

# **INDEPENDENT ORBITER ASSESSMENT**

**CIL ISSUES  
RESOLUTION REPORT  
VOLUME 2 OF 3**

**16 SEPTEMBER 1988**



SECTION C.11  
NOSE WHEEL STEERING SUBSYSTEM

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/03/86  
ASSESSMENT ID: NWS-204  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: NWS  
MDAC ID: 204  
ITEM: BOX, STEERING CONTROL - PILOT VALVE CONTROL  
CIRCUIT (FAILS TO PROVIDE A GROUND)

LEAD ANALYST: A.S. MEDIAVILLA

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

A. NO FMEA WRITTEN. B. THE NWS CONTROL BOX MANIPULATES 3 MAJOR NWS SIGNALS: 1) THE PILOT VALVE ACTIVATION SIGNAL (NWS ACTUATOR HYDRAULIC ACTIVATION), 2) NWS COMMAND SIGNAL, AND 3) THE NWS FAILURE DETECTION SIGNAL. NASA FMEAs ADDRESS THE NWS CONTROL BOX COMMAND SIGNAL FAILURES AND THE FAILURE DETECTION CIRCUIT FAILURES BUT NOT THE PILOT VALVE ACTIVATION SIGNAL FAILURES. IOA ANALYSIS INCLUDED TWO FAILURE MODES ON THE PILOT VALVE ACTIVATION SIGNALS. NEITHER OF THESE FAILURES WOULD RAISE THE EXISTING CRITICALITY OF THE SCB [2/1R]. C. IOA RECOMMENDS THAT THIS FAILURE MODE BE ADDED.

CIL RESOLUTION:

A. SSM COVERED THIS FAILURE IN THE PRCB PRESENTATION OF 4/15/88 CIL ITEM 02-1D-095-1. CRITICALITY 2/1R.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/03/86  
ASSESSMENT ID: NWS-308  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: NWS  
MDAC ID: 308  
ITEM: PISTON, ACTUATOR ARM (JAMMED)

LEAD ANALYST: A.S. MEDIAVILLA

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 1 / 1 ]	[ 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:

A. NO FMEA WRITTEN. B. A JAMMED ACTUATOR ARM CAN OCCUR AS THE RESULT OF DEBRIS EXTERNAL TO THE ORBITER BECOMING LODGED BETWEEN THE PISTON AND THE NOSE WHEEL STEERING COLUMN.

C. A JAMMED ACTUATOR ARM WILL RESULT IN THE ORBITER POSSIBLY LEAVING THE RUNWAY AND THE POSSIBLE LOSS OF CREW/VEHICLE.

D. IOA RECOMMENDS A FMEA BE WRITTEN FOR THIS ITEM REGARDLESS OF THE PROBABILITY OF OCCURENCE DUE TO THE SERIOUSNESS OF THE FAILURE MODE.

CIL RESOLUTION:

ACTION CLOSED BY PRCB PRESENTATION ON 4/15/88 CIL ITEM 02-1D-084-2. CRITICALITY OF 1/1.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/03/86  
ASSESSMENT ID: NWS-310  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: NWS  
MDAC ID: 310  
ITEM: FILTER, INLET (SHUTOFF VALVE) (FAILS TO FILTER)

LEAD ANALYST: A.S. MEDIAVILLA

ASSESSMENT:

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

A. NO FMEA WRITTEN. B. FAILURE TO FILTER WILL RESULT IN THE CONTAMINATION OF THE NWS ACTUATOR VALVE AND THE LOSS OF NWS. C. A FAILURE REPORT (FPR A4640-01) HAS ALREADY BEEN WRITTEN FOR THIS FAILURE MODE. D. IOA RECOMMENDS NASA WRITE A FMEA FOR THIS FAILURE MODE.

CIL RESOLUTION:

A. SSM AND R. I. PRESENTED THIS AS NOT A CREDIBLE FAILURE. B. HYDRAULIC SUBSYSTEM AGREES THAT THIS IS NOT A CREDIBLE FAILURE. C. IOA CONCURS, WITHDRAW THIS ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/03/86  
ASSESSMENT ID: NWS-311  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: NWS  
MDAC ID: 311  
ITEM: FILTER, INLET (SHUTOFF VALVE) (BLOCKED)

LEAD ANALYST: A.S. MEDIAVILLA

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

A. NO FMEA WRITTEN. B. CONTAMINATION OF THE FILTER WILL RESTRICT THE HYDRAULIC FLOW TO THE ACTUATOR RESULTING IN THE LOSS OF NWS.

C. A FAILURE REPORT (FPR A4640-01) FOR THE FILTER DISCUSSES THE FAILURE OF THE ACTUATOR TO MEET THE STEERING RATE REQUIREMENT AS A RESULT OF CONTAMINATION TO THE FILTER.

D. IOA RECOMMENDS NASA WRITE A FMEA FOR THIS FAILURE MODE.

CIL RESOLUTION:

A. ISSUE CLOSED BY PRCB PRESENTATION OF 4/15/88 CIL ITEM 02-1D-103-1. CRITICALITY 2/1R.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/03/86  
ASSESSMENT ID: NWS-312  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: NWS  
MDAC ID: 312  
ITEM: HYDRAULIC SYSTEM - CONNECTORS, HOSE ASSEMBLY  
(RUPTURE/LEAKAGE)

LEAD ANALYST: A.S. MEDIAVILLA

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 1 / 1 ]	[ 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:

A. NO FMEA WRITTEN. B. THERE IS A NON-FLEXIBLE HYDRAULIC LINE LEADING FROM THE RETRACTION SIDE OF THE ACTUATOR PISTON TO THE ACTUATOR MAIN HOUSING. LEAKAGE FROM THIS LINE OR ITS CONNECTORS COULD CAUSE THE TOTAL LOSS OF NWS AND THE SHIMMY DAMPING CAPABILITY OF THE ACTUATOR. THE SUBSEQUENT SHIMMY OF THE NOSE WHEEL WOULD RESULT IN THE POSSIBLE FAILURE OF THE NOSE GEAR AND LOSS OF THE VEHICLE. NO TEST DATA ON THE EFFECTS OF SHIMMY WITH NO HYDRAULIC DAMPING IS AVAILABLE. THE FACT THAT THE COROTATING NOSE WHEELS HAVE SOME STABILIZING EFFECT IS NOT ENOUGH TO DISMISS THE SHIMMY ISSUE. C. IOA RECOMMENDS THAT THE NASA WRITE A FMEA FOR THIS FAILURE MODE.

CIL RESOLUTION:

A. CCB CHAIRMAN DIRECTED NASA AND R. I. TO WORK THIS ISSUE WITH MDAC ON 12/21/87. NO CONTACT BY EITHER ORGANIZATION. B. THIS ISSUE IS RESOLVED BY PRCB PRESENTATION ON 4/15/88 CIL ITEM 02-1D-090-1. CRITICALITY OF 1/1.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/03/86	NASA DATA:
ASSESSMENT ID: NWS-323	BASELINE [    ]
NASA FMEA #: 02-1-091-1	NEW [ X ]
SUBSYSTEM: NWS	
MDAC ID: 323	
ITEM: VALVE, ANTI-CAVITATION CHECK (FAILS CLOSED)	
LEAD ANALYST: A.S. MEDIAVILLA	

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [ X ]

REMARKS:

A. CIL EFFECTS: "(B) LOSS OF NWS (LOSS OF TORQUE)....". B. FAILING THE CHECK VALVES CLOSED DOES NOT RESULT IN THE LOSS OF NWS TORQUE.

C. IOA RECOMMENDS A CRITICALITY OF 3/1R. FAILURE OF BOTH ANTI-CAVITATION CHECK VALVES IS NOT LIFE/VEHICLE THREATENING. BUT THE FAILURE OF BOTH VALVES AND THEN A NWS FAILURE THAT FORCES THE FREE CASTOR MODE COULD RESULT IN CAVITATION. THE IOA ANALYSIS ORIGINALLY DID NOT CONSIDER CAVITATION LIFE/VEHICLE THREATENING BUT A CONSERVATIVE APPROACH WOULD BE TO ASSIGN THE FAILURE MODE A 3/1R.

CIL RESOLUTION:

A. ISSUE CLOSED PER PRCB PRESENTATION OF 4/15/88 CIL ITEM 02-1-091-1. NASA ASSIGNED A CRITICALITY OF 2/1R.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/03/86  
ASSESSMENT ID: NWS-326  
NASA FMEA #: 02-1-101-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: NWS  
MDAC ID: 326  
ITEM: VALVE, E-H PROTECTION CHECK (RETURN LINE ISOLATION) (FAILS OPEN)

LEAD ANALYST: A.S. MEDIAVILLA

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [ X ]

REMARKS:

A. IF THE VALVE FAILS OPEN JUST PRIOR TO LANDING GEAR (LG) RETRACTION, HIGH PRESSURE BUILDUP DURING RETRACTION COULD DAMAGE THE SERVO VALVE FIRST STAGE. MUCH LATER, DURING THE ACTUAL FLIGHT WHEN NWS IS ACTIVATED, THE DAMAGED E-H SERVO VALVE COULD RESULT IN A DOWNMODE TO FREE CASTOR. THE OPEN CHECK VALVE ALSO RESULTS IN THE DEGRADATION OF SHIMMY DAMPING PROTECTION.

B. IOA RECOMMENDS AN UPGRADE IN CRITICALITY TO 2/1R.

CIL RESOLUTION:

A. ISSUE CLOSED BY PRCB PRESENTATION OF 4/15/88 CIL ITEM 02-1D-101-2. CRITICALITY OF 2/1R.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/03/86  
ASSESSMENT ID: NWS-329  
NASA FMEA #: 02-1-106-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: NWS  
MDAC ID: 329  
ITEM: VALVE, OVERLOAD CHECK (2 OF) (FAILS CLOSED)

LEAD ANALYST: A.S. MEDIAVILLA

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

A. THE IOA EFFECTS ASSUME THE WORST CASE: A FAILED-CLOSED VALVE AND THEN THE NOSE WHEEL HITTING A RUT OR FOREIGN OBJECT CAUSING AN UNRELIEVED HIGH PRESSURE SPIKE THAT DAMAGES THE FIRST STAGE OF THE EH VALVE RESULTING IN THE LOSS OF NWS.

B. IOA RECOMMENDS AN UPGRADE IN CRITICALITY TO 2/1R.

CIL RESOLUTION:

A. CCB CHAIRMAN DIRECTED NASA AND R. I. TO WORK THIS ISSUE WITH MDAC ON 12/21/87. NO CONTACT BY EITHER ORGANIZATION.

B. CLOSED VALVE HAS A CRIT OF 3/3. THE SECOND IMPACT, HITTING A RUT OR FOREIGN OBJECT ON THE RUNWAY IS REMOTE. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 3/17/87  
 ASSESSMENT ID: NWS-503  
 NASA FMEA #: 05-1-FC7248-0001

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: NWS  
 MDAC ID: 503  
 ITEM: INDICATOR, PUSH BUTTON: ROLL/YAW (CSS/AUTO)  
 (JAMMED IN AUTO)

LEAD ANALYST: A.S. MEDIAVILLA

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 1 / 1 ]	[ 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:

NASA'S REVISED "WORK AROUND" IS STILL CONSIDERED BY IOA AS OFF  
 NOMINAL CREW PROCEDURES WHICH CANNOT BE USED TO DOWNGRADE  
 CRITICALITY (PER 22206).

CIL RESOLUTION:

A. ISSUE CLOSED BY PRCB PRESENTATION OF 4/18/88 CIL ITEMS 05-1-  
 FC7245-1 AND 05-1-FC7248-1. CRITICALITY OF 2/1R.

SECTION C.12  
REMOTE MANIPULATOR SUBSYSTEM

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-401  
 NASA FMEA #: 4020-183(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 401  
 ITEM: ENCODER PHOTO DETECTORS

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-402  
 NASA FMEA #: 4020-183(a)

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 402  
 ITEM: ENCODER PHOTO DETECTORS

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-403  
 NASA FMEA #: 4020-183(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 403  
 ITEM: ENCODER ROTATING DISK

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-420  
 NASA FMEA #: 4130-189(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 420  
 ITEM: TACHOMETER ROTOR

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-420A  
 NASA FMEA #: 4130-189(b)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 420  
 ITEM: TACHOMETER ROTOR

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-421  
 NASA FMEA #: 4130-189(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 421  
 ITEM: TACHOMETER ROTOR

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-421A  
NASA FMEA #: 4130-189(b)

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 421  
ITEM: TACHOMETER ROTOR

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-424  
 NASA FMEA #: 2600-116A(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 424  
 ITEM: POWER-ON RESET CONTROL

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87	NASA DATA:
ASSESSMENT ID: RMS-435	BASELINE [    ]
NASA FMEA #: 3180-143(c)	NEW [ X ]
SUBSYSTEM: RMS	
MDAC ID: 435	
ITEM: PROTECTOR, POWER CONDITIONER	
LEAD ANALYST: R. GRASMEDER	

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-435A  
 NASA FMEA #: 3170

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 435  
 ITEM: PROTECTOR, POWER CONDITIONER

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[    ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-439  
 NASA FMEA #: 3220-146(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 439  
 ITEM: SCU

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[    ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-439A  
 NASA FMEA #: 3220-146(b)

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 439  
 ITEM: SCU

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-440  
 NASA FMEA #: 3220-146(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 440  
 ITEM: SCU

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-440A  
 NASA FMEA #: 3220-146(b)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 440  
 ITEM: SCU

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[    ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-442  
 NASA FMEA #: 4020-183(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 442  
 ITEM: POSITION ENCODER DATA PROCESSING

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
	NASA [ 2 /1R ]	[ F ]	[ P ]	[    ]	
IOA [ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]	
COMPARE [ 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:  
 ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS  
 ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE  
 CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED.  
 AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH  
 NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-443  
 NASA FMEA #: 4030-184(b)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 443  
 ITEM: POSITION ENCODER DATA PROCESSING

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-444  
 NASA FMEA #: 3180

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 444  
 ITEM: + 10V

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-448  
 NASA FMEA #: 2540-114(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 448  
 ITEM: D/A CONVERTER

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-450  
 NASA FMEA #: 2650-121(b)

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 450  
 ITEM: ENCODER FEEDBACK

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-452  
 NASA FMEA #: 2690/2700

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 452  
 ITEM: I/P CLOCK OR SYNCH SIGNAL

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-454  
 NASA FMEA #: 2690/2700

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 454  
 ITEM: O/P CLOCK OR SYNCH SIGNAL

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-458A  
NASA FMEA #: 2570-

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 458  
ITEM: SHIFT REGISTERS

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-458B  
 NASA FMEA #: 2680-122(b)

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 458  
 ITEM: SHIFT REGISTERS

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-460  
 NASA FMEA #: 2620-117(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 460  
 ITEM: DIGITAL F/B (ENCODER)

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87    NASA DATA:  
 ASSESSMENT ID: RMS-462    BASELINE [    ]  
 NASA FMEA #: 2620-117(a)    NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 462  
 ITEM: ANALOG F/B (COMMUTATOR)

LEAD ANALYST: R. GRASMEDER

**ASSESSMENT:**

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

**REMARKS:**

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS  
 ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE  
 CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED.  
 AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH  
 NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-482  
 NASA FMEA #: 2600-116A(a)

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 482  
 ITEM: POWER "ON" RESET

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-484  
 NASA FMEA #: 2950-130(e)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 484  
 ITEM: CURRENT LIMITER

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-485C  
 NASA FMEA #: 3010-132A(e)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 485  
 ITEM: CURRENT LIMITER

LEAD ANALYST: R. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87	NASA DATA:
ASSESSMENT ID: RMS-601A	BASELINE [    ]
NASA FMEA #: 1970-93(b)	NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 601  
ITEM: 16 CHANNEL ANALOG MULTIPLEXOR (3)

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-601B  
NASA FMEA #: 2040-

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 601  
ITEM: 16 CHANNEL ANALOG MULTIPLEXOR (3)

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87	NASA DATA:
ASSESSMENT ID: RMS-605	BASELINE [    ]
NASA FMEA #: 2050-	NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 605  
ITEM: SAMPLE AND HOLD GATED OP AMP

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[    ]	[ X ] *
IOA	[ 1 /1 ]	[ P ]	[ F ]	[ F ]	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-609  
NASA FMEA #: 2000-

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 609  
ITEM: ANALOG TO DIGITAL CONVERTER

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87	NASA DATA:
ASSESSMENT ID: RMS-611	BASELINE [    ]
NASA FMEA #: 1990/2000	NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 611  
 ITEM: QUAD 3-STATE R/S LATCHES (2)

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
		NASA [ 2 /1R ]	[    ]	[    ]	
IOA [ 1 /1 ]	[ P ]	[ F ]	[ F ]	[ X ]	
COMPARE [ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-613  
 NASA FMEA #: 2450-110(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 613  
 ITEM: MULTIWINDING OUTPUT TRANSFORMER

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-615  
NASA FMEA #: 2450

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 615  
ITEM: 2-PHASE PWM

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-617  
NASA FMEA #: 2450

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 617  
ITEM: POWER SWITCHING TRANSISTORS

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[    ]	[    ]	[    ]	[ X ] *
IOA	[ 1 /1 ]	[ P ]	[ F ]	[ F ]	[ X ]
COMPARE	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-619  
NASA FMEA #: 2450

NASA DATA:  
BASELINE [     ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 619  
ITEM: 30-KHZ TRIANGULAR WAVE GENERATOR

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

	CRITICALITY		REDUNDANCY SCREENS			CIL ITEM
	FLIGHT HDW/FUNC		A	B	C	
NASA	[ 2 /1R ]		[   ]	[   ]	[   ]	[ X ] *
IOA	[ 1 /1 ]		[ P ]	[ F ]	[ F ]	[ X ]
COMPARE	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-621  
NASA FMEA #: 2450

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 621  
ITEM: DIFFERENTIAL AMPLIFIER PWM ADJUSTER

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[    ]	[    ]	[    ]	[ X ] *
IOA	[ 1 /1 ]	[ P ]	[ F ]	[ F ]	[ X ]
COMPARE	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-623  
NASA FMEA #: 2450

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 623  
ITEM: OP AMP, 30 KHZ TRIANGULAR WAVE WIDTH ADJUSTER

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-625  
NASA FMEA #: 2450

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 625  
ITEM: RECTIFIER MODULES

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-627  
NASA FMEA #: 1650

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 627  
ITEM: MIA

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[    ]	[    ]	[    ]	[ X ] *
IOA	[ 1 /1 ]	[ P ]	[ F ]	[ F ]	[ X ]
COMPARE	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-629  
 NASA FMEA #: 1740/1760/1770/1780

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 629  
 ITEM: CLOCK DIVIDER CIRCUIT

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-631  
 NASA FMEA #: 1770

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 631  
 ITEM: 16 MHZ CRYSTAL OSCILLATOR

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[    ]	[    ]	[    ]	[ X ] *
IOA	[ 1 /1 ]	[ P ]	[ F ]	[ F ]	[ X ]
COMPARE	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:	1/16/87	NASA DATA:	
ASSESSMENT ID:	RMS-633	BASELINE	[ ]
NASA FMEA #:	1710-78(a)	NEW	[ X ]
SUBSYSTEM:	RMS		
MDAC ID:	633		
ITEM:	O/P PARALLEL TO SERIAL SHIFT REGISTER (3)		
LEAD ANALYST:	B. GRASMEDER		

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[ X ]
INADEQUATE	[ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87	NASA DATA:
ASSESSMENT ID: RMS-635	BASELINE [    ]
NASA FMEA #: 1660-76(a)	NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 635  
ITEM: I/P SERIAL TO PARALLEL SHIFT REGISTER

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-635A  
 NASA FMEA #: 1670-76(b)

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 635  
 ITEM: I/P SERIAL TO PARALLEL SHIFT REGISTER

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS  
 ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE  
 CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED.  
 AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH  
 NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-637  
NASA FMEA #: 1640

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 637  
ITEM: TRANSMIT TIMING CONTROL

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-639  
NASA FMEA #: 1650

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 639  
ITEM: RECEIVE TIMING CONTROL

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87	NASA DATA:
ASSESSMENT ID: RMS-659	BASELINE [    ]
NASA FMEA #: 1830-83(a)	NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 659  
 ITEM: LOWER SERIAL SHIFT REGISTER, ABE O/P

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[    ]	[ X ] *
IOA	[ 1 /1 ]	[ P ]	[ F ]	[ F ]	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

### APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87	NASA DATA:
ASSESSMENT ID: RMS-659A	BASELINE [    ]
NASA FMEA #: 1840-83(b)	NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 659  
 ITEM: LOWER SERIAL SHIFT REGISTER, ABE O/P

LEAD ANALYST: B. GRASMEDER

**ASSESSMENT:**

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[ X ]
INADEQUATE	[   ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

**APPENDIX C  
ASSESSMENT WORKSHEET**

ASSESSMENT DATE:	1/16/87	NASA DATA:	
ASSESSMENT ID:	RMS-661	BASELINE	[   ]
NASA FMEA #:	1830-83(a)	NEW	[ X ]

SUBSYSTEM:           RMS  
MDAC ID:             661  
ITEM:                 UPPER SERIAL SHIFT REGISTER, ABE I/P

LEAD ANALYST:       B. GRASMEDER

**ASSESSMENT:**

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

RECOMMENDATIONS:   (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE   [ X ]  
INADEQUATE [   ]

**REMARKS:**

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87	NASA DATA:
ASSESSMENT ID: RMS-661A	BASELINE [    ]
NASA FMEA #: 1840-83(b)	NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 661  
 ITEM: UPPER SERIAL SHIFT REGISTER, ABE I/P

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
		NASA [ 2 /1R ]	[ P ]	[ P ]	
IOA [ 1 /1 ]	[ P ]	[ F ]	[ F ]	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-663  
 NASA FMEA #: 1880-87(f)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 663  
 ITEM: ABE OUTPUT DRIVER

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[    ]	[ X ] *
IOA	[ 1 /1 ]	[ P ]	[ F ]	[ F ]	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-673  
 NASA FMEA #: 1890

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 673  
 ITEM: ABE INPUT OPTO ISOLATORS

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[    ]	[    ]	[    ]	[ X ] *
IOA	[ 1 /1 ]	[ P ]	[ F ]	[ F ]	[ X ]
COMPARE	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-675  
NASA FMEA #: 1890

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 675  
ITEM: SERIAL-PARALLEL SHIFT REGISTERS (2) ABE I/P  
LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS  
ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE  
CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED.  
AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH  
NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-681  
 NASA FMEA #: 2340-104(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 681  
 ITEM: CPU

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-683  
 NASA FMEA #: 2340-104(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 683  
 ITEM: 200 KHZ CLOCK

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[    ]	[ X ] *
IOA	[ 1 /1 ]	[ P ]	[ F ]	[ F ]	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-685  
 NASA FMEA #: 2400-109(h)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 685  
 ITEM: PARALLEL DATA CONVERTER

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87	NASA DATA:
ASSESSMENT ID: RMS-685B	BASELINE [    ]
NASA FMEA #: 2410-109(h)	NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 685  
ITEM: PARALLEL DATA CONVERTER

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[ X ]
INADEQUATE	[    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-687  
NASA FMEA #: 2360

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 687  
ITEM: DIRECT MEMORY ACCESS CONTROLLER

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-689  
 NASA FMEA #: 2440

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 689  
 ITEM: POWER ON INIT ROUTINE LOGIC

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-691  
 NASA FMEA #: 2350-105(b)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 691  
 ITEM: RAM

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-693  
 NASA FMEA #: 2350-105(b)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 693  
 ITEM: ROM

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[   ]	[ X ] *
IOA	[ 1 /1 ]	[ P ]	[ F ]	[ F ]	[ 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:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-695  
NASA FMEA #: 2360

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 695  
ITEM: O/P LATCH (2)

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87	NASA DATA:
ASSESSMENT ID: RMS-697	BASELINE [    ]
NASA FMEA #: 2360	NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 697  
ITEM: I/P LATCH (2)

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS	CIL ITEM
		A	B	C
NASA	[ 2 /1R ]	[ P ]	[ P ]	[    ]
IOA	[ 1 /1 ]	[ P ]	[ F ]	[ F ]
COMPARE	[ N /N ]	[    ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87  
 ASSESSMENT ID: RMS-4536  
 NASA FMEA #: 05-6ID-2507-2

NASA DATA:  
 BASELINE [ X ]  
 NEW [ ]

SUBSYSTEM: RMS/EPD&C  
 MDAC ID: 4536  
 ITEM: PIC 1, 12

LEAD ANALYST: ROBINSON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:	7/17/87	NASA DATA:
ASSESSMENT ID:	RMS-4537	BASELINE [ X ]
NASA FMEA #:	05-6ID-2515-2	NEW [ ]

SUBSYSTEM: RMS/EPD&C  
MDAC ID: 4537  
ITEM: PIC 1, 12

LEAD ANALYST: ROBINSON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87  
 ASSESSMENT ID: RMS-4542  
 NASA FMEA #: 05-6ID-2505-2

NASA DATA:  
 BASELINE [ X ]  
 NEW [ ]

SUBSYSTEM: RMS/EPD&C  
 MDAC ID: 4542  
 ITEM: PIC 6, 17

LEAD ANALYST: ROBINSON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87  
 ASSESSMENT ID: RMS-4543  
 NASA FMEA #: 05-6ID-2513-2

NASA DATA:  
 BASELINE [ X ]  
 NEW [ ]

SUBSYSTEM: RMS/EPD&C  
 MDAC ID: 4543  
 ITEM: PIC 6, 17

LEAD ANALYST: ROBINSON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87  
 ASSESSMENT ID: RMS-4548  
 NASA FMEA #: 05-6ID-2503-2

NASA DATA:  
 BASELINE [ X ]  
 NEW [ ]

SUBSYSTEM: RMS/EPD&C  
 MDAC ID: 4548  
 ITEM: PIC 8, 19

LEAD ANALYST: ROBINSON

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87	NASA DATA:
ASSESSMENT ID: RMS-4549	BASELINE [ X ]
NASA FMEA #: 05-6ID-2511-2	NEW [ ]

SUBSYSTEM: RMS/EPD&C  
MDAC ID: 4549  
ITEM: PIC 8, 19

LEAD ANALYST: ROBINSON

ASSESSMENT:

	CRITICALITY	REDUNDANCY SCREENS			CIL ITEM
	FLIGHT	A	B	C	
	HDW/FUNC				
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 [ X ]  
INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87  
 ASSESSMENT ID: RMS-4554  
 NASA FMEA #: 05-6ID-2501-2

NASA DATA:  
 BASELINE [ X ]  
 NEW [ ]

SUBSYSTEM: RMS/EPD&C  
 MDAC ID: 4554  
 ITEM: PIC 10, 21

LEAD ANALYST: ROBINSON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87  
 ASSESSMENT ID: RMS-4555  
 NASA FMEA #: 05-6ID-2509-2

NASA DATA:  
 BASELINE [ X ]  
 NEW [ ]

SUBSYSTEM: RMS/EPD&C  
 MDAC ID: 4555  
 ITEM: PIC 10, 21

LEAD ANALYST: ROBINSON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87  
 ASSESSMENT ID: RMS-4560  
 NASA FMEA #: 05-6ID-2506-2

NASA DATA:  
 BASELINE [ X ]  
 NEW [ ]

SUBSYSTEM: RMS/EPD&C  
 MDAC ID: 4560  
 ITEM: PIC 2, 13

LEAD ANALYST: ROBINSON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87	NASA DATA:
ASSESSMENT ID: RMS-4561	BASELINE [ X ]
NASA FMEA #: 05-6ID-2514-2	NEW [ ]

SUBSYSTEM: RMS/EPD&C  
MDAC ID: 4561  
ITEM: PIC 2, 13

LEAD ANALYST: ROBINSON

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87  
 ASSESSMENT ID: RMS-4566  
 NASA FMEA #: 05-6ID-2504-2

NASA DATA:  
 BASELINE [ X ]  
 NEW [ ]

SUBSYSTEM: RMS/EPD&C  
 MDAC ID: 4566  
 ITEM: PIC 7, 18

LEAD ANALYST: ROBINSON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87	NASA DATA:
ASSESSMENT ID: RMS-4567	BASELINE [ X ]
NASA FMEA #: 05-6ID-2512-2	NEW [ ]

SUBSYSTEM: RMS/EPD&C  
MDAC ID: 4567  
ITEM: PIC 7, 18

LEAD ANALYST: ROBINSON

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87  
 ASSESSMENT ID: RMS-4572  
 NASA FMEA #: 05-6ID-2502-2

NASA DATA:  
 BASELINE [ X ]  
 NEW [ ]

SUBSYSTEM: RMS/EPD&C  
 MDAC ID: 4572  
 ITEM: PIC 9, 20

LEAD ANALYST: ROBINSON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87  
 ASSESSMENT ID: RMS-4573  
 NASA FMEA #: 05-6ID-2510-2

NASA DATA:  
 BASELINE [ X ]  
 NEW [ ]

SUBSYSTEM: RMS/EPD&C  
 MDAC ID: 4573  
 ITEM: PIC 9, 20

LEAD ANALYST: ROBINSON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87  
 ASSESSMENT ID: RMS-4578  
 NASA FMEA #: 05-6ID-2500-2

NASA DATA:  
 BASELINE [ X ]  
 NEW [ ]

SUBSYSTEM: RMS/EPD&C  
 MDAC ID: 4578  
 ITEM: PIC 11, 22

LEAD ANALYST: ROBINSON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 7/17/87	NASA DATA:
ASSESSMENT ID: RMS-4579	BASELINE <input checked="" type="checkbox"/> [ X ]
NASA FMEA #: 05-6ID-2508-2	NEW <input type="checkbox"/> [ ]

SUBSYSTEM: RMS/EPD&C  
 MDAC ID: 4579  
 ITEM: PIC 11, 22

LEAD ANALYST: ROBINSON

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE  [ X ]  
 INADEQUATE  [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS  
 ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE  
 CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED.  
 AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH  
 NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-20506  
 NASA FMEA #: 2670-122(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 20506  
 ITEM: ENCODER LATCH

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-20511  
 NASA FMEA #: 2630-118(a)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 20511  
 ITEM: OUTPUT LATCH

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-20518  
 NASA FMEA #: 2910

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 20518  
 ITEM: TRANSISTOR

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-20699  
NASA FMEA #: 1730-79(b)

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 20699  
ITEM: SYNL CIRCUIT

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [ ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

REPORT DATE 22 JULY 1988

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02

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-20700  
 NASA FMEA #: 1730-79(b)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 20700  
 ITEM: SYNC CIRCUIT

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-20707  
 NASA FMEA #: 2430-109(j)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 20707  
 ITEM: READ STROBE

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
ASSESSMENT ID: RMS-20708  
NASA FMEA #: 2020-96(f)

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: RMS  
MDAC ID: 20708  
ITEM: REFERENCE VOLTAGE GENERATOR

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASAs ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/16/87  
 ASSESSMENT ID: RMS-20710  
 NASA FMEA #: 2420-109A(i)

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: RMS  
 MDAC ID: 20710  
 ITEM: PDC INT-2 OUTPUT

LEAD ANALYST: B. GRASMEDER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ISSUE RESOLUTION: DURING THE ADDITIONAL ASSESSMENT PERIOD, THIS ISSUE WAS RE-EXAMINED. NASA'S ASSERTION THAT THE SOFTWARE CONSTITUTED A RELIABLE UNLIKE REDUNDANCY WAS DISCUSSED. AFTER FURTHER ANALYSIS OF ALL AVAILABLE DATA, IOA AGREES WITH NASA AND WITHDRAWS THE ISSUE.

SECTION C.13  
ATMOSPHERE REVITALIZATION SUBSYSTEM

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
ASSESSMENT ID: ARS-108  
NASA FMEA #: 06-1-0543-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: ARS  
MDAC ID: 108  
ITEM: ACCUMULATOR (2)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

THIS ISSUE WAS DISCUSSED WITH THE NASA SUBSYSTEM MANAGER (SSM), JOHN WHELAN, ON MAY 23, 1988. HIS DATA INDICATES THAT EVEN IF THE ACCUMULATOR FAILED, THE PUMP HEAD PRESSURE WOULD BE SUFFICIENT TO ALLOW OPERATION OF THE WATER LOOP. IOA AGREES WITH THIS ANALYSIS AND WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
ASSESSMENT ID: ARS-148  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: ARS  
MDAC ID: 148  
ITEM: FILTER, 40 MICRON (3)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

UPON RE-EXAMINATION OF AVAILABLE DATA, IOA HAS LEARNED THAT THIS FILTER WAS EXAMINED AS PART OF THE PUMP FMEA 06-1-0547-4 WHOSE CRITICALITIES MATCH THOSE OF IOA. MDAC WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
ASSESSMENT ID: ARS-151  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: ARS  
MDAC ID: 151  
ITEM: ORIFICE (3)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

UPON RE-EXAMINATION OF AVAILABLE DATA, IOA HAS LEARNED THAT THIS FILTER WAS COVERED AS PART OF THE PUMP FMEA 06-1-0547-4 WITH CRITICALITIES THAT MATCH THOSE OF IOA. MDAC WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
ASSESSMENT ID: ARS-153  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: ARS  
MDAC ID: 153  
ITEM: ORIFICE (3)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:  
UPON RE-EXAMINATION OF AVAILABLE DATA, IOA HAS LEARNED THAT THIS FILTER WAS COVERED AS PART OF THE PUMP FMEA 06-1-0547-3 WITH CRITICALITIES THAT MATCH THOSE OF IOA. MDAC WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
ASSESSMENT ID: ARS-170  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: ARS  
MDAC ID: 170  
ITEM: MANUAL OVERRIDE FOR BYPASS VALVE (2)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

DISCUSSION WITH JOHN WHELAN, THE NASA SSM, ON 23 MAY 1988,  
REVEALED THAT THIS FAILURE IS INCLUDED IN THE WORST CASE ANALYSIS  
OF THE BYPASS VALVE FAILURE. (NASA FMEA 06-1-0538, CRIT 2/1R).  
ISSUE IS WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: ARS-189  
 NASA FMEA #: 06-1-0563-4

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 189  
 ITEM: ORIFICES, AVIONICS BAY 2, (2)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ 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 UTILIZED A MORE CONSERVATIVE DEFINITION OF REDUNDANCY WHICH RESULTED IN HIGHER CRITICALITIES. IOA AGREES WITH THE MORE CONSERVATIVE APPROACH AND THE HIGHER CRITICALITIES. MDAC WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
ASSESSMENT ID: ARS-191  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: ARS  
MDAC ID: 191  
ITEM: HATCH, THERMAL CONDITIONING SYSTEM (1)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 2 /1R ]	[ F ]	[ 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:

THIS FAILURE WAS STUDIED AS A PART OF NASA FMEA PACKAGE 01-4-CS WHICH COVERS ALL ORBITER SEALS. A FAILURE IN THE THERMAL CONDITIONING FOR THE SEALS WILL RESULT IN A FAILURE OF THE SEALS. AS OF LATE 1987 THIS SEAL PACKAGE DATA WAS UNAVAILABLE FOR MDAC REVIEW. THIS RE-EVALUATION PROCESS HAS MADE THE DATA AVAILABLE FOR INCORPORATION INTO THE IOA RESULTS. (ACTUAL FMEA NO. 01-4-CS24-1 WITH CRITICALITIES IDENTICAL TO THOSE OF IOA).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
ASSESSMENT ID: ARS-192  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: ARS  
MDAC ID: 192  
ITEM: HATCH, THERMAL CONDITIONING SYSTEM (1)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

THIS FAILURE WAS STUDIED AS A PART OF NASA FMEA PACKAGE 01-4-CS WHICH COVERS ALL ORBITER SEALS. A FAILURE ON THE THERMAL CONDITIONING FOR THE SEALS WILL RESULT IN A LOSS OF THE SEAL. AS OF LATE 1987, THIS SEAL PACKAGE DATA WAS UNAVAILABLE FOR MDAC REVIEW. THIS REEVALUATION PROCESS HAS MADE THE DATA AVAILABLE FOR INCORPORATION INTO THE IOA RESULTS (ACTUAL FMEA NO. 01-4-CS24-1 WITH CRITICALITIES IDENTICAL TO THOSE OF IOA).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88	NASA DATA:
ASSESSMENT ID: ARS-194	BASELINE [    ]
NASA FMEA #:	NEW [    ]

SUBSYSTEM:            ARS  
MDAC ID:              194  
ITEM:                  WINDOW THERMAL CONDITIONING SYSTEM

LEAD ANALYST:        S. SINCLAIR/M. SAIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

THIS FAILURE WAS STUDIED AS A PART OF NASA FMEA PACKAGE 01-4-CS WHICH COVERS ALL ORBITER SEALS. A FAILURE IN THE THERMAL CONDITIONING FOR THE SEALS WILL RESULT IN A LOSS OF THE SEAL. AS OF LATE 1987, THIS SEAL PACKAGE DATA WAS UNAVAILABLE FOR MDAC REVIEW. THIS RE-EVALUATION PROCESS HAS MADE THE DATA AVAILABLE FOR INCORPORATION INTO THE IOA RESULTS. (ACTUAL FMEA NO. 01-4-CS24-1 WITH CRITICALITIES IDENTICAL TO THOSE OF IOA).



