB 41 FWD BAY P/T HTR (3A)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
OPEN FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT IN LOSS OF VEHICLE AND CREW.
IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20117-1. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.
# APPENDIX C
## ASSESSMENT WORKSHEET

**ASSESSMENT DATE:** 3/05/88  
**ASSESSMENT ID:** COMTRK-8511  
**NASA FMEA #:** 05-6PK-20201-1  

**SUBSYSTEM:** COMM AND TRACK/EPD&C  
**MDAC ID:** 8511  
**ITEM:** CB 34 AFT BAY TVC & P/T (3A)  

**LEAD ANALYST:** W.C. LONG

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**RECOMMENDATIONS:** (If different from NASA)

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**CIL RETENTION RATIONALE:** (If applicable)

- ADEQUATE [ ]
- INADEQUATE [ ]

**REMARKS:**

OPEN FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT IN LOSS OF VEHICLE AND CREW.

IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20112-1. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

**REPORT DATE** 26 JULY 1988  
**C.19-380**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8513
NASA FMEA #: 05-6PK-20202-1

SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 8513
ITEM: CB 35 AFT BAY TVC HTR (3A)

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
OPEN FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT IN LOSS OF VEHICLE AND CREW.
IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20113-1. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8515
NASA FMEA #: 05-6PK-20202-1
SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 8515
ITEM: CB 36 AFT BAY P/T HTR (3A)
LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
OPEN FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT IN LOSS OF VEHICLE AND CREW.
IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20114-1. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-382
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8517
NASA FMEA #: 05-6PK-20201-1

SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 8517
ITEM: CB 45 KEEL/EVA TVC & P/T (3A)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
OPEN FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT IN LOSS OF VEHICLE AND CREW.
IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20118-1. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-383
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8519
NASA FMEA #: 05-6PK-20201-1

SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 8519
ITEM: CB 46 KEEL/EVA TVC HTR (3A)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
OPEN FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT IN LOSS OF VEHICLE AND CREW.

IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20119-1. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-384
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8521
NASA FMEA #: 05-6PK-20202-1

SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 8521
ITEM: CB 47 KEEL/EVA P/T HTR (3A)
LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
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REMARKS:
OPEN FAILURE COULD RESULT IN LOSS OF MISSION. LOSS OF ALL
CAPABILITY TO PERFORM CCTV FUNCTION COULD RESULT IN LOSS OF
VEHICLE AND CREW.
IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-
6PK-20120-1. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR
2/2.

REPORT DATE 26 JULY 1988 C.19-385
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8525
NASA FMEA #: 

NASA DATA:
BASELINE [ ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 8525
ITEM: CB 51 STBD RMS TVC & P/T (3A)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COMPARABLE NASA CCTV FMEA. STBD NOT USED ON PRESENT MISSION.
NO FMEA REQUIRED FOR STBD RMS.

REPORT DATE 26 JULY 1988   C.19-386
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88  NASA DATA:
ASSESSMENT ID: COMTRK-8527  BASELINE [ ]
NASA FMEA #:  NEW [ ]

SUBSYSTEM:  COMM AND TRACK/EPD&C
MDAC ID:  8527
ITEM:  CB 52 STBD RMS TVC HTR (3A)

LEAD ANALYST:  W.C. LONG

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RECOMMENDATIONS:  (If different from NASA)

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* CIL RETENTION RATIONALE:  (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COMPARABLE NASA CCTV FMEA. STBD RMS NOT USED ON PRESENT MISSIONS.
IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20201-1. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988  C.19-387
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8529
NASA FMEA #: [ ]
SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 8529
ITEM: CB 53 STBD RMS P/T HTR (3A)
LEAD ANALYST: W.C. LONG

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IOA [ 2 /1R ] [ P ] [ P ] [ P ] [ N ] [ N ]
COMPARE [ N /N ] [ N ] [ N ] [ N ] [ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
NO COMPARABLE NASA CCTV FMEA. STBD RMS NOT USED ON PRESENT MISSIONS.
IOA ACCEPTS NASA CRITICALITY BASED ON NASA REVISED FMEA/CIL 05-6PK-20211-1. BOTH NASA AND IOA ASSIGNED CIL DESIGNATIONS 2/1R OR 2/2.