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
 ASSESSMENT ID: ARS-195  
 NASA FMEA #: 06-1-0561-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 195  
 ITEM: PAYLOAD BAY FLOOD LIGHT COLD PLATE

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ F ]	[ 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 06-1-0-561-2 INCLUDES THE FAILURE OF THE COLD PLATE FOR THIS FLOODLIGHT WITH THE FAILURE OF A COLD PLATE FOR THE FLIGHT DECK MDM. ALTHOUGH, IOA WOULD ORDINARILY RECOMMEND A SEPARATION OF THE FAILURES, THE NASA FMEA CORRECTLY CARRIES THE CRITICALITY OF THE WORST CASE FAILURE. THEREFORE MDAC WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
 ASSESSMENT ID: ARS-199  
 NASA FMEA #: 06-1-0526-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 199  
 ITEM: LCVG HEAT EXCHANGER (HX) (1)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ N ]	[ 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 UTILIZED A MORE CONSERVATIVE DEFINITION OF REDUNDANCY WHICH RESULTED IN HIGHER CRITICALITIES. IOA AGREES WITH THE MORE CONSERVATIVE APPROACH AND THE HIGHER CRITICALITIES. MDAC WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: ARS-212  
 NASA FMEA #: 05-6U-2005-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS/EPD&C  
 MDAC ID: 212  
 ITEM: CIRCUIT BREAKER, CB35 (1)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
 INADEQUATE [   ]

REMARKS:

NASA'S RE-EVALUATION OF THIS FAILURE HAS MOVED IT FROM A CIL TO A NON-CIL RANKING. THEREFORE, THE ISSUE NO LONGER EXISTS (NEW FMEA NO. 05-6UB-6001-01).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/17/86  
ASSESSMENT ID: ARS-221  
NASA FMEA #: 06-1-0615-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: ARS  
MDAC ID: 221  
ITEM: HEAT EXCHANGER, IMU (1)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

THIS FMEA WAS DISCUSSED WITH THE NASA SSM, JOHN WHELAN ON 23 MAY 1988. THE NASA FMEA ADDRESSES THE DUCT LEADING TO THE IMU HEAT EXCHANGER, AND NOT THE HEAT EXCHANGER ITSELF. A NEW FMEA (06-1-0557-6) WILL BE CREATED TO ADDRESS RESTRICTED FLOW THRU THE HX. BOTH WILL BE ASSIGNED A 2/2 CRITICALITY BY DIRECTION FROM DAN GERMANY. THE CRITICALITY IS ASSIGNED SINCE AIR FLOW TO THE HX CAN BE RESTORED BY CUTTING THE DUCT AND ESTABLISHING CABIN AIR DIRECT CIRCULATION. THIS WILL CAUSE A LOSS OF MISSION, BUT NOT A THREAT TO LIFE OR VEHICLE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
ASSESSMENT ID: ARS-234  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: ARS  
MDAC ID: 234  
ITEM: FILTER, 300 MICRON (3)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 2 / 2 ]	[    ]	[    ]	[    ]	[ X ]
COMPARE	[ N / N ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

NASA FMEA 06-1-0611-1 IS WRITTEN FOR RESTRICTED FLOW THROUGH THE DUCT SECTIONS FOR AVIONICS BAY COOLING. ONE POSSIBLE CAUSE OF THIS RESTRICTED FLOW THROUGH THE DUCT SECTIONS IS RESTRICTED FLOW THROUGH THE FILTER. THEREFORE, THIS IOA FMEA WORKSHEET CAN BE MATCHED TO 06-1-0611-1 WHICH CLEARS THE ISSUE(S) ASSOCIATED WITH MDAC ID'S 234 AND 2561X. MDAC ALSO ACCEPTS NASA'S MORE CONSERVATIVE APPROACH TO THE CRITICALITY ASSIGNMENT AND WITHDRAWS THE ISSUES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88  
ASSESSMENT ID: ARS-255  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: ARS  
MDAC ID: 255  
ITEM: CHECK VALVE (6)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY		REDUNDANCY SCREENS			CIL ITEM
	FLIGHT	HDW/FUNC	A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 2 / 2 ]	[    ]	[    ]	[    ]	[    ]	[ X ]
COMPARE	[ N / N ]	[    ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

CLOSER EXAMINATION REVEALS THE CHECK VALVE IS INCLUDED IN NASA FMEA 06-1-0401-1. IOA AGREES WITH THE GROUPING AND WITH THE NASA ASSIGNED CRITICALITIES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88  
 ASSESSMENT ID: ARS-273  
 NASA FMEA #: 05-6U-2005-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS/EPD&C  
 MDAC ID: 273  
 ITEM: CIRCUIT BREAKER, CB35 (1)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA'S RE-EVALUATION OF THIS FAILURE HAS MOVED IT FROM A CIL TO A  
 NON CIL RANKING. THEREFORE, THE ISSUE NO LONGER EXISTS. (NEW  
 FMEA NO. 05-6UB-6001-01).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88  
 ASSESSMENT ID: ARS-277  
 NASA FMEA #: 06-1-0427-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 277  
 ITEM: CHECK VALVE (3)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ N ]	[ 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:

FAILURE OF THE TWO CHECK VALVES ON THE NON-OPERATING FANS CAN CREATE AN AIR CIRCULATION LOOP WHICH COMPLETELY BYPASSES THE IMU HEAT EXCHANGER. THIS WILL LEAD TO THE LOSS OF CREW/VEHICLE AFTER ONLY TWO FAILURES. THEREFORE, IOA AGREES WITH THE NASA CRITICALITIES AND WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88  
 ASSESSMENT ID: ARS-286  
 NASA FMEA #: 06-1-0368-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 286  
 ITEM: TEMPERATURE CONTROL VALVE (1)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ 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 UTILIZED A MORE CONSERVATIVE DEFINITION OF FUNCTION AND REDUNDANCY. IOA ACCEPTS THE MORE CONSERVATIVE APPROACH AND THE HIGHER CRITICALITIES. MDAC WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88  
 ASSESSMENT ID: ARS-301A  
 NASA FMEA #: 06-1-0340-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 301  
 ITEM: LiOH CANISTER (2)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA HAS UTILIZED A MORE CONSERVATIVE DEFINITION OF FUNCTION AND REDUNDANCY IN EVALUATING THIS FAILURE. IOA AGREES WITH THIS APPROACH AND THE HIGHER CRITICALITY. MDAC WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/17/86  
ASSESSMENT ID: ARS-303  
NASA FMEA #:

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: ARS  
MDAC ID: 303  
ITEM: LINES & FITTINGS

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

NASA FMEA 06-1-0301-4 (CRIT 2/2) IS WRITTEN AGAINST EXTERNAL LEAKAGE OF AIR FROM CABIN FAN ASSEMBLY. IT MAY BE CONSIDERED THAT A CAUSE OF THIS AIR LEAKAGE IS EXTERNAL LEAKAGE FROM THE LINES AND FITTINGS. FURTHER, THE IOA WORST CASE EFFECT WAS CONSIDERED TO BE INCREASED PPO2 LEVELS IN THE CABIN. FURTHER EXAMINATION REVEALS THAT THE FIRST PROBLEM MANIFESTED WILL BE DECREASED COOLING OF THE AVIONICS BAY WHICH CAN BE DETECTED AND THE MISSION TERMINATED. MDAC WITHDRAWS THIS ISSUE AND THE ONE ASSOCIATED WITH ARS-3061X.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88	NASA DATA:
ASSESSMENT ID: ARS-305	BASELINE [    ]
NASA FMEA #: 06-1-0330-2	NEW [ X ]

SUBSYSTEM: ARS  
MDAC ID: 305  
ITEM: FILTER, 75 MICRON (1)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

THERE IS ONLY ONE FILTER FOR BOTH CABIN FANS. DAMAGE TO THIS FILTER WILL ALLOW DEBRIS TO REACH BOTH FANS. THEREFORE, IOA WILL AGREE WITH NASA'S HIGHER CRITICALITIES AND MORE CONSERVATIVE APPROACH. MDAC WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88  
 ASSESSMENT ID: ARS-315  
 NASA FMEA #: 05-6U-2008-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: ARS/EPD&C  
 MDAC ID: 315  
 ITEM: CIRCUIT BREAKER, CB95 THROUGH CB100 (6)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RE-EVALUATION BY NASA HAS RESULTED IN CHANGING THE CRITICALITY TO MATCH IOA'S. THEREFORE, THIS CHANGE WAS ACCEPTED BY NASA. (NEW FMEA NO. 05-6UB-2000-01).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88  
ASSESSMENT ID: ARS-319  
NASA FMEA #:

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: ARS  
MDAC ID: 319  
ITEM: CHECK VALVE (2)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

CLOSER EXAMINATION REVEALS THAT THE CHECK VALVE IS INCLUDED IN NASA'S FAN/MOTOR FMEA NUMBER 06-1-0301-1. ISSUE IS CLOSED.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88  
 ASSESSMENT ID: ARS-320  
 NASA FMEA #: 06-1-0338-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS/EPD&C  
 MDAC ID: 320  
 ITEM: SENSOR, PPCO2 (1)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA UTILIZED A MORE CONSERVATIVE DEFINITION OF FUNCTION WHEN DETERMINING THE CRITICALITY OF THIS SENSOR. NASA DID NOT CONSIDER THE EFFECTS OF CREW ACTIONS OR ROUTINE MAINTENANCE ACTIVITIES ON CONTROLLING THE PPCO2 LEVEL IN THE CABIN. UNDER THESE CONDITIONS AND ASSUMPTIONS, MDAC WILL WITHDRAW THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88  
ASSESSMENT ID: ARS-321  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: ARS  
MDAC ID: 321  
ITEM: LINES & FITTINGS

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

NASA FMEA 06-1-0301-4 (CRIT 2/2) IS WRITTEN AGAINST EXTERNAL LEAKAGE OF AIR FROM CABIN FAN ASSEMBLY. IT MAY BE CONSIDERED THAT A CAUSE OF THIS AIR LEAKAGE IS EXTERNAL LEAKAGE FROM THE LINES AND FITTINGS. FURTHER, THE IOA WORST CASE EFFECT WAS CONSIDERED TO BE INCREASED PPCO2 LEVELS IN THE CABIN. FURTHER EXAMINATION REVEALS THAT THE FIRST PROBLEM MANIFESTED WILL BE DECREASED COOLING OF THE AVIONICS BAY WHICH CAN BE DETECTED AND THE MISSION TERMINATED. MDAC WITHDRAWS THIS ISSUE AND THE ONE ASSOCIATED WITH ARS-3061X.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88  
ASSESSMENT ID: ARS-340  
NASA FMEA #: 06-1-0316-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: ARS  
MDAC ID: 340  
ITEM: CHECK VALVE, SEPARATOR OUTLET (4)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

THIS ISSUE WAS DISCUSSED WITH THE NASA SSM, JOHN WHELAN ON 23 MAY 1988. THE VACUUM VENT NOZZLE IS OF A DIAMETER WHICH IS MUCH SMALLER THAN THE CRITICAL SIZE JUDGED FOR A HOLE IN THE CABIN. THEREFORE, IT WILL NOT CAUSE A LOSS OF LIFE. HOWEVER, THE BACKFLOW OF WATER IS A VALID EFFECT AND WILL CAUSE MISSION TERMINATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88	NASA DATA:
ASSESSMENT ID: ARS-344	BASELINE [    ]
NASA FMEA #: 06-1-0310-2	NEW [ X ]

SUBSYSTEM:            ARS  
MDAC ID:                344  
ITEM:                    LINES AND FITTINGS-SLURPER

LEAD ANALYST:         S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ ? ]	[ ? ]	[ ? ]	[    ] *
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:

ADDITIONAL INFORMATION ALLOWS IOA TO RE-ASSESS ITS POSITION AND AGREE WITH NASA CRITICALITIES. MDAC WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: ARS-1221X  
 NASA FMEA #: 05-6U-2028-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 1221  
 ITEM: SWITCH, S6, WCL2 (1)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RE-EVALUATION OF THE FMEA BY NASA HAS RESULTED IN THE ASSIGNMENT OF A NON-CIL CRITICALITY RANKING. THEREFORE, THE ISSUE NO LONGER EXISTS. (NEW FMEA NO. 05-6UB-4002-03).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/10/88  
 ASSESSMENT ID: ARS-2211X  
 NASA FMEA #: 06-1-0557-5

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 2211  
 ITEM: IMU HEAT EXCHANGER

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /2 ]	[    ]	[    ]	[    ]	[ X ] *
IOA	[    /NA ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /? ]    [    ]    [    ]    [    ]    [ D ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ALTHOUGH IOA CONSIDERS EXTERNAL LEAKAGE FROM THE IMU HEAT EXCHANGER TO BE A NON-CREDIBLE FAILURE, IT IS TRUE THAT THERE ARE COMPONENTS LEADING TO AND FROM THE HEAT EXCHANGER WHICH CAN RESULT IN EXTERNAL LEAKAGE OF AIR. TO THE EXTENT THAT THE EFFECTS OF THESE FAILURES ARE THE SAME, IOA WILL WITHDRAW THE ISSUE WITH THE CREDIBILITY OF THIS FAILURE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
 ASSESSMENT ID: ARS-2331X  
 NASA FMEA #: 06-1-0571-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 2331  
 ITEM: LINES & FITTINGS (ENTIRE LOOP)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

ALTHOUGH IOA CONSIDERS THE RESTRICTED FLOW IN THE ENTIRE LOOP TO BE A NON-CREDIBLE FAILURE, IT IS TRUE THAT THERE ARE CERTAIN COMPONENTS WITHIN THE LOOP WHICH CAN CAUSE RESTRICTED FLOW (SUCH AS FILTERS, PUMPS, ETC.). TO THE EXTENT OF A PRIMARY FAILURE, IOA WILL AGREE WITH THE CRITICALITIES AND WITHDRAW THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
 ASSESSMENT ID: ARS-2332X  
 NASA FMEA #: 06-1-0579-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 2332  
 ITEM: FLEX LINES

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ALTHOUGH IOA CONSIDERS THE RESTRICTED FLOW IN THE ENTIRE LOOP TO BE A NON-CREDIBLE FAILURE, IT IS TRUE THAT THERE ARE CERTAIN COMPONENTS WITHIN THE LOOP WHICH CAN CAUSE RESTRICTED FLOW (SUCH AS FILTERS, PUMPS, ETC.). TO THE EXTENT OF A PRIMARY FAILURE, IOA WILL AGREE WITH THE CRITICALITIES AND WITHDRAW THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: ARS-2561X  
 NASA FMEA #: 06-1-0611-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 2561  
 ITEM: DUCT SECTIONS, AVIONICS BAY

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA FMEA 06-1-0611-1 IS WRITTEN FOR RESTRICTED FLOW THROUGH THE DUCT SECTIONS FOR AVIONICS BAY COOLING. ONE POSSIBLE CAUSE OF THIS RESTRICTED FLOW THROUGH THE DUCT SECTIONS IS RESTRICTED FLOW THROUGH THE 300 MICRON FILTER (COVERED IN ARS-234). THEREFORE, THIS NASA FMEA CAN BE CONSIDERED A VALID FAILURE ALTHOUGH IT MORE APPROPRIATELY SHOULD BE CONSIDERED THE EFFECT OF A PRIMARY FAILURE. MDAC WILL WITHDRAW THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: ARS-2562X  
 NASA FMEA #: 06-1-0611-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 2562  
 ITEM: RETURN AIR DUCT SECTIONS-AVIONICS BAY

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ALTHOUGH IOA CONSIDERS EXTERNAL LEAKAGE OF AIR FROM THE DUCT SECTIONS THEMSELVES TO BE A NONCREDIBLE FAILURE, THERE ARE COMPONENTS IN THE AIR STREAM LEADING TO OR FROM THE DUCTS WHICH WHEN FAILED WILL MANIFEST THE SAME EFFECTS. TO THE EXTENT THAT THIS ITEM CAN BE CONSIDERED ONE OF THE EFFECTS OF A PRIMARY FAILURE, IOA WILL WITHDRAW THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: ARS-3061X  
 NASA FMEA #: 06-1-0301-4

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 3061  
 ITEM: CABIN FAN ASSEMBLY

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 / 2 ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ /NA ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N /N ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

NASA FMEA 06-1-0301-4 IS WRITTEN AGAINST EXTERNAL LEAKAGE OF AIR FROM THE CABIN FAN ASSEMBLY. IT MAY BE CONSIDERED THAT A CAUSE OF THIS AIR LEAKAGE IS EXTERNAL LEAKAGE FROM THE ASSOCIATED LINES AND FITTINGS (COVERED IN ARS-321). FURTHER, THE IOA WORST CASE EFFECT WAS CONSIDERED TO BE INCREASED PPO2 LEVELS IN THE CABIN. ADDITIONAL EXAMINATION REVEALS THAT THE FIRST PROBLEM MANIFESTED WILL BE DECREASED COOLING OF THE AVIONICS BAY WHICH CAN BE DETECTED AND THE MISSION TERMINATED. MDAC WITHDRAWS THIS ISSUE AND THE ONE ASSOCIATED WITH ARS-321.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88	NASA DATA:
ASSESSMENT ID: ARS-3601X	BASELINE [    ]
NASA FMEA #: 06-1-0630-1	NEW [ X ]

SUBSYSTEM: ARS  
MDAC ID: 3601  
ITEM: RETURN AND SUPPLY AIR DUCT SECTIONS

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 / 2 ]	[    ]	[    ]	[    ]	[    ] *
IOA	[    / NA ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

ALTHOUGH IOA CONSIDERS EXTERNAL LEAKAGE OF AIR FROM THE DUCT SECTIONS THEMSELVES TO BE A NONCREDIBLE FAILURE, THERE ARE COMPONENTS IN THE AIR STREAM LEADING TO OR FROM THE DUCTS WHICH WHEN FAILED WILL MANIFEST THE SAME EFFECTS. TO THE EXTENT THAT THIS ITEM CAN BE CONSIDERED ONE OF THE EFFECTS OF A PRIMARY FAILURE, IOA WILL WITHDRAW THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: ARS-3604X  
 NASA FMEA #: 06-1-0635-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 3604  
 ITEM: RETURN AIR DUCTS

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 / 2 ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ /NA ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N / N ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

ALTHOUGH IOA CONSIDERS RESTRICTED FLOW THROUGH THE RETURN AIR DUCT SECTIONS TO BE A NONCREDIBLE FAILURE, THERE ARE COMPONENTS IN THE AIR STREAM LEAKING TO OR FROM THE DUCTS WHICH WHEN CLOGGED WILL MANIFEST THE SAME EFFECTS. TO THE EXTENT THAT THE RESTRICTED FLOW THROUGH THE DUCTS CAN BE CONSIDERED TO BE ONE OF THE EFFECTS OF A PRIMARY FAILURE, MDAC WILL WITHDRAW THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88  
 ASSESSMENT ID: ARS-4017X  
 NASA FMEA #: 06-1-0303-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 4017  
 ITEM: SIGNAL CONDITIONER (1)

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA UTILIZED A MORE CONSERVATIVE DEFINITION OF FUNCTION AND REDUNDANCY FOR SENSORS. IOA ACCEPTS THIS MORE CONSERVATIVE APPROACH AND AGREES WITH THE HIGHER CRITICALITIES. MDAC WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/10/88  
 ASSESSMENT ID: ARS-4027X  
 NASA FMEA #: 06-1-0615-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: ARS  
 MDAC ID: 4027  
 ITEM: IMU AIR DUCTS

LEAD ANALYST: S. SINCLAIR/M. SAIIDI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /2 ]	[   ]	[   ]	[   ]	[ X ] *
IOA	[ /NA ]	[   ]	[   ]	[   ]	[ X ]
COMPARE	[ N /N ]	[   ]	[   ]	[   ]	[   ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
 INADEQUATE [   ]

REMARKS:

ALTHOUGH IOA CONSIDERS EXTERNAL LEAKAGE FROM THE IMU HEAT EXCHANGER TO BE A NON-CREDIBLE FAILURE, IT IS TRUE THAT THERE ARE COMPONENTS LEADING TO AND FROM THE HEAT EXCHANGER WHICH CAN RESULT IN EXTERNAL LEAKAGE OF AIR. TO THE EXTENT THAT THE EFFECTS OF THESE FAILURES ARE THE SAME, IOA WILL WITHDRAW THE ISSUE WITH THE CREDIBILITY OF THIS FAILURE.



SECTION C.14  
EXTRAVEHICULAR MOBILITY UNIT  
SUBSYSTEM

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
 ASSESSMENT ID: EMU-192A  
 NASA FMEA #: 480-FM6

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 192  
 ITEM: CONTAMINANT CONTROL CARTRIDGE (ITEM 480)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA ACCEPTS NASA CRITICALITY IN REVISED FMEA 480-FM6.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-202  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 202  
ITEM: CHECK VALVE AND VENT FLOW SENSOR (ITEM 121)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:  
IOA WITHDREW ITS FAILURE MODE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
 ASSESSMENT ID: EMU-225  
 NASA FMEA #:

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 225  
 ITEM: CHECK VALVE AND FILTER (ITEM 113A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 /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:

NASA WILL MODIFY CAUSES IN 113A FAILURE MODES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
 ASSESSMENT ID: EMU-226  
 NASA FMEA #:

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 226  
 ITEM: CHECK VALVE AND FILTER (ITEM 113A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

NASA WILL MODIFY CAUSES IN 113A FAILURE MODES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86	NASA DATA:
ASSESSMENT ID: EMU-238	BASELINE [    ]
NASA FMEA #: 113D-FM3	NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 238  
ITEM: PRIMARY REGULATOR (ITEM 113D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	[    ] (ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:  
IOA ACCEPTS NASA CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
 ASSESSMENT ID: EMU-239  
 NASA FMEA #: 113D-FM3

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 239  
 ITEM: PRIMARY REGULATOR (ITEM 113D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-243  
NASA FMEA #: 113E-FM2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 243  
ITEM: H2O REGULATOR (ITEM 113E)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
 ASSESSMENT ID: EMU-298A  
 NASA FMEA #: 215-FM5

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 298  
 ITEM: PRESSURE TRANSDUCER (ITEM 215)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:  
 IOA ACCEPTS NASA CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86	NASA DATA:
ASSESSMENT ID: EMU-301	BASELINE [    ]
NASA FMEA #: 215-FM1, FM7	NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 301  
 ITEM: PRESSURE TRANSDUCER (ITEM 215)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:  
 NASA WILL REVISE TO IOA CRITICALITY.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-320  
NASA FMEA #:

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 320  
ITEM: SOP FILL PORT QD AND FILTER (ITEM 213F)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /2R ]	[ 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:

IOA ACCEPTS NASA FAILURE MODES OF DOWNSTREAM COMPONENTS AS ENCOMPASSING THIS FAILURE MODE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-321  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 321  
ITEM: SOP ASSEMBLY (ITEM 200)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 /2R ]	[ P ]	[ F ]	[ 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 WILL MODIFY FAILURE MODE CAUSES IN NASA FMEA 213B-FM2A FOR THIS COMPONENT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-322  
NASA FMEA #: 200-FM1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 322  
ITEM: SOP ASSEMBLY (ITEM 200)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

NASA WILL REVISE TO IOA CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-384  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 384  
ITEM: COMMON MULTIPLE CONNECTOR (ITEM 330)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 2 / 2 ]	[ P ]	[ P ]	[ NA ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

NASA WILL MODIFY ITS FMEA TO INCORPORATE THIS FAILURE MODE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-387  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 387  
ITEM: COMMON MULTIPLE CONNECTOR (ITEM 330)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:  
NASA ACCEPTS THIS FAILURE MODE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-393A  
NASA FMEA #: 360-FM7

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 393  
ITEM: VOLUME CONTROL (ITEM 360)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:  
NASA WILL REVISE TO IOA CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-413  
NASA FMEA #: 362-FM8

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 413  
ITEM: EVC SELECTOR SWITCH (ITEM 362)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:  
IOA ACCEPTS NASA CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-439  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 439  
ITEM: FAN SWITCH (ITEM 366)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

NASA WILL ADD AS A CAUSE IN NASA FMEA 366-FM6.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-440  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 440  
ITEM: FAN SWITCH (ITEM 366)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

NASA WILL ADD AS A CAUSE IN NASA FMEA 366-FM5.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
 ASSESSMENT ID: EMU-441  
 NASA FMEA #: 366-FM3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 441  
 ITEM: FAN SWITCH (ITEM 366)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 NASA WILL ADD 3/1R MISSION PHASE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
 ASSESSMENT ID: EMU-447  
 NASA FMEA #: 367-FM5

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 447  
 ITEM: FEEDWATER VALVE SWITCH (ITEM 367)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

NASA WILL ADD A NEW FAILURE MODE 367-FM6, CONTACT TO CONTACT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
 ASSESSMENT ID: EMU-453  
 NASA FMEA #: 368-FM2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 453  
 ITEM: CAUTION AND WARNING SWITCH (ITEM 368)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 NASA WILL ADD 368-FM9, 2/1R FOR INLET.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-458  
NASA FMEA #: 351-FM1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 458  
ITEM: BITE INDICATOR (ITEM 363)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:  
NASA WILL REVISE TO IOA CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-463  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 463  
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)  
LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 2 / 2 ]	[ ]	[ ]	[ ]	[ 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 ACCEPTS NASA FMEA 150-FM9 AS ENCOMPASSING THIS FAILURE MODE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-464  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 464  
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 2 / 2 ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N / N ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ACCEPTS NASA FMEA 150-FM9 AS ENCOMPASSING THIS FAILURE MODE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
 ASSESSMENT ID: EMU-466  
 NASA FMEA #: 150-FM10

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 466  
 ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 NASA WILL REVISE TO IOA CRITICALITY.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-476  
NASA FMEA #:

NASA DATA:  
BASELINE [   ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 476  
ITEM: DCM ELECTRONICS (ITEM 350)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

[ 3 /2R ]     [ P ]     [ NA ]     [ P ]     [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
INADEQUATE [   ]

REMARKS:

NASA WILL INCORPORATE THIS FAILURE MODE INTO THE FMEA.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-478  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 478  
ITEM: DCM ELECTRONICS (ITEM 350)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

[ 3 /2R ]    [ P ]    [ NA ]    [ P ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

NASA WILL INCORPORATE THIS FAILURE MODE INTO THE FMEA.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
 ASSESSMENT ID: EMU-479  
 NASA FMEA #:

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 479  
 ITEM: DCM ELECTRONICS (ITEM 350)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
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:

NASA WILL INCORPORATE THIS FAILURE MODE INTO THE FMEA.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-480  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 480  
ITEM: DCM ELECTRONICS (ITEM 350)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

NASA WILL INCORPORATE THIS FAILURE MODE INTO THE FMEA.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
 ASSESSMENT ID: EMU-485  
 NASA FMEA #:

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 485  
 ITEM: DCM ELECTRONICS (ITEM 350)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 2 / 2 ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA ACCEPTS NASA FMEA 350-FM25 AS ENCOMPASSING THIS FAILURE MODE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
 ASSESSMENT ID: EMU-609  
 NASA FMEA #: 102-FM26

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 609  
 ITEM: MULTIPLE WATER CONNECTOR (HUT HALF)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 NASA WILL REVISE TO IOA CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-612  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 612  
ITEM: HARD UPPER TORSO SHELL

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 2 / 2 ]	[    ]	[    ]	[    ]	[ X ]
COMPARE	[ N / N ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ACCEPTS INCORPORATION IN NASA FMEA 440-FM4.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
 ASSESSMENT ID: EMU-615  
 NASA FMEA #: 102-FM18

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 615  
 ITEM: BODY SEAL CLOSURE (HUT SIDE)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 IOA ACCEPTS NASA CRITICALITY.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
ASSESSMENT ID: EMU-624  
NASA FMEA #: 108-FM8

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 624  
ITEM: EXTRAVEHICULAR VISOR ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA ACCEPTS NASA CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:	12/10/86	NASA DATA:	
ASSESSMENT ID:	EMU-626	BASELINE	[    ]
NASA FMEA #:	108-FM7	NEW	[ X ]

SUBSYSTEM:            EMU  
MDAC ID:                626  
ITEM:                    EXTRAVEHICULAR VISOR ASSEMBLY

LEAD ANALYST:        J. WHITMAN

ASSESSMENT:

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

RECOMMENDATIONS:    (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:  
IOA ACCEPTS NASA CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86  
 ASSESSMENT ID: EMU-657  
 NASA FMEA #: 104-FM3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 657  
 ITEM: BODY SEAL CLOSURE (LTA SIDE)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA WILL REVISE TO IOA CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87  
ASSESSMENT ID: EMU-759X  
NASA FMEA #: 300-FM7

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 759  
ITEM: DCM

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IF THE ENTIRE NUMBER OF SCREWS FAILED BRACKET SEPARATION CAN RESULT IN SUIT DEPRESSURIZATION AND LOSS OF LIFE. SCREEN A SHOULD BE PASSED DUE TO CAPABILITY FOR CHECKOUT DURING GROUND TURNAROUND. SCREEN C SHOULD BE FAILED TO REFLECT A COMMON CAUSE FAILURE FOR THE SCREWS (E.G. IMPACT).  
CLAY MCCULLOUGH/VP AGREED ON 1 SEPTEMBER 1988 THAT NASA WOULD PERFORM ANALYSIS TO DETERMINE CREDIBILITY OF THIS FAILURE MODE AS A RESULT OF EVA IMPACT LOADS. RESULTS OF THIS ANALYSIS WILL DETERMINE THE FAILURE MODE CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87  
 ASSESSMENT ID: EMU-784X  
 NASA FMEA #: 100-FM1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 784  
 ITEM: PLSS

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

THE IOA RECOMMENDS A 2/1R BC CRITICALITY TO REFLECT THAT THIS BRACKET IS ONE OF TWO WHICH IF BOTH WERE LOST CAN RESULT IN SEPARATION OF HUT FROM PLSS AND UNCONTROLLED DEPRESSURIZATION. CLAY MCCULLOUGH/VP AGREED ON 1 SEPTEMBER 1988 THAT NASA WOULD PERFORM ANALYSIS TO DETERMINE CREDIBILITY OF THIS FAILURE MODE AS A RESULT OF EVA IMPACT LOADS. RESULTS OF THIS ANALYSIS WILL DETERMINE THE FAILURE MODE CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87  
 ASSESSMENT ID: EMU-819X  
 NASA FMEA #: 106-FM6

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 819  
 ITEM: RESTRAINT MODIFIED

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /2 ]	[   ]	[   ]	[   ]	[ X ] *
IOA	[ /NA ]	[   ]	[   ]	[   ]	[   ]
COMPARE	[ N /N ]	[   ]	[   ]	[   ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ /NA ] [   ] [   ] [   ] [ D ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
 INADEQUATE [   ]

REMARKS:  
 NASA ACCEPTS IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87  
 ASSESSMENT ID: EMU-823X  
 NASA FMEA #: 106-FM12

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 823  
 ITEM: WRIST DISCONNECT (GLOVE SIDE)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:  
 NASA WILL REVISE TO IOA CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87  
ASSESSMENT ID: EMU-825X  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EMU  
MDAC ID: 825  
ITEM: WAIST RESTRAINT AND BLADDER

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 2 / 2 ]	[ ]	[ ]	[ ]	[ X ]
COMPARE	[ N / N ]	[ ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:  
NASA TO ADD TO FMEA.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87  
 ASSESSMENT ID: EMU-888X  
 NASA FMEA #: 107-FM1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EMU  
 MDAC ID: 888  
 ITEM: RESTRAINT ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 NASA WILL REVISE TO IOA CRITICALITY.



SECTION C.15  
POWER REACTANT SUPPLY AND  
DISTRIBUTION SUBSYSTEM



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/13/86  
 ASSESSMENT ID: PRSD-231  
 NASA FMEA #: M4-1B2-RV031-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 231  
 ITEM: H2 MANIFOLD 1 RELIEF VALVE (1) RV031

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ALSO NASA FMEA'S 04-1B-RV031-1 AND M4-1B1-RV031-1.  
 THE FAILURE MODE IS FAILED OPEN OR INTERNAL LEAKAGE.  
 THE CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS A LARGE  
 EXTERNAL LEAK CAN DEplete CRYO PRESSURE BELOW SAFE LEVEL IN 7  
 SECONDS (MEETING WITH DEPUTY SUBSYSTEM MANAGER DAVID SAUCIER,  
 4/12/88), BEFORE CREW CAN CLOSE MANIFOLD VALVES. SCREEN B IS NOT  
 NA, BECAUSE THIS FAILURE MODE DOES NOT INVOLVE THE PRESSURE  
 RELIEF FUNCTION OF THE RELIEF VALVE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/13/86  
 ASSESSMENT ID: PRSD-234  
 NASA FMEA #: M4-1B2-RV031-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 234  
 ITEM: H2 MANIFOLD 2 RELIEF VALVE (1) RV041

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [ ]

REMARKS:

ALSO NASA FMEA'S 04-1B-RV031-1 AND M4-1B1-RV031-1.  
 THE FAILURE MODE IS FAILED OPEN OR INTERNAL LEAKAGE.  
 THE CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS A LARGE  
 EXTERNAL LEAK CAN DEplete CRYO PRESSURE BELOW SAFE LEVEL IN 7  
 SECONDS (MEETING WITH DEPUTY SUBSYSTEM MANAGER DAVID SAUCIER,  
 4/12/88), BEFORE CREW CAN CLOSE MANIFOLD VALVES. SCREEN B IS NOT  
 NA, BECAUSE THIS FAILURE MODE DOES NOT INVOLVE THE PRESSURE  
 RELIEF FUNCTION OF THE RELIEF VALVE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/13/86  
 ASSESSMENT ID: PRSD-237  
 NASA FMEA #: M4-1B2-CV030-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 237  
 ITEM: H2 CHECK VALVE (2) CV031,CV041

LEAD ANALYST: S. GOTCH

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 2 /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:

ALSO NASA FMEA # M4-1B1-CV030-1.  
 THE FAILURE MODE IS FAILED OPEN OR INTERNAL LEAKAGE. THE  
 CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS A LARGE EXTERNAL  
 LEAK CAN DEplete CRYO PRESSURE BELOW SAFE LEVEL IN 7 SECONDS  
 (MEETING WITH DEPUTY SUBSYSTEM MANAGER DAVID SAUCIER, 4/12/88),  
 BEFORE CREW CAN CLOSE MANIFOLD VALVES. SCREEN B IS FAILED  
 BECAUSE FAILURE OF THIS VALVE IS NOT DETECTIBLE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/13/86  
 ASSESSMENT ID: PRSD-240  
 NASA FMEA #: M4-1B2-CV030-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 240  
 ITEM: H2 CHECK VALVE (1) CV030

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ALSO NASA FMEA'S 04-1B-CV030-1 AND M4-1B1-CV030-1.  
 THE FAILURE MODE IS FAILED OPEN OR INTERNAL LEAKAGE. THE  
 CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS A LARGE EXTERNAL  
 LEAK CAN DEplete CRYO PRESSURE BELOW SAFE LEVEL IN 7 SECONDS  
 (MEETING WITH DEPUTY SUBSYSTEM MANAGER DAVID SAUCIER, 4/12/88),  
 BEFORE CREW CAN CLOSE MANIFOLD VALVES. SCREEN B IS FAILED  
 BECAUSE FAILURE OF THIS VALVE IS NOT DETECTIBLE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/14/86  
 ASSESSMENT ID: PRSD-252  
 NASA FMEA #: M4-1B2-LV031-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 252  
 ITEM: H2 MANIFOLD 1 SOLENOID CROSSOVER VALVE (1) LV031

LEAD ANALYST: S. GOTCH

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
 INADEQUATE [    ]

REMARKS:

ALSO NASA FMEA'S 04-1B-LV031-1 AND M4-1B1-LV031-1.  
 THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS AN EXTERNAL LEAK CAN KILL TWO FUEL CELLS, AND DURING ASCENT THE VEHICLE REQUIRES TWO OF THREE FUEL CELLS. SCREEN B IS FAILED BECAUSE NOT ALL INTERNAL VALVE LEAKS ARE DETECTIBLE BY A VPI DRIVEN BY SOLENOID POSITION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/14/86  
ASSESSMENT ID: PRSD-255  
NASA FMEA #: M4-1B2-LV033-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPG  
MDAC ID: 255  
ITEM: H2 FUEL CELL 1 SOLENOID REACTANT SUPPLY VALVE  
(1) LV033

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

REMARKS:

ALSO NASA FMEA'S 04-1B-LV033-1 AND M4-1B1-LV033-1.  
THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. THE HARDWARE  
CRITICALITY IS A 2 BECAUSE IT WILL ONLY TAKE A FUEL CELL FAILURE  
REQUIRING FUEL CELL SHUTDOWN, PLUS A FAILURE OF THE REACTANT  
SUPPLY VALVES TO CAUSE THE POSSIBLE LOSS OF THE  
ORBITER. SCREEN B IS FAILED BECAUSE NOT ALL VALVE INTERNAL LEAKS  
ARE DETECTIBLE BY A VPI DRIVEN BY SOLENOID POSITION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/15/86  
 ASSESSMENT ID: PRSD-258  
 NASA FMEA #: M4-1B2-LV033-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 258  
 ITEM: H2 FUEL CELL 2 SOLENOID REACTANT SUPPLY VALVE  
 (1) LV043

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ALSO NASA FMEA'S 04-1B-LV033-1 AND M4-1B1-LV033-1.  
 THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. THE HARDWARE  
 CRITICALITY IS A 2 BECAUSE IT WILL ONLY TAKE A FAILURE REQUIRING  
 FUEL CELL SHUTDOWN, PLUS A FAILURE OF THE REACTANT SUPPLY VALVE  
 TO CAUSE THE POSSIBLE LOSS OF THE ORBITER. SCREEN B IS  
 FAILED BECAUSE NOT ALL VALVE INTERNAL LEAKS ARE DETECTIBLE BY A  
 VPI DRIVEN BY SOLENOID POSITION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/15/86  
 ASSESSMENT ID: PRSD-261  
 NASA FMEA #: M4-1B2-LV033-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 261  
 ITEM: H2 FUEL CELL 3 SOLENOID REACTANT SUPPLY VALVE  
 (1) LV044

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ALSO NASA FMEA'S 04-1B-LV033-1 AND M4-1B1-LV033-1.  
 THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. THE HARDWARE  
 CRITICALITY IS A 2 BECAUSE IT WILL ONLY TAKE A FAILURE REQUIRING  
 FUEL CELL SHUTDOWN, PLUS A FAILURE OF THE REACTANT SUPPLY VALVES  
 TO CAUSE POSSIBLE LOSS OF THE ORBITER. SCREEN B IS  
 FAILED BECAUSE NOT ALL VALVE INTERNAL LEAKS ARE DETECTIBLE BY A  
 VPI DRIVEN BY SOLENOID POSITION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/15/86  
 ASSESSMENT ID: PRSD-264  
 NASA FMEA #: M4-1B2-LV031-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 264  
 ITEM: H2 MANIFOLD 2 SOLENOID CROSSOVER VALVE (1) LV041

LEAD ANALYST: S. GOTCH

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
 INADEQUATE [    ]

REMARKS:

ALSO NASA FMEA'S 04-1B-LV031-1 AND M4-1B1-LV031-1.  
 THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS AN EXTERNAL LEAK CAN KILL TWO FUEL CELLS, AND DURING ASCENT THE VEHICLE REQUIRES TWO OF THREE FUEL CELLS. SCREEN B IS FAILED BECAUSE NOT ALL INTERNAL VALVE LEAKS ARE DETECTIBLE BY A VPI DRIVEN BY SOLENOID POSITION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/16/86  
ASSESSMENT ID: PRSD-267  
NASA FMEA #: M4-1B2-LV045-1  
NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPG  
MDAC ID: 267  
ITEM: H2 SOLENOID GSE SUPPLY VALVE (1) LV045

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [ ]

REMARKS:

ALSO NASA FMEA'S 04-1B-LV045-1 AND M4-1B1-LV-45-1.  
THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. THE  
CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS A GSE QUICK  
DISCONNECT LEAK CAN DEplete CRYO PRESSURE BELOW SAFE LEVEL IN 7  
SECONDS (MEETING WITH DEPUTY SUBSYSTEM MANAGER DAVID SAUCIER,  
4/12/88), BEFORE CREW CAN CLOSE MANIFOLD VALVES. SCREEN B IS  
FAILED BECAUSE VPI IS AVAILABLE TO GSE ONLY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/16/86  
 ASSESSMENT ID: PRSD-275  
 NASA FMEA #: M4-1B2-LV015-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 275  
 ITEM: 02 SOLENOID GSE SUPPLY VALVE (1) LV015

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ALSO NASA FMEA'S 04-1B-LV015-1 AND M4-1B1-LV015-1.  
 THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. THE  
 CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS A GSE QUICK  
 DISCONNECT LEAK CAN DEplete CRYO PRESSURE BELOW SAFE LEVEL IN 7  
 SECONDS (MEETING WITH DEPUTY SUBSYSTEM MANAGER DAVID SAUCIER,  
 4/12/88), BEFORE CREW CAN CLOSE MANIFOLD VALVES. SCREEN B IS  
 FAILED BECAUSE VPI IS AVAILABLE TO GSE ONLY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/16/86  
 ASSESSMENT ID: PRSD-278  
 NASA FMEA #: M4-1B2-LV012-1

NASA DATA:  
 BASELINE [ X ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 278  
 ITEM: 02 SOLENOID ECLSS SYSTEM 1 SUPPLY VALVE (1)  
 LV012

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [ ]

REMARKS:

ALSO NASA FMEA'S 04-1B-LV012-1 AND M4-1B1-LV012-1.  
 THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. THE  
 CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS A LARGE EXTERNAL  
 LEAK CAN DEplete CRYO PRESSURE BELOW SAFE LEVEL IN 7 SECONDS  
 (MEETING WITH DEPUTY SUBSYSTEM MANAGER DAVID SAUCIER, 4/12/88),  
 BEFORE CREW CAN CLOSE MANIFOLD VALVES. SCREEN B IS FAILED  
 BECAUSE NOT ALL INTERNAL VALVE LEAKS ARE DETECTIBLE BY A VPI  
 DRIVEN BY SOLENOID POSITION.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/02/86	NASA DATA:
ASSESSMENT ID: PRSD-281	BASELINE [    ]
NASA FMEA #: M4-1B2-LV012-1	NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 281  
 ITEM: 02 SOLENOID ECLSS SYSTEM 2 SUPPLY VALVE (1)  
 LV022

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:  
 ALSO NASA FMEA'S 04-1-LV012-1 AND M4-1B1-LV012.  
 THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. THE  
 CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS A LARGE EXTERNAL  
 LEAK CAN DEplete CRYO PRESSURE BELOW SAFE LEVEL IN 7 SECONDS  
 (MEETING WITH DEPUTY SUBSYSTEM MANAGER DAVID SAUCIER, 4/12/88),  
 BEFORE CREW CAN CLOSE MANIFOLD VALVES. SCREEN B IS FAILED  
 BECAUSE NOT ALL INTERNAL VALVE LEAKS ARE DETECTIBLE BY A VPI  
 DRIVEN BY SOLENOID POSITION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/17/86  
 ASSESSMENT ID: PRSD-289  
 NASA FMEA #: M4-1B2-LV013-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 289  
 ITEM: 02 FUEL CELL 1 SOLENOID REACTANT SUPPLY VALVE  
 (1) LV013

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ALSO NASA FMEA'S 04-1B-LV013-1 AND M4-1B1-LV013-1.  
 THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. SCREEN B IS  
 FAILED BECAUSE NOT ALL VALVE INTERNAL LEAKS ARE DETECTIBLE BY A  
 VPI DRIVEN BY SOLENOID POSITION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/17/86  
 ASSESSMENT ID: PRSD-292  
 NASA FMEA #: M4-1B2-LV011-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 292  
 ITEM: 02 MANIFOLD 1 SOLENOID CROSSOVER VALVE (1) LV011

LEAD ANALYST: S. GOTCH

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
 INADEQUATE [    ]

REMARKS:

ALSO NASA FMEA'S 04-1B-LV011-1 AND M4-1B1-LV011-1.  
 THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS AN EXTERNAL LEAK CAN KILL TWO FUEL CELLS, AND DURING ASCENT THE VEHICLE REQUIRES TWO OF THREE FUEL CELLS. SCREEN B IS FAILED BECAUSE NOT ALL INTERNAL VALVE LEAKS ARE DETECTIBLE BY A VPI DRIVEN BY SOLENOID POSITION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/17/86  
 ASSESSMENT ID: PRSD-295  
 NASA FMEA #: M4-1B2-LV011-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 295  
 ITEM: 02 MANIFOLD 2 SOLENOID CROSSOVER VALVE (1) LV021  
 LEAD ANALYST: S. GOTCH

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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 [ X ]  
 INADEQUATE [    ]

REMARKS:

ALSO NASA FMEA'S 04-1B-LV011-1 AND M4-1B1-LV011-1.  
 THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS AN EXTERNAL LEAK CAN KILL TWO FUEL CELLS, AND DURING ASCENT THE VEHICLE REQUIRES TWO OF THREE FUEL CELLS. SCREEN B IS FAILED BECAUSE NOT ALL INTERNAL VALVE LEAKS ARE DETECTIBLE BY A VPI DRIVEN BY SOLENOID POSITION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/18/86  
 ASSESSMENT ID: PRSD-301  
 NASA FMEA #: M4-1B2-LV013-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 301  
 ITEM: 02 FUEL CELL 3 SOLENOID REACTANT SUPPLY VALVE  
 (1) LV024

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [ ]

REMARKS:

ALSO NASA FMEA'S 04-1B-LV013-1 AND M4-1B1-LV013-1.  
 THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. SCREEN B IS  
 FAILED BECAUSE NOT ALL INTERNAL LEAKS ARE DETECTIBLE BY A VPI  
 DRIVEN BY SOLENOID POSITION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/18/86  
 ASSESSMENT ID: PRSD-304  
 NASA FMEA #: M4-1B2-LV013-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 304  
 ITEM: 02 FUEL CELL 2 SOLENOID REACTANT SUPPLY VALVE  
 (1) LV023

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ALSO NASA FMEA'S 04-1B-LV013-1 AND M4-1B1-LV013-1.  
 THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. SCREEN B IS  
 FAILED BECAUSE NOT ALL INTERNAL LEAKS ARE DETECTIBLE BY A VPI  
 DRIVEN BY SOLENOID POSITION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/19/86  
 ASSESSMENT ID: PRSD-307  
 NASA FMEA #: M4-1B2-RV011-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 307  
 ITEM: O2 MANIFOLD 1 RELIEF VALVE (1) RV011

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [    ]

REMARKS:

ALSO NASA FMEA'S 04-1B-RV011-1 AND M4-1B1-RV011-1.  
 THE FAILURE MODE IS FAILED OPEN OR INTERNAL LEAKAGE. THE  
 CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS A LARGE EXTERNAL  
 LEAK CAN DEplete CRYO PRESSURE BELOW SAFE LEVEL IN 7 SECONDS  
 (MEETING WITH DEPUTY SUBSYSTEM MANAGER DAVID SAUCIER, 4/12/88),  
 BEFORE CREW CAN CLOSE MANIFOLD VALVES. SCREEN B IS NOT NA,  
 BECAUSE THIS FAILURE MODE DOES NOT INVOLVE THE PRESSURE RELIEF  
 FUNCTION OF THE RELIEF VALVE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/19/86  
ASSESSMENT ID: PRSD-310  
NASA FMEA #: M4-1B2-RV011-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPG  
MDAC ID: 310  
ITEM: O2 MANIFOLD 2 RELIEF VALVE (1) RV021

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

REMARKS:

ALSO NASA FMEA'S 04-1B-RV011-1 AND M4-1B1-RV011-1.  
THE FAILURE MODE IS FAILED OPEN OR INTERNAL LEAKAGE. THE  
CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS A LARGE EXTERNAL  
LEAK CAN DEplete CRYO PRESSURE BELOW SAFE LEVEL IN 7 SECONDS  
(MEETING WITH DEPUTY SUBSYSTEM MANAGER DAVID SAUCIER, 4/12/88),  
BEFORE  
CREW CAN CLOSE MANIFOLD VALVES. SCREEN B IS NOT NA, BECAUSE THIS  
FAILURE MODE DOES NOT INVOLVE THE PRESSURE RELIEF FUNCTION OF THE  
RELIEF VALVE.

REPORT DATE 22 JULY 1988

C.15-22



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/19/86  
 ASSESSMENT ID: PRSD-313  
 NASA FMEA #: M4-1B2-CV010-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 313  
 ITEM: 02 CHECK VALVE (2) CV021

LEAD ANALYST: S. GOTCH

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [ ]

REMARKS:

ALSO NASA FMEA # M4-1B1-CV010-1. SCREENS ARE P F P, BY NSTS LEVEL I/II REVIEW BOARD PRESENTATION, 1/19/88. THE FAILURE MODE IS FAILS OPEN OR INTERNAL LEAKAGE. THE CRITICALITY IS 2/1R BECAUSE THIS FAILURE PLUS A LARGE EXTERNAL LEAK CAN DEplete CRYO PRESSURE BELOW SAFE LEVEL IN 7 SECONDS (MEETING WITH DEPUTY SUBSYSTEM MANAGER DAVID SAUCIER, 4/12/88), BEFORE CREW CAN CLOSE MANIFOLD VALVES. SCREEN B IS FAILED BECAUSE FAILURE OF THIS VALVE IS NOT DETECTIBLE.

**APPENDIX C  
ASSESSMENT WORKSHEET**

ASSESSMENT DATE: 12/19/86 NASA DATA:  
 ASSESSMENT ID: PRSD-330 BASELINE [ ]  
 NASA FMEA #: M4-1B2-TK010-1 NEW [ X ]

SUBSYSTEM: EPG  
 MDAC ID: 330  
 ITEM: O2 TANK SUBASSEMBLY (4), (3), OR (2)

LEAD ANALYST: S. GOTCH

**ASSESSMENT:**

	CRITICALITY	REDUNDANCY SCREENS			CIL ITEM
	FLIGHT HDW/FUNC	A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
 INADEQUATE [ ]

**REMARKS:**

ALSO NASA FMEA'S 04-1B-TK010-1 AND M4-1B1-TK010-1.  
 NASA FMEA 04-1B-A01FS0-1 COVERS EXTERNAL LEAKAGE OF ALL H2 LINES,  
 COMPONENTS, AND FITTINGS (MEETING WITH DEPUTY SUBSYSTEM MANAGER  
 DAVID SAUCIER, 4/12/88).

SECTION C.16  
MAIN PROPULSION SYSTEM

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/09/88  
 ASSESSMENT ID: MPS-010X  
 NASA FMEA #: 2381-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 10  
 ITEM: DIODE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

LH2 RTLS INBOARD/OUTBOARD DUMP VALVE OPEN COMMAND B RPC OUTPUT  
 DIODE (2). FAIL SHORTED TO GROUND.  
 RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD  
 WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
 ASSESSMENT ID: MPS-013X  
 NASA FMEA #: 2263-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 13  
 ITEM: HYBRID DRIVER CONTROLLER

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:	1/25/88	NASA DATA:
ASSESSMENT ID:	MPS-018X	BASELINE [ ]
NASA FMEA #:	2275-1	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 18  
ITEM: FILL AND DRAIN LA1 MDM BLOCKING DIODE (1)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA ACCEPTS HIGHER NASA 2/1R CRITICALITY BASED ON NASA'S BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
 ASSESSMENT ID: MPS-028X  
 NASA FMEA #: 2355A-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 28  
 ITEM: OPEN SWITCH BLOCKING DIODE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

LH2 OUTBOARD FILL & DRAIN VALVE CIRCUIT.  
 SHORTING OF THE OPEN CONTACT TO GROUND IN THIS SWITCH IS  
 INFEASIBLE. THERE IS NO GROUND CONNECTION AND THE SWITCH CASE IS  
 NOT GROUNDED.  
 SWITCH CASE IS GROUNDED. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88	NASA DATA:
ASSESSMENT ID: MPS-033X	BASELINE [    ]
NASA FMEA #: 2359A-1	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 33  
ITEM: TRANSIENT SUPPRESSION DIODES (2)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

LO2 DISCONNECT. FAIL SHORTED.  
2 TRANSIENT SUPPRESSION DIODES. A SHORT IN THE DIODE, PLUS A SHORT IN THE ON INTERNAL HDC DIODE, WILL GROUND A SOLENOID. CLOSE SIGNAL WILL BE GROUNDED PREVENTING DISCONNECT CLOSURE, WHICH IS A 1/1 FAILURE (SEE 0408-6). GROUNDED OPEN SIGNAL FOLLOWED BY INADVERTENT CLOSE SIGNAL AND LATCH FAILURE WILL CAUSE DISCONNECT TO CLOSE (1/1, SEE 0408-2).



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88  
 ASSESSMENT ID: MPS-037X  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 37  
 ITEM: MDM LA1

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

LH2 O/B F&D.  
 MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
ASSESSMENT ID: MPS-044X  
NASA FMEA #: 2397-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 44  
ITEM: RPC A OUTPUT DIODE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

LH2 RELIEF SHUTOFF VALVE RPC A OUTPUT BLOCKING DIODE. FAIL  
SHORTED. RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP WHICH  
MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: MPS-064X  
 NASA FMEA #: 2100-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 64  
 ITEM: OPEN HDC

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
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:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP, WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: MPS-065X  
 NASA FMEA #: 2100-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 65  
 ITEM: OPEN HDC

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

LH2 RECIRCULATION DISCONNECT VALVE OPEN SOLENOID CIRCUIT.  
 RI/NASA HAS COMBINED 2100-3 WITH 2100-2 AND INDICATES 2/1R PPP  
 FOR NOMINAL AND 1/1 FOR ALL ABORTS. IOA RECOMMENDATION ON MPS-  
 065X WAS FOR ABORT ONLY. MPS-064X ADDRESSED NOMINAL FLIGHT.  
 RI/NASA RESULTS NOW MATCH IOA RECOMMENDATIONS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: MPS-067X  
 NASA FMEA #: 2101-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 67  
 ITEM: CLOSE HDC

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS COMBINED 2101-3 WITH 2101-1 AND ASSIGNED A 2/1R PPP.  
 IOA ACCEPTS THE RI/NASA CRITICALITY BASED ON THEIR BROADER  
 INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:	1/27/88	NASA DATA:
ASSESSMENT ID:	MPS-072X	BASELINE [   ]
NASA FMEA #:	2031-1	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 72  
ITEM: TRANSIENT SUPPRESSION DIODES (3)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

L02 DISCONNECT. FAIL SHORTED.  
2 TRANSIENT SUPPRESSION DIODES. A SHORT IN THE DIODE, PLUS A SHORT IN THE ON INTERNAL HDC DIODE, WILL GROUND A SOLENOID. CLOSE SIGNAL WILL BE GROUNDED PREVENTING DISCONNECT CLOSURE, WHICH IS A 1/1 FAILURE (SEE 0408-6). GROUNDED OPEN SIGNAL FOLLOWED BY INADVERTENT CLOSE SIGNAL AND LATCH FAILURE WILL CAUSE DISCONNECT TO CLOSE (1/1, SEE 0408-2).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-074X  
 NASA FMEA #: 2032-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 74  
 ITEM: HDC, RELAY CONTROL POWER (3)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-075X  
 NASA FMEA #: 2032-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 75  
 ITEM: HDC, RELAY CONTROL POWER (3)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT FOR GH2 FLOW CONTROL VALVES. RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP WHICH MATCHES THE IOA RECOMMENDATION.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-076X  
 NASA FMEA #: 2033-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 76  
 ITEM: RELAY (3)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT FOR GH2 FLOW CONTROL VALVE CIRCUIT. RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-077X  
 NASA FMEA #: 2033-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 77  
 ITEM: RELAY (3)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR GH2 FCV CIRCUIT. RI/NASA HAS REVISED THIS  
 CRITICALITY TO 3/1R PFP. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-078X  
 NASA FMEA #: 2034-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 78  
 ITEM: BLOCKING DIODE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

ASSESSMENT IS FOR GH2 FCV CIRCUIT. RI/NASA HAS REVISED THIS  
 CRITICALITY TO 3/1R PFP WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-079X  
 NASA FMEA #: 2034-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 79  
 ITEM: BLOCKING DIODE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR GH2 FCV CIRCUIT. RI/NASA HAS REVISED THIS  
 CRITICALITY TO 2/1R PFP. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-081X  
 NASA FMEA #: 2035-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 81  
 ITEM: TOGGLE SWITCH

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA NOW SHOWS SCREEN B PASS. IOA ACCEPTS THIS REVISION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-088X  
 NASA FMEA #: 2235-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 88  
 ITEM: SWITCH SCAN DIODES (3)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

GH2 FLOW CONTROL VALVE CIRCUIT. FAIL SHORTED.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP. IOA ACCEPTS  
 THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/10/88  
ASSESSMENT ID: MPS-115X  
NASA FMEA #: 2350-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 115  
ITEM: TRANSIENT SUPPRESSION DIODES (2)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

LO2 DISCONNECT. FAIL SHORTED.  
2 TRANSIENT SUPPRESSION DIODES. A SHORT IN THE DIODE, PLUS A SHORT IN THE ON INTERNAL HDC DIODE, WILL GROUND A SOLENOID. CLOSE SIGNAL WILL BE GROUNDED PREVENTING DISCONNECT CLOSURE, WHICH IS A 1/1 FAILURE (SEE 0408-6). GROUNDED OPEN SIGNAL FOLLOWED BY INADVERTENT CLOSE SIGNAL AND LATCH FAILURE WILL CAUSE DISCONNECT TO CLOSE (1/1, SEE 0408-2).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
 ASSESSMENT ID: MPS-143X  
 NASA FMEA #: 2214-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 143  
 ITEM: LH2 PREVALVES BLOCKING DIODE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

OPEN SWITCH COMMAND A BLOCKING DIODE. FAIL SHORTED. THE FAILURE IS NOT DETECTABLE.  
 FAILURE DETECTABLE VIA SWITCH SCAN.  
 IOA WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
ASSESSMENT ID: MPS-144X  
NASA FMEA #: 2215-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 144  
ITEM: LH2 PREVALVE CLOSE SWITCH COMMAND A BLOCKING  
DIODES (3)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:  
FAIL SHORTED.  
THE FAILURE IS NOT DETECTABLE.  
FAILURE DETECTABLE VIA SWITCH SCAN.  
IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
ASSESSMENT ID: MPS-145X  
NASA FMEA #: 2216-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 145  
ITEM: LH2 PREVALVES OPEN SWITCH COMMAND C BLOCKING  
DIODES (3)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAIL SHORTED.  
THE FAILURE IS NOT DETECTABLE.  
FAILURE DETECTABLE VIA SWITCH SCAN.  
IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
 ASSESSMENT ID: MPS-146X  
 NASA FMEA #: 2217-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 146  
 ITEM: LH2 PREVALVES OPEN SWITCH COMMAND B BLOCKING  
 DIODES (3)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:  
 FAIL SHORTED.  
 THE FAILURE IS NOT DETECTABLE.  
 FAILURE DETECTABLE VIA SWITCH SCAN.  
 IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
ASSESSMENT ID: MPS-147X  
NASA FMEA #: 2218-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 147  
ITEM: LH2 PREVALVES CLOSE SWITCH B&C BLOCKING DIODES  
(6)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:  
FAIL SHORTED.  
THE FAILURE IS NOT DETECTABLE.  
FAILURE DETECTABLE VIA SWITCH SCAN.  
IOA WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/20/88  
 ASSESSMENT ID: MPS-201X  
 NASA FMEA #: 0518-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 201  
 ITEM: LO2 TANK PRE-PRESS CHECK VALVE (CV16)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS COMBINED 0518-3 WITH 0502-2.  
 IOA HAS NO ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/21/88  
ASSESSMENT ID: MPS-207X  
NASA FMEA #: 0408-10

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 207  
ITEM: LO2 FEED (ORB/ET) DISCONNECT (PD1)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA EFFECTS IMPLY A FAILURE OF THE VALVE TO CLOSE, WHICH IS ADDRESSED ON 0408-6. WORST CASE EFFECT OF ERRONEOUS INDICATION OF A PROPERLY OPERATING VALVE IS TO CAUSE SIX MINUTE DELAY OF ET SEP.

SEE ALSO 0408-13.

IOA BELIEVES THIS CIL ENTRY IS REDUNDANT BUT WITHDRAWS THE ISSUE ON THE BASIS THAT ITS PRESENCE IS NOT HARMFUL AND ITS REMOVAL WOULD CONSUME SCARCE RESOURCES WITHOUT ANY CORRESPONDING BENEFIT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/21/88  
ASSESSMENT ID: MPS-209X  
NASA FMEA #: 0803-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 209  
ITEM: LO2 FEED DISCONNECT (PD1)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA 0803-1 HAS BEEN REPLACED BY 0408-13.  
LOSS OF POSITION INDICATION. OPEN INDICATION FAILS ON.  
RI/NASA CRITICALITY IS 2/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/21/88  
ASSESSMENT ID: MPS-214X  
NASA FMEA #: 0454-6

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 214  
ITEM: LO2 AND LH2 FEED DISCONNECT LATCH ASSEMBLY (ORB ONLY)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA CRITICALITY REVISED TO 2/1R PFP IN POST-PRCB CIL.  
RI/NASA EFFECTS STATE FAILURES OF THE LATCH TO LOCK OR UNLOCK,  
WHICH ARE ADDRESSED ON A NON-CIL FMEA AND 0454-3, RESPECTIVELY.  
ERRONEOUS INDICATION OF A PROPERLY OPERATING LATCH WILL HAVE  
NO EFFECT.  
SEE ALSO 0454-9.  
IOA BELIEVES THIS CIL ENTRY IS REDUNDANT BUT WITHDRAWS THE ISSUE  
ON THE BASIS THAT ITS PRESENE IS NOT HARMFUL AND ITS REMOVAL  
WOULD CONSUME SCARCE RESOURCES WITHOUT ANY CORRESPONDING BENEFIT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/21/88  
ASSESSMENT ID: MPS-217X  
NASA FMEA #: 0805-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 217  
ITEM: LO2 AND LH2 FEED DISCONNECT LATCH ASSEMBLY (ORB ONLY)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA 0805-1 HAS BEEN REPLACED BY 0454-9.  
LOSS OF POSITION INDICATION. LOCKED INDICATION FAILS ON.  
RI/NASA INDICATES A CRITICALITY OF 3/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
ASSESSMENT ID: MPS-224X  
NASA FMEA #: 0801-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 224  
ITEM: LO2 PREVALVE (PV1, 2, 3)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA 0801-1 HAS BEEN REPLACED BY 0401-11.  
LOSS OF POSITION INDICATION. OPEN INDICATION FAILS ON.  
RI/NASA CRITICALITY IS 2/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88	NASA DATA:
ASSESSMENT ID: MPS-225X	BASELINE [    ]
NASA FMEA #: 0414-4	NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 225  
ITEM: LO2 FEEDLINE RELIEF SHUTOFF VALVE (PV7)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

ERRONEOUS INDICATION. VALVE OPEN, CLOSED INDICATION.  
FAILURE OF THE VALVE TO REMAIN CLOSED IS ADDRESSED ON 0414-3.  
FAILURE OF THE INDICATION SYSTEM ONLY WILL HAVE NO EFFECT.  
THE RI/NASA SCENARIO IMPLIES FAILURE OF THE VALVE AS WELL AS ITS INDICATOR. SEE 0414-6.  
IOA BELIEVES THIS CIL ENTRY IS REDUNDANT BUT WITHDRAWS THE ISSUE ON THE BASIS THAT ITS PRESENCE IS NOT HARMFUL AND ITS REMOVAL WOULD CONSUME SCARCE RESOURCES WITHOUT ANY CORRESPONDING BENEFIT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
 ASSESSMENT ID: MPS-227X  
 NASA FMEA #: 0414-6

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 227  
 ITEM: LO2 FEEDLINE RELIEF SHUTOFF VALVE (PV7)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY		REDUNDANCY SCREENS			CIL ITEM
	FLIGHT	HDW/FUNC	A	B	C	
NASA	[ 3 / 3 ]		[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]		[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]		[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

LOSS OF POSITION INDICATION. CLOSED INDICATION FAILS ON.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88	NASA DATA:
ASSESSMENT ID: MPS-228X	BASELINE [    ]
NASA FMEA #: 0311-3	NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 228  
ITEM: LO2 OUTBOARD FILL AND DRAIN VALVE (PV9)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA CIL STATES FAILURES OF THE VALVE TO CLOSE OR REMAIN CLOSED, WHICH ARE ADDRESSED ON 0311-2 AND 0311-4. ERRONEOUS INDICATION OF A PROPERLY OPERATING VALVE WILL HAVE NO EFFECT. SEE ALSO 0311-8.  
IOA BELIEVES THIS CIL ENTRY IS REDUNDANT BUT WITHDRAWS THE ISSUE ON THE BASIS THAT ITS PRESENCE IS NOT HARMFUL AND ITS REMOVAL WOULD CONSUME SCARCE RESOURCES WITHOUT ANY CORRESPONDING BENEFIT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
ASSESSMENT ID: MPS-230X  
NASA FMEA #: 0311-8

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 230  
ITEM: LO2 OUTBOARD FILL AND DRAIN VALVE (PV9)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

LOSS OF POSITION INDICATION. CLOSED INDICATION FAILS ON.  
RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
ASSESSMENT ID: MPS-232X  
NASA FMEA #: 0310-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 232  
ITEM: LO2 INBOARD FILL AND DRAIN VALVE (PV10)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA CIL STATES FAILURES OF THE VALVE TO CLOSE OR REMAIN CLOSED, WHICH ARE ADDRESSED ON A NON-CIL FMEA AND 0310-4, RESPECTIVELY. ERRONEOUS INDICATION OF A PROPERLY OPERATING VALVE WILL HAVE NO HARMFUL EFFECT. SEE ALSO 0310-9. IOA BELIEVES THIS CIL ENTRY IS REDUNDANT BUT WITHDRAWS THE ISSUE ON THE BASIS THAT ITS PRESENCE IS NOT HARMFUL AND ITS REMOVAL WOULD CONSUME SCARCE RESOURCES WITHOUT ANY CORRESPONDING BENEFIT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
 ASSESSMENT ID: MPS-235X  
 NASA FMEA #: 0310-9

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 235  
 ITEM: LO2 INBOARD FILL AND DRAIN VALVE (PV10)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

LOSS OF POSITION INDICATION. CLOSED INDICATION FAILS ON.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
ASSESSMENT ID: MPS-237X  
NASA FMEA #: 0806-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 237  
ITEM: LO2 INBOARD FILL AND DRAIN VALVE (PV10)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA 0806-1 HAS BEEN COMBINED WITH 0310-9.  
THIS FAILURE MODE SHOULD BE ADEQUATELY ADDRESSED UNDER ERRONEOUS  
INDICATION (0310-3) AND LOSS OF POSITION INDICATION (0310-9).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88  
ASSESSMENT ID: MPS-240X  
NASA FMEA #: 0453-4

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 240  
ITEM: LO2 POGO ACCUMULATOR RECIRC VALVE (PV20, 21)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

ERRONEOUS INDICATION. VALVE CLOSED, OPEN INDICATION.  
FAILURE TO REMAIN OPEN IS ADDRESSED ON 0453-1. FAILURE OF THE  
INDICATOR ALONE WILL HAVE NO EFFECT.  
THE RI/NASA SCENARIO IMPLIES FAILURE OF THE VALVE AS WELL AS ITS  
INDICATOR. SEE 0453-5.  
IOA BELIEVES THIS CIL ENTRY IS REDUNDANT BUT WITHDRAWS THE ISSUE  
ON THE BASIS THAT ITS PRESENCE IS NOT HARMFUL AND ITS REMOVAL  
WOULD CONSUME SCARCE RESOURCES WITHOUT ANY CORRESPONDING BENEFIT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
 ASSESSMENT ID: MPS-241X  
 NASA FMEA #: 0453-5

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 241  
 ITEM: LO2 POGO ACCUMULATOR RECIRC VALVE (PV20, 21)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

LOSS OF POSITION INDICATION. OPEN INDICATION FAILS ON.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88  
ASSESSMENT ID: MPS-243X  
NASA FMEA #: 0427-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 243  
ITEM: LH2/LO2 PROPELLANT LEVEL SENSORS

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

FALSE DRY SIGNAL.  
RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PPP AND REMOVED  
0427-2 FROM THE CIL. LOSS OF ALL REDUNDANCY IS NOT DETECTABLE.  
LOSS OF A SINGLE SENSOR IS DETECTABLE.  
IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88  
 ASSESSMENT ID: MPS-251X  
 NASA FMEA #: 0422-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 251  
 ITEM: LO2 BLEED LINE, 1.5" DIA

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]

(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 RI/NASA HAS COMBINED THIS CIL WITH 0428-1. CRITICALITY STILL AGREES WITH IOA.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88  
ASSESSMENT ID: MPS-255X  
NASA FMEA #: 0456-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 255  
ITEM: LO2 RELIEF SENSE LINE, .38" DIA

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /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:

RI/NASA AINDICATES A 1/1 CRITICALITY FOR THIS ITEM/FAILURE MODE.  
HIGH PRESSURE OXIDIZER TURBOPUMP SEALS ARE NOT CAPABLE OF  
PROVIDING ADEQUATE RELIEF. IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88  
 ASSESSMENT ID: MPS-257X  
 NASA FMEA #: 0428-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 257  
 ITEM: LO2 BLEED RECIRC & POGO SUPPRESSION LINE, 1,  
 1.5, 2" DIA

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

THIS FAILURE MODE IS ADDRESSED ON 0428-1.  
 RI/NASA HAS DELETED THIS FMEA/CIL.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-264X  
 NASA FMEA #: 0510-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 264  
 ITEM: GO2 PRESSURIZATION SUPPLY LINE (CV16 TO PD9)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 1/1.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-265X  
 NASA FMEA #: 0515-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 265  
 ITEM: LO2 ULLAGE PRESSURE SIGNAL CONDITIONER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED SCREEN B TO PASS.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
ASSESSMENT ID: MPS-266X  
NASA FMEA #: 0515-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 266  
ITEM: LO2 ULLAGE PRESSURE SIGNAL CONDITIONER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ACCEPTS THE RI/NASA RESULT.

**APPENDIX C  
ASSESSMENT WORKSHEET**

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-267X  
 NASA FMEA #: 0515-3

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 267  
 ITEM: LO2 ULLAGE PRESSURE SIGNAL CONDITIONER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
ASSESSMENT ID: MPS-271X  
NASA FMEA #: 0626-6

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 271  
ITEM: LO2 MANIFOLD PRESSURE TRANSDUCER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS CHANGED THIS FMEA NUMBER TO 0723-1. IOA ACCEPTS HIGHER RI/NASA CRITICALITY BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-272X  
 NASA FMEA #: 0626-7

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 272  
 ITEM: GO2 DISCONNECT PRESSURE TRANSDUCER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS CHANGED THIS FMEA NUMBER TO 0747-1. NO ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
ASSESSMENT ID: MPS-274X  
NASA FMEA #: 0627-4

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 274  
ITEM: GO2 ENGINE OUTLET TEMPERATURE TRANSDUCER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS CHANGED THIS FMEA NUMBER TO 0748-1 AND REVISED THE CRITICALITY TO 3/1R PPP. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-275X  
 NASA FMEA #: 0627-5

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 275  
 ITEM: LO2 FEED MANIFOLD DISCONNECT TEMPERATURE  
 TRANSDUCER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS DELETED 0627-5 AND ANALYZED THE TWO TRANSDUCERS ON  
 0727-1 AND 0728-1. BOTH HAVE BEEN ASSIGNED A CRITICALITY OF 3/1R  
 PFP. IOA ACCEPTS RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:	1/27/88	NASA DATA:	
ASSESSMENT ID:	MPS-280X	BASELINE	[ ]
NASA FMEA #:	0301-8	NEW	[ X ]

SUBSYSTEM: MPS  
 MDAC ID: 280  
 ITEM: LH2 INBOARD FILL AND DRAIN VALVE (PV12)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY	REDUNDANCY SCREENS			CIL ITEM
	FLIGHT HDW/FUNC	A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

LOSS OF POSITION INDICATION. CLOSED INDICATOR FAILS ON.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
ASSESSMENT ID: MPS-283X  
NASA FMEA #: 0808-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 283  
ITEM: LH2 INBOARD FILL AND DRAIN VALVE (PV12)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA 0808-1 HAS BEEN COMBINED WITH 0301-8.  
THIS FAILURE MODE SHOULD BE ADEQUATELY ADDRESSED UNDER ERRONEOUS  
INDICATION (0301-3) AND LOSS OF POSITION INDICATION (0301-8).  
SEE RI/NASA 0301-8.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-284X  
 NASA FMEA #: 0302-7

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 284  
 ITEM: LH2 OUTBOARD FILL AND DRAIN VALVE (PV11)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ / ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

LOSS OF POSITION INDICATION. CLOSED INDICATION FAILS ON.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
 ASSESSMENT ID: MPS-287X  
 NASA FMEA #: 0807-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 287  
 ITEM: LH2 OUTBOARD FILL & DRAIN VALVE (PV11)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA 0807-1 HAS BEEN COMBINED WITH 0302-7.  
 THIS FAILURE MODE SHOULD BE ADEQUATELY ADDRESSED UNDER ERRONEOUS  
 INDICATION (0302-3) AND LOSS OF POSITION INDICATION (0302-7).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
 ASSESSMENT ID: MPS-295X  
 NASA FMEA #: 0304-6

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 295  
 ITEM: LH2 REPLENISH VALVE (PV13)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

LOSS OF POSITION INDICATION. CLOSED INDICATION FAILS ON.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
ASSESSMENT ID: MPS-296X  
NASA FMEA #: 0304-11

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 296  
ITEM: LH2 REPLENISH VALVE (PV13)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RUPTURE/LEAKAGE OF VALVE ACTUATOR.

RI/NASA HAS MOVED THIS ITEM/FAILURE MODE TO 0304-8 AND ASSIGNED A 3/1R PFP. FAILURE WILL PREVENT VALVE FROM OPENING WHEN REQUIRED. SUBSEQUENT FAILURE OF RELIEF SYSTEM MAY CAUSE LOSS OF VEHICLE.

ACTUATOR LEAKAGE IS CITED ON 0304-1 AS A CAUSE OF FAILURE TO OPEN, A 2/1R FAILURE.