REPORT DATE 26 JULY 1988 C.19-388
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8531
NASA FMEA #: 05-6PK-20101-1

SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 8531
ITEM: CB 55 PORT RMS TVC & P/T (3A)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
INADEQUATE [ ]

REMARKS:
OTHER TVCs AND CREW VIEWING COULD BE CONSIDERED AS UNLIKE REDUNDANCY AND LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTIONS COULD RESULT IN LOSS OF VEHICLE AND CREW.
IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR USE OF VARIOUS GROUND RULE INTERPRETATION IN DETERMINING THE SYSTEM LEVEL OF REDUNDANCY.

REPORT DATE 26 JULY 1988 C.19-389
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8533
NASA FMEA #: 05-6PK-20102-1

SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 8533
ITEM: CB 56 PORT RMS TVC HTR (3A)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
OTHER TVCs AND CREW VIEWING COULD BE CONSIDERED AS UNLIKE REDUNDANCY AND LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTIONS COULD RESULT IN LOSS OF VEHICLE AND CREW.
IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR USE OF VARIOUS GROUND RULE INTERPRETATION IN DETERMINING THE SYSTEM LEVEL OF REDUNDANCY.

REPORT DATE 26 JULY 1988 C.19-390
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/05/88
ASSESSMENT ID: COMTRK-8535
NASA FMEA #: 06-6PK-20102-1

NASA DATA:
BASELINE [ X ]
NEW [ ]

SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 8535
ITEM: CB 57 PORT RMS P/T HTR (3A)

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
OTHER TVCs AND CREW VIEWING COULD BE CONSIDERED AS UNLIKE REDUNDANCY AND LOSS OF ALL CAPABILITY TO PERFORM CCTV FUNCTIONS COULD RESULT IN LOSS OF VEHICLE AND CREW.
IOA ACCEPTS THE NASA CRITICALITY BASED ON THE LATITUDE GIVEN FOR USE OF VARIOUS GROUND RULE INTERPRETATION IN DETERMINING THE SYSTEM LEVEL OF REDUNDANCY.

REPORT DATE 26 JULY 1988   C.19-391
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/11/88
ASSESSMENT ID: COMTRK-10502
NASA FMEA #: COMTRK-10502
SUBSYSTEM: COMM AND TRACK/EPD&C
MDAC ID: 10502
ITEM: EMU/TV-BATTERY PACK
LEAD ANALYST: W.H. TRAHAN

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

| ADEQUATE | [ ] |
| INADEQUATE | [ ] |

REMARKS:

NO NASA COMM & TRACK COUNTERPART. CREDIBLE FAILURE MODE THAT SHOULD BE COVERED BY NASA POWER DIVISION. NASA INITIALLY HAD A COMPARABLE FMEA/CIL, BUT NASA CONSOLIDATED BATTERY RELATED CILS AND RESOLUTION ACTION ASSIGNED TO NASA EPS/BATTERY SECTION, LITHIUM CELL EVALUATION.

REPORT DATE 26 JULY 1988 C.19-392
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/10/88
ASSESSMENT ID: COMTRK-11007
NASA FMEA #: 05-6PH-24800-1

SUBSYSTEM: COMM AND TRACK
MDAC ID: 11007
ITEM: GCIL DRIVER, NETWORK SIGNAL PROCESSOR
LEAD ANALYST: A.W. ADDIS

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]
INADEQUATE [ ]

REMARKS:
IOA 11007 REFERS TO NSP ONLY, NASA FMEA COVERS ENTIRE S-BAND SYSTEM, AND RELATES THE 3/1R CRITICALITY TO LOSS OF THE TWO S-BAND PM STRINGS, LEAVING ONLY UHF VOICE FOR STATE VECTOR UPDATES. A SINGLE FMEA CANNOT COVER ALL THE POTENTIAL DEGREES OF CRITICALITY FOR THE S-BAND PM SYSTEM. LOSS OF FIRST NSP DOWNLINK CALLS FOR MINIMUM DURATION FLIGHT, AND THUS QUALIFIES AS 2/1R.

IOA ACCEPTS NASA CRITICALITY BASED ON THE INTERPRETATION THAT A MINIMUM DURATION FLIGHT DOES NOT REPRESENT A LOSS OF MISSION.

REPORT DATE 26 JULY 1988 C.19-393
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/14/88
ASSESSMENT ID: COMTRK-24066X
NASA FMEA #: 05-2R-5300-7

SUBSYSTEM: COMM AND TRACK
MDAC ID: 24066
ITEM: KU BD DMA (DEPLOYED ELECTRONIC ASSY) TEMPERATURE SENSOR

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]

INADEQUATE [ ]

REMARKS:

LOSS OF MEASUREMENT DOES NOT HINDER HEATER OPERATON. A SECOND FAILURE, THE THERMOSTAT, COULD ALLOW FOR OVERHEATING OR FREEZING RESULTING IN DAMAGE TO GIMBAL THUS JEOPARDIZING THE SECURING OF DA. FLIGHT DIRECTOR MAY CURTAIL MISSION TO PRECLUDE THIS.

IOA ACCEPTS THE MORE SEVERE NASA CRITICALLY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALLY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/14/88
ASSESSMENT ID: COMTRK-27056X
NASA FMEA #: 05-2C-22200-4

SUBSYSTEM: COMM AND TRACK
MDAC ID: 27056
ITEM: TACAN
LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
DURING NEAR IN OPERATION S-BAND OR UHF VOICE LINK SHOULD PROVIDE STATE VECTOR UPDATE CAPABILITY, BUT UNDER WORST CASE CONDITIONS IMMEDIATELY AFTER BLACKOUT STATE VECTOR UPDATE CAPABILITY MAY BE LOSS. NASA FMEA 05-2C-22200-4 DELETED. NO LONGER A CREDIBLE FAILURE MODE. HARDWARE WAS REDESIGNED.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/16/88
ASSESSMENT ID: COMTRK-28378X
NASA FMEA #: 2.4.4.2

SUBSYSTEM: COMM AND TRACK
MDAC ID: 28378
ITEM: PAN AND TILT UNIT LIMIT SWITCH

LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
UNLIKE REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION, RMS JETTISON, AND KUBAND RADAR FOR RENDEZ AND STATION KEEPING.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-396
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/16/88
ASSESSMENT ID: COMTRK-28380X
NASA FMEA #: 4.4.4.2

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 28380
ITEM: PAN AND TILT UNIT LIMIT SWITCH

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
RMS TVC DOES NOT PROVIDE HIGH CRITICALITY FUNCTION LIKE MONITORING RMS MOVEMENT AND P/L BAY DOOR LATCH CLOSURE. UNLIKE REDUNDANCY PROVIDED VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION, RMS JETTISON. OTHER RMS TVC AND KUBAND RADAR FOR RENDEZ AND STATION KEEPING. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-397
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/16/88
ASSESSMENT ID: COMTRK-28384X
NASA FMEA #: 2.1.6.4

SUBSYSTEM: COMM AND TRACK
MDAC ID: 28384
ITEM: MONOCHROME LENS ASSEMBLY IRIS LIMIT SWITCH

LEAD ANALYST: W.C. LONG

ASSESSMENT:

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RECOMMENDATIONS: (If different from NASA)

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*CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
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REMARKS:

UNLIKE REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION, RMS JETTISON, AND KUBAND RADAR FOR RENDEZ AND STATION KEEPING.

IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-398
ASSESSMENT DATE: 3/16/88
ASSESSMENT ID: COMTRK-28386X
NASA FMEA #: 5.1.6.4

SUBSYSTEM: COMM AND TRACK
MDAC ID: 28386
ITEM: MONOCHROME LENS ASSEMBLY IRIS LIMIT SWITCH

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/16/88
ASSESSMENT ID: COMTRK-28388X
NASA FMEA #: 4.1.6.4

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 28388
ITEM: MONOCHROME LENS ASSEMBLY IRIS LIMIT SWITCH

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)
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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
RMS TVC DOES NOT PROVIDE HIGH CRITICALITY FUNCTION LIKE MONITORING RMS MOVEMENT AND P/L BAY DOOR LATCH CLOSURE. UNLIKE REDUNDANCY PROVIDED VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION, RMS JETTISON. OTHER RMS TVC AND KUBAND RADAR FOR RENDEZ AND STATION KEEPING. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-400
### APPENDIX C
### ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/16/88
ASSESSMENT ID: COMTRK-28390X
NASA FMEA #: 2.3.6.4

SUBSYSTEM: COMM AND TRACK
MDAC ID: 28390
ITEM: WIDE ANGLE LENS ASSEMBLY IRIS, FOCUS, ZOOM LIMIT SWITCH

LEAD ANALYST: W.C. LONG

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**RECOMMENDATIONS:** (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

**REMARKS:**

UNLIKE REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION, RMS JETTISON, AND KUBAND RADAR FOR RENDEZ AND STATION KEEPING.