THIS FAILURE IS COVERED BY 0304-1 WHICH ADDRESSES POST-MECO OPERATIONS. FMEA # 0304-8 IS MEANT TO ADDRESS ASCENT ONLY. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
 ASSESSMENT ID: MPS-297X  
 NASA FMEA #: 0431-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 297  
 ITEM: LH2 HI POINT BLEED VALVE (PV22)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

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

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

REMARKS:  
 ERRONEOUS INDICATION. VALVE OPEN, CLOSED INDICATION.  
 RI/NASA HAS CHANGED THIS FMEA NUMBER TO 0431-9 AND REVISED THE  
 CRITICALITY TO 1/1. RI/NASA CIL INDICATES FAILURE TO CLOSE,  
 WHICH IS ADDRESSED ON A NON-CIL FMEA. ERRONEOUS INDICATION OF A  
 PROPERLY OPERATING VALVE WILL HAVE NO EFFECT. SEE 0431-12.  
 IOA BELIEVES THIS IL ENTRY IS REDUNDANT BUT WITHDRAWS THE ISSUE  
 ON THE BASIS THAT ITS PRESENCE IS NOT HARMFUL AND ITS REMOVAL  
 WOULD CONSUME SCARCE RESOURCES WITHOUT ANY CORRESPONDING BENEFIT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
 ASSESSMENT ID: MPS-298X  
 NASA FMEA #: 0431-6

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 298  
 ITEM: LH2 HI POINT BLEED VALVE (PV22)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS DELETED THIS CIL. IOA RECOMMENDED DELETION SINCE 0431-6 WAS A DUPLICATE OF 0431-5.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: MPS-305X  
NASA FMEA #: NA

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 305  
ITEM: LH2 HI POINT BLEED LINE (PV22 TO PD17)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA REVISED 0430-1 TO COVER THIS ITEM/FAILURE MODE AND  
ASSIGNED A CRITICALITY OF 1/1 WHICH MATCHES THE IOA  
RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: MPS-307X  
NASA FMEA #: 0405-4

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 307  
ITEM: LH2 RECIRCULATION DISCONNECT VALVE (PD3)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ] [ NA ] [ NA ] [ NA ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

FAILURE OF THE VALVE TO REMAIN OPEN IS ADDRESSED ON 0405-2.  
FAILURE OF THE INDICATOR ALONE WILL HAVE NO EFFECT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: MPS-308X  
NASA FMEA #: 0405-7

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 308  
ITEM: LH2 RECIRCULATION DISCONNECT VALVE (PD3)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

ERRONEOUS INDICATION. VALVE OPEN, CLOSED INDICATION.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP AND 1/1 FOR A  
PAD ABORT. FAILURE OF THE VALVE TO CLOSE IS COVERED ON 0405-6.  
NSTS 22206 2.3.2d EXCLUDES FAILURE OF THE ENGINE TO SHUT DOWN  
SAFELY. THE RI/NASA SCENARIO IMPLIES FAILURE OF THE VALVE AS  
WELL AS ITS POSITION INDICATOR AND WOULD REQUIRE A 3/1R  
CRITICALITY. THE RI/NASA 2/1R CRITICALITY APPLIES TO AN FRF  
ONLY.  
IOA BELIEVES THIS CIL ENTRY IS REDUNDANT BUT WITHDRAWS THE ISSUE  
ON THE BASIS THAT ITS PRESENCE IS NOT HARMFUL AND ITS REMOVAL  
WOULD CONSUME SCARCE RESOURCES WITHOUT ANY CORRESPONDING BENEFIT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88	NASA DATA:
ASSESSMENT ID: MPS-313X	BASELINE [    ]
NASA FMEA #: 0403-4	NEW [ X ]
SUBSYSTEM: MPS	
MDAC ID: 313	
ITEM: LH2 RECIRCULATION PUMP VALVE (PV14, 15, 16)	
LEAD ANALYST: W.J. MCNICOLL	

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[ D ]
INADEQUATE	[   ]

REMARKS:

RI/NASA HAS ELIMINATED 0403-6 AND PLACED THE RUPTURE/LEAKAGE FAILURE MODE ON 0403-4. AS SUCH, 0403-4 NOW CORRESPONDS TO MPS-2103 AND THE 1/1 CRITICALITIES MATCH. MPS-313X CAN BE DELETED.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
 ASSESSMENT ID: MPS-316X  
 NASA FMEA #: 0505-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 316  
 ITEM: GH2 PRESSURIZATION ISOLATION CHECK VALVE (CV21,  
 22, 23)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

FAIL TO CHECK.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PNAF.  
 IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
 INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: MPS-318X  
NASA FMEA #: 0504-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 318  
ITEM: GH2 PRESSURIZATION FLOW CONTROL VALVE (LV56, 57, 58)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R FPF, WHICH AGREES WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
ASSESSMENT ID: MPS-321X  
NASA FMEA #: 0407-10

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 321  
ITEM: LH2 FEED DISCONNECT VALVE (PD2)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA EFFECTS IMPLY A FAILURE OF THE VALVE TO CLOSE, WHICH IS ADDRESSED ON 0407-6. WORST CASE EFFECT OF ERRONEOUS INDICATION OF A PROPERLY OPERATING VALVE IS TO CAUSE SIX MINUTE DELAY OF ET SEP.

SEE ALSO 0407-13.

IOA BELIEVES THIS CIL ENTRY IS REDUNDANT BUT WITHDRAWS THE ISSUE ON THE BASIS THAT ITS PRESENCE IS NOT HARMFUL AND ITS REMOVAL WOULD CONSUME SCARCE RESOURCES WITHOUT ANY CORRESPONDING BENEFIT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88	NASA DATA:
ASSESSMENT ID: MPS-323X	BASELINE [    ]
NASA FMEA #: 0804-1	NEW [ X ]

SUBSYSTEM:           MPS  
MDAC ID:             323  
ITEM:                 LH2 FEED DISCONNECT VALVE (PD2)

LEAD ANALYST:       W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS:   (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE    [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA 0804-1 HAS BEEN REPLACED BY 0407-13.  
LOSS OF POSITION INDICATION. OPEN INDICATION FAILS ON.  
RI/NASA CRITICALITY IS 2/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
 ASSESSMENT ID: MPS-324X  
 NASA FMEA #: 0402-7

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 324  
 ITEM: LH2 PREVALVE (PV4, 5, 6)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA CIL DESCRIBES A FAILURE OF THE PREVALVE TO OPEN DUE TO A STRUCTURAL FAILURE SUCH THAT THE INDICATOR SHOWS THE VALVE TO BE OPEN. FAILURE MODE SHOULD BE REVISED TO ACCURATELY DESCRIBE THE POSTULATED SCENARIO.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
 ASSESSMENT ID: MPS-326X  
 NASA FMEA #: 0802-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 326  
 ITEM: LH2 PREVALVE (PV4, 5, 6)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA 0802-1 HAS BEEN COMBINED WITH 0402-6.  
 THIS FAILURE SHOULD BE ADEQUATELY ADDRESSED UNDER LOSS OF  
 POSITION INDICATION (0402-6) AND ERRONEOUS INDICATION (0402-7).  
 THIS ANALYSIS SHOULD BE DELETED.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
ASSESSMENT ID: MPS-329X  
NASA FMEA #: 0437-5

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 329  
ITEM: LH2 FEEDLINE RELIEF SHUTOFF VALVE (PV8)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

ERRONEOUS INDICATION. VALVE OPEN, CLOSED INDICATION.  
FAILURE OF THE VALVE TO REMAIN CLOSED IS ADDRESSED ON 0437-3.  
ERRONEOUS INDICATION OF A PROPERLY OPERATING VALVE HAS NO EFFECT.  
THE RI/NASA SCENARIO IMPLIES FAILURE OF THE VALVE AS WELL AS ITS  
INDICATOR. SEE 0437-6.  
IOA BELIEVES THIS CIL ENTRY IS REDUNDANT BUT WITHDRAWS THE ISSUE  
ON THE BASIS THAT ITS PRESENCE IS NOT HARMFUL AND ITS REMOVAL  
WOULD CONSUME SCARCE RESOURCES WITHOUT ANY CORRESPONDING BENEFIT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
 ASSESSMENT ID: MPS-330X  
 NASA FMEA #: 0437-6

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 330  
 ITEM: LH2 FEEDLINE RELIEF SHUTOFF VALVE (PV8)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ / ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

LOSS OF POSITION INDICATION. CLOSED INDICATION FAILS ON.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-334X  
 NASA FMEA #: 0651-5

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 334  
 ITEM: LH2 FEED RTLS INBOARD VALVE (PV17)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 1/1, WHICH AGREES WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-335X  
NASA FMEA #: 0651-6

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 335  
ITEM: LH2 FEED RTLS INBOARD VALVE (PV17)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REMOVED THIS ITEM FROM THE CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-336X  
 NASA FMEA #: 0651-7

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 336  
 ITEM: LH2 FEED RTLS INBOARD VALVE (PV17)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ERRONEOUS INDICATION. VALVE OPEN, CLOSED INDICATION.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
 FAILURE OF THE VALVE TO REMAIN CLOSED IS ADDRESSED ON 0651-2.  
 FAILURE OF THE INDICATOR ALONE WILL HAVE NO EFFECT OTHER THAN A  
 POSSIBLE LAUNCH SCRUB. SEE 0651-8.  
 IOA BELIEVES THIS CIL ENTRY IS REDUNDANT BUT WITHDRAWS THE ISSUE  
 ON THE BASIS THAT ITS PRESENCE IS NOT HARMFUL AND ITS REMOVAL  
 WOULD CONSUME SCARCE RESOURCES WITHOUT ANY CORRESPONDING BENEFIT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-337X  
 NASA FMEA #: 0651-8

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 337  
 ITEM: LH2 FEED RTLS INBOARD VALVE (PV17)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

LOSS OF POSITION INDICATION. CLOSED INDICATION FAILS ON.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-338X  
NASA FMEA #: 0651-7

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 338  
ITEM: LH2 FEED RTLS OUTBOARD VALVE (PV18)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

ERRONEOUS INDICATION. VALVE OPEN, CLOSED INDICATION.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
FAILURE OF THE VALVE TO REMAIN CLOSED IS ADDRESSED ON 0651-2.  
FAILURE OF THE INDICATOR ALONE WILL HAVE NO EFFECT OTHER THAN A  
POSSIBLE LAUNCH SCRUB. SEE 0651-8.  
IOA BELIEVES THIS CIL ENTRY IS REDUNDANT BUT WITHDRAWS THE ISSUE  
ON THE BASIS THAT ITS PRESENCE IS NOT HARMFUL AND ITS REMOVAL  
WOULD CONSUME SCARCE RESOURCES WITHOUT ANY CORRESPONDING BENEFIT.

REPORT DATE 19 SEPTEMBER 1988 C.16-79

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-339X  
 NASA FMEA #: 0651-8

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 339  
 ITEM: LH2 FEED RTLS OUTBOARD VALVE (PV18)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

LOSS OF POSITION INDICATION. CLOSED INDICATION FAILS ON.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-350X  
 NASA FMEA #: XXXXXX

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 350  
 ITEM: LH2 RTL5 DUMP LINE (PD2 TO PV17)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

EXTERNAL LEAKAGE.

IOA HAS NOT LOCATED A NEW RI/NASA CIL WORKSHEET TO REPLACE XXX,  
 WHICH HAS BEEN DELETED.

THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION AT A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-353X  
 NASA FMEA #: 0515-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 353  
 ITEM: LH2 ULLAGE PRESSURE SIGNAL CONDITIONER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED SCREEN B TO PASS.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-355X  
 NASA FMEA #: 0515-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 355  
 ITEM: LH2 ULLAGE PRESSURE SIGNAL CONDITIONER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88	NASA DATA:
ASSESSMENT ID: MPS-361X	BASELINE [    ]
NASA FMEA #: 0626-2	NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 361  
ITEM: LH2 ENGINE MANIFOLD PRESSURE TRANSDUCER  
  
LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS CHANGED THIS FMEA NUMBER TO 0721-1. IOA ACCEPTS HIGHER RI/NASA CRITICALITY BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

c-4

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-362X  
 NASA FMEA #: 0626-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 362  
 ITEM: GH2 OUTLET PRESSURE TRANSDUCER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]    [ NA ]    [ NA ]    [ NA ]    [ D ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

TRANSDUCER FAILURE HAS NO EFFECT. NO REDUNDANCY.  
 RI/NASA HAS CHANGED THIS FMEA NUMBER TO 0740-1 AND REVISED THE  
 CRITICALITY TO 3/1R PPP.  
 REMOVAL FROM THE CIL ELIMINATES THE CIL ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-363X  
 NASA FMEA #: 0626-4

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 363  
 ITEM: GH2 DISCONNECT PRESSURE TRANSDUCER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS CHANGED THIS FMEA NUMBER TO 0746-1. NO ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-364X  
 NASA FMEA #: 0627-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 364  
 ITEM: LH2 FEED MANIFOLD DISCONNECT TEMPERATURE  
 TRANSDUCER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS CHANGED THIS FMEA NUMBER TO 0724-1 AND REVISED THE CRITICALITY TO 3/1R PFP. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-366X  
 NASA FMEA #: 0202-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 366  
 ITEM: ENGINE HELIUM SUPPLY CHECK VALVE (CV1, 2, 3)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS CHANGED THIS CRITICALITY TO 1/1 WHICH AGREES WITH THE  
 IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
ASSESSMENT ID: MPS-370X  
NASA FMEA #: 0205-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 370  
ITEM: ENGINE HELIUM PRESSURE REGULATOR (PR1,2,3,7,8,9)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

THE REGULATOR IS NOT REQUIRED TO REMAIN CLOSED.  
RI/NASA HAS DELETED THIS FMEA FROM THE CIL WHICH IS IN ACCORD  
WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-372X  
NASA FMEA #: 0262-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 372  
ITEM: ENGINE HELIUM SUPPLY INTERCONNECT OUT VALVE  
(LV60,62,64)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAILURE WILL HAVE NO EFFECT. RI/NASA CITES A LEAK AS A SECOND FAILURE, BUT A LEAK IS A 1/1 FAILURE IN ISOLATION AND THUS SKEWS THE ANALYSIS. ENGINES ARE NOT REDUNDANT. IOA ACCEPTS THE RI/NASA RESULTS BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
 ASSESSMENT ID: MPS-375X  
 NASA FMEA #: 0202-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 375  
 ITEM: PNEUMATIC HELIUM SUPPLY CHECK VALVE (CV4)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 1/1 WHICH AGREES WITH THE  
 IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-378X  
NASA FMEA #: 0605-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 378  
ITEM: GH2 PRESSURIZATION MANIFOLD REPRESSURIZATION  
CHECK VALVE (CV13)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA 0605-2 IS NOW MATCHED TO MPS-4060.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-379X  
NASA FMEA #: 0605-4

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 379  
ITEM: GH2 PRESSURIZATION MANIFOLD REPRESSURIZATION  
CHECK VALVE (CV13)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RUPTURE/LEAKAGE.

RI/NASA HAS REVISED THIS CRITICALITY TO 1/1. THE RI/NASA FMEA STATES THAT THE SINGLE FAILURE OF A RUPTURE OF CV13 WILL HAVE NO EFFECT. ANALYSIS OF CV13 AND CV24 SHOULD BE SEPARATED. IOA ACCEPTS CRITICALITY 1/1 FOR CV24 (MPS-383X). THE MPS SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES, ACCEPTED THE IOA RECOMMENDATION AT A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
 ASSESSMENT ID: MPS-382X  
 NASA FMEA #: 0605-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 382  
 ITEM: GH2 PRESSURIZATION MANIFOLD REPRESSURIZATION  
 CHECK VALVE (CV24)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA 0605-2 IS NOW MATCHED TO MPS-4110.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
ASSESSMENT ID: MPS-400X  
NASA FMEA #: 0602-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 400  
ITEM: LO2 MANIFOLD REPRESSURIZATION REGULATOR (PR5)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAILURE OF REGULATOR FOLLOWED BY FAILURE OF BOTH SOLENOID VALVES (LV40, 41) WILL RESULT IN HELIUM INJECTION INTO THE LO2 MANIFOLD. RI/NASA HAS COMBINED THIS FMEA WITH 0602-2. IOA HAS NO ISSUE. SEE ALSO MPS-4541.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
 ASSESSMENT ID: MPS-409X  
 NASA FMEA #: 2077-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 409  
 ITEM: OPEN RPC OUTPUT DIODE

LEAD ANALYST: R. O'DONNELL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS DELETED THIS ITEM/FAILURE MODE FROM THE CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
ASSESSMENT ID: MPS-414X  
NASA FMEA #: 2185-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 414  
ITEM: OPEN SWITCH BLOCKING DIODE

LEAD ANALYST: R. O'DONNELL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

12 OPEN SWITCH BLOCKING DIODES. FAIL SHORTED. DIODE FAILS B SCREEN BECAUSE REDUNDANCY MASKS THE FAILURE, AND LACK OF INSTRUMENTATION. RI/NASA SHOWS 3/1R PFP FOR OTHER OPEN SWITCH BLOCKING DIODES (2187-2 AND 2189-2). FAILURE DETECTABLE VIA SWITCH SCAN. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88	NASA DATA:
ASSESSMENT ID: MPS-415X	BASELINE [    ]
NASA FMEA #: 2186-2	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 415  
ITEM: CLOSE SWITCH BLOCKING DIODE

LEAD ANALYST: R. O'DONNELL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

12 CLOSE SWITCH BLOCKING DIODES. FAIL SHORTED. LOSS OF ALL REDUNDANCY (GPC AND MANUAL) IN CLOSING THE L02 PREVALVE COULD CAUSE LOSS OF VEHICLE/CREW. FAILS B SCREEN BECAUSE REDUNDANCY MASKS THE FAILURE.

RI/NASA SHOWS 3/1R PFP FOR OTHER CLOSE SWITCH BLOCKING DIODES (2188-2).

FAILURE DETECTABLE VIA SWITCH SCAN.

IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
ASSESSMENT ID: MPS-421X  
NASA FMEA #: 2238B-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 421  
ITEM: BLOCKING DIODE, SWITCH

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

ASSESSMENT IS FOR ONE DIODE. THIS ASSESSMENT IS FOR A DIODE IN THE LO2 RELIEF SHUTOFF VALVE CIRCUIT. THE FMEA NUMBER IS 2238A-2. RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP, WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
ASSESSMENT ID: MPS-425X  
NASA FMEA #: 2397-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 425  
ITEM: RPC A OUTPUT DIODE, 12A

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

LO2 RELIEF SHUTOFF VALVE RPC A OUTPUT BLOCKING DIODE. FAIL  
SHORTED. RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP WHICH  
MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88  
 ASSESSMENT ID: MPS-427X  
 NASA FMEA #: 2056B-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 427  
 ITEM: DIODE, OP SW BLOCK (LCA)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

SWITCH SCAN CAN NOT ELIMINATE OTHER FAILURES. DIODE FAILURE IS NOT DETECTABLE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88  
ASSESSMENT ID: MPS-430X  
NASA FMEA #: 2355B-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 430  
ITEM: DIODE, OP SW BLOCK (MODULE)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ X ]

REMARKS:

LH2 OUTBOARD FIL & DRAIN VALVE CIRCUIT.  
THERE IS NO ELECTRICAL GROUND ON S6. NASA SCENARIO IS  
INFEASIBLE. SWITCH CASE IS NOT GROUNDED.  
SWITCH CASE IS GROUNDED. IOA WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88  
ASSESSMENT ID: MPS-432X  
NASA FMEA #: 2359B-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 432  
ITEM: TRANSIENT SUPPRESSION DIODE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

L02 OUTBOARD FILL & DRAIN VALVE CONTROL CIRCUIT.  
FAIL OPEN. NO HAZARDOUS EFFECT. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88	NASA DATA:
ASSESSMENT ID: MPS-433X	BASELINE [    ]
NASA FMEA #: 2037-5	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 433  
ITEM: LO2 INBOARD FILL & DRAIN TOGGLE SWITCH

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[ X ]
INADEQUATE	[    ]

REMARKS:  
IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88  
ASSESSMENT ID: MPS-439X  
NASA FMEA #: 2286-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 439  
ITEM: DIODE (3A), CL SW BLOCK

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

LO2 INBOARD FILL & DRAIN VALVE CIRCUIT. FAIL SHORTED.  
VALVE MAY OPEN DURING ASCENT. LOSS OF ALL REDUNDANCY MAY BE  
DETECTABLE VIA VALVE POSITION INDICATION BUT CREW MAY NOT BE ABLE  
TO RESPOND IN TIME TO PREVENT ENGINE EXPLOSION.  
FAILURE DETECTABLE VIA SWITCH SCAN.  
IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88	NASA DATA:
ASSESSMENT ID: MPS-458X	BASELINE [    ]
NASA FMEA #: 2031-1	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 458  
 ITEM: TRANSIENT SUPPRESSION DIODES

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 INADVERTENT REPETITION OF MPS-72X.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88  
ASSESSMENT ID: MPS-461X  
NASA FMEA #: 2032-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 461  
ITEM: HDC I-RELAY CONTROL PWR

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

ASSESSMENT FOR GO2 FLOW CONTROL VALVES. RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88  
 ASSESSMENT ID: MPS-462X  
 NASA FMEA #: 2033-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 462  
 ITEM: RELAY

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT FOR GO2 FLOW CONTROL VALVE CIRCUIT. RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88  
 ASSESSMENT ID: MPS-463X  
 NASA FMEA #: 2033-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 463  
 ITEM: RELAY

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR GO2 FCV CIRCUIT. RI/NASA HAS REVISED THIS  
 CRITICALITY TO 3/1R PFP. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88	NASA DATA:
ASSESSMENT ID: MPS-465X	BASELINE [    ]
NASA FMEA #: 2090-2	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 465  
ITEM: CL HDC III

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
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:

RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP. IOA ACCEPTS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-466X  
NASA FMEA #: 2090-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 466  
ITEM: CL HDC III

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
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:

RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-467X  
NASA FMEA #: 2091-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 467  
ITEM: CL HDC I

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

LO2 OVERBOARD BLEED VALVE CIRCUIT. PREMATURE OUTPUT. SECOND FAILURE WILL CAUSE BLEED VALVE TO CLOSE. SEE RI/NASA 0452-1. NOT A CIL ENTRY. NO CIL ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-468X  
 NASA FMEA #: 2092-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 468  
 ITEM: CL RPC

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

LO2 OVERBOARD BLEED VALVE CIRCUIT. PREMATURE OUTPUT. SECOND  
 FAILURE WILL CAUSE BLEED VALVE TO CLOSE. SEE RI/NASA 0452-1.  
 NOT A CIL ENTRY. NO CIL ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-469X  
 NASA FMEA #: 2092-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 469  
 ITEM: CL RPC

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
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:

LO2 OVERBOARD BLEED VALVE CIRCUIT. PREMATURE OUTPUT. SECOND FAILURE WILL CAUSE BLEED VALVE TO CLOSE. SEE RI/NASA 0452-1. NOT A CIL ENTRY. NO CIL ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
ASSESSMENT ID: MPS-472X  
NASA FMEA #: 2093-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 472  
ITEM: CL RPC C OUTPUT DIODE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP, WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/12/88  
ASSESSMENT ID: MPS-498X  
NASA FMEA #: 2350-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 498  
ITEM: TRANSIENT SUPPRESSOR DIODES (2)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

LH2 FEEDLINE DISCONNECT LATCH CIRCUIT.  
FAIL SHORTED.

SUBSEQUENT FAILURE OF THE HDC WILL SHORT THE LOCK OR UNLOCK  
COMMAND TO GROUND. LOSS OF ALL REDUNDANCY WILL ALLOW THE  
DISCONNECT VALVE TO CLOSE DURING ENGINE BURN RESULTING IN LOSS OF  
VEHICLE.

THE CONNECTION TO THE TRANSIENT SUPPRESSION DIODE EMPLOYS A WIRE  
OF SUCH SMALL DIAMETER THAT IT WILL OVERHEAT AND BREAK IF THE  
INTERNAL DIODE ALSO SHORTS. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
ASSESSMENT ID: MPS-601X  
NASA FMEA #: 2167-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 601  
ITEM: TOGGLE SWITCH

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

SSME CONTROLLER POWER. FAIL TO TRANSFER TO OFF. THE TOGGLE SWITCH IS NOT USED AT MECO.  
RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
ASSESSMENT ID: MPS-603X  
NASA FMEA #: 2167-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 603  
ITEM: TOGGLE SWITCH

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

THE TOGGLE SWITCH IS NOT USED AT MECO.  
RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD  
WITH THE IOA RECOMMENDATION.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
ASSESSMENT ID: MPS-605X  
NASA FMEA #: 2168-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 605  
ITEM: CIRCUIT BREAKER

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

SSME CONTROLLER POWER. FAIL OFF. THE FAILURE OF SOME BUT NOT ALL CIRCUIT BREAKERS CAN BE DETECTED. ALL 3 ARE REQUIRED TO OPERATE CONTROLLER. DETECTABLE VIA CONTROLLER. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
ASSESSMENT ID: MPS-619X  
NASA FMEA #: 2166-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 619  
ITEM: FUSE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

MAIN ENGINE LIMIT SHUTDOWN CIRCUIT. RI/NASA HAS REVISED THIS  
CRITICALITY TO 3/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
 ASSESSMENT ID: MPS-620X  
 NASA FMEA #: 2170-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 620  
 ITEM: FUSE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

MAIN ENGINE SHUTDOWN CIRCUIT. FAIL OPEN. THE MANUAL SHUTDOWN CAPABILITY IS USED WHEN LIMIT CONTROL IS INHIBITED AND AN ENGINE LIMIT VIOLATION OCCURS (I.E., ABORT CASE).  
 RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP. PUSHBUTTON COMMANDS APPEAR TO BE DUAL REDUNDANT.  
 BOTH SIGNALS ARE REQUIRED. PUSHBUTTON COMMANDS ARE NOT REDUNDANT. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88	NASA DATA:
ASSESSMENT ID: MPS-621X	BASELINE [    ]
NASA FMEA #: 2171-1	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 621  
ITEM: PUSHBUTTON SWITCH

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

MAIN ENGINE SHUTDOWN CIRCUIT. FAIL OPEN. THE MANUAL SHUTDOWN CAPABILITY IS USED WHEN LIMIT CONTROL IS INHIBITED AND AN ENGINE LIMIT VIOLATION OCCURS (I.E., ABORT CASE).  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP. PUSHBUTTON COMMANDS APPEAR TO BE DUAL REDUNDANT.  
BOTH SIGNALS ARE REQUIRED. PUSHBUTTON COMMANDS ARE NOT REDUNDANT. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
ASSESSMENT ID: MPS-622X  
NASA FMEA #: 2171-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 622  
ITEM: PUSHBUTTON SWITCH

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

SSME SHUTDOWN. FAIL CLOSED.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP AND 1/1 FOR  
ABORTS WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
ASSESSMENT ID: MPS-640X  
NASA FMEA #: 2027-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 640  
ITEM: BUS 2 AND 3 UPSTREAM HDC

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
ASSESSMENT ID: MPS-642X  
NASA FMEA #: 2028-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 642  
ITEM: BUS 2 AND 3 DOWNSTREAM AND BUS 1 HDC

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

AN UNDERLOAD WOULD NOT OCCUR BECAUSE OF THE FIRST FAILURE.  
SENSORS ARE AVAILABLE AT 100.15%, 100%, AND 99.85% AND ARE ALL  
POWERED BY A SEPARATE BUS.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP. IOA ACCEPTS  
THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
ASSESSMENT ID: MPS-644X  
NASA FMEA #: 2232-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 644  
ITEM: BUS 4 RPC

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD WITH THE IOA RECOMMENDATION.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
 ASSESSMENT ID: MPS-646X  
 NASA FMEA #: 2233-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 646  
 ITEM: RPC OUTPUT DIODE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

PARALLEL POWER PATHS PROVIDE REDUNDANCY FOR THE FIRST FAILURE. A  
 SECOND FAILURE WILL NOT ELIMINATE TWO POWER SUPPLIES.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP WHICH MATCHES  
 THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
ASSESSMENT ID: MPS-648X  
NASA FMEA #: 2233-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 648  
ITEM: RPC OUTPUT DIODE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88  
 ASSESSMENT ID: MPS-667X  
 NASA FMEA #: 2161-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 667  
 ITEM: BACKUP LH2 VLV SWITCH FUSE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88	NASA DATA:
ASSESSMENT ID: MPS-669X	BASELINE [    ]
NASA FMEA #: 2162-3	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 669  
ITEM: DUMP SEQUENCE SWITCH S1

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ F ]	[ F ]	[ P ]	[ X ] *
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:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88  
ASSESSMENT ID: MPS-670X  
NASA FMEA #: 2163-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 670  
ITEM: BACKUP LH2 VALVE SWITCH S2

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88	NASA DATA:
ASSESSMENT ID: MPS-672X	BASELINE [    ]
NASA FMEA #: 2163-3	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 672  
ITEM: BACKUP LH2 VALVE SWITCH S2

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

PREMATURE TRANSFER TO OPEN, CONTACT-TO-CONTACT SHORT ACROSS "OPEN" POLES.  
PROPELLANT VENTING DURING BOOST COULD CAUSE FIRE/EXPLOSION.  
SOFTWARE INHIBITS WERE NOT CONSIDERED.  
PREMATURE TRANSFER TO START COULD VENT PROPELLANT OVERBOARD DURING BOOST. THIS COULD RESULT IN FIRE/EXPLOSION.  
DOCUMENTATION ON ANY SOFTWARE INHIBIT WAS UNAVAILABLE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88  
ASSESSMENT ID: MPS-673X  
NASA FMEA #: 2163-4

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 673  
ITEM: BACKUP LH2 VALVE SWITCH S2

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ F ]	[ F ]	[ P ]	[ X ] *
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:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
ASSESSMENT ID: MPS-680X  
NASA FMEA #: 2416-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 680  
ITEM: STATUS LIGHT

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS FMEA NUMBER TO 0663-1 AND DELETED IT FROM THE CIL. THIS IS IN ACCORD WITH THE IOA RECOMMENDATION.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
 ASSESSMENT ID: MPS-681X  
 NASA FMEA #: 2407-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 681  
 ITEM: METER M1 (PC)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD WITH THE IOA RECOMMENDATION.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
ASSESSMENT ID: MPS-683X  
NASA FMEA #: 2409-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 683  
ITEM: METER M4 (HELIUM PRESSURE)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS CHANGED THIS FMEA NUMBER TO 0662-1.  
POSTULATED FAILURES OF FA MDM AND MAIN ENGINE VIOLATE NSTS 22206  
2.3.2d. IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88	NASA DATA:
ASSESSMENT ID: MPS-684X	BASELINE [    ]
NASA FMEA #: 2410-1	NEW [ X ]
SUBSYSTEM: EPD&C/MPS	
MDAC ID: 684	
ITEM: TOGGLE SWITCH (TANK/REG SELECT FOR METER M4)	
LEAD ANALYST: B. SLAUGHTER	

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-806X  
 NASA FMEA #: 2050-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 806  
 ITEM: HELIUM SUPPLY BLOWDOWN VALVES HYBRID DRIVER  
 CONTROLLER

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

CRITICALITY FOR AN ABORT IS 1/1.  
 RI/NASA ANALYSIS REPORTS 3/3 NOMINAL, 1/1 ABORT.  
 NO ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
ASSESSMENT ID: MPS-808X  
NASA FMEA #: 2114-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 808  
ITEM: HELIUM ISOLATION "B" VALVE SWITCH BLOCKING DIODE

LEAD ANALYST: MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAIL SHORT.

A LOSS OF ALL REDUNDANCY COULD RESULT IN AN EXPLOSION DUE TO LACK OF HELIUM PURGE IN A SSME. RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.

LOSS OF HELIUM PURGE SHOULD RESULT IN A SAFE MAIN ENGINE SHUTDOWN (NSTS 22206 2.3.2d). RESULTS IN LOSS OF MISSION. NSTS 22206 2.3.31 REQUIRES FUNCTIONAL CRITICALITY ASSIGNMENT OF 1R. THE RI/NASA RESULT MATCHES THE IOA RECOMMENDATION.





APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-810X  
NASA FMEA #: 2117-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 810  
ITEM: HELIUM ISOLATION "A" VALVE TOGGLE SWITCH

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP.  
LOSS OF HELIUM PURGE SHOULD RESULT IN A SAFE MAIN ENGINE SHUTDOWN  
(NSTS 22206 2.3.2d). RESULTS IN LOSS OF MISSION. NSTS 22206  
2.3.31 REQUIRES FUNCTIONAL CRITICALITY ASSIGNMENT OF 1R.  
ENGINE MANUFACTURER INDICATES THAT SEVEN SECONDS OF CONTINUOUS  
HELIUM PURGE ARE REQUIRED FOR SAFE SHUTDOWN. ABRUPT OR RAPID  
LOSS OF HELIUM CAN CAUSE ENGINE EXPLOSION. IOA ACCEPTS THE  
RI/NASA RESULT.  
ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-811X  
NASA FMEA #: 2119-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 811  
ITEM: HELIUM ISOLATION "A" VALVE SWITCH BLOCKING DIODE  
LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP WHICH MATCHES THE IOA RECOMMENDATION.  
LOSS OF HELIUM PURGE SHOULD RESULT IN A SAFE MAIN ENGINE SHUTDOWN (NSTS 22206 2.3.2d). RESULTS IN LOSS OF MISSION. NSTS 22206 2.3.31 REQUIRES FUNCTIONAL CRITICALITY ASSIGNMENT OF 1R.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-812X  
 NASA FMEA #: 2119-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 812  
 ITEM: HELIUM ISOLATION "A" VALVE SWITCH BLOCKING DIODE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP WHICH MATCHES THE IOA RECOMMENDATION.  
 LOSS OF HELIUM PURGE SHOULD RESULT IN A SAFE MAIN ENGINE SHUTDOWN (NSTS 22206 2.3.2d). RESULTS IN LOSS OF MISSION. NSTS 22206 2.3.31 REQUIRES FUNCTIONAL CRITICALITY ASSIGNMENT OF 1R.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-813X  
NASA FMEA #: 2120-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 813  
ITEM: HELIUM ISOLATION VALVE TRANSIENT SUPPRESSION  
DIODES

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA HAS REVISED ITS RECOMMENDATION AND MADE THIS A NON-CIL. NO  
CIL ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-814X  
NASA FMEA #: 2300-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 814  
ITEM: FUSES (2)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

PNEUMATIC HELIUM SUPPLY ISOLATION VALVE CIRCUIT. FAIL OPEN.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-817X  
 NASA FMEA #: 2302-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 817  
 ITEM: TOGGLE SWITCH

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

PNEUMATIC HELIUM SUPPLY ISOLATION VALVE CIRCUIT. FAIL SHORTED.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-818X  
NASA FMEA #: 2302-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 818  
ITEM: TOGGLE SWITCH

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

PNEUMATIC HELIUM SUPPLY ISOLATION VALVE CONTROL CIRCUIT. FAIL OPEN.

A LOSS OF ALL REDUNDANCY COULD RESULT IN THE LOSS OF HELIUM SUPPLY.

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.

IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-819X  
 NASA FMEA #: 2302-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 819  
 ITEM: TOGGLE SWITCH

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD WITH THE IOA RECOMMENDATION.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-825X  
NASA FMEA #: 2312-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 825  
ITEM: LO2 MANIFOLD REPRESS VALVES TOGGLE SWITCH

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

FAIL SHORTED.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-830X  
NASA FMEA #: 2065-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 830  
ITEM: LH2 MANIFOLD REPRESS VALVES CIRCUIT HDC III (2)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAIL OFF. RI/NASA INDICATES 1/1 FOR ABORT.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
ASSESSMENT ID: MPS-832X  
NASA FMEA #: 2135-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 832  
ITEM: TRANSIENT SUPPRESSION DIODE

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

HELIUM CROSSOVER VALVE (LV10) CIRCUIT.  
FAIL SHORT.  
SECOND FAILURE COULD GROUND SOLENOID OPEN POWER.  
RI/NASA HAS ASSIGNED 2/1R PPP FOR SIMILAR EFFECT (0208-1).  
THE CONNECTION TO THE TRANSIENT SUPPRESSION DIODE EMPLOYS A WIRE  
OF SUCH SMALL DIAMETER THAT IT WILL OVERHEAT AND BREAK IF THE  
INTERNAL DIODE ALSO SHORTS. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
 ASSESSMENT ID: MPS-835X  
 NASA FMEA #: 2143-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 835  
 ITEM: REMOTE POWER CONTROLLER (6)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA ASSUMES A HELIUM LEAK WHICH IS CRITICALITY 1/1 BY ITSELF TO GET THEIR 1R.

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP.

IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
ASSESSMENT ID: MPS-836X  
NASA FMEA #: 2144-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 836  
ITEM: ISOLATION DIODES (6)

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
ASSESSMENT ID: MPS-837X  
NASA FMEA #: 2145-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 837  
ITEM: ISOLATION DIODES

LEAD ANALYST: B. SLAUGHTER

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

THE LOSS OF ONE ENGINE COULD RESULT IF ALL REDUNDANCY WERE LOST.  
THE FAILURE IS NOT READILY DETECTABLE. NSTS 22206 2.3.3L  
REQUIRES ASSIGNMENT OF 3/1R FOR FAILURES RESULTING IN AN ENGINE  
SHUTDOWN.  
RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP WHICH MATCHES  
THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
ASSESSMENT ID: MPS-901X  
NASA FMEA #: 0602-5

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 901  
ITEM: LO2 MANIFOLD REPRESS REGULATOR (PR5)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

SENSE PORT CLOGGED.

REGULATOR WILL REMAIN OPEN DURING ENTRY REPRESS, PRESSURIZING THE MANIFOLD. FAILURE OF RELIEF SYSTEM DURING ENTRY MAY CAUSE MANIFOLD RUPTURE. NO HAZARD DURING DUMP PRESSURIZATION.

RI/NASA HAS COMBINED 0602-5 WITH 0602-2 AND REVISED THE CRITICALITY TO 3/1R PFP.

SWITCH FAILURE CAN CAUSE BOTH REPRESS VALVES TO OPEN. NOTE: THIS FAILURE MODE FOR THE LH2 REGULATOR (PR6) IS ADDRESSED ON 0629-4 AND WAS ASSIGNED A 2/1R BY RI/NASA. SEE ALSO 2312-2. THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, D. PREVETT, ACCEPTED THE IOA RECOMMENDATION AT A MEETING ON 9-9-88.

REPORT DATE 19 SEPTEMBER 1988 C.16-157

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
ASSESSMENT ID: MPS-915X  
NASA FMEA #: 0626-8

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 915  
ITEM: ENGINE HELIUM SUPPLY PRESSURE TRANSDUCERS (3)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS CHANGED THIS FMEA NUMBER TO 0741-1 AND REVISED THE ANALYSIS TO ADDRESS AN ERRONEOUS LOW PRESSURE INDICATION. THE RESULTING RI/NASA CRITICALITY IS 2/1R PPP. TERMINATION OF HELIUM FLOW SHOULD RESULT IN A SAFE ENGINE SHUTDOWN (SEE NSTS 22206 2.3.2d) AND LOSS OF MISSION. NSTS 22206 2.3.31 REQUIRES ASSIGNMENT OF FUNCTIONAL CRITICALITY 1R. ENGINE MANUFACTURER INDICATES THAT SEVEN SECONDS OF CONTINUOUS HELIUM PURGE ARE REQUIRED FOR SAFE SHUTDOWN. ABRUPT OR RAPID LOSS OF HELIUM CAN CAUSE ENGINE EXPLOSION. IOA ACCEPTS THE RI/NASA RESULT.  
ISSUE WITHDRAWN.

REPORT DATE 19 SEPTEMBER 1988 C.16-158



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
ASSESSMENT ID: MPS-917X  
NASA FMEA #: 0626-10

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 917  
ITEM: ENGINE HELIUM REGULATOR OUTLET PRESSURE  
TRANSDUCERS (6)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS CHANGED THIS FMEA NUMBER TO 0743-1 AND REVISED THE  
CRITICALITY TO 3/1R PPP.  
REMOVAL FROM THE CIL ELIMINATES THE CIL ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
ASSESSMENT ID: MPS-918X  
NASA FMEA #: 0626-11

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 918  
ITEM: PNEUMATIC HELIUM REGULATOR OUTLET PRESSURE  
TRANSDUCER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS DELETED THIS FMEA FROM THE CIL WHICH IS IN ACCORD WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
ASSESSMENT ID: MPS-919X  
NASA FMEA #: 0626-12

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 919  
ITEM: HELIUM ACCUMULATOR PRESSURE TRANSDUCER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS DELETED THIS FMEA FROM THE CIL WHICH IS IN ACCORD WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
ASSESSMENT ID: MPS-920X  
NASA FMEA #: 0627-6

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 920  
ITEM: ENGINE HELIUM SUPPLY TEMPERATURE TRANSDUCERS (6)

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

MULTIPLE FAILURE OF TRANSDUCERS MAY ALLOW STRUCTURAL TEMPERATURE LIMITS TO BE VIOLATED DURING TANK FILL AND CAUSE RUPTURE AND LOSS OF VEHICLE. FAILURE DURING ASCENT WILL HAVE NO EFFECT. RI/NASA HAS CHANGED THIS FMEA NUMBER TO 0749-1 AND REVISED THE CRITICALITY TO 3/3. NO CIL ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
ASSESSMENT ID: MPS-921X  
NASA FMEA #: 0627-7

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 921  
ITEM: PNEUMATIC HELIUM SUPPLY TEMPERATURE TRANSDUCER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS CHANGED THIS FMEA NUMBER TO 0750-1. NO CIL ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
 ASSESSMENT ID: MPS-924X  
 NASA FMEA #: 0901-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 924  
 ITEM: STRUCTURAL ATTACH POINTS

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NSTS 22206 2.3.1 DOES NOT REQUIRE A FMEA FOR STRUCTURE. DELETE  
 0901-1.  
 RI/NASA HAS DELETED THIS FMEA.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/20/88  
ASSESSMENT ID: MPS-1002  
NASA FMEA #: 0514-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1002  
ITEM: GO2 PRESSURE ISOLATION CHECK VALVE (CV18, 19, 20)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

FAIL TO CHEK.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/20/88  
ASSESSMENT ID: MPS-1005  
NASA FMEA #: 0514-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1005  
ITEM: GO2 PRESSURE ISOLATION CHECK VALVE (CV18, 19, 20)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

FAIL TO OPEN.  
FAILURE OF THE CHECK VALVE TO OPEN WILL ALLOW INCREASING GO2 PRESSURE TO RUPTURE THE HEAT EXCHANGER, POSSIBLY RESULTING IN ENGINE EXPLOSION.  
RI/NASA HAS REVISED THIS CRITICALITY TO 1/1 WHICH MATCHES THE IOA RECOMMENDATION.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/20/88  
ASSESSMENT ID: MPS-1006  
NASA FMEA #: NA

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1006  
ITEM: GO2 PRESSURE ISOLATION CHECK VALVE (CV18, 19, 20)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

SPONTANEOUS IGNITION IN/OF PART.  
THE BURNING OF THIS VALVE COULD CAUSE A HOLE WHICH WOULD ALLOW HOT GO2 TO ENTER THE AFT COMPARTMENT. THIS WOULD RESULT IN OVERPRESSURIZATION AND A POSSIBLE FIRE/EXPLOSION. THIS ANALYSIS CORRESPONDS TO THE 0514 SERIES IN THE RI/NASA RESULTS.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES, ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/20/88  
 ASSESSMENT ID: MPS-1012  
 NASA FMEA #: 0518-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 1012  
 ITEM: LO2 TANK PRE-PRESS CHECK VALVE (CV16)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 RI/NASA HAS CHANGED 0518-2 WITH 0502-2.  
 IOA HAS NO ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/20/88  
ASSESSMENT ID: MPS-1014  
NASA FMEA #: N/A

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1014  
ITEM: LO2 TANK PRE-PRESS CHECK VALVE (CV16)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

SPONTANEOUS IGNITION IN/OFF PART.  
THIS ANALYSIS CORRESPONDS TO THE 0502 SERIES IN THE RI/NASA  
RESULTS.  
GO2 TEMPERATURE AT THE LOCATION OF THIS COMPONENT IS TOO LOW TO  
SUPPORT COMBUSTION. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/20/88	NASA DATA:
ASSESSMENT ID: MPS-1021	BASELINE [    ]
NASA FMEA #: 0451-1	NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1021  
ITEM: LO2 BLEED CHECK VALVE (CV31, 33, 35)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP. IOA ACCEPTS THE RI/NASA RESULT. THIS IOA WORKSHEET SHOULD BE COMBINED WITH MPS-1023.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/20/88  
 ASSESSMENT ID: MPS-1022  
 NASA FMEA #: 0451-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 1022  
 ITEM: LO2 BLEED CHECK VALVE (CV31, 33, 35)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP. IOA ACCEPTS THE RI/NASA RESULT. THIS IOA WORKSHEET SHOULD BE COMBINED WITH MPS-1023.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/20/88  
 ASSESSMENT ID: MPS-1023  
 NASA FMEA #: 0451-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 1023  
 ITEM: LO2 BLEED CHECK VALVE (CV31, 33, 35)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/20/88  
ASSESSMENT ID: MPS-1025  
NASA FMEA #: 0451-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1025  
ITEM: LO2 BLEED CHECK VALVE (CV31, 33, 35)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP. IOA ACCEPTS RI/NASA HIGHER CRITICALITY BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/20/88	NASA DATA:
ASSESSMENT ID: MPS-1028	BASELINE [    ]
NASA FMEA #: 0451-1	NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1028  
ITEM: LO2 BLEED CHECK VALVE (CV31, 33, 35)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ]	[ F ]	[ F ]	[ F ]	[    ] (ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP. IOA ACCEPTS THE RI/NASA RESULT.

THIS IOA WORKSHEET APPLIES ONLY TO THE PRELAUNCH PHASE. LOSS OF TEMPERATURE CONDITIONING FOR ONE ENGINE MAY CAUSE LAUNCH DELAY. THIS IOA WORKSHEET SHOULD BE COMBINED WITH #1023.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/20/88  
ASSESSMENT ID: MPS-1031  
NASA FMEA #: 0519-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1031  
ITEM: GO2 PRESSURE FLOW CONTROL VALVE (LV53, 54, 55)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

FAILURE OF TWO FLOW CONTROL VALVES MAY CAUSE VIOLATION OF SAFETY LIMITS ON O2 ULLAGE PRESSURE. LOSS OF ALL REDUNDANCY WILL CAUSE ULLAGE PRESSURE TO FALL BELOW ITS MINIMUM ALLOWABLE VALVE. THIS IS MONITORED AND WILL BE INDICATED TO THE CREW.  
RI/NASA HAS REVISED THIS CRITICALITY TO 1/1.  
IOA ACCEPTS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/20/88  
ASSESSMENT ID: MPS-1033  
NASA FMEA #: 0519-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1033  
ITEM: GO2 PRESSURE FLOW CONTROL VALVE (LV53, 54, 55)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ F ]	[ P ]	[ F ]	[ 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 [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPF.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/21/88  
 ASSESSMENT ID: MPS-1055  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 1055  
 ITEM: GO2 PRESSURIZATION (ORB/ET) DISCONNECT (PD4)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

SPONTANEOUS IGNITION IN/OFF PART.  
 THIS ANALYSIS CORRESPONDS TO THE 0513 SERIES IN THE RI/NASA RESULTS.  
 GO2 TEMPERATURE AT THE LOCATION OF THIS COMPONENT IS TOO LOW TO SUPPORT COMBUSTION. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/21/88  
ASSESSMENT ID: MPS-1056  
NASA FMEA #: 0513-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1056  
ITEM: GO2 PRESSURIZATION (ORB/ET) DISCONNECT (PD4)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAIL TO CLOSE/REMAIN CLOSED.  
RI/NASA HAS REVISED THIS CRITICALITY TO 1/1.  
IOA ACCEPTS THE 1/1 FOR RTLS AND TAL ABORTS. PROPULSIVE VENTING THROUGH THE OPEN GO2 PRESSURIZATION DISCONNECT MAY, DEPENDING ON PLACEMENT AND ORIENTATION, AID THE TUMBLE SYSTEM RATHER THAN REDUCE ITS EFFECTIVENESS. LEAKAGE OF GO2 INTO THE DISCONNECT CAVITY AFTER MECO IS NOT HAZARDOUS. SEE ALSO 0755-3.  
IOA ACCEPTS THE RI/NASA RESULT AS THE WORST POSSIBLE OUTCOME, PENDING A MORE DETAILED ANALYSIS TO ACCURATELY DETERMINE THE FEASIBILITY OF THE STATED RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/21/88  
 ASSESSMENT ID: MPS-1063  
 NASA FMEA #: 0517-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 1063  
 ITEM: LO2 TANK PRE-PRESS (ORB/GND) DISC (PD9)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS COMBINED THIS FMEA WITH 0501-1.  
 FAIL TO CLOSE, REMAIN CLOSED OR INTERNAL LEAKAGE.  
 IOA ACCEPTS FAILURE OF SCREEN C FOR FAILURE TO CLOSE. SCREEN C  
 SHOULD PASS FOR FAIL TO REMAIN CLOSED AND INTERNAL LEAKAGE.  
 REMAINS A CIL ENTRY REGARDLESS OF SCREENS. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/21/88  
 ASSESSMENT ID: MPS-1064A  
 NASA FMEA #: 0517-4

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 1064  
 ITEM: LO2 TANK PRE-PRESS (ORB/GND) DISC (PD9)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS COMBINED THIS FMEA WITH 0501-4 AND CHANGED THE  
 CRITICALITY TO 1/1.  
 IOA ACCEPTS THE RI/NASA RESULT.

C-5

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/22/88  
ASSESSMENT ID: MPS-1091  
NASA FMEA #: 0516-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1091  
ITEM: GO2 PRESSURIZATION MANIFOLD TEST POINT COUPLING  
(PD15)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[   /   ]	[   ]	[   ]	[   ]	[   ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

EXTERNAL LEAKAGE. RI/NASA CONSIDERS THIS FAILURE MODE AS SEPARATE AND DISTINCT FROM RUPTURE/LEAKAGE. RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R FFF. IOA ACCEPTS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/22/88  
 ASSESSMENT ID: MPS-1092  
 NASA FMEA #: 0516-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 1092  
 ITEM: GO2 PRESSURIZATION MANIFOLD TEST POINT COUPLING  
 (PD15)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 1/1 WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/22/88  
ASSESSMENT ID: MPS-1093  
NASA FMEA #: NA

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1093  
ITEM: GO2 PRESSURIZATION MANIFOLD TEST POINT COUPLING  
(PD15)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 2 / 2 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

SPONTANEOUS IGNITION IN/OF PART.  
COMBUSTION OF THE COMPONENT WILL ALLOW ESCAPE OF O2, CREATING A  
FIRE/EXPLOSION HAZARD THAT CAN DESTROY THE VEHICLE.  
THIS ANALYSIS CORRESPONDS TO THE 0516 SERIES IN THE RI/NASA  
RESULTS.  
GO2 TEMPERATURE AT THE LOCATION OF THIS COMPONENT IS TOO LOW TO  
SUPPORT COMBUSTION. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
ASSESSMENT ID: MPS-1131  
NASA FMEA #: 0311-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1131  
ITEM: LO2 OUTBOARD FILL AND DRAIN VALVE (PV9)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS DELETED THIS ITEM FROM THE CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88	NASA DATA:
ASSESSMENT ID: MPS-1173	BASELINE [    ]
NASA FMEA #: 0452-4	NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1173  
ITEM: LO2 BLEED SHUTOFF VALVE (PV19)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS COMBINED THIS CIL WORKSHEET WITH 0452-2 AND ASSIGNED A 1/1 CRITICALITY.  
IOA ACCEPTS RI/NASA RESULT. BLEED DISCONNECT CAN NOT BE INCLUDED AS A REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
ASSESSMENT ID: MPS-1181  
NASA FMEA #: 0453-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 1181  
ITEM: LO2 POGO ACCUMULATOR RECIRCULATION VALVE (PV20,  
21)

LEAD ANALYST: K.A. HOLDEN

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP AND REVISED THE ANALYSIS TO APPLY ONLY TO FRF AND PAD ABORTS (PRELAUNCH). IOA ACCEPTS RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
ASSESSMENT ID: MPS-2006  
NASA FMEA #: 0301-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 2006  
ITEM: LH2 INBOARD FILL AND DRAIN VALVE (PV12)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

ERRONEOUS INDICATION.

RI/NASA HAS REVISED THIS CRITICALITY TO 1/1.

RI/NASA CIL IMPLIES FAILURES OF THE VALVE TO CLOSE OR REMAIN CLOSED, WHICH ARE ADDRESSED ON A NON-CIL FMEA AND 0301-4, RESPECTIVELY. ERRONEOUS INDICATION OF A PROPERLY OPERATING VALVE WILL HAVE NO EFFECT. AT LEAST TWO FAILURES ARE REQUIRED TO HAVE A HARMFUL EFFECT. THE SECOND, A FAILURE OF THE VALVE TO REMAIN CLOSED, IS A 1/1 REGARDLESS OF POSITION INDICATION. SEE ALSO 0301-8.

IOA BELIEVES THIS CIL ENTRY IS REDUNDANT BUT WITHDRAWS THE ISSUE ON THE BASIS THAT ITS PRESENCE IS NOT HARMFUL AND ITS REMOVAL WOULD CONSUME SCARCE RESOURCES WITHOUT ANY CORRESPONDING BENEFIT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88	NASA DATA:
ASSESSMENT ID: MPS-2015	BASELINE [    ]
NASA FMEA #: 0302-3	NEW [ X ]

SUBSYSTEM:           MPS  
MDAC ID:             2015  
ITEM:                 LH2 OUTBOARD FILL AND DRAIN VALVE (PV11)

LEAD ANALYST:       W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS:   (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

ERRONEOUS INDICATION.  
RI/NASA CIL IMPLIES FAILURES OF THE VALVE TO CLOSE OR REMAIN CLOSED, WHICH ARE ADDRESSED ON 0302-2 AND 0302-4. ERRONEOUS INDICATION OF A PROPERLY OPERATING VALVE WILL HAVE NO EFFECT. SEE ALSO 0302-7.  
IOA BELIEVES THIS CIL ENTRY IS REDUNDANT BUT WITHDRAWS THE ISSUE ON THE BASIS THAT ITS PRESENCE IS NOT HARMFUL AND ITS REMOVAL WOULD CONSUME SCARCE RESOURCES WITHOUT ANY CORRESPONDING BENEFIT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
ASSESSMENT ID: MPS-2053  
NASA FMEA #: 0304-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 2053  
ITEM: LH2 REPLENISH VALVE (PV13)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

THIS ASSESSMENT ADDRESSES FAILURE TO REMAIN OPEN. MANIFOLD PRESSURE INDICATOR AND ALARM SUPPORT PASSAGE OF SCREEN B. NSTS 22206 2.3.4c EXCLUDES FAILURE OF THE RELIEF SYSTEM FOR DETERMINATION OF SCREEN C. SINGLE FAILURE IS NOT DETECTABLE. IOA WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
 ASSESSMENT ID: MPS-2062  
 NASA FMEA #: 0431-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 2062  
 ITEM: LH2 HI POINT BLEED VALVE (PV22)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA FMEA # SHOWN ABOVE IS INCORRECT. THIS ASSESSMENT  
 ADDRESSES FAILURE TO REMAIN CLOSED, FMEA # 0431-4. IOA ACCEPTS  
 RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88	NASA DATA:
ASSESSMENT ID: MPS-2081A	BASELINE [    ]
NASA FMEA #: 0430-1	NEW [ X ]

SUBSYSTEM:           MPS  
MDAC ID:             2081  
ITEM:                LH2 HI POINT BLEED LINE (FH19)

LEAD ANALYST:       W.J.MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS	CIL ITEM
		A	B	C
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS:   (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

THIS ANALYSIS IS FOR THE FOAM INSULATED LINE.  
RI/NASA HAS REVISED THIS CIL TO COVER THE VACUUM-JACKETED LINE.  
THE LINE IS NOT FOAM INSULATED. MDAC 2081A SHOULD BE DELETED.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
 ASSESSMENT ID: MPS-2102  
 NASA FMEA #: 0403-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 2102  
 ITEM: LH2 RECIRCULATION PUMP VALVE (PV14, PV15, PV16)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA ACCEPTS HIGHER RI/NASA CRITICALITY BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: MPS-2162  
NASA FMEA #: 0411-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 2162  
ITEM: LH2 RECIRCULATION MANIFOLD RELIEF VALVE (RV7)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ACCEPTS HIGHER RI/NASA CRITICALITY BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: MPS-2191  
NASA FMEA #: 0505-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 2191  
ITEM: GH2 PRESSURIZATION ISOLATION CHECK VALVE  
(CV21, CV22, CV23)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAIL TO OPEN.  
THE RI/NASA CIL INDICATES THAT THIS CRITICALITY HAS BEEN REVISED TO 2/1R FPP. THE CIL WORKSHEET FOR THIS WAS OMITTED FROM THE RI/NASA DOCUMENTATION.  
RI/NASA LISTING OF SCREENS AS FPP WAS A MISPRINT. THE SUBSYSTEM MANAGER VIA HIS DESIGNATED ALTERNATE, J. BORCHES, ACCEPTED THE IOA RECOMMENDATION AT A MEETING ON 9-2-88.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: MPS-2212  
NASA FMEA #: 0503-5

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 2212  
ITEM: GH2 PRESSURIZATION DISCONNECT (PD5)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 1/1.  
THE ET TUMBLE SYSTEM IS BASED ON RESIDUAL GO2.  
PROPULSIVE VENTING THROUGH THE OPEN GH2 PRESSURIZATION DISCONNECT  
MAY, DEPENDING ON PLACEMENT AND ORIENTATION, AID THE TUMBLE  
SYSTEM RATHER THAN REDUCE ITS EFFECTIVENESS.  
LEAKAGE OF GH2 INTO THE DISCONNECT CAVITY AFTER MECO IS NOT  
HAZARDOUS. IOA ACEPTS THE 1/1 FOR RTLS AND TAL ABORTS. SEE ALSO  
0756-3.  
IOA ACCEPTS THE RI/NASA RESULT AS THE WORST POSSIBLE OUTCOME,  
PENDING A MORE DETAILED ANALYSIS TO ACURATELY DETERMINE THE  
FEASIBILITY OF THE STATED RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
ASSESSMENT ID: MPS-2222A  
NASA FMEA #: 0501-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 2222  
ITEM: LH2 TANK GROUND PRE-PRESS DISCONNECT (PD10)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
 ASSESSMENT ID: MPS-2222B  
 NASA FMEA #: 0501-4

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 2222  
 ITEM: LH2 TANK GROUND PRE-PRESS DISCONNECT (PD10)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 1/1.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
 ASSESSMENT ID: MPS-2231  
 NASA FMEA #: 0516-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 2231  
 ITEM: GH2 PRESSURIZATION MANIFOLD TEST POINT COUPLING  
 (PD16)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 1/1 WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
 ASSESSMENT ID: MPS-2231A  
 NASA FMEA #: 0516-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 2231  
 ITEM: GH2 PRESSURIZATION MANIFOLD TEST POINT COUPLING  
 (PD16)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

EXTERNAL LEAKAGE. RI/NASA CONSIDERS THIS FAILURE MODE AS  
 SEPARATE AND DISTINCT FROM RUPTURE/LEAKAGE.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R FFF.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
ASSESSMENT ID: MPS-2272  
NASA FMEA #: 0402-4

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 2272  
ITEM: LH2 PREVALVE (PV4, PV5, PV6)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ACCEPTS HIGHER NASA 2/1R CRITICALITY BASED ON NASA'S BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
ASSESSMENT ID: MPS-2275  
NASA FMEA #: 0402-6

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 2275  
ITEM: LH2 PREVALVE (PV4, PV5, PV6)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

LOSS OF POSITION INDICATION. OPEN INDICATION FAILS ON.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88	NASA DATA:
ASSESSMENT ID: MPS-2343A	BASELINE [    ]
NASA FMEA #: 0436-4	NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 2343  
 ITEM: LH2 FEEDLINE MANIFOLD RELIEF VALVE (RV6)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

THIS RI/NASA ANALYSIS COULD BE COMBINED WITH 0436-5.  
 FIRST FAILURE WILL ALLOW LEAKAGE OF LH2 FROM SENSE LINE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-2351  
 NASA FMEA #: 0608-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 2351  
 ITEM: LH2 DUMP PRESSURIZATION ORIFICE (RP10)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
 INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-2381  
NASA FMEA #: 0651-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 2381  
ITEM: LH2 FEED RTLS INBOARD VALVE (PV17)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP. IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-2382A  
NASA FMEA #: 0651-4

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 2382  
ITEM: LH2 FEED RTLS INBOARD VALVE (PV17)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]      [ NA]      [ NA]      [ NA]      [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS DELETED THIS ITEM/FAILURE MODE FROM THE CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-2391  
NASA FMEA #: 0651-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 2391  
ITEM: LH2 FEED RTLS OUTBOARD VALVE (PV18)

LEAD ANALYST: W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP. IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88                      NASA DATA:  
 ASSESSMENT ID:   MPS-2392A                  BASELINE [    ]   
 NASA FMEA #:     0651-4                      NEW    [ X ]

SUBSYSTEM:       MPS  
 MDAC ID:        2392  
 ITEM:            LH2 FEED RTLS OUTBOARD VALVE (PV18)

LEAD ANALYST:    W.J.MCNICOLL

ASSESSMENT:

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

RECOMMENDATIONS:    (If different from NASA)

                  [ 3 /3 ]        [ NA]    [ NA]    [ NA]        [ D ]  
   (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE    [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HASA DELETED THIS ITEM/FAILURE MODE FROM THE CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-3010  
 NASA FMEA #: 0202-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3010  
 ITEM: ENGINE HELIUM SUPPLY CHECK VALVE (CV1,CV2,CV3)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
 INADEQUATE [   ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
 A SINGLE ENGINE SHUTDOWN WILL CAUSE AN INTACT ABORT. NO LOSS OF  
 CREW OR VEHICLE. NSTS 22206 2.3.3L REQUIRES ASSIGNMENT OF 3/1R.  
 IOA ACCEPTS THE RI/NASA RESULT ON THE BASIS OF AFT COMPARTMENT  
 OVER PRESSURIZATION UPON SECOND FAILURE.  
 NSTS 22206 2.3.2d INDICATES THAT THE SSME SHUTDOWN DUE TO LOSS OF  
 HELIUM FLOW SHOULD BE CONSIDERED AN EFFECTIVE MEANS OF SAFE  
 ENGINE SHUTDOWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
ASSESSMENT ID: MPS-3020  
NASA FMEA #: 0201-2

NASA DATA:  
BASELINE [ X ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 3020  
ITEM: HELIUM SUPPLY DISCONNECT(ORB/GND, ORB HALF),  
(PD8)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

FAIL TO CLOSE OR REMAIN CLOSED.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFF.  
SECOND FAILURE (CV1, 2, 3) WILL CAUSE LOSS OF HELIUM AND AN  
ENGINE SHUTDOWN. FAILURE OF ANOTHER CHECK VALVE WILL CAUSE A  
SECOND ENGINE SHUTDOWN AND LOSS OF VEHICLE. NSTS 22206 2.3.31  
REQUIRES ASSIGNMENT OF 1R FUNCTIONAL CRITICALITY.  
IOA ACCEPTS FAILURE OF SCREEN C. NSTS 22206 2.3.2D INDICATES  
THAT THE SHUTDOWN DUE TO LOSS OF HELIUM FLOW SHOULD BE CONSIDERED  
AN EFFECTIVE MEANS OF SAFE ENGINE SHUTDOWN.  
ENGINE MANUFACTURER INDICATES THAT SEVEN SECONDS OF CONTINUOUS  
HELIUM PURGE ARE REQUIRED FOR SAFE SHUTDOWN. ABRUPT OR RAPID  
LOSS OF HELIUM CAN CAUSE ENGINE EXPLOSION. IOA ACCEPTS THE  
RI/NASA RESULT. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-3021  
 NASA FMEA #: 0201-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3021  
 ITEM: HELIUM SUPPLY DISCONNECT (ORB/GND, ORB HALF),  
 (PDS)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA FMEA 0201-3 REFERS ONLY TO DETECTABLE LEAKAGE PRIOR TO LAUNCH. IOA ACCEPTS RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
ASSESSMENT ID: MPS-3021A  
NASA FMEA #: 0201-4

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 3021  
ITEM: HELIUM SUPPLY DISCONNECT (ORB/GND, ORB HALF),  
(PD8)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

SECOND FAILURE (CV1, 2, 3 FAIL TO CHECK) WILL CAUSE LOSS OF HELIUM AND AN ENGINE SHUTDOWN. FAILURE OF ANOTHER CHECK VALVE WILL CAUSE A SECOND ENGINE SHUTDOWN AND LOSS OF VEHICLE. NSTS 22206 2.3.2d INDICATES THAT THE SSME SHUTDOWN DUE TO LOSS OF HELIUM FLOW SHOULD BE CONSIDERED AN EFFECTIVE MEANS OF SAFE ENGINE SHUTDOWN.  
IOA ACCEPTS THE RI/NASA RESULT ON THE BASIS OF AFT COMPARTMENT OVERPRESSURIZATION UPON SECOND FAILURE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
ASSESSMENT ID: MPS-3050A  
NASA FMEA #: 0203-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 3050  
ITEM: 4.7 CU. FT. HELIUM SUPPLY TANK (TK1,2,3,7,9,11)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS COMBINED THE PREVIOUS VERSIONS OF 0203-1 AND 0203-2 TO MAKE THIS 0203-1 AND HAS ASSIGNED A 1/1. THIS AGREES WITH THE IOA RECOMMENDATION. THE IOA WORKSHEETS 3050 AND 3050A CAN ALSO BE COMBINED.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-3070  
 NASA FMEA #: 0258-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3070  
 ITEM: ENGINE HELIUM SUPPLY CHECK VALVE  
 (CV25,26;36,37;41,42)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

SINGLE FAILURE WILL HAVE NO EFFECT. LEAKAGE OF UPSTREAM LINE IS  
 A SINGLE FAILURE POINT.  
 IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
 INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88	NASA DATA:
ASSESSMENT ID: MPS-3070A	BASELINE [    ]
NASA FMEA #: 0258-3	NEW [ X ]

SUBSYSTEM:           MPS  
MDAC ID:             3070  
ITEM:                 ENGINE HELIUM SUPPLY CHECK VALVE  
(CV25,26;36,37;41,42)

LEAD ANALYST:       M. L. MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS:   (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

RI/NASA HAS COMBINED THIS FMEA WITH 0258-2.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-3071  
 NASA FMEA #: 0258-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3071  
 ITEM: ENGINE HELIUM SUPPLY CHECK VALVE  
 (CV25,26;36,37;41,42)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

FAIL TO OPEN. POSSIBLE LAUNCH SCRUB.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-3071A BASELINE [    ]  
 NASA FMEA #: NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3071  
 ITEM: ENGINE HELIUM SUPPLY CHECK VALVE

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 /2R ]	[ 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:

FAIL TO REMAIN OPEN.  
 FIRST FAILURE WILL HAVE NO EFFECT. ANY INTERRUPTION OF HELIUM FLOW IN THE OTHER LEG WILL CAUSE ENGINE SHUTDOWN AND LOSS OF MISSION.  
 THIS ANALYSIS CORRESPONDS TO THE 0258 SERIES IN THE RI/NASA RESULTS.  
 FAILURE NOT CREDIBLE. CHECK VALVE WILL NOT CLOSE DURING FLOW.  
 IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-3080  
 NASA FMEA #: 0242-1

NASA DATA:  
 BASELINE [ X ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3080  
 ITEM: ENGINE HELIUM SUPPLY FILTER - PANEL A;B  
 (FL2,6;3,7;4,8)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RESTRICTED FLOW.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
 LOSS OF REDUNDANCY RESULTS IN SHUTDOWN OF ONE ENGINE AND LOSS OF  
 MISSION. NSTS 22206 2.3.3L REQUIRES ASSIGNMENT OF 3/1R.  
 LOSS OF HELIUM FLOW SHOULD RESULT IN A SAFE MAIN ENGINE SHUTDOWN.  
 SEE NSTS 22206 2.3.2d.  
 ENGINE MANUFACTURER INDICATES THAT SEVEN SECONDS OF CONTINUOUS  
 HELIUM PURGE ARE REQUIRED FOR SAFE SHUTDOWN. ABRUPT OR RAPID  
 LOSS OF HELIUM CAN CAUSE ENGINE EXPLOSION. IOA ACCEPTS THE  
 RI/NASA RESULT. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88	NASA DATA:
ASSESSMENT ID: MPS-3082	BASELINE [    ]
NASA FMEA #: NA	NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 3082  
ITEM: ENGINE HELIUM SUPPLY FILTER - PANEL A;B  
(FL2,6;3,7;4,8)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 2 / 2 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

THIS ANALYSIS CORRESPONDS TO THE 0242 SERIES IN THE RI/NASA RESULTS. DOWNSTREAM CONTAMINATION CAUSING LOW FLOW IS ADDRESSED ON OTHER FMEA WORKSHEETS (0205-1).  
IOA WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
ASSESSMENT ID: MPS-3090A  
NASA FMEA #: 0204-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 3090  
ITEM: ENGINE HELIUM SUPPLY ISOLATION VALVE  
(LV1,2;3,4;5,6)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

FAIL TO REMAIN OPEN.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
SECOND FAILURE WILL CAUSE ENGINE SHUTDOWN AND LOSS OF MISSION.  
NSTS 22206 2.3.3L REQUIRES ASSIGNMENT OF 3/1R.  
LOSS OF HELIUM FLOW SHOULD RESULT IN A SAFE MAIN ENGINE SHUTDOWN.  
IOA ACCEPTS FAILURE OF SCREEN B.  
ENGINE MANUFACTURER INDICATES THAT SEVEN SECONDS OF CONTINUOUS  
HELIUM PURGE ARE REQUIRED FOR SAFE SHUTDOWN. ABRUPT OR RAPID  
LOSS OF HELIUM CAN CAUSE ENGINE EXPLOSION. IOA ACCEPTS THE  
RI/NASA RESULT. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88	NASA DATA:
ASSESSMENT ID: MPS-3091	BASELINE [    ]
NASA FMEA #: 0204-3	NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 3091  
ITEM: ENGINE HELIUM SUPPLY ISOLATION VALVE  
(LV1,2;3,4;5,6)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-3092  
 NASA FMEA #: 0204-4

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3092  
 ITEM: ENGINE HELIUM SUPPLY ISOLATION VALVE  
 (LV1,2;3,4;5,6)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 1/1. FAILURE WILL CAUSE  
 ENGINE SHUTDOWN AND LOSS OF MISSION. ESCAPING HELIUM MAY  
 OVERPRESSURIZE THE AFT COMPARTMENT.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-3092A  
 NASA FMEA #: 0204-5

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3092  
 ITEM: ENGINE HELIUM SUPPLY ISOLATION VALVE  
 (LV1,2;3,4;5,6)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS FAILURE MODE TO EXTERNAL LEAKAGE THROUGH THE PILOT VENT PORT AND REVISED THE CRITICALITY TO 3/3 NOMINAL AND 1/1 FOR RTLS.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
ASSESSMENT ID: MPS-3110  
NASA FMEA #: 0205-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 3110  
ITEM: ENGINE HELIUM PRESSURE REGULATOR (PR1,7;2,8;3,9)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

FAIL CLOSED; LOW OUTLET PRESSURE.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP. IOA ACCEPTS FAILURE OF SCREEN B.  
SECOND FAILURE WILL CAUSE ENGINE SHUTDOWN AND LOSS OF MISSION.  
NSTS 22206 2.3.3L REQUIRES ASSIGNMENT OF 3/1R.  
LOSS OF HELIUM FLOW SHOULD RESULT IN A SAFE MAIN ENGINE SHUTDOWN.  
SEE NSTS 22206 2.3.2d.  
ENGINE MANUFACTURER INDICATES THAT SEVEN SECONDS OF CONTINUOUS HELIUM PURGE ARE REQUIRED FOR SAFE SHUTDOWN. ABRUPT OR RAPID LOSS OF HELIUM CAN CAUSE ENGINE EXPLOSION. IOA ACCEPTS THE RI/NASA RESULT. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-3110A  
 NASA FMEA #: 0205-3

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3110  
 ITEM: ENGINE HELIUM PRESSURE REGULATOR (PR1,7;2,8;3,9)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS DELETED THIS ITEM FROM THE CIL, WHICH IS IN ACCORD WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-3111  
 NASA FMEA #: 0205-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3111  
 ITEM: ENGINE HELIUM PRESSURE REGULATOR (PR1,7;2,8;3,9)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 1/1 WHICH AGREES WITH THE  
 IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
ASSESSMENT ID: MPS-3120  
NASA FMEA #: 0206-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 3120  
ITEM: ENGINE HE RELIEF VALVE PANEL A;B  
(RV1,8;2,9;3,10)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

POSSIBLE OVERPRESSURIZATION (1/1). POSSIBLE ENGINE SHUTDOWN  
CAUSED BY LOSS OF HELIUM (2/2).  
RI/NASA HAS REVISED THIS CRITICALITY TO 1/1 WHICH AGREES WITH THE  
IOA RECOMMENDATION.  
THIS FMEA IS LISTED BY RI/NASA AS A CIL ENTRY BUT IS NOT INCLUDED  
IN THEIR DOCUMENTATION.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-3120A  
 NASA FMEA #: 0206-3

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3120  
 ITEM: ENGINE HE RELIEF VALVE PANEL A;B  
 (RV1,8;2,9;3,10)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 2 / 2 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ N / N ]	[ ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

FAIL TO RESEAT.  
 SINCE RI/NASA DID NOT MAKE THIS FMEA A CIL ENTRY, NO  
 DOCUMENTATION/RATIONALE IS AVAILABLE ON WHICH TO BASE AN  
 ASSESSMENT.  
 FAILURE TO RESEAT FOLLOWING RELIEF CAN CAUSE AFT COMPARTMENT  
 OVERPRESSURIZATION.  
 THIS FAILURE WAS ADDRESSED ON RI/NASA FMEA # 0206-1 WHICH CARRIES  
 A 1/1 CRITICALITY BUT WAS OMITTED FROM THE RI/NASA RESULTS. IOA  
 WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-3121  
 NASA FMEA #: 0206-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3121  
 ITEM: ENGINE HE RELIEF VALVE PANEL A;B  
 (RV1,8;2,9;3,10)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

POSSIBLE OVERPRESSURIZATION (1/1).  
 RI/NASA HAS REVISED THIS CRITICALITY TO 1/1 WHICH AGREES WITH THE  
 IOA RECOMMENDATION.  
 THIS FMEA IS LISTED BY RI/NASA AS A CIL ENTRY BUT IS NOT INCLUDED  
 IN THEIR DOCUMENTATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-3122  
 NASA FMEA #: 0206-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3122  
 ITEM: ENGINE HE RELIEF VALVE PANEL A;B  
 (RV1,8;2,9;3,10)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

POSSIBLE OVERPRESSURIZATION UPON SECOND FAILURE.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R FNAF.  
 IOA ACCEPTS THE RI/NASA RESULT.

**APPENDIX C  
ASSESSMENT WORKSHEET**

**ASSESSMENT DATE:** 2/03/88  
**ASSESSMENT ID:** MPS-3130  
**NASA FMEA #:** NA

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

**SUBSYSTEM:** MPS  
**MDAC ID:** 3130  
**ITEM:** ENGINE HELIUM SUPPLY RELIEF VALVE SENSE LINE

**LEAD ANALYST:** M.L.MCNEELY

**ASSESSMENT:**

	CRITICALITY		REDUNDANCY SCREENS			CIL ITEM
	FLIGHT HDW/FUNC		A	B	C	
NASA	[ / ]		[ ]	[ ]	[ ]	[ ] *
IOA	[ 2 / 2 ]		[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ N / N ]		[ N ]	[ N ]	[ N ]	[ N ]

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

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

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

ADEQUATE [ ]  
INADEQUATE [ ]

**REMARKS:**

**FAILURE MODE:** EXTERNAL LEAKAGE.  
**POSSIBLE OVERPRESSURIZATION.**  
RI/NASA DID NOT ADDRESS RELIEF VALVE SENSE LINES AS SEPARATE  
ITEMS. RI/NASA DOES SHOW EXTERNAL LEAKAGE OF THE RELIEF VALVE AS  
CRITICALITY 1/1 (0206-4)  
THIS ITEM/FAILURE MODE IS NOW INCLUDED ON RI/NASA 0111-1 WHICH  
CARRIES A 1/1 CRITICALITY.  
ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
ASSESSMENT ID: MPS-3140  
NASA FMEA #: 0207-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 3140  
ITEM: ENGINE REG OUTLET CHECK VLV (CV5,29;6,40;7,45)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAILS TO CHECK.

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.

FAILURE HAS NO EFFECT. THE CHECK VALVE CANNOT PROTECT AGAINST AN UPSTREAM LEAK.

RI/NASA LISTS THIS FMEA AS A CIL ENTRY BUT IT WAS OMITTED FROM THEIR DOCUMENTATION.

A LEAK BETWEEN THE ISOLATION VALVE AND THE CHECK VALVE CAN BE ISOLATED BY THE CREW. FAILURE OF THE CHECK VALVE WILL ALLOW HELIUM FROM THE OTHER LEG TO LEAK AWAY. CREW ACTION DOES NOT AFFECT CRITICALITY. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-3150  
NASA FMEA #: 0260-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 3150  
ITEM: ENGINE HELIUM SUPPLY INTERCONNECT INLET VALVE  
(LV59, 61, 63)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETAION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-3151  
NASA FMEA #: 0260-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 3151  
ITEM: ENGINE HELIUM SUPPLY INTERCONNECT INLET VALVE  
(LV59, 61, 63)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETAION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-3152  
NASA FMEA #: 0260-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 3152  
ITEM: ENGINE HELIUM SUPPLY INTERCONNECT INLET VALVE  
(LV59,61,63)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-3160  
NASA FMEA #: 0262-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 3160  
ITEM: ENGINE HELIUM SUPPLY INTERCONNECT OUTLET VALVE  
(LV60,62,64)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
 ASSESSMENT ID: MPS-3162  
 NASA FMEA #: 0262-3

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3162  
 ITEM: ENGINE HELIUM SUPPLY INTERCONNECT OUTLET VALVE  
 (LV60, 62, 64)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 2 / 2 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ N / N ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA INDICATES 3/3 FOR NOMINAL FLIGHT AND 1/1 FOR RTLS ABORT ONLY.

THIS FAILURE MODE ASSUMES LEAKAGE THROUGH THE PILOT VENT PORT ONLY.

IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
 ASSESSMENT ID: MPS-3162A  
 NASA FMEA #: 0262-4

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3162  
 ITEM: ENGINE HELIUM SUPPLY INTERCONNECT OUTLET VALVE  
 (LV60,62,64)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 THIS RI/NASA FMEA HAS BEEN COMBINED WITH 0262-3.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-3170  
NASA FMEA #: 0261-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 3170  
ITEM: ENGINE HELIUM INTERCONNECT CHECK VALVE-PANEL  
OUTLET (CV28,39,44)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED SCREEN B TO PASS.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
 ASSESSMENT ID: MPS-3180  
 NASA FMEA #: 0259-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3180  
 ITEM: ENGINE HELIUM INTERCONNECT CHECK VALVE-PANEL  
 INLET (CV27,38,43)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
 INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
 ASSESSMENT ID: MPS-3181  
 NASA FMEA #: 0259-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 3181  
 ITEM: ENGINE HELIUM INTERCONNECT CHECK VALVE-PANEL  
 INLET (CV27,38,43)

LEAD ANALYST: M.L.MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 2 / 2 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ N / N ]	[ ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
 INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-4010  
NASA FMEA #: 0202-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4010  
ITEM: PNEU VALVE HE SUPPLY CHECK VALVE (CV4)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFF.  
IOA ACCEPTS THE RI/NASA RESULT. SEE ALSO MPS-3010.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88	NASA DATA:
ASSESSMENT ID: MPS-4020	BASELINE [    ]
NASA FMEA #: 0241-2	NEW [ X ]
SUBSYSTEM: MPS	
MDAC ID: 4020	
ITEM: PNEU VALVE HE REG OUTLET CHECK VALVE (CV8)	
LEAD ANALYST: A.J.MARINO	

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ACCEPTS FAILURE OF SCREEN B AND WITHDRAWS THIS ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-4021  
NASA FMEA #: 0241-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4021  
ITEM: PNEU VALVE HE ISOLATION CHECK VALVE (CV8)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

SECOND FAILURE (LV10) WILL PREVENT VALVE OPERATIONS FOR DUMP.  
VENTING HYDROGEN WILL CREATE A FIRE HAZARD DURING ENTRY/LANDING.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
IOA ACCEPTS THE FAILURE OF SCREEN B AND WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-4031  
NASA FMEA #: 0209-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4031  
ITEM: PNEU VALVE HE ISOLATION CHECK VALVE (CV9)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88	NASA DATA:
ASSESSMENT ID: MPS-4040	BASELINE [    ]
NASA FMEA #: 0631-2	NEW [ X ]
SUBSYSTEM: MPS	
MDAC ID: 4040	
ITEM: GO2 PRESS MANIF REPRESS CHECK VALVE (CV10)	
LEAD ANALYST: A.J.MARINO	

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER INTERPRETATION OF REDUDANDCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-4050  
NASA FMEA #: 0603-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4050  
ITEM: LO2 FEED MANIF REPRESS CHECK VALVE (CV12)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER INTERPRETATION OF REDUDANDCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-4051  
NASA FMEA #: 0603-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4051  
ITEM: LO2 FEED MANIF REPRESS CHECK VALVE (CV12)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

HELIUM PRESSURE IS NOT REQUIRED FOR DUMP. RELIEF SYSTEM AND  
INERTING WILL PROTECT AGAINST MANIFOLD RUPTURE.  
RI/NASA HAS DELETED THIS FMEA FROM THE CIL, WHICH IS IN ACCORD  
WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-4060  
NASA FMEA #: NA

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4060  
ITEM: GH2 PRESS MANIF REPRESS CHECK VALVE (CV13)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 / 3 ]    [ NA ]    [ NA ]    [ NA ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

THIS ASSESSMENT IS FOR RI/NASA 0605-2. FAIL TO REMAIN CLOSED.  
THE RI/NASA CRITICALITY IS 2/1R PFP.  
GH2 WILL, UPON SECOND FAILURE, PASS THROUGH CV13 AND CV24 AND  
ENTER THE FEED MANIFOLD THROUGH CV15.  
ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
 ASSESSMENT ID: MPS-4070  
 NASA FMEA #: 0632-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4070  
 ITEM: LH2 RECIRC MANIF REPRESS CHECK VALVE (CV14)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
 INTERPRETATION OF REDUNDANCY.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-4071  
NASA FMEA #: 0632-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4071  
ITEM: LH2 RECIRC MANIF REPRESS CHECK VALVE (CV14)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
ASSESSMENT ID: MPS-4080  
NASA FMEA #: 0630-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4080  
ITEM: LH2 FEED MANIF NOM REPRESS CHECK VALVE (CV15)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
ASSESSMENT ID: MPS-4081  
NASA FMEA #: 0630-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4081  
ITEM: LH2 FEED MANIF NOM REPRESS CHECK VALVE (CV15)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

DEGRADED DUMP. MPS INERTING WILL CLEAR REMAINING LH2. RELIEF SYSTEM WILL PROTECT AGAINST MANIFOLD RUPTURE. NO REDUNDANCY. RI/NASA HAS DELETED THIS FMEA FROM THE CIL WHICH IS IN ACCORD WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
 ASSESSMENT ID: MPS-4110  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4110  
 ITEM: GH2 PRESS MANIFOLD REPRESS CHECK VALVE (CV24)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 / 3 ]      [ NA ]      [ NA ]      [ NA ]      [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

THIS ASSESSMENT IS FOR RI/NASA 0605-2. FAIL TO REMAIN CLOSED.  
 THE RI/NASA CRITICALITY IS 2/1R PFP.  
 GH2 WILL, UPON SECOND FAILURE, PASS THROUGH CV13 AND CV24 AND  
 ENTER THE FEED MANIFOLD THROUGH CV15.  
 ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
ASSESSMENT ID: MPS-4120  
NASA FMEA #: 0248-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4120  
ITEM: LH2 FEED MANIF RTLS REPRESS CHECK VALVE (CV30)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

LINE RUPTURE IS NOT VALID AS LOSS OF REDUNDANCY. FAILURE HAS NO EFFECT.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
ASSESSMENT ID: MPS-4132  
NASA FMEA #: 0238-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4132  
ITEM: PNEU VALVE HE SUPPLY-ISOLATION VALVE (LV7, LV8)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
 ASSESSMENT ID: MPS-4140  
 NASA FMEA #: 0208-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4140  
 ITEM: PNEU HE CROSSOVER SOLENOID (LV10)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
ASSESSMENT ID: MPS-4141  
NASA FMEA #: NA

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4141  
ITEM: PNEU HE CROSSOVER SOLENOID (LV10)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
INADEQUATE [   ]

REMARKS:

RI/NASA HAS ADDED THIS FAILURE MODE TO 0208-1 WHICH CARRIES A CRITICALITY OF 2/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
 ASSESSMENT ID: MPS-4152A  
 NASA FMEA #: 0225-5

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4152  
 ITEM: LO2 PREVALVE OPENING SOLENOID (LV12, LV14, LV16)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

FAILURE MODE IS PREMATURE ACTUATION.  
 FAILURE OF BOTH OPENING SOLENOIDS CAN PREVENT PREVALVE CLOSURE  
 DESPITE PROPER OPERATION OF CLOSING SOLENOIDS, i.e., ACTUATION OF  
 OPENING SOLENOIDS BEFORE VALVE HAS CLOSED AT MECO.  
 SCENARIO IS NOT CREDIBLE. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: MPS-4162A  
 NASA FMEA #: 0226-4

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4162  
 ITEM: LO2 PREVALVE CLOSING SOLENOID (LV13, LV15, LV17)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA CRITICALITY HAS BEEN REVISED TO 2/1R PFP.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: MPS-4164  
 NASA FMEA #: 0227-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4164  
 ITEM: LH2 PREVALVE OPENING SOLENOID (LV18, LV20, LV22)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: MPS-4166  
 NASA FMEA #: 0227-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4166  
 ITEM: LH2 PREVALVE OPENING SOLENOID (LV18, LV20, LV22)  
 LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDATION WAS 3/3 BASED ON FAILURE OF PREVALVE TO CLOSE HAVING NO EFFECT AND RULE 2.3.2d (NSTS 22206) EXCLUDING FAILURES IN INTERFACING SUBSYSTEMS.  
 IOA ACCEPTS HIGHER NASA 2/1R CRITICALITY BASED ON NASA'S BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: MPS-4166A  
 NASA FMEA #: 0227-5

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4166  
 ITEM: LH2 PREVALVE OPENING SOLENOID (LV18, LV20, LV22)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDATION WAS 3/3 BASED ON FAILURE OF PREVALVE TO CLOSE HAVING NO EFFECT AND RULE 2.3.2d (NSTS 22206) EXCLUDING FAILURES IN INTERFACING SUBSYSTEMS.  
 IOA ACCEPTS HIGHER NASA 2/1R CRITICALITY BASED ON NASA'S BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88	NASA DATA:
ASSESSMENT ID: MPS-4167	BASELINE [    ]
NASA FMEA #: 0228-1	NEW [ X ]
SUBSYSTEM: MPS	
MDAC ID: 4167	
ITEM: LH2 PREVALVE CLOSING SOLENOID (LV19, LV21, LV23)	
LEAD ANALYST: A.J.MARINO	

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

FAILURE TO CLOSE PREVALVE HAS NO EFFECT. SUBSEQUENT FAILURES IN INTERFACING SUBSYSTEMS ARE NOT CONSIDERED (NSTS 22206, 2.3.2d).  
REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 12-14-87. INITIAL IOA RECOMMENDATION WAS 3/3, NNN.  
IOA ACCEPTS HIGHER NASA 2/1R CRITICALITY BASED ON NASA'S BROADER INTERPRETATION OF REDUNDANCY.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: MPS-4168  
 NASA FMEA #: 0228-5

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4168  
 ITEM: LH2 PREVALVE CLOSING SOLENOID (LV19, LV21, LV23)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

FAILURE OF PREVALVE TO REMAIN CLOSED HAS NO EFFECT. FAILURES IN INTERFACING SUBSYSTEM ARE NOT CONSIDERED (NSTS 22206, 2.3.2d). INITIAL IOA RECOMMENDATION WAS 3/3. RI/NASA HAS DELETED THIS ITEM FROM THE CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
ASSESSMENT ID: MPS-4172  
NASA FMEA #: 0231-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4172  
ITEM: LO2 FEEDLINE RELIEF SHUTOFF VALVE CLOSING  
SOLENOID (LV24)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RI/NASA HAS REVISED THIS CRITICALITY TO 1/1. INADEQUACY OF HPOT SEAL LEAKAGE TO PREVENT RUPTURE SUPPORTS THE 1/1 CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: MPS-4172A  
 NASA FMEA #: 0231-5

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4172  
 ITEM: LO2 FEEDLINE RELIEF SHUTOFF VALVE CLOSING  
 SOLENOID (LV24)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RI/NASA HAS COMBINED 0231-5 WITH 0231-2, WHICH CARRIES A 1/1 CRITICALITY. THE 1/1 WAS ACCEPTED BY IOA ON ASSESSMENT SHEET MPS-4172. THIS ASSESSMENT, MPS-4172A, CAN BE DELETED.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: MPS-4182A  
 NASA FMEA #: 0232-5

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4182  
 ITEM: LH2 FEEDLINE RELIEF SHUTOFF VALVE CLOSING  
 SOLENOID (LV25)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RI/NASA HAS COMBINED 0232-5 WITH 0232-2, WHICH CARRIES A 1/1  
 CRITICALITY AND AGREES WITH THE IOA RECOMMENDATION. MPS-4182A  
 CAN BE DELETED.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: MPS-4190  
 NASA FMEA #: 0233-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4190  
 ITEM: HE SUPPLY BLOWDOWN VALVE (LV26, LV27)

LEAD ANALYST: A.J. MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

THIS RI/NASA CRITICALITY SHOULD READ 3/3 FOR NOMINAL FLIGHT AND  
 1/1 FOR RTLS AND TAL ABORTS.  
 THE PURGE IS CRITICAL DURING ABORTS ONLY.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
ASSESSMENT ID: MPS-4191  
NASA FMEA #: NA

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4191  
ITEM: HE SUPPLY BLOWDOWN VALVE (LV26, LV27)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

INADEQUATE PURGE MAY CAUSE LOSS OF VEHICLE.  
RI/NASA HAS ADDED THIS FAILURE MODE TO 0233-3 WHICH CARRIES  
CRITICALITIES OF 3/3 FOR NOMINAL AND 1/1 FOR ABORT. IOA ACCEPTS  
THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/10/88  
 ASSESSMENT ID: MPS-4242  
 NASA FMEA #: 0229-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4242  
 ITEM: LH2 RECIRC PUMP VALVE OPENING SOLENOID (LV36)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP. IOA ACCEPTS HIGHER RI/NASA CRITICALITY BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/10/88  
 ASSESSMENT ID: MPS-4242A  
 NASA FMEA #: 0229-4

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4242  
 ITEM: LH2 RECIRC PUMP VALVE OPENING SOLENOID (LV36)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP. IOA ACCEPTS HIGHER RI/NASA CRITICALITY BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

e-6



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/10/88  
ASSESSMENT ID: MPS-4250  
NASA FMEA #: 0230-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4250  
ITEM: LH2 REPLENISH VALVE OPENING SOLENOID(LV39)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAILURE CAN PREVENT LH2 DUMP. SUBSEQUENT FAILURE OF RELIEF SYSTEM CAN CAUSE MANIFOLD RUPTURE.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP. IOA PREVIOUSLY RECOMMENDED 2/1R PPF. SCREEN C SHOULD PASS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/10/88  
 ASSESSMENT ID: MPS-4260  
 NASA FMEA #: 0601-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4260  
 ITEM: LO2 MANIFOLD REPRESS VALVE (LV40, LV41)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH AGREES WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/10/88  
 ASSESSMENT ID: MPS-4261  
 NASA FMEA #: 0601-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4261  
 ITEM: LO2 MANIFOLD REPRESS VALVE (LV40, LV41)

LEAD ANALYST: A.J. MARINO

ASSESSMENT:

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

RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/10/88  
ASSESSMENT ID: MPS-4270  
NASA FMEA #: 0606-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4270  
ITEM: LH2 MANIFOLD REPRESS VALVE (LV42, LV43)

LEAD ANALYST: A.J. MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 3/3 WITH 1/1 FOR RTLS AND  
TAL ABORTS.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/10/88  
 ASSESSMENT ID: MPS-4282  
 NASA FMEA #: 0219-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4282  
 ITEM: LO2 FEED DISCONNECT VALVE OPENING SOLENOID  
 (LV46)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA CRITICALITY HAS BEEN REVISED TO 2/1R PFP.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
ASSESSMENT ID: MPS-4302  
NASA FMEA #: 0217-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4302  
ITEM: LH2 FEED DISCONNECT VALVE OPENING SOLENOID  
(LV48)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA CRITICALITY HAS BEEN REVISED TO 2/1R PFP.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
 ASSESSMENT ID: MPS-4321  
 NASA FMEA #: 0215-5

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4321  
 ITEM: LH2 RECIRC DISCONNECT VALVE OPENING SOLENOID  
 (LV50)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
ASSESSMENT ID: MPS-4322  
NASA FMEA #: 0215-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4322  
ITEM: LH2 RECIRC DISCONNECT VALVE OPENING SOLENOID  
(LV50)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THEIR CRITICALITY TO 2/1R PPP. IOA ACCEPTS PASS FOR SCREEN B BASED ON POSITION INDICATOR. IOA RECOMMENDED 2/1R BASED ON REQUIREMENT FOR TWO FAILURES TO ALLOW LEAKAGE OF LH2. RI/NASA STATES THAT LH2 LEAKAGE IS NOT HAZARDOUS AT ET SEP. NSTS 22206 2.3.3h CLASSIFIES ALL SUCH LEAKAGES AS CRIT 1. RI/NASA ASSIGNS 2/1R BASED ON AN ENGINE FAILURE AND A SOLENOID FAILURE. NSTS 22206 2.3.2d DOES NOT ALLOW FAILURE OF INTERFACING SUBSYSTEMS.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
 ASSESSMENT ID: MPS-4330  
 NASA FMEA #: 0216-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4330  
 ITEM: LH2 RECIRC DISCONNECT VALVE CLOSING SOLENOID  
 (LV51)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THEIR CRITICALITY TO 2/1R PPP. IOA ACCEPTS PASS FOR SCREEN B BASED ON POSITION INDICATOR. IOA RECOMMENDED 2/1R BASED ON REQUIREMENT FOR TWO FAILURES TO ALLOW LEAKAGE OF LH2. RI/NASA STATES THAT LH2 LEAKAGE IS NOT HAZARDOUS AT ET SEP. NSTS 22206 2.3.3h CLASSIFIES ALL SUCH LEAKAGES AS CRIT 1. RI/NASA ASSIGNS 2/1R BASED ON AN ENGINE FAILURE AND A SOLENOID FAILURE. NSTS 22206 2.3.2d DOES NOT ALLOW FAILURE OF INTERFACING SUBSYSTEMS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
 ASSESSMENT ID: MPS-4332A  
 NASA FMEA #: 0216-4

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4332  
 ITEM: LH2 RECIRC DISCONNECT VALVE CLOSING SOLENOID  
 (LV51)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/12/88  
 ASSESSMENT ID: MPS-4340  
 NASA FMEA #: 0245-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4340  
 ITEM: LH2 FEED RTLS INBOARD DUMP VALVE OPENING  
 SOLENOID (LV72)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED CRITICALITY TO 2/1R PPP. IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/12/88  
 ASSESSMENT ID: MPS-4341  
 NASA FMEA #: 0245-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4341  
 ITEM: LH2 FEED RTLS INBOARD DUMP VALVE OPENING  
 SOLENOID (LV72)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS MOVED THIS FAILURE MODE TO 0245-4 AND ASSIGNED A 2/1R  
 PPP CRITICALITY. IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/12/88  
ASSESSMENT ID: MPS-4350  
NASA FMEA #: 0245-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4350  
ITEM: LH2 FEED RTLS OUTBOARD DUMP VALVE OPENING  
SOLENOID (LV73)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED CRITICALITY TO 2/1R PPP. IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/12/88  
 ASSESSMENT ID: MPS-4351  
 NASA FMEA #: 0245-1

NASA DATA:  
 BASELINE [    ]  
 NEW [    ]

SUBSYSTEM: MPS  
 MDAC ID: 4351  
 ITEM: LH2 FEED RTLS OUTBOARD DUMP VALVE OPENING  
 SOLENOID (LV73)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS MOVED THIS FAILURE MODE TO 0245-4 AND ASSIGNED A 2/1R  
 PPP CRITICALITY. IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/12/88  
 ASSESSMENT ID: MPS-4361  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4361  
 ITEM: LH2 FEED MANIFOLD RTLS PRESS VALVE (LV74, LV75)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

FAIL TO REMAIN OPEN.  
 OPENING OF FILL & DRAIN VALVES SHOULD ALLOW FOR ADEQUATE DUMP  
 WITHOUT MANIFOLD PRESSURIZATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/12/88  
 ASSESSMENT ID: MPS-4362  
 NASA FMEA #: 0246-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4362  
 ITEM: LH2 FEED MANIFOLD RTLS PRESS VALVE (LV74, LV75)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
 IOA ACCPETS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/12/88  
 ASSESSMENT ID: MPS-4392  
 NASA FMEA #: 0250-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4392  
 ITEM: LH2 HI POINT BLEED VALVE OPENING SOLENOID (LV79)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

THIS ASSESSMENT IS FOR FAILURE TO CLOSE.  
 RI/NASA HAS DELETED THIS ITEM/FAILURE MODE FROM THE CIL. FAILURE  
 OF THE SOLENOID TO DEACTUATE WILL ALLOW LH2 TO ESCAPE THROUGH THE  
 BLEED DISCONNECT AFTER LIFTOFF. LCC REQUIRES THAT THE VALVE BE  
 CLOSED BEFORE ALLOWING ENGINE IGNITION. IOA ACCEPTS THE  
 RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
ASSESSMENT ID: MPS-4412A  
NASA FMEA #: 0225-5

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4412  
ITEM: LO2 PREVALVE REDUNDANT OPENING SOLENOID  
(LV83, LV84, LV85)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

FAILURE MODE IS PREMATURE ACTUATION.  
FAILURE OF BOTH OPENING SOLENOIDS CAN PREVENT PREVALVE CLOSURE AT  
MECO, REGARDLESS OF THE OPERATION OF THE CLOSING SOLENOIDS.  
SCENARIO IS NOT CREDIBLE. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
ASSESSMENT ID: MPS-4530  
NASA FMEA #: 0239-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4530  
ITEM: PNEU VALVE HE SUPPLY REGULATOR (PR4)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

SECOND FAILURE (LV10) WILL PREVENT VALVE OPERATIONS FOR DUMP.  
RELIEF SYSTEMS WILL PROTECT AGAINST MANIFOLD RUPTURE. VENTING  
HYDROGEN WILL CREATE A FIRE HAZARD DURING ENTRY/LANDING.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
IOA ACCEPTS THE FAILURE OF SCREEN B AND WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
 ASSESSMENT ID: MPS-4540  
 NASA FMEA #: 0602-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4540  
 ITEM: LO2 MANIF REPRESS REGULATOR (PR5)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS DELETED THIS FMEA FROM THE CIL WHICH IN ACCORD WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
 ASSESSMENT ID: MPS-4541  
 NASA FMEA #: 0602-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4541  
 ITEM: LO2 MANIF REPRESS REGULATOR (PR5)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

OUTLET PRESSURE HIGH/FAIL OPEN.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP. FAILURE OF  
 COCKPIT SWITCH CAN CAUSE LV40 AND LV41 VALVES TO OPEN. SEE  
 RI/NASA 0629-4. SEE ALSO RI/NASA 2312-2.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION AT A MEETING ON 9-2-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
 ASSESSMENT ID: MPS-4550  
 NASA FMEA #: 0629-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4550  
 ITEM: LH2 MANIF REPRESS REGULATOR (PR6)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 3/3 WITH 1/1 FOR RTLS AND  
 TAL ABORT.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
 ASSESSMENT ID: MPS-4551  
 NASA FMEA #: 0629-4

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4551  
 ITEM: LH2 MANIF REPRESS REGULATOR (PR6)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
 ASSESSMENT ID: MPS-4560  
 NASA FMEA #: 0251-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4560  
 ITEM: PNEU VALVE HE SUPPLY RELIEF VALVE (RV4)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R FNF.  
 IOA ACCEPTS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
 ASSESSMENT ID: MPS-4561  
 NASA FMEA #: 0251-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4561  
 ITEM: PNEU VALVE HE SUPPLY RELIEF VALVE (RV4)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ / ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THE FMEA NUMBER FOR THIS FAILURE MODE (FAIL TO RESEAT). IT IS NOT A CIL ENTRY. IOA HAS NO ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
ASSESSMENT ID: MPS-4561A  
NASA FMEA #: 0251-4

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4561  
ITEM: PNEU VALVE HE SUPPLY RELIEF VALVE (RV4)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THE FMEA NUMBER FOR THIS FAILURE MODE  
(RUPTURE/LEAKAGE) TO 0251-3. IOA HAS NO ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
 ASSESSMENT ID: MPS-4600  
 NASA FMEA #: 0247-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4600  
 ITEM: LH2 FEED MANIF RTLS REPRESS ORIFICE (RP9)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS DELETED THIS FMEA FROM THE CIL. OPENING FILL AND DRAIN VALVES SHOULD ALLOW FOR AN ADEQUATE LH2 DUMP WITHOUT HELIUM PRESSURIZATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/15/88  
 ASSESSMENT ID: MPS-4620  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4620  
 ITEM: PNEUMATIC HE FILL LINE (.50", .375", .625" DIA)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

THIS ASSESSMENT ADDRESSES THE LINE FROM CHECK VALVE CV4 TO TANK TK4. POSSIBLE OVERPRESSURIZATION.  
 RI/NASA APPARENTLY FAILED TO INCLUDE THIS LINE IN THEIR ANALYSIS. SEE ALSO MPS-4650.  
 THIS ITEM/FAILURE MODE IS NOW INCLUDED ON RI/NASA 0255-1 WHICH CARRIES A 1/1 CRITICALITY.  
 ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88  
 ASSESSMENT ID: MPS-4630E  
 NASA FMEA #: 0143-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4630  
 ITEM: PNEUMATIC HE PRESSURE LINE (.50" DIA)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

THIS ASSESSMENT IS FOR THE LINE CONNECTING THE BLOWDOWN VALVES (LV26, 27).  
 RI/NASA HAS REVISED THIS CRITICALITY TO 1/1.  
 IOA ACCEPTS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88  
 ASSESSMENT ID: MPS-4630G  
 NASA FMEA #: 0236-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4630  
 ITEM: PNEUMATIC HE PRESSURE LINE (.50" DIA)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

THIS ASSESSMENT IS FOR THE 0.5" LINES FROM THE UPSTREAM PNEUMATIC CHECK VALVE (CV8) TO ALL DOWNSTREAM SOLENOID INTERFACES ON THE NON-ACCUMULATOR LEG. A SINGLE FAILURE CAN CAUSE COMPARTMENT OVERPRESSURIZATION. RI/NASA HAS REVISED THIS CRITICALITY TO 1/1 WHICH AGREES WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88	NASA DATA:
ASSESSMENT ID: MPS-4640A	BASELINE [    ]
NASA FMEA #: 0119-1	NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4640  
ITEM: PNEUMATIC HE PRESS VALVE ACTUATION LINE  
(.25", .38" DIA)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

	CRITICALITY	REDUNDANCY SCREENS			CIL ITEM
	FLIGHT HDW/FUNC	A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ / ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ / ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88  
 ASSESSMENT ID: MPS-4640B  
 NASA FMEA #: 0122-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4640  
 ITEM: PNEUMATIC HE PRESS VALVE ACTUATION LINE  
 (.25", .38" DIA)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

THIS ASSESSMENT IS FOR THE LINE CONNECTING THE LH2 MANIFOLD RTLS  
 REPRESSURIZATION VALVES (LV75, 75).  
 RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP, WHICH AGREES  
 WITH THE IOA RECOMMENDATION.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88  
ASSESSMENT ID: MPS-4640E  
NASA FMEA #: 0191-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4640  
ITEM: PNEUMATIC HE PRESS VALVE ACTUATION LINE  
(.25", .38" DIA)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

THIS ASSESSMENT IS FOR SEVERAL HELIUM LINES THAT CONNECT A SOLENOID VALVE TO A PROPELLANT VALVE IN ORDER TO OPERATE THE PROPELLANT VALVE. THESE ARE: LV72 TO PV17, LV73 TO PV18, LV79 TO PV22, LV51 TO PD3, LV47 TO PD1, LV49 TO PD2, LV19 TO PV4, LV21 TO PV5, LV23 TO PV6, LV66 TO PD1 LATCH AND LV68 TO PD2 LATCH. ALL OF THESE LINES ARE UNPRESSURIZED (SOLENOID CLOSED) PRIOR TO MECO. FAILURE MODE IS RUPTURE/LEAKAGE. RI/NASA INDICATES 1/1 CRITICALITY FOR ALL ABORT MODES. LINE RUPTURE AFTER OPENING THE SOLENOID CAN CAUSE OVERPRESSURIZATION. ALL LINES WILL BE PRESSURIZED AFTER MECO. IF POST-MECO OVERPRESSURIZATION IS A HAZARD, CRITICALITY SHOULD BE 1/1. RUPTURE PRE-MECO CAN DAMAGE OTHER VITAL COMPONENTS VIA SHRAPNEL. THESE LINES ARE TOO SMALL (.25, .375 INCH) TO ALLOW A FLOWRATE SUFFICIENT TO OVERPRESSURIZE THE AFT COMPARTMENT. LINE MATERIAL DOES NOT PRODUCE SHRAPNEL. IOA ACCEPTS RI/NASA RESULT. ISSUE WITHDRAWN.

REPORT DATE 19 SEPTEMBER 1988 C.16-313

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88  
ASSESSMENT ID: MPS-4640G  
NASA FMEA #: 0193-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4640  
ITEM: PNEUMATIC HE PRESS VALVE ACTUATION LINE  
(.25", .38" DIA)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

THIS ASSESSMENT IS FOR SEVERAL HELIUM LINES THAT CONNECT THE FILL & DRAIN VALVES TO THEIR CLOSING SOLENOIDS. THESE ARE: LV33 TO PV11, LV35 TO PV12, LV29 TO PV9 AND LV31 TO PV10. THESE LINES ARE PRESSURIZED DURING ASCENT.  
FAILURE MODE IS RUPTURE/LEAKAGE.  
POSSIBLE AFT COMPARTMENT OVERPRESSURIZATION UPON FIRST FAILURE.  
PNEUMATIC ISOLATION VALVES ARE OPEN DURING ASCENT. RUPTURE MAY DAMAGE OTHER VITAL COMPONENTS VIA SHRAPNEL.  
THESE LINES ARE TOO SMALL (.25, .375 INCH) TO ALLOW A FLOWRATE SUFFICIENT TO OVERPRESSURIZE THE AFT COMPARTMENT. LINE MATERIAL DOES NOT PRODUCE SHRAPNEL. IOA ACCEPTS RI/NASA RESULT. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88  
 ASSESSMENT ID: MPS-4640H  
 NASA FMEA #: 0194-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4640  
 ITEM: PNEUMATIC HE PRESS VALVE ACTUATION LINE  
 (.25", .38" DIA)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

THIS ASSESSMENT IS FOR THREE HELIUM LINES THAT CONNECT A SOLENOID VALVE TO A PROPELLANT VALVE IN ORDER TO OPERATE THE PROPELLANT VALVE. THESE ARE: LV36 TO PV14, 15, 16, LV77 TO PV20 AND LV78 TO PV21.

THESE LINES ARE UNPRESSURIZED DURING ASCENT AND REMAIN SO FOR THE REMAINDER OF THE MISSION.

RUPTURE DURING PRELAUNCH OPERATIONS CAN CAUSE LOSS OF VEHICLE FROM SHRAPNEL IMPACT ON OTHER COMPONENTS.

THESE LINES ARE TOO SMALL (.25, .375 INCH) TO ALLOW A FLOWRATE SUFFICIENT TO OVERPRESSURIZE THE AFT COMPARTMENT. LINE MATERIAL DOES NOT PRODUCE SHRAPNEL. IOA ACCEPTS RI/NASA RESULT. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88  
ASSESSMENT ID: MPS-4640I  
NASA FMEA #: 0194-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4640  
ITEM: PNEUMATIC HE PRESS VALVE ACTUATION LINE  
(.25", .38" DIA)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

THIS ASSESSMENT IS FOR FIVE HELIUM LINES THAT CONNECT A SOLENOID VALVE TO A PROPELLANT VALVE IN ORDER TO OPERATE THE PROPELLANT VALVE. THESE ARE: LV39 TO PV13, LV32 TO PV11, LV34 TO PV12, LV28 TO PV9 AND LV30 TO PV10. FAILURE MODE IS RUPTURE/LEAKAGE. THESE LINES ARE UNPRESSURIZED DURING MAIN ENGINE ASCENT BUT PRESSURIZED DURING MPS DUMP OR INERT. IF POST-MECO OVERPRESSURIZATION IS A HAZARD CRITICALITY SHOULD BE 1/1. RUPTURE MAY DAMAGE OTHER VITAL COMPONENTS VIA SHRAPNEL. THESE LINES ARE TOO SMALL (.25, .375 INCH) TO ALLOW A FLOWRATE SUFFICIENT TO OVERPRESSURIZE THE AFT COMPARTMENT. LINE MATERIAL DOES NOT PRODUCE SHRAPNEL. IOA ACCEPTS RI/NASA RESULT. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
 ASSESSMENT ID: MPS-4640J  
 NASA FMEA #: 0633-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4640  
 ITEM: PNEUMATIC HE PRESS VALVE ACTUATION LINE  
 (.25", .38" DIA)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

THIS ASSESSMENT IS FOR THE LH2 HELIUM PRESSURIZATION FLEXIBLE HOSE ASSEMBLY (CV13, 14, 15 TO PR6).  
 THIS FAILURE IS 2/1R FOR LEAKAGE OF HYDROGEN (SECOND FAILURE - CV14 OR CV15) OR HELIUM (SECOND FAILURE - REGULATOR PR6).  
 RI/NASA HAS ADDED 1/1 FOR RTLS AND TAL ABORTS.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
ASSESSMENT ID: MPS-4640K  
NASA FMEA #: 0604-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4640  
ITEM: PNEUMATIC HE PRESS VALVE ACTUATION LINE  
(.25", .38" DIA)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

THIS ASSESSMENT IS FOR THE LO2 HELIUM PRESSURIZATION FLEXIBLE HOSE ASSEMBLY (CV10 TO CV12 AND PR5).  
THIS FAILURE IS 2/1R FOR LEAKAGE OF OXYGEN (SECOND FAILURE - CV10 OR CV12) OR HELIUM (SECOND FAILURE - REGULATOR PR5).  
RI/NASA HAS REVISED THIS FMEA TO INCLUDE 1/1 FOR RTLS AND TAL ABORTS.  
IOA ACCEPTS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
 ASSESSMENT ID: MPS-4640L  
 NASA FMEA #: 0634-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 4640  
 ITEM: PNEUMATIC HE PRESS VALVE ACTUATION LINE  
 (.25", .38" DIA)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

THIS ASSESSMENT IS FOR THE REPRESSURIZATION LINE FROM CV13 TO CV24. RUPTURE/LEAKAGE.  
 RI/NASA HAS ADDED CRITICALITY 1/1 FOR RTLS AND TAL ABORTS. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88  
ASSESSMENT ID: MPS-4650  
NASA FMEA #: NA

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 4650  
ITEM: PNEUMATIC HELIUM INTERCONNECT LINE  
(.63", 1.00", .50" DIA)

LEAD ANALYST: A.J.MARINO

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

THIS ASSESSMENT IS FOR THE HELIUM LINES FROM THE PNEUMATICS TANK (TK4) TO THE IN/OUT INTERCONNECT VALVES.  
RI/NASA APPARENTLY FAILED TO INCLUDE THIS LINE IN THEIR ANALYSIS. SEE ALSO MPS-4620.  
THIS ITEM/FAILURE MODE IS NOW INCLUDED ON RI/NASA 0255-1 WHICH CARRIES A 1/1 CRITICALITY.  
ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
 ASSESSMENT ID: MPS-5000A  
 NASA FMEA #: 2182-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5000  
 ITEM: LO2 PREVALVE CONTROL CIRCUIT

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA ACCEPTS HIGHER NASA 3/1R CRITICALITY BASED ON NASA'S BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88	NASA DATA:
ASSESSMENT ID: MPS-5001	BASELINE [    ]
NASA FMEA #: 2071-2	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5001  
 ITEM: LO2 PREVALVE TOGGLE SWITCH

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

3 TOGGLE SWITCHES. INADVERTENT COMMAND TO REOPEN PREVALVE DURING  
 MECO SEQUENCE.  
 IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
 ASSESSMENT ID: MPS-5002  
 NASA FMEA #: 2071-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5002  
 ITEM: LO2 PREVALVE TOGGLE SWITCH

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

3 TOGGLE SWITCHES. INADVERTENT COMMAND TO CLOSE SOLENOID, MAY CLOSE PREVALVE PREMATURELY DURING THE BURN.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88	NASA DATA:
ASSESSMENT ID: MPS-5003	BASELINE [    ]
NASA FMEA #: 2070-1	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5003  
ITEM: FUSE (1A) (4 PER CIRCUIT)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

LO2 PREVALVE CIRCUIT.  
12 FUSES. FAIL OPEN. LOSS OF ALL REDUNDANCY (GPC AND MANUAL) IN CLOSING THE LO2 PREVALVE COULD CAUSE THE LOSS OF VEHICLE/CREW. REFERENCE NSTS 22206, PARA 2.3.3.C.  
NSTS 22206 2.3.3f STATES THAT OFF-NOMINAL CREW PROCEDURES SHALL NOT BE CONSIDERED IN ASSIGNING CRITICALITY.  
THE SWITCH IS USED ONLY FOR VACUUM INERTING. MANUAL CLOSURE OF PREVALVES AT MECO WOULD NOT RELIABLY PREVENT ENGINE EXPLOSION.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
 ASSESSMENT ID: MPS-5011  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5011  
 ITEM: MDM (FA1)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

LO2 PREVALVE.  
 MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
ASSESSMENT ID: MPS-5012  
NASA FMEA #: NA

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5012  
ITEM: MDM (FA2)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

LO2 PREVALVE.  
MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
 ASSESSMENT ID: MPS-5013  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5013  
 ITEM: MDM (FA3)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

LO2 PREVALVE.  
 MDMS ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
 ASSESSMENT ID: MPS-5014  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5014  
 ITEM: MDM (FA4)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

LO2 PREVALVE.  
 MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
ASSESSMENT ID: MPS-5071A  
NASA FMEA #: 2180-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5071  
ITEM: DIODE (10 PER CIRCUIT)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

LO2 PREVALVE CIRCUIT.  
6 OPEN COMMAND D (FA4) MDM BLOCKING DIODES. FAIL OPEN. FAILS B-  
SCREEN BECAUSE REDUNDANCY MASKS THE FAILURE.  
RI/NASA SHOWS 3/1R PFP FOR OTHER OPEN MDM BLOCKING DIODES (2182-  
1).  
SINCE RI/NASA DID NOT INCLUDE THIS ITEM IN THE CIL, IOA HAS NO  
DOCUMENTATION THAT EXPLAINS HOW SCREEN B WAS PASSED.  
A DEDICATED MONITOR DOWNSTREAM OF THE RPC SUPPORTS PASSAGE OF  
SCREEN B. DIODES ANALYZED ON 2182 DO NOT HAVE A DEDICATED  
MONITOR. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
ASSESSMENT ID: MPS-5072  
NASA FMEA #: 2180-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5072  
ITEM: DIODE (2 PER CIRCUIT)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

LO2 PREVALVE CIRCUIT.

6 OPEN COMMAND D (FA3) MDM BLOCKING DIODES. FAIL OPEN. FAILS B-SCREEN BECAUSE REDUNDANCY MASKS THE FAILURE.

RI/NASA SHOWS 3/1R PFP FOR OTHER OPEN MDM BLOCKING DIODES (2182-1).

SINCE RI/NASA DID NOT INCLUDE THIS ITEM IN THE CIL, IOA HAS NO DOCUMENTATION THAT EXPLAINS HOW SCREEN B WAS PASSED.

A DEDICATED MONITOR DOWNSTREAM OF THE RPC SUPPORTS PASSAGE OF SCREEN B. DIODES ANALYZED ON 2182 DO NOT HAVE A DEDICATED MONITOR. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
ASSESSMENT ID: MPS-5074A  
NASA FMEA #: 2181-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5074  
ITEM: DIODE (10 PER CIRCUIT)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

LO2 PREVALVE CIRCUIT.  
3 CLOSE (CLOSE CMD D, FA4) MDM BLOCKING DIODES. FAIL OPEN.  
FAILS B-SCREEN BECAUSE REDUNDANCY MASKS THE FAILURE.  
RI/NASA SHOWS 3/1R PFP FOR OTHER CLOSE MDM BLOCKING DIODES (2183-1).  
A DEDICATED MONITOR DOWNSTREAM OF THE RPC SUPPORTS PASSAGE OF SCREEN B. DIODES ANALYZED ON 2183 DO NOT HAVE A DEDICATED MONITOR. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88	NASA DATA:
ASSESSMENT ID: MPS-5074C	BASELINE [    ]
NASA FMEA #: 2186-1	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5074  
ITEM: DIODE (10 PER CIRCUIT)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

LO2 PREVALVE CIRCUIT.  
3 CLOSE SWITCH BLOCKING DIODES (ORIGINATING AT BC1). FAIL OPEN.  
LOSS OF ALL REDUNDANCY WILL PREVENT MANUAL CLOSE COMMAND FROM  
REACHING SOLENOIDS. MANUAL (SWITCH) COMMAND IS ONLY USED FOR  
VACUUM INERTING. NO HAZARDOUS EFFECT. IOA ACCEPTS THE RI/NASA  
RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
 ASSESSMENT ID: MPS-5074E  
 NASA FMEA #: 2188-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5074  
 ITEM: DIODE (10 PER CIRCUIT)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

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

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

LO2 PREVALVE CIRCUIT.  
 6 CLOSE SWITCH BLOCKING DIODES (ORIGINATING AT BC1 & BC1). FAIL  
 OPEN.  
 LOSS OF ALL REDUNDANCY WILL PREVENT MANUAL CLOSE COMMAND FROM  
 REACHING SOLENOIDS. MANUAL (SWITCH) COMMAND IS ONLY USED FOR  
 VACUUM INERTING. NO HAZARDOUS EFFECT. IOA ACCEPTS THE RI/NASA  
 RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88	NASA DATA:
ASSESSMENT ID: MPS-5075	BASELINE [    ]
NASA FMEA #: 2181-1	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5075  
ITEM: DIODE (6 PER CIRCUIT)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

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

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

LO2 PREVALVE CIRCUIT.  
9 CLOSE MDM (CLOSE CMD A & C, FA2 & 3) BLOCKING DIODES (A1CR28, 37, 44). FAIL OPEN. FAILS B-SCREEN BECAUSE REDUNDANCY MASKS THE FAILURE.  
RI/NASA SHOWS 3/1R PFP FOR OTHER CLOSE MDM BLOCKING DIODES (2183-1).  
A DEDICATED MONITOR DOWNSTREAM OF THE RPC SUPPORTS PASSAGE OF SCREEN B. DIODES ANALYZED ON 2183 DO NOT HAVE A DEDICATED MONITOR. IOA WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
 ASSESSMENT ID: MPS-5075A  
 NASA FMEA #: 2186-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5075  
 ITEM: DIODE (6 PER CIRCUIT)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

LO2 PREVALVE CIRCUIT.  
 9 CLOSE SWITCH BLOCKING DIODES (ORIGINATING AT AB1 (A1CR20,27)  
 AND AB3 (A1CR45)). FAIL OPEN.  
 LOSS OF ALL REDUNDANCY WILL PREVENT MANUAL CLOSE COMMAND FROM  
 REACHING SOLENOIDS. MANUAL (SWITCH) COMMAND IS ONLY USED FOR  
 VACUUM INERTING. NO HAZARDOUS EFFECT.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/88  
 ASSESSMENT ID: MPS-5076B  
 NASA FMEA #: 2188-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5076  
 ITEM: DIODE (7 PER CIRCUIT)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

LO2 PREVALVE CIRCUIT.  
 6 CLOSE SWITCH BLOCKING DIODES (ORIGINATING AT AB2 & 3). FAIL OPEN.  
 LOSS OF ALL REDUNDANCY WILL PREVENT MANUAL CLOSE COMMAND FROM REACHING SOLENOIDS. MANUAL (SWITCH) COMMAND IS ONLY USED FOR VACUUM INERTING. NO HAZARDOUS EFFECT.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
 ASSESSMENT ID: MPS-5120A  
 NASA FMEA #: 2012B-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5120  
 ITEM: LO2 FEEDLINE RELIEF SHUTOFF VALVE CONTROL  
 CIRCUIT

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ NA ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ /N ]	[ N ]	[    ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

THE CORRECT FMEA NUMBER IS 2012A-2. 3 CLOSE SW SCAN DIODES. THE RI/NASA CRITICALITY WAS REPORTED INCORRECTLY. IT SHOULD BE 2/1R PFP. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88	NASA DATA:
ASSESSMENT ID: MPS-5120C	BASELINE [    ]
NASA FMEA #: 2237-2	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5120  
 ITEM: LO2 FEEDLINE RELIEF SHUTOFF VALVE CONTROL CIRCUIT

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ NA ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ /N ]	[ N ]	[    ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP, WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
ASSESSMENT ID: MPS-5121  
NASA FMEA #: NA

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5121  
ITEM: LO2 FEEDLINE RELIEF SHUTOFF VALVE TOGGLE SWITCH

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

THE ORIGINAL IOA ANALYSIS WAS ERRONEOUS BECAUSE IT INDICATES THAT A PREMATURE OPEN-TO-BUS WOULD ACTIVATE THE HELIUM CLOSING SOLENOID LV24. THIS WOULD CLOSE THE RELIEF SHUTOFF VALVE. HOWEVER, A PREMATURE OPEN-TO-BUS ON THE TOGGLE SWITCH WOULD INHIBIT THE GPC'S CLOSE COMMAND, DEACTIVATE THE LV24 SOLENOID, AND OPEN THE SHUTOFF VALVE. THIS IOA ANALYSIS CORRESPONDS TO RI/NASA 2011-3 WHICH CARRIES A CRITICALITY OF 2/1R PPP. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: MPS-5132  
NASA FMEA #: NA

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5132  
ITEM: MDM (FA3)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

LO2 RELIEF ISOLATION VALVE.  
MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
 ASSESSMENT ID: MPS-5133  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5133  
 ITEM: MDM (FA3)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:

LO2 RELIEF ISOLATION VALVE.  
 MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
 ASSESSMENT ID: MPS-5134  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5134  
 ITEM: MDM (FA1)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

LO2 RELIEF ISOLATION VALVE.  
 MDMS ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
 ASSESSMENT ID: MPS-5135  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5135  
 ITEM: MDM (FA1)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:

LO2 RELIEF ISOLATION VALVE.  
 MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
 ASSESSMENT ID: MPS-5136  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5136  
 ITEM: MDM (FA2)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

LO2 RELIEF ISOLATION VALVE.  
 MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
 ASSESSMENT ID: MPS-5137  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5137  
 ITEM: MDM (FA2)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:

LO2 RELIEF ISOLATION VALVE.  
 MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88	NASA DATA:
ASSESSMENT ID: MPS-5138A	BASELINE [    ]
NASA FMEA #: 2238-1	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5138  
 ITEM: DIODE, ISOLATION (1A, 12A)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS	CIL ITEM
		A	B	C
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]
IOA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

LO2 RELIEF SHUTOFF VALVE CIRCUIT. FAIL OPEN.  
 FAILURE ELIMINATES THE ABILITY TO MANUALLY CLOSE THE VALVE. O2  
 COULD BE VENTED INTO THE ATMOSPHERE. THE FAILURE IS READILY  
 DETECTABLE. NOT A CIL ISSUE (A5CR4 ONLY).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
ASSESSMENT ID: MPS-5139  
NASA FMEA #: 2238B-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5139  
ITEM: DIODE, ISOLATION (1A, 12A)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ NA ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /N ]	[    ]	[ N ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR TWO DIODES. THE VENTING OF O2 INTO THE ATMOSPHERE IS CRITICALITY 1. THE BLOCKING PROTECTION IS NOT STANDBY REDUNDANT. RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP, WHICH AGREES WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88	NASA DATA:
ASSESSMENT ID: MPS-5139A	BASELINE [    ]
NASA FMEA #: 2238-1	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5139  
ITEM: DIODE, ISOLATION (1A, 12A)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY	REDUNDANCY SCREENS			CIL ITEM
	FLIGHT	A	B	C	
	HDW/FUNC				
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 2R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 / 1R ]	[ P ]	[ P ]	[ P ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

LO2 RELIEF SHUTOFF VALVE CIRCUIT. FAIL OPEN.  
FAILURE ELIMINATES THE ABILITY TO MANUALLY CLOSE THE VALVE. O2  
COULD BE VENTED INTO THE ATMOSPHERE. THE FAILURE IS READILY  
DETECTABLE. NOT A CIL ISSUE. (A1CR32 AND A1CR36).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: MPS-5139H  
NASA FMEA #: 2013-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5139  
ITEM: DIODE, ISOLATION (1A, 12A)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 2R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR 1 TRANSIENT SUPPRESSOR DIODE IN THE LO2 FEEDLINE RELIEF SHUTOFF VALVE CIRCUIT. A SHORT IN THIS DIODE COULD GROUND THE OUTPUT TO THE CLOSE SOLENOID IF ALL REDUNDANCY IS LOST. O2 COULD BE VENTED INTO THE ATMOSPHERE. THE FAILURE IS NOT REDILY DETECTABLE. RI/NASA INDICATES 2/1R FOR FAILURE OF THE LO2 FEEDLINE SHUTOFF VALVE TO REMAIN CLOSED (0414-3). THE CONNECTION TO THE TRANSIENT SUPPRESSION DIODE EMPLOYS A WIRE OF SUCH SMALL DIAMETER THAT IT WILL OVERHEAT AND BREAK IF THE INTERNAL DIODE ALSO SHORTS. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88  
 ASSESSMENT ID: MPS-5141  
 NASA FMEA #: 2162-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5141  
 ITEM: LO2 PROPELLANT DUMP SEQUENCE TOGGLE SWITCH

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ] *
IOA	[ 2 /2 ]	[ NA]	[ NA]	[ NA]	[ X ]
COMPARE	[ N /N ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

PREMATURE TRANSFER TO START COULD VENT PROPELLANT OVERBOARD DURING BOOST. THIS COULD RESULT IN FIRE/EXPLOSION. DOCUMENTATION ON ANY SOFTWARE INHIBIT WAS UNAVAILABLE. THE INADVERTENT SIGNAL WILL NOT BE READ BY SOFTWARE UNTIL MECO+ 20 SEC. THE ET SEPARATES AT MECO+ 17. FAILURE HAS NO EFFECT. IOA WITHDRAWS THE ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88  
ASSESSMENT ID: MPS-5142  
NASA FMEA #: 2162-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5142  
ITEM: LO2 PROPELLANT DUMP SEQUENCE TOGGLE SWITCH

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ F ]	[ F ]	[ P ]	[ X ] *
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:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/16/88	NASA DATA:
ASSESSMENT ID: MPS-5143	BASELINE [    ]
NASA FMEA #: 2160-1	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5143  
ITEM: FUSE (F31, F32)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS	CIL ITEM	
		A	B	C	
NASA	[ 2 /1R ]	[ F ]	[ F ]	[ P ]	[ X ] *
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:

LO2/LH2 DUMP CONTROL CIRCUIT. FAIL OPEN.  
THE FAILURE WILL BE DETECTED DURING MPS DUMP (WHEN S1 IS NOT IN GPC POSITION). DIRECT INSERTION MISSION IS THE MOST CRITICAL CASE SINCE IT REQUIRES A MANUAL DUMP INITIATE COMMAND. FAILURE OF ONE FUSE ONLY ELIMINATES ONE POWER PATH. RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP. TWO START MDMs RECEIVE SIGNALS. IT IS NOT CLEAR, BASED ON AVAILABLE DATA, WHETHER BOTH ARE REQUIRED. BOTH SIGNALS ARE REQUIRED. SOFTWARE USES BOTH. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88  
 ASSESSMENT ID: MPS-5160D  
 NASA FMEA #: 2359B-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5160  
 ITEM: LO2 OUTBOARD FILL & DRAIN VALVE CONTROL CIRCUIT

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

1 TRANSIENT SUPPRESSION DIODE. A SHORT IN THIS DIODE WITH AN INTERNAL HDC FAILURE WOULD GROUND THE OPEN SOLENOID. INADVERTENT CLOSE SOLENOID POWER WOULD CLOSE THE VALVE DURING LOADING. THE FAILURE IS NOT READILY DETECTABLE. THE CONNECTION TO THE TRANSIENT SUPPRESSION DIODE EMPLOYS A WIRE OF SUCH SMALL DIAMETER THAT IT WILL OVERHEAT AND BREAK IF THE INTERNAL DIODE ALSO SHORTS. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/12/88  
 ASSESSMENT ID: MPS-5500A  
 NASA FMEA #: 2280-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5500  
 ITEM: LO2 INBOARD FILL & DRAIN VALVE CONTROL CIRCUIT

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA ACCEPTS HIGHER NASA 2/1R CRITICALITY BASED ON NASA'S BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-5554  
 NASA FMEA #: 2092-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5554  
 ITEM: REMOTE POWER CONTROLLER (RPC24)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP, WHICH MATCHES THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
ASSESSMENT ID: MPS-5556  
NASA FMEA #: NA

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5556  
ITEM: MDM (FA2)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

LO2 OVERBOARD BLEED VALVE.  
MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
ASSESSMENT ID: MPS-5557  
NASA FMEA #: NA

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5557  
ITEM: MDM (FA3)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

LO2 OVERBOARD BLEED VALVE.  
MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-5558  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5558  
 ITEM: MDM (FA4)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

LO2 OVERBOARD BLEED VALVE.  
 MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
ASSESSMENT ID: MPS-5561  
NASA FMEA #: 2096-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5561  
ITEM: DIODE

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ N / N ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

TRANSIENT SUPPRESSION DIODE. FAIL SHORTED.  
A SHORT IN THE DIODE WILL ERODE REDUNDANCY. A SECOND SHORTED  
DIODE WITHIN THE SERIES HDC I WILL GROUND THE OUTPUT AND OPEN THE  
VALVE.

SEE 0452-2, MPS-1173.

THE CONNECTION TO THE TRANSIENT SUPPRESSION DIODE EMPLOYS A WIRE  
OF SUCH SMALL DIAMETER THAT IT WILL OVERHEAT AND BREAK IF THE  
INTERNAL DIODE ALSO SHORTS. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-5561A  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5561  
 ITEM: DIODE

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ 3 / 3 ]      [ NA ]      [ NA ]      [ NA ]      [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

TRANSIENT SUPPRESSION DIODE. FAIL OPEN.  
 THE FAILURE WILL HAVE NO HAZARDOUS EFFECT.  
 NOT A CIL ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
 ASSESSMENT ID: MPS-5600A  
 NASA FMEA #: 2411-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5600  
 ITEM: MPS INSTRUMENT POWER CIRCUIT

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

TOGGLE SWITCH. FAIL TO CLOSE.  
 RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD  
 WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88	NASA DATA:
ASSESSMENT ID: MPS-5600B	BASELINE [    ]
NASA FMEA #: 2412-1	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5600  
 ITEM: MPS INSTRUMENT POWER CIRCUIT

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

CIRCUIT BREAKER. FAIL OPEN.  
 RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD  
 WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88  
 ASSESSMENT ID: MPS-5600C  
 NASA FMEA #: 2413-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5600  
 ITEM: MPS INSTRUMENT POWER CIRCUIT

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

FUSE. FAIL OPEN.  
 RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD  
 WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/17/88	NASA DATA:
ASSESSMENT ID: MPS-5600D	BASELINE [    ]
NASA FMEA #: 2416-2	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 5600  
ITEM: MPS INSTRUMENT POWER CIRCUIT

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

SSME RED/AMBER STATUS ANNUNCIATOR.  
LOSS OF ILLUMINATION. FAIL TO ILLUMINATE AMBER.  
RI/NASA HAS REVISED THIS FMEA NUMBER TO 0663-2. IOA HAS NO  
ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88  
 ASSESSMENT ID: MPS-5650A  
 NASA FMEA #: 2034-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5650  
 ITEM: GO2 PRESSURE FLOW CONTROL VALVE CONTROL CIRCUIT

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

6 BLOCKING DIODES (XDUCER SEL).  
 RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP WHICH AGREES  
 WITH THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88  
 ASSESSMENT ID: MPS-5650B  
 NASA FMEA #: 2034-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5650  
 ITEM: GO2 PRESSURE FLOW CONTROL VALVE CONTROL CIRCUIT

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ F ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

6 BLOCKING DIODES (XDUCER SEL).  
 RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: MPS-5701  
 NASA FMEA #: 2225-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5701  
 ITEM: HYBRID DRIVER, TYPE 3 (2 PER CIRCUIT)

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ N ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:  
 IOA ACCEPTS RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/19/88  
 ASSESSMENT ID: MPS-5750F  
 NASA FMEA #: 2250-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 5750  
 ITEM: ET/ORBITER DISCONNECT VALVE CONTROL CIRCUIT

LEAD ANALYST: HOLDEN/LOWERY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

1 DIODE OP XOVER (12A). FAILURE CAN SHORT ALL OPEN COMMANDS TO GROUND, VENTING OPEN PRESSURE AND ALLOWING VALVE TO CLOSE DURING MAIN ENGINE BURN. LATCH IS NOT CERTIFIED TO PREVENT PNEUMATIC CLOSURE. IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:	2/05/88	NASA DATA:
ASSESSMENT ID:	MPS-6011D	BASELINE [    ]
NASA FMEA #:	2252-1	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 6011  
ITEM: POWER & CONTROL CIRCUITS FOR LH2 FEEDLINE  
DISCONNECT VALVE

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ / ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [    ] [    ] [    ] [    ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAIL SHORTED. 2 TRANSIENT SUPPRESSION DIODES.  
A SHORT IN THE TRANSIENT SUPPRESSION DIODE COMBINED WITH A SHORT  
IN AN INTERNAL HDC DIODE WILL GROUND A SOLENOID. CLOSE SIGNAL  
WILL BE GROUNDED PREVENTING DISCONNECT CLOSURE, WHICH IS A 1/1  
FAILURE (SEE 0407-6). GROUNDED OPEN SIGNAL FOLLOWED BY  
INADVERTENT CLOSE SIGNAL AND LATCH FAILURE WILL CAUSE DISCONNECT  
TO CLOSE (1/1, SEE 0407-2).  
THE CONNECTION TO THE TRANSIENT SUPPRESSION DIODE EMPLOYS A WIRE  
OF SUCH SMALL DIAMETER THAT IT WILL OVERHEAT AND BREAK IF THE  
INTERNAL DIODE ALSO SHORTS. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/21/88  
ASSESSMENT ID: MPS-6016  
NASA FMEA #: NA

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 6016  
ITEM: INDICATOR SWITCH (PD2)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 1 / 1 ]	[ 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:

MECHANICAL LINKAGE WILL PROVIDE REDUNDANCY. LOSS OF MECHANICAL REDUNDANCY COULD RESULT IN LOSS OF VEHICLE. THIS ANALYSIS CORRESPONDS TO RI/NASA 0407-10. WHICH CARRIES A 1/1 CRITICALITY. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
ASSESSMENT ID: MPS-6021C  
NASA FMEA #: 2009-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 6021  
ITEM: POWER & CONTROL CIRCUITS FOR LH2 RTLS DUMP VALVES (2)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

A SHORT IN A TRANSIENT SUPPRESSION DIODE WILL ERODE BLOCKING REDUNDANCY. A SHORT IN AN INTERNAL HDC DIODE WILL GROUND OPEN SOLENOID POWER AND CLOSE THE VALVE. FAILURE OF THE RELIEF VALVE COULD CAUSE OVERPRESSURIZATION AND RUPTURE DUE TO LH2 BOIL OFF. RI/NASA INDICATES 2/1R FOR FAILURE OF AN RTLS DUMP VALVE TO REMAIN OPEN (0651-3).

THE CONNECTION TO THE TRANSIENT SUPPRESSION DIODE EMPLOYS A WIRE OF SUCH SMALL DIAMETER THAT IT WILL OVERHEAT AND BREAK IF THE INTERNAL DIODE ALSO SHORTS. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
ASSESSMENT ID: MPS-6025  
NASA FMEA #: 2202-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 6025  
ITEM: ISOLATION DIODE (2)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ P ]	[ F ]	[ P ]	[    ]
COMPARE	[ /N ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [    ] [    ] [    ] [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

LOSS OF ALL REDUNDANCY WILL PRECLUDE LH2 MANIFOLD VENT AFTER  
MECO. OVERPRESSURIZATION AND RUPTURE COULD RESULT. THIS  
WORKSHEET SHOWED AN INCORRECT FMEA NUMBER. IT SHOULD HAVE BEEN  
2002-1.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88	NASA DATA:
ASSESSMENT ID: MPS-6026	BASELINE [    ]
NASA FMEA #: N/A	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6026  
 ITEM: FLIGHT CRITICAL AFT MDM (FA1,FA3,FA4)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 /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:

LH2 RTLS DUMP VALVES.  
 MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: MPS-6027  
 NASA FMEA #: N/A

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6027  
 ITEM: FLIGHT CRITICAL AFT MDM (FA1,FA3,FA4)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 / 3 ]	[ P ]	[ F ]	[ P ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

LH2 RTLS DUMP VALVES.  
 MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
ASSESSMENT ID: MPS-6051B  
NASA FMEA #: 2224-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 6051  
ITEM: LH2 RECIRCULATION PUMP VALVE OPENING SOLENOID  
ENERGIZING CIRCUITRY

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ACCEPTS HIGHER RI/NASA CRITICALITY BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
ASSESSMENT ID: MPS-6071  
NASA FMEA #: 2264-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 6071  
ITEM: FUSE, 1A (3)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:  
IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/21/88  
 ASSESSMENT ID: MPS-6072  
 NASA FMEA #: 2038-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6072  
 ITEM: TOGGLE SWITCH

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
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:

THIS IOA ANALYSIS NOW CORRESPONDS TO RI/NASA 2038-1.  
 LH2 INBOARD FILL/DRAIN, HIGH POINT BLEED AND TOPPING VALVES  
 SWITCH. FAILS OPEN.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP WHICH MATCHES  
 THE IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/21/88  
 ASSESSMENT ID: MPS-6075B  
 NASA FMEA #: 2262-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6075  
 ITEM: HYBRID DRIVER CONTROLLER

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR 1 TOPPING VALVE OPEN HDC. FAILURE IS DETECTED BY V41X1458E.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
 ASSESSMENT ID: MPS-6076A  
 NASA FMEA #: 2265-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6076  
 ITEM: ISOLATION DIODES (16)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:  
 IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
 ASSESSMENT ID: MPS-6076C  
 NASA FMEA #: 2266-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6076  
 ITEM: ISOLATION DIODES (16)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:

IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
 ASSESSMENT ID: MPS-6076H  
 NASA FMEA #: 2270-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6076  
 ITEM: ISOLATION DIODES (16)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

LH2 INBOARD FILL/DRAIN VALVE CIRCUIT.  
 ASSESSMENT IS FOR 1 CLOSE SWITCH BLOCKING DIODE. FAIL OPEN. A  
 LOSS OF ALL REDUNDANCY COULD VENT H2 INTO THE ATMOSPHERE DURING  
 BOOST. THE FAILURE IS NOT READILY DETECTABLE.  
 LOSS OF MANUAL (SWITCH) CAPABILITY TO CLOSE VALVE. VALVE IS  
 CLOSED MANUALLY ONLY AT THE END OF VACUUM INERTING. IOA ACCEPTS  
 THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
ASSESSMENT ID: MPS-6076T  
NASA FMEA #: 2279-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 6076  
ITEM: ISOLATION DIODES (16)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

LH2 INBOARD FILL & DRAIN, HIGH POINT BLEED AND TOPPING VALVE CIRCUIT.

ASSESSMENT IS FOR 3 TRANSIENT SUPPRESSION DIODES. FAIL SHORTED. CRITICALITY 3/1R FOR SHORT AND IS NOT READILY DETECTABLE. FAILURE CAN SHORT COMMANDS TO GROUND. SUBSEQUENT FAILURE OF FILL & DRAIN VALVE CAN CAUSE LOSS OF VEHICLE (1/1, SEE 0301-4). LOSS OF OPEN COMMAND TO TOPPING VALVE CAN CAUSE LOSS OF VEHICLE (2/1R, SEE 0304\_1).

THE CONNECTION TO THE TRANSIENT SUPPRESSION DIODE EMPLOYS A WIRE OF SUCH SMALL DIAMETER THAT IT WILL OVERHEAT AND BREAK IF THE INTERNAL DIODE ALSO SHORTS. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
ASSESSMENT ID: MPS-6078  
NASA FMEA #: NA

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 6078  
ITEM: MDM (FA1, 2, LA1)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /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:

LH2 I/B F&D, TOPPING HIGH POINT BLEED.  
MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
 ASSESSMENT ID: MPS-6083A  
 NASA FMEA #: 2055A-4

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6083  
 ITEM: TOGGLE SWITCH

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ N /    ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

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 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS COMBINED THIS ANALYSIS WITH 2055A-3.  
 A SECOND FAILURE, LOSS OF THE GROUND OPEN COMMAND, WOULD HAVE TO  
 OCCUR TO CAUSE THE VALVE TO CLOSE.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/25/88  
 ASSESSMENT ID: MPS-6086C  
 NASA FMEA #: 2358A-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6086  
 ITEM: ISOLATION DIODE (4)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ / ]	[    ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR ONE CLOSE MDM ISOLATION DIODE. FAILURE IS  
 DETECTABLE DURING RELEVANT PHASES OF FLIGHT.  
 IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88  
ASSESSMENT ID: MPS-6088  
NASA FMEA #: NA

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 6088  
ITEM: MDM

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /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:

LH2 O/B F&D. FA2  
MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/26/88  
 ASSESSMENT ID: MPS-6101  
 NASA FMEA #: 2013-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6101  
 ITEM: LH2 FEEDLINE RELIEF ISOLATION VALVE POWER AND CONTROL CIRCUITS

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR 1 TRANSIENT SUPPRESSION DIODE. A SHORT IN THIS DIODE COULD GROUND THE OUTPUT TO THE CLOSE SOLENOID IF ALL REDUNDANCY IS LOST. THE RELIEF SHUTOFF VALVE WILL OPEN. RI/NASA INDICATES 2/1R FOR FAILURE TO REMAIN LOSED (0437-3). THE CONNECTION TO THE TRANSIENT SUPPRESSION DIODE EMPLOYS A WIRE OF SUCH SMALL DIAMETER THAT IT WILL OVERHEAT AND BREAK IF THE INTERNAL DIODE ALSO SHORTS. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
 ASSESSMENT ID: MPS-6107A  
 NASA FMEA #: 2012-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6107  
 ITEM: ISOLATION DIODE (11)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR 3 CLOSE SWITCH SCAN DIODES.  
 THE FMEA NUMBER SHOWN IS INCORRECT. IT SHOULD BE 2012B-2. THE  
 RI/NASA CRITICALITY SHOWN IS ALSO INCORRECT. IT SHOULD BE 2/1R  
 PFP. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/27/88  
ASSESSMENT ID: MPS-6107E  
NASA FMEA #: 2238A-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 6107  
ITEM: ISOLATION DIODE (11)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ] [    ] [    ] [    ] [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR 3 SWITCH BLOCKING DIODES IN THE LO2 RELIEF SHUTOFF VALVE CIRCUIT. RI/NASA HAS REVISED SCREEN B TO F. IOA ACCEPTS RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/88  
 ASSESSMENT ID: MPS-6109  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6109  
 ITEM: MDM (FA1, FA3, FA4)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /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:

LH2 RELIEF ISOLATION VALVE.  
 MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88	NASA DATA:
ASSESSMENT ID: MPS-6141	BASELINE [    ]
NASA FMEA #: NA	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 6141  
ITEM: MDM (FA4)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS		CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

LH2 RECIRC DISCONNECT.  
MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/08/88  
 ASSESSMENT ID: MPS-6144  
 NASA FMEA #: 2102-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6144  
 ITEM: ISOLATION DIODES (4)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR 2 TRANSIENT SUPPRESSION DIODES IN THE RECIRC DISCONNECT CIRCUIT. A SHORT IN THE TRANSIENT SUPPRESSION DIODES COMBINED WITH A SHORT IN AN INTERNAL HDC DIODE WILL ELIMINATE SOLENOID POWER. DISCONNECT WILL FAIL TO CLOSE. RESULTS IN LOSS OF VEHICLE. SEE RI/NASA 0405-6. THE CONNECTION TO THE TRANSIENT SUPPRESSION DIODE EMPLOYS A WIRE OF SUCH SMALL DIAMETER THAT IT WILL OVERHEAT AND BREAK IF THE INTERNAL DIODE ALSO SHORTS. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
ASSESSMENT ID: MPS-6157  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 6157  
ITEM: ISOLATION DIODES, 12A (18)  
LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:

LH2 PREVALVE CIRCUIT.  
ASSESSMENT IS FOR 3 OPEN COMMAND B RPC OUTPUT DIODES.  
RI/NASA FMEA # IS 2205-1. IOA HAS NO ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/29/88  
 ASSESSMENT ID: MPS-6158B  
 NASA FMEA #: 2214-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6158  
 ITEM: ISOLATION DIODES, 4.2A (3)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ P ] [ P ] [ P ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

OPEN SWITCH COMMAND A BLOCKING DIODE. FAIL OPEN.  
 THE DIODE PROVIDES REDUNDANT BLOCKING PROTECTION. LOSS OF ALL  
 REDUNDANCY COULD PREMATURELY CLOSE THE PREVALVE. LOSS OF  
 REDUNDANCY IS DETECTABLE. NOT A CIL ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
 ASSESSMENT ID: MPS-6159G  
 NASA FMEA #: 2222-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 6159  
 ITEM: ISOLATION DIODE (36)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]    [ P ]    [ P ]    [ P ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR 6 TRANSIENT SUPPRESSION DIODES. A SHORT IN THE DIODE COULD CAUSE LOSS OF OPEN SOLENOID POWER. A LOSS OF ALL REDUNDANCY WOULD CLOSE THE PREVALVE DURING ENGINE BURN RESULTING IN AN EXPLOSION. FAILURE IS DETECTABLE DURING RELEVANT PHASES OF FLIGHT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
ASSESSMENT ID: MPS-6160  
NASA FMEA #: NA

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 6160  
ITEM: MODULATOR DEMODULATOR (4)

LEAD ANALYST: MCNICOLL/EMMONS

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:

ASSESSMENT IS FOR MDM FA1, 2, 3, 4. LH2 PREVALVE CIRCUIT.  
MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88	NASA DATA:
ASSESSMENT ID: MPS-7100B	BASELINE [    ]
NASA FMEA #: 2113-2	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 7100  
ITEM: VALVE POWER & CONTROL CIRCUITS FOR HELIUM ISOLATION VALVES

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
	A	B	C		
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR 6 "B" VALVE RPC'S. FAIL OPEN.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
ASSESSMENT ID: MPS-7110  
NASA FMEA #: 2110-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 7110  
ITEM: FUSE, 1AMP (9)

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /2R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ ]	[ N ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

ENGINE HELIUM ISOLATION VALVES, B LEG.  
ASSESSMENT IS FOR 6 "B" VALVE FUSES. FAIL OPEN.  
RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-7110A  
 NASA FMEA #: 2116-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7110  
 ITEM: FUSE, 1AMP (9)

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /2R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ ]	[ N ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

ASSESSMENT IS FOR 3 "A" VALVE FUSES. IOA INDICATES 3/1R FOR ABORTS ONLY.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-7120B  
 NASA FMEA #: 2117-4

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7120  
 ITEM: TOGGLE SWITCH, 1P3T (3)

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[    /N ]	[    ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
 INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
ASSESSMENT ID: MPS-7130A  
NASA FMEA #: 2111-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 7130  
ITEM: TOGGLE SWITCH, 2P3T (3)

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ /N ]	[    ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:  
SHORT TO GROUND.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
 ASSESSMENT ID: MPS-7130B  
 NASA FMEA #: 2111-4

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7130  
 ITEM: TOGGLE SWITCH, 2P3T (3)

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /2R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ ]	[ N ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
 INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:	2/01/88	NASA DATA:	
ASSESSMENT ID:	MPS-7140	BASELINE	[   ]
NASA FMEA #:	2118-1	NEW	[ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 7140  
ITEM: HYBRID DRIVER, TYPE III (3)

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY	REDUNDANCY SCREENS			CIL ITEM
	FLIGHT HDW/FUNC	A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[   ] *
IOA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[   ]
COMPARE	[ /N ]	[   ]	[   ]	[   ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
INADEQUATE [   ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP.  
LOSS OF HELIUM PURGE SHOULD RESULT IN A SAFE MAIN ENGINE SHUTDOWN  
(NSTS 22206 2.3.2d). RESULTS IN LOSS OF MISSION. NSTS 22206  
2.3.31 REQUIRES FUNCTIONAL CRITICALITY ASSIGNMENT OF 1R.  
ENGINE MANUFACTURER INDICATES THAT SEVEN SECONDS OF CONTINUOUS  
HELIUM PURGE ARE REQUIRED FOR SAFE SHUTDOWN. ABRUPT OR RAPID  
LOSS OF HELIUM CAN CAUSE ENGINE EXPLOSION. IOA ACCEPTS THE  
RI/NASA RESULT.  
ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-7140A  
 NASA FMEA #: 2118-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7140  
 ITEM: HYBRID DRIVER, TYPE III (3)

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /N ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
 INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
ASSESSMENT ID: MPS-7150  
NASA FMEA #: 2112-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 7150  
ITEM: HYBRID DRIVER, TYPE I (6)

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /N ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PFP.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-7170A  
NASA FMEA #: 2119-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 7170  
ITEM: ISOLATION DIODES (9)

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /2R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ ]	[ N ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

ASSESSMENT IS FOR 3 "A" VALVE SWITCH BLOCKING DIODES. FAIL OPEN.  
RI/NASA HAS REVISED SCREEN B TO "FAIL:."  
LOSS OF HELIUM PURGE SHOULD RESULT IN A SAFE MAIN ENGINE SHUTDOWN  
(NSTS 22206 2.3.2d). RESULTS IN LOSS OF MISSION. NSTS 22206  
2.3.31 REQUIRES FUNCTIONAL CRITICALITY ASSIGNMENT OF 1R. IOA  
ACCEPTS FAILURE OF SCREEN B. CRITICALITY MATCHES IOA  
RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88	NASA DATA:
ASSESSMENT ID: MPS-7180	BASELINE [    ]
NASA FMEA #: 2119-1	NEW [ X ]
SUBSYSTEM: EPD&C/MPS	
MDAC ID: 7180	
ITEM: ISOLATION DIODES (3)	
LEAD ANALYST: EMMONS/MCNEELY	

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[    /N ]	[    ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR 3 "A" VALVE SWITCH BLOCKING DIODES. FAIL OPEN. RI/NASA HAS REVISED SCREEN B TO "FAIL: . LOSS OF HELIUM PURGE SHOULD RESULT IN A SAFE MAIN ENGINE SHUTDOWN (NSTS 22206 2.3.2d). RESULTS IN LOSS OF MISSION. NSTS 22206 2.3.31 REQUIRES FUNCTIONAL CRITICALITY ASSIGNMENT OF 1R. IOA ACCEPTS FAILURE OF SCREEN B. CRITICALITY MATCHES IOA RECOMMENDATION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-7190  
 NASA FMEA #: N/A

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7190  
 ITEM: MDM, FLIGHT AFT 1,2,3,4

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /2R ]	[ 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:  
 MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM.  
 ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
ASSESSMENT ID: MPS-7220B  
NASA FMEA #: 2141-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 7220  
ITEM: TOGGLE SWITCH, 2P3T (3)

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ NA ]	[ P ]	[    ] *
IOA	[ 2 /2R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[    ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP AND 1/1 FOR RTLS AND TAL. IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
ASSESSMENT ID: MPS-7260  
NASA FMEA #: 2145-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 7260  
ITEM: ISOLATION DIODES (12)

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /2R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ ]	[ N ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

ASSESSMENT IS FOR 6 DIODES IN THE INTERCONNECT IN VALVE CIRCUIT. THE FAILURE WILL ERODE REDUNDANCY TO OPEN THE VALVE. LOSS OF ALL REDUNDANCY WILL CAUSE THE LOSS OF ONE ENGINE. THE FAILURE WILL NOT BE DETECTED. RESULTS IN LOSS OF MISSION (INTACT ABORT). NSTS 22206 REQUIRES ASSIGNMENT OF 3/1R. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
 ASSESSMENT ID: MPS-7270  
 NASA FMEA #:

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7270  
 ITEM: MDM, FLIGHT AFT 1,2,3

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 / 3 ]	[ P ]	[ F ]	[ P ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
 ASSESSMENT ID: MPS-7300C  
 NASA FMEA #: 2151-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7300  
 ITEM: VALVE POWER AND CONTROL CIRCUITS FOR HELIUM  
 INTERCONNECT OUTLET VALVES

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

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 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR SIX BLOCKING DIODES IN THE CIRCUITS.  
 FAIL SHORTED. RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
 INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/05/88  
 ASSESSMENT ID: MPS-7300G  
 NASA FMEA #: 2404-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7300  
 ITEM: VALVE POWER AND CONTROL CIRCUITS FOR HELIUM  
 INTERCONNECT OUTLET VALVES

LEAD ANALYST: EMMONS/MCNEELY

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

FAILURE DOES NOT HAVE IDENTICAL EFFECT TO THAT REPORTED ON 2148-2  
 AS PREVIOUSLY REPORTED.  
 IOA ACCEPTS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-7400B  
NASA FMEA #: 2304-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 7400  
ITEM: PNEUMATIC HELIUM SUPPLY ISOLATION VALVE POWER  
AND CONTROL CIRCUIT

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

ASSESSMENT IS FOR 2 SWITCH (CLOSED) SCAN DIODES. FAIL SHORTED.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-7400C  
 NASA FMEA #: 2305-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7400  
 ITEM: PNEUMATIC HELIUM SUPPLY ISOLATION VALVE POWER  
 AND CONTROL CIRCUIT

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR 2 MDM OPEN COMMAND BLOCKING DIODES. FAIL OPEN.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-7400E  
NASA FMEA #: 2306-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 7400  
ITEM: PNEUMATIC HELIUM SUPPLY ISOLATION VALVE POWER  
AND CONTROL CIRCUIT

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

ASSESSMENT IS FOR 2 SWITCH OPEN COMMAND BLOCKING DIODES. FAIL  
OPEN.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-7400F  
 NASA FMEA #: 2306-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7400  
 ITEM: PNEUMATIC HELIUM SUPPLY ISOLATION VALVE POWER  
 AND CONTROL CIRCUIT

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

ASSESSMENT IS FOR 2 SWITCH OPEN COMMAND BLOCKING DIODES. FAIL  
 SHORTED.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
ASSESSMENT ID: MPS-7400G  
NASA FMEA #: 2307-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 7400  
ITEM: PNEUMATIC HELIUM SUPPLY ISOLATION VALVE POWER  
AND CONTROL CIRCUIT

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [ F ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR 2 TRANSIENT SUPPRESSION DIODES. FAIL SHORTED.  
SECOND FAILURE (A SHORT IN THE HDC) WILL SHORT THE OPEN COMMAND  
TO GROUND. TWO MORE SIMILAR FAILURES WILL SHORT THE OPEN COMMAND  
TO GROUND. TWO MORE SIMILAR FAILURES WILL SHORT THE OTHER  
SOLENOID'S OPEN COMMAND TO GROUND, RESULTING IN CLOSURE OF BOTH  
ISOLATION VALVES. SUBSEQUENT FAILURE OF THE CROSSOVER VALVE TO  
OPEN CAN CAUSE LOSS OF VEHICLE (SEE 2306-1).  
THE CONNECTION TO THE TRANSIENT SUPPRESSION DIODE EMPLOYS A WIRE  
OF SUCH SMALL DIAMETER THAT IT WILL OVERHEAT AND BREAK IF THE  
INTERNAL DIODE ALSO SHORTS. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
ASSESSMENT ID: MPS-7430  
NASA FMEA #: 2131-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 7430  
ITEM: PNEUMATIC HELIUM CROSSOVER SOLENOID VALVE  
CONTROL CIRCUIT SWITCH

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /N ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP.  
IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-7430A  
 NASA FMEA #: 2131-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7430  
 ITEM: PNEUMATIC HELIUM CROSSOVER SOLENOID VALVE  
 CONTROL CIRCUIT SWITCH

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ /N ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [    ] [    ] [    ] [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP.  
 IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
 INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-7440  
 NASA FMEA #: 2130-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ x ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7440  
 ITEM: PNEUMATIC HELIUM CROSSOVER SOLENOID VALVE  
 CONTROL CIRCUIT FUSE

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ NA ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ /N ]	[    ]	[ N ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP.  
 IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
 INTERPRETATION OF REDUNDANCY.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/88  
 ASSESSMENT ID: MPS-7460  
 NASA FMEA #: 2132-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7460  
 ITEM: PNEUMATIC HELIUM CROSSOVER SOLENOID VALVE  
 CONTROL CIRCUIT HYBRID DRIVER CONTROLLER

LEAD ANALYST: W.J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ /N ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RI/NASA HAS REVISED THIS CRITICALITY TO 2/1R PPP.  
 IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
 INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/02/88  
 ASSESSMENT ID: MPS-7490  
 NASA FMEA #: NA

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7490  
 ITEM: HELIUM SUPPLY BLOWDOWN VALVES CONTROL CIRCUIT  
 MDM COMMANDS

LEAD ANALYST: A.J. MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR MDMs FA3 AND FA4.  
 MDMs ARE ANALYZED IN ANOTHER SUBSYSTEM. ISSUE WITHDRAWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
 ASSESSMENT ID: MPS-7500B  
 NASA FMEA #: 2314-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7500  
 ITEM: LO2 MANIFOLD REPRESS VALVES POWER AND CONTROL  
 CIRCUIT

LEAD ANALYST: A.J. MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR 2 OPEN SWITCH SCAN DIODES. FAIL SHORTED.  
 RI/NASA HAS REVISED THIS CRITICALITY TO 3/1R PFP.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
 ASSESSMENT ID: MPS-7500D  
 NASA FMEA #: 2316-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7500  
 ITEM: LO2 MANIFOLD REPRESS VALVES POWER AND CONTROL  
 CIRCUIT

LEAD ANALYST: A.J. MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

ASSESSMENT IS FOR 2 OPEN SWITCH BLOCKING DIODES.  
 FAIL SHORTED.  
 RI/NASA HAS DELETED THIS ITEM FROM THE CIL.  
 FAILURE OF THE BLOCKING DIODE FOLLOWED BY AN INADVERTENT SIGNAL  
 FROM THE CORRESPONDING OPEN COMMAND, A SWITCH SCAN DIODE SHORT  
 AND A REGULATOR FAIL OPEN WILL CAUSE LOSS OF VEHICLE.  
 FAILURE DETECTABLE VIA SWITCH SCAN. IOA WITHDRAWS THE ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
 ASSESSMENT ID: MPS-7540  
 NASA FMEA #: 2322-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7540  
 ITEM: LH2 MANIFOLD REPRESS VALVES POWER AND CONTROL  
 CIRCUIT

LEAD ANALYST: A.J. MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

MDM OPEN COMMAND BLOCKING DIODES (2). FAIL OPEN.  
 RI/NASA INDICATES 3/3 FOR NOMINAL AND 1/1 FOR RTLS AND TAL ABORT.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/88  
 ASSESSMENT ID: MPS-7540B  
 NASA FMEA #: 2319-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
 MDAC ID: 7540  
 ITEM: LH2 MANIFOLD REPRESS VALVES POWER AND CONTROL  
 CIRCUIT

LEAD ANALYST: A.J. MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

ASSESSMENT IS FOR 2 OPEN SWITCH SCAN DIODES. FAIL SHORTED.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/01/88  
ASSESSMENT ID: MPS-7600  
NASA FMEA #: 2048-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 7600  
ITEM: LH2 FEED MANIFOLD RTLS PRESS VALVES HYBRID  
DRIVER CONTROLLER

LEAD ANALYST: A.J. MARINO

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

FAIL ON. RI/NASA HAS REVISED SCREEN B TO FAIL. IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 5/31/88	NASA DATA:
ASSESSMENT ID: MPS-8001X	BASELINE [    ]
NASA FMEA #: 2205-1	NEW [ X ]

SUBSYSTEM: EPD&C/MPS  
MDAC ID: 8001  
ITEM: LH2 PREVALVE BLOCKING DIODE

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ] (ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

ASSESSMENT OF THIS ITEM/FAILURE MODE WAS PREVIOUSLY OMITTED.  
IOA ACCEPTS RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-8002X BASELINE [ ]  
 NASA FMEA #: 2133-1 NEW [ X ]

SUBSYSTEM: EPDC/MPS  
 MDAC ID: 8002  
 ITEM: BLOCKING DIODE, CROSSOVER VALVE CONTROL CIRCUIT

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

FAIL OPEN. IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:

ASSESSMENT ID: MPS-8003X  
NASA FMEA #: 2142-2

NASA DATA:

BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPDC/MPS

MDAC ID: 8003

ITEM: HYBRID DRIVER CONTROLLER, INTERCONNECT IN VALVE  
CIRCUIT

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

INADVERTENT OUTPUT.

IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROADER  
INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-8004X  
NASA FMEA #: 2414B-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: EPDC/MPS  
MDAC ID: 8004  
ITEM: HELIUM ISOLATION VALVE B CLOSE SWITCH SCAN  
BLOCKING DIODE

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

FAIL SHORTED.  
RI/NASA HAS DELETED THIS ITEM FROM THE CIL WHICH IS IN ACCORD  
WITH THE IOA RECOMMENDATION.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:

ASSESSMENT ID: MPS-9002X  
NASA FMEA #: 0405-11

NASA DATA:

BASELINE [    ]  
NEW [ X ]

SUBSYSTEM:

MDAC ID: 9002

ITEM: LH2 RECIRCULATION RETURN 4" DIA DISCONNECT (PD3)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA CONCURS WITH NASA CRITICALITY AND SCREENS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9003X BASELINE [   ]  
 NASA FMEA #: 0414-8 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9003  
 ITEM: LO2 FEEDLINE RELIEF SHUTOFF VALVE (PV7)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY	REDUNDANCY SCREENS			CIL ITEM
	FLIGHT HDW/FUNC	A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[   /   ]	[   ]	[   ]	[   ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]   [   ]   [   ]   [   ]   [   ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
 INADEQUATE [   ]

REMARKS:

IOA CONCURS WITH NASA CRITICALITY AND SCREENS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9004X BASELINE [    ]  
 NASA FMEA #: 0427-6 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9004  
 ITEM: LO2/LH2 POINT LEVEL SENSORS AND ELECTRONICS

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ D ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RUPTURE/LEAKAGE AT LO2 ECO SENSOR.  
 THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0418-2. BY NSTS-22206, SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BE COVERED BY COMPONENT OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA. THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES, ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9005X BASELINE [   ]  
 NASA FMEA #: 0427-7 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9005  
 ITEM: LO2/LH2 POINT LEVEL SENSORS AND ELECTRONICS

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[   /   ]	[   ]	[   ]	[   ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]   [   ]   [   ]   [   ]   [   ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
 INADEQUATE [   ]

REMARKS:

IOA CONCURS WITH NASA CRITICALITY AND SCREENS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9007X		BASELINE [    ]
NASA FMEA #: 0431-10		NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9007  
 ITEM: GH2 HIGH POINT BLEED VALVE (PV22)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ]	[ ]	[ ]	[ ]	[ ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

IOA CONCURS WITH NASA CRITICALITY AND SCREENS.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9008X  
NASA FMEA #: 0431-11

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9008  
ITEM: GH2 HIGH POINT BLEED VALVE (PV22)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA CONCURS WITH NASA CRITICALITY AND SCREENS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9009X BASELINE [    ]  
 NASA FMEA #: 0437-9 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9009  
 ITEM: LH2 FEEDLINE RELIEF SHUTOFF VALVE (PV8)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[   /   ]	[   ]	[   ]	[   ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]    [   ]    [   ]    [   ]    [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 IOA CONCURS WITH NASA CRITICALITY AND SCREENS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9010X BASELINE [    ]  
 NASA FMEA #: 0452-9 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9010  
 ITEM: LO2 OVERBOARD BLEED VALVE (PV19)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
		NASA [ 2 /1R ]	[ P ]	[ F ]	
IOA [ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]	
COMPARE [ / ]	[    ]	[    ]	[    ]	[    ]	

RECOMMENDATIONS: (If different from NASA)

[ / ] [    ] [    ] [    ] [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 IOA CONCURS WITH NASA CRITICALITY AND SCREENS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9011X BASELINE [    ]  
 NASA FMEA #: 0453-8 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9011  
 ITEM: LO2 POGP RECIRCULATION VALVE (PV20, PV21)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:

IOA CONCURS WITH NASA CRITICALITY AND SCREENS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9012X BASELINE [ ]  
 NASA FMEA #: 0651-10 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9012  
 ITEM: RTLES DUMP, LH2 FEEDLINE MANIFOLD VALVES (PV17,  
 PV18)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA CONCURS WITH NASA CRITICALITY AND SCREENS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9013X		BASELINE [    ]
NASA FMEA #: 0661-1		NEW [ X ]

SUBSYSTEM:           MPS  
MDAC ID:             9013  
ITEM:                 LO2/LH2 ENGINE MANIFOLD PRESSURE METER

LEAD ANALYST:       W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS:   (If different from NASA)

[    /    ]      [    ]      [    ]      [    ]      [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE   [    ]  
IADEQUATE  [    ]

REMARKS:  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9015X  
NASA FMEA #: 0720-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9015  
ITEM: LH2 ENGINE INLET PRESSURE TRANSDUCER.  
(V41P1200C, V41P1100C, V41P1300C).

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RUPTURE/LEAKAGE.

THIS FAILURE MODE IS COVERED BY FMEA 0417-2. BY NSTS-22206, SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA. THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES, ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

REPORT DATE 19 SEPTEMBER 1988 C.16-445

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9017X  
NASA FMEA #: 0721-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9017  
ITEM: LH2 17 INCH FEELINE MANIFOLD DISCONNECT PRESSURE  
TRANSDUCER (V41P1433C).

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RUPTURE/LEAKAGE OF THE TRANSDUCER BODY.  
THIS FAILURE MODE IS COVERED BY FMEA 0415-2. BY NSTS-22206,  
SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9018X  
NASA FMEA #: 0722-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9018  
ITEM: LO2 ENGINE INLET PRESSURE TRANSDUCER  
(V41P1130C), V41P1230C, V41P1330C)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RUPTURE/LEAKAGE  
THIS FAILURE MODE IS COVERED BY FMEA 0420-2. BY NSTS-22206,  
SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9020X		BASELINE [    ]
NASA FMEA #: 0723-2		NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9020  
ITEM: LO2 17 INCH FEEDLINE MANIFOLD DISCONNECT  
PRESSURE TRANSDUCER (V41P1533C)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ]	[    ]	[    ]	[    ]	[ D ] (ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

RUPTURE/LEAKAGE OF THE TRANSDUCER BODY.  
THIS FAILURE MODE IS COVERED BY FMEA 0418-2. BY NSTS-22206,  
SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9022X  
NASA FMEA #: 0724-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9022  
ITEM: LH2 17 INCH FEEDLINE MANIFOLD DISCONNECT  
TEMPERATURE TRANSDUCER (V41T1428A)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RUPTURE/LEAKAGE.

THIS FAILURE MODE IS COVERED BY FMEA 0415-2. BY NSTS-22206, SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA. THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES, ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

REPORT DATE 19 SEPTEMBER 1988 C.16-449

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9023X BASELINE [ ]  
 NASA FMEA #: 0724-3 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9023  
 ITEM: LH2 17 INCH FEEDLINE MANIFOLD DISCONNECT  
 TEMPERATURE TRANSDUCER (V41T1428A)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA CONCURS WITH NASA CRITICALITY AND SCREENS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9025X  
NASA FMEA #: 0725-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9025  
ITEM: LH2 ENGINE INLET TEMPERATURE TRANSDUCER  
(V41T1101C, V41T1201C, V41T1301C).

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [    ] [    ] [    ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RUPTURE/LEAKAGE.

THIS FAILURE MODE IS COVERED BY FMEA 0417-2. BY NSTS-22206, SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA. THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES, ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

REPORT DATE 19 SEPTEMBER 1988 C.16-451

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9026X		BASELINE [    ]
NASA FMEA #: 0725-3		NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9026  
ITEM: LH2 ENGINE INLET TEMPERATURE TRANSDUCER  
(V41T1101C, V41T1201C, V41T1301C)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ACCEPTS RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9028X  
NASA FMEA #: 0726-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9028  
ITEM: LO2 ENGINE INLET TEMPERATURE TRANSDUCER  
(V41T1131C, V41T1231C, V41T1331C).

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RUPTURE/LEAKAGE.  
THIS FAILURE MODE IS COVERED BY FMEA 0420-2. BY NSTS-22206,  
SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9029X BASELINE [    ]  
 NASA FMEA #: 0726-3 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9029  
 ITEM: LO2 ENGINE INLET TEMPERATURE TRANSDUCER  
 (V41T1131C, V41T1231C, V41T1331C)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
	A	B	C	D	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA CONCURS WITH NASA CRITICALTY AND SCREENS.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9031X  
NASA FMEA #: 0727-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9031  
ITEM: LO2 17 INCH MANIFOLD DISCONNECT TEMPERATURE "A"  
TRANSDUCER (V41T1528A)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RUPTURE/LEAKAGE.

THIS FAILURE MODE IS COVERED BY FMEA 0418-2. BY NSTS-22206, SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA. THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES, ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

REPORT DATE 19 SEPTEMBER 1988 C.16-455

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9032X		BASELINE [    ]
NASA FMEA #: 0727-3		NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9032  
ITEM: LO2 17 INCH FEEDLINE MANIFOLD DISCONNECT  
TEMPERATURE "A" TRANSDUCER (V41T1528A)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ]      [ ]      [ ]      [ ]      [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA CONCURS WITH NASA CRITICALTY AND SCREENS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9034X  
NASA FMEA #: 0728-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9034  
ITEM: LO2 17 INCH FEEDLINE MANIFOLD DISCONNECT  
TEMPERATURE "B" TRANSDUCER (V41T1527A)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [ D ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RUPTURE/LEAKAGE.  
THIS FAILURE MODE IS COVERED BY FMEA 0418-2. BY NSTS-22206,  
SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9035X		BASELINE [    ]
NASA FMEA #: 0728-3		NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9035  
ITEM: LO2 17 INCH FEEDLINE MANIFOLD DISCONNECT  
TEMPERATURE "B" TRANSDUCER (V41T1527A)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ]    [ ]    [ ]    [ ]    [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA CONCURS WITH NASA CRITICALTY AND SCREENS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9036X  
NASA FMEA #: 0729-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9036  
ITEM: LH2 RECIRC MANIFOLD PRESSURE TRANSDUCER  
(V41P9000A)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RUPTURE/LEAKAGE OF THE TRANSDUCER BODY.  
THIS FAILURE MODE IS COVERED BY FMEA 0309-2. BY NSTS-22206,  
SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9037X		BASELINE [    ]
NASA FMEA #: 0730-2		NEW [ X ]
SUBSYSTEM: MPS		
MDAC ID: 9037		
ITEM: LH2 FILL AND DRAIN LINE PRESSURE TRANSDUCER (V41P9407A)		
LEAD ANALYST: W. J. MCNICOLL		

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[ D ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

RUPTURE/LEAKAGE OF THE TRANSDUCER BODY.  
THIS FAILURE MODE IS COVERED BY FMEA 0308-2. BY NSTS-22206,  
SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9038X  
NASA FMEA #: 0731-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9038  
ITEM: LO2 BLEEDLINE PRESSURE TRANSDUCER (V41P9108A,  
V41P9208A, V41P9308A)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RUPTURE/LEAKAGE OF THE TRANSDUCER BODY.  
THIS FAILURE MODE IS COVERED BY FMEA 0428-1. BY NSTS-22206,  
SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9039X BASELINE [    ]  
 NASA FMEA #: 0732-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9039  
 ITEM: LO2 FILL AND DRAIN LINE PRESSURE TRANSDUCER  
 (V41P9408A)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ]      [    ]      [    ]      [    ]      [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RUPTURE/LEAKAGE OF THE TRANSDUCER BODY.  
 THIS FAILURE MODE IS COVERED BY FMEA 0307-2. BY NSTS-22206,  
 SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
 OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9040X  
NASA FMEA #: 0733-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9040  
ITEM: LH2 RECIRCULATION LINE TEMPERATURE (V41T9104A,  
V41T9204A, V41T9304A) AND MANIFOLD TEMPERATURE (V1T9409A)  
TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RUPTURE/LEAKAGE OF THE TRANSDUCER BODY.  
THIS FAILURE MODE IS COVERED BY FMEA 0309-2. BY NSTS-22206,  
SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:	NASA DATA:
ASSESSMENT ID: MPS-9041X	BASELINE [    ]
NASA FMEA #: 0733-3	NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9041  
 ITEM: LH2 RECIRCULATION LINE TEMPERATURE (V41T9104A,  
 V41T9204A, V41T9304A) AND MANIFOLD TEMPERATURE (V41T9409A)  
 TRANSDUCER

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ]	[ ]	[ ]	[ ]	[ ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

IOA CONCURS WITH NASA CRITICALTY AND SCREENS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9042X BASELINE [    ]  
 NASA FMEA #: 0734-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9042  
 ITEM: LH2 ENGINE INLET PRESSURE TRANSDUCER (V41P9196A,  
 V41P9292A, V41P9396A)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[   /   ]	[   ]	[   ]	[   ]	[   ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]    [   ]    [   ]    [   ]    [ D ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RUPTURE/LEAKAGE OF THE TRANSDUCER BODY.  
 THIS FAILURE MODE IS COVERED BY FMEA 0417-2. BY NSTS-22206,  
 SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
 OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:

ASSESSMENT ID: MPS-9043X  
NASA FMEA #: 0735-2

NASA DATA:

BASELINE [    ]  
NEW [ X ]

SUBSYSTEM:

MPS  
MDAC ID: 9043  
ITEM: LO2 ENGINE INLET PRESSURE TRANSDUCER (V41P9195A,  
V41P9295A, V41P9395A)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

RUPTURE/LEAKAGE OF THE TRANSDUCER BODY.  
THIS FAILURE MODE IS COVERED BY FMEA 0420-2. BY NSTS-22206,  
SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9044X BASELINE [    ]  
 NASA FMEA #: 0736-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9044  
 ITEM: LO2 BLEED TEMPERATURE TRANSDUCER (V41P9109A,  
 V41P9209A, V41P9309A)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ D ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

RUPTURE/LEAKAGE OF THE TRANSDUCER BODY.  
 THIS FAILURE MODE IS COVERED BY FMEA 0428-1. BY NSTS-22206,  
 SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
 OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9045X		BASELINE [    ]
NASA FMEA #: 0736-3		NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9045  
ITEM: LO2 BLEED TEMPERATURE TRANSDUCER (V41T9109A,  
V41T9209A, V41T9309A)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA CONCURS WITH NASA CRITICALTY AND SCREENS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9046X  
NASA FMEA #: 0737-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9046  
ITEM: LO2 POGO ACCUMULATOR RECIRCULATION MANIFOLD  
TEMPERATURE TRANSDUCER (V41T9001A)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

RUPTURE/LEAKAGE OF THE TRANSDUCER BODY.  
THIS FAILURE MODE IS COVERED BY FMEA 0428-1. BY NSTS-22206,  
SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9047X		BASELINE [    ]
NASA FMEA #: 0737-3		NEW [ X ]
SUBSYSTEM: MPS		
MDAC ID: 9047		
ITEM: LO2 POGO ACCUMULATOR RECIRCULATION MANIFOLD		
TEMPERATURE (V41T9001A)		
LEAD ANALYST: W. MCNICOLL		

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ]	[ ]	[ ]	[ ]	[ ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[ X ]
INADEQUATE	[    ]

REMARKS:

IOA CONCURS WITH NASA CRITICALTY AND SCREENS.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9048X BASELINE [ ]  
 NASA FMEA #: 0738-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9048  
 ITEM: LH2 HIGH POINT BLEED TEMPERATURE TRANSDUCER  
 (V41T9435A)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

RUPTURE/LEAKAGE OF THE TRANSDUCER BODY.  
 THIS FAILURE MODE IS COVERED BY FMEA 0429-2. BY NSTS-22206,  
 SECT. 2.3.3.i, THIS FAILURE MODE SHOULD BY COVERED BY COMPONENT  
 OR LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FMEA.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9049X BASELINE [    ]  
 NASA FMEA #: 0738-3 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9049  
 ITEM: LH2 HIGH POINT BLEED TEMPERATURE TRANSDUCER  
 (V41T9435A)

LEAD ANALYST: W. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA CONCURS WITH NASA CRITICALTY AND SCREENS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: \_\_\_\_\_ NASA DATA:  
 ASSESSMENT ID: MPS-9050X BASELINE [ ]  
 NASA FMEA #: 0238-6 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9050  
 ITEM: PNEUMATIC HELIUM SUPPLY ISOLATION VALVES (LV7,8)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

FAIL MODE: EXTERNAL LEAKAGE THROUGH VENT PORT.  
 IOA ACCEPTS THE RI/NASA RESULT BASED ON THEIR BROAD  
 INTERPRETATION OF REDUNDANCY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9051X BASELINE [    ]  
 NASA FMEA #: 0660-1 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9051  
 ITEM: MAIN ENGINE THRUST CHAMBER PRESSURE METER (Pc)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

FAIL MODE: INACCURATE READING.  
 RI/NASA DELETED THIS ITEM FROM THE CIL BEFORE FINAL PUBLICATION.  
 IOA HAS NO ISSUE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9053X BASELINE [    ]  
 NASA FMEA #: 0720-1 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9053  
 ITEM: LH2 ENGINE INLET PRESSURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

FAIL MODE: ERRONEOUS INDICATION - SHIFTS HIGH.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9058X BASELINE [    ]  
 NASA FMEA #: 0740-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9058  
 ITEM: GH2 PRESSURIZATION OUTLET PRESSURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ D ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE OF THE TRANSDUCER BODY.  
 THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0506-1. UNDER NSTS  
 22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
 IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9060X BASELINE [    ]  
 NASA FMEA #: 0741-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9060  
 ITEM: ENGINE HELIUM SUPPLY PRESSURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE OF THE TRANSDUCER BODY.  
 THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0252-1. UNDER NSTS  
 22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
 IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9061X BASELINE [    ]  
 NASA FMEA #: 0742-1 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9061  
 ITEM: PNEUMATIC HELIUM SUPPLY PRESSURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 FAIL MODE: ERRONEOUS OUTPUT, READS HIGH.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9062X BASELINE [ ]  
 NASA FMEA #: 0742-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9062  
 ITEM: PNEUMATIC HELIUM SUPPLY PRESSURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE OF TRANSDUCER BODY.  
 THIS FAILURE MODE IS COVERED UNDER MPS-4620 BY IOA. UNDER NSTS  
 22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
 IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9064X BASELINE [   ]  
 NASA FMEA #: 0743-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9064  
 ITEM: ENGINE HELIUM REGULATOR OUTLET PRESSURE  
 TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY	REDUNDANCY SCREENS			CIL
	FLIGHT HDW/FUNC	A	B	C	ITEM
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[   ] *
IOA	[   /   ]	[   ]	[   ]	[   ]	[   ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]   [   ]   [   ]   [   ]   [ D ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
 INADEQUATE [   ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE OF TRANSDUCER BODY.  
 THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0111-1. UNDER NSTS  
 22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
 IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: \_\_\_\_\_ NASA DATA:  
 ASSESSMENT ID: MPS-9065X BASELINE [    ]  
 NASA FMEA #: 0744-1 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9065  
 ITEM: PNEUMATIC SYSTEM REGULATOR OUTLET PRESSURE  
 TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ] [    ] [    ] [    ] [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

FAIL MODE: ERRONEOUS OUTPUT. FALSE INDICATION WITHIN LIMITS.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9066X  
NASA FMEA #: 0744-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9066  
ITEM: PNEUMATIC SYSTEM REGULATOR OUTLET PRESSURE  
TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE OF TRANSDUCER BODY.  
THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0114-1. UNDER NSTS  
22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9067X BASELINE [    ]  
 NASA FMEA #: 0745-1 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9067  
 ITEM: PNEUMATIC ACCUMULATOR PRESSURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

FAIL MODE: ERRONEOUS OUTPUT, READS HIGH.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9068X BASELINE [ ]  
 NASA FMEA #: 0745-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9068  
 ITEM: PNEUMATIC ACCUMULATOR PRESSURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE OF TRANSDUCER BODY.  
 THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0110-1. UNDER NSTS  
 22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
 IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9070X BASELINE [    ]  
 NASA FMEA #: 0746-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9070  
 ITEM: GH2 PRESSURIZATION LINE PRESSURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE OF TRANSDUCER BODY.  
 THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0508-1. UNDER NSTS  
 22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
 IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID:	MPS-9072X	BASELINE [    ]
NASA FMEA #:	0747-2	NEW [ X ]
SUBSYSTEM:	MPS	
MDAC ID:	9072	
ITEM:	GO2 PRESSURIZATION LINE PRESSURE TRANSDUCER	
LEAD ANALYST:	W. J. MCNICOLL	

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[ D ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE OF TRANSDUCER BODY.  
 THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0509-1. UNDER NSTS  
 22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
 IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9074X BASELINE [    ]  
 NASA FMEA #: 0748-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9074  
 ITEM: GO2 PRESSURIZATION OUTLET TEMPERATURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE OF TRANSDUCER BODY.  
 THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0507-1. UNDER NSTS  
 22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
 IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9075X BASELINE [ ]  
 NASA FMEA #: 0748-3 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9075  
 ITEM: GO2 PRESSURIZATION OUTLET TEMPERATURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

FAIL MODE: PROBE STRUCTURAL FAILURE.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9077X BASELINE [    ]  
 NASA FMEA #: 0749-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9077  
 ITEM: ENGINE HELIUM SUPPLY TEMPERATURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ D ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE OF TRANSDUCER BODY.  
 THIS FAILURE MODE IS ALREADY COVERED BY FMEAs 0203-1 AND 0256-1.  
 UNDER NSTS 22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE  
 LEAKAGE. IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9078X		BASELINE [    ]
NASA FMEA #: 0749-3		NEW [ X ]
SUBSYSTEM: MPS		
MDAC ID: 9078		
ITEM: ENGINE HELIUM SUPPLY TEMPERATURE TRANSDUCER		
LEAD ANALYST: W. J. MCNICOLL		

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:  
 FAIL MODE: PROBE STRUCTURAL FAILURE.  
 RI/NASA CREATED THIS FMEA AFTER AFTER THE IOA INTERIM REPORT WAS COMPLETED. NO CIL ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9080X BASELINE [    ]  
 NASA FMEA #: 0750-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9080  
 ITEM: PNEUMATIC HELIUM SUPPLY TEMPERATURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ D ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE OF TRANSDUCER BODY.  
 THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0237-2. UNDER NSTS 22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
 IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES, ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9081X BASELINE [    ]  
 NASA FMEA #: 0750-3 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9081  
 ITEM: PNEUMATIC HELIUM SUPPLY TEMPERATURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

FAIL MODE: PROBE STRUCTURAL FAILURE.  
 RI/NASA CREATED THIS FMEA AFTER THE IOA INTERIM REPORT WAS  
 COMPLETED. NO CIL ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9082X BASELINE [    ]  
 NASA FMEA #: 0751-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9082  
 ITEM: HELIUM INTERFACE PRESSURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ D ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE OF TRANSDUCER BODY.  
 THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0235-1. UNDER NSTS 22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
 IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES, ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9083X  
NASA FMEA #: 0752-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9083  
ITEM: LH2 REPRESSURIZATION REGULATOR OUTLET PRESSURE  
TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE OF TRANSDUCER BODY.  
THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0633-1. UNDER NSTS  
22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9084X BASELINE [   ]  
 NASA FMEA #: 0753-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9084  
 ITEM: LO2 REPRESSURIZATION MANIFOLD PRESSURE  
 TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[   ] *
IOA	[   /   ]	[   ]	[   ]	[   ]	[   ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]   [   ]   [   ]   [   ]   [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
 INADEQUATE [   ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE OF TRANSDUCER BODY.  
 THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0604-1. UNDER NSTS  
 22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
 IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9085X  
NASA FMEA #: 0754-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9085  
ITEM: HELIUM INTERFACE TEMPERATURE TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE.  
THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0235-1. UNDER NSTS 22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE. IOA RECOMMENDS DELETION OF THIS FAILURE MODE. THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES, ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9086X		BASELINE [    ]
NASA FMEA #: 0754-3		NEW [ X ]

SUBSYSTEM:           MPS  
MDAC ID:             9086  
ITEM:                 HELIUM INTERFACE TEMPERATURE TRANSDUCER

LEAD ANALYST:       W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS A	B	C	CIL ITEM
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS:   (If different from NASA)

[    /    ]      [    ]      [    ]      [    ]      [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAIL MODE:   PROBE STRUCTURAL FAILURE.  
LOSS OF HELIUM PURGE SHOULD RESULT IN A SAFE MAIN ENGINE SHUTDOWN  
(NSTS 22206 2.3.2d). RESULTS IN LOSS OF MISSION. NSTS 22206  
2.3.31 REQUIRES FUNCTIONAL CRITICALITY ASSIGNMENT OF 1R.  
IOA ACCEPTS THE RI/NASA RESULT ON THE BASIS OF LOSS OF ENGINE  
STARTUP/SHUTDOWN FUNCTIONS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9087X  
NASA FMEA #: 0755-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9087  
ITEM: GO2 PRESSURIZATION DISCONNECT TEMPERATURE  
TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ D ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE.  
THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0509-1. UNDER NSTS  
22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9088X		BASELINE [    ]
NASA FMEA #: 0755-3		NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9088  
ITEM: GO2 PRESSURIZATION DISCONNECT TEMPERATURE  
TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

FAIL MODE: PROBE STRUCTURAL FAILURE.  
IOA ACCEPTS THE 1/1 FOR RTLS AND TAL ABORTS.  
PROPULSIVE VENTING THROUGH THE OPEN GO2 PRESSURIZATION DISCONNECT  
MAY, DEPENDING ON PLACEMENT AND ORIENTATION, AID THE TUMBLE  
SYSTEM RATHER THAN REDUCE ITS EFFECTIVENESS. LEAKAGE OF GO2 INTO  
THE DISCONNECT CAVITY AFTER MECO IS NOT HAZARDOUS.  
SEE 0513-2.  
IOA ACCEPTS THE RI/NASA RESULT