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**APPENDIX C**

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]

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**REMARKS:**

RMS TVC DOES NOT PROVIDE HIGH CRITICALITY FUNCTION LIKE MONITORING RMS MOVEMENT AND P/L BAY DOOR LATCH CLOSURE. UNLIKE REDUNDANCY PROVIDED VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION, RMS JETTISON. OTHER RMS TVC AND KUBAND RADAR FOR RENDEZ AND STATION KEEPING. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALITY.

**REPORT DATE 26 JULY 1988 C.19-402**
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/16/88
ASSESSMENT ID: COMTRK-28396X
NASA FMEA #: 5.3.6.4

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 28396
ITEM: WIDE ANGLE LENS ASSEMBLY IRIS, FOCUS, ZOOM LIMIT
SWITCH

LEAD ANALYST: W.C. LONG

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
RMS TVC DOES NOT PROVIDE HIGH CRITICALITY FUNCTION LIKE
MONITORING RMS MOVEMENT AND P/L BAY DOOR LATCH CLOSURE. UNLIKE
REDUNDANCY PROVIDED VIA CREW WINDOW VIEWING, EVA AND COAS FOR
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RADAR FOR RENDEZ AND STATION KEEPING. IOA ACCEPTS THE MORE
SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH
TO ASSIGNING CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-403
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/16/88
ASSESSMENT ID: COMTRK-28400X
NASA FMEA #: 2.2.6.4

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 28400
ITEM: COLOR LENS ASSEMBLY IRIS LIMIT SWITCH

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
UNLIKE REDUNDANCY EXISTS VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION, RMS JETTISON, AND KUBAND RADAR FOR RENDEZ AND STATION KEEPING.
IOA ACCEPTS NASA WORST CASE CRITICALITY. NASA ASSIGNED DUAL CRITICALITIES (2/2 AND 3/1R), AND IOA COMBINED TO OBTAIN ONE CRITICALITY.

REPORT DATE 26 JULY 1988   C.19-404
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/16/88
ASSESSMENT ID: COMTRK-28402X
NASA FMEA #: 4.2.6.4

NASA DATA:
BASELINE [ ]
NEW [ X ]

SUBSYSTEM: COMM AND TRACK
MDAC ID: 28402
ITEM: COLOR LENS ASSEMBLY IRIS LIMIT SWITCH

LEAD ANALYST: W.C. LONG

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
RMS TVC DOES NOT PROVIDE HIGH CRITICALITY FUNCTION LIKE MONITORING RMS MOVEMENT AND P/L BAY DOOR LATCH CLOSURE. UNLIKE REDUNDANCY PROVIDED VIA CREW WINDOW VIEWING, EVA AND COAS FOR CREW VISUAL INSPECTION, RMS JETTISON. OTHER RMS TVC AND KUBAND RADAR FOR RENDEZ AND STATION KEEPING. IOA ACCEPTS THE MORE SEVERE NASA CRITICALITY BASED ON THEIR MORE CONSERVATIVE APPROACH TO ASSIGNING CRITICALITY.
APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/16/88
ASSESSMENT ID: COMTRK-28404X
NASA FMEA #: 5.2.6.4
SUBSYSTEM: COMM AND TRACK
MDAC ID: 28404
ITEM: COLOR LENS ASSEMBLY IRIS LIMIT SWITCH
LEAD ANALYST: W.C. LONG

NASA DATA:
BASELINE [ ]
NEW [ X ]

ASSESSMENT:

CRITICALITY
FLIGHT
HDW/FUNC

REDUNDANCY SCREENS
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C

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RECOMMENDATIONS: (If different from NASA)

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* CIL RETENTION RATIONALE: (If applicable)
ADEQUATE [ X ]
INADEQUATE [ ]

REMARKS:
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TO ASSIGNING CRITICALITY.

REPORT DATE 26 JULY 1988 C.19-406
MCDONNELL DOUGLAS ASTRONAUTICS COMPANY - ENGINEERING SERVICES
16055 SPACE CENTER BLVD, HOUSTON, TEXAS 77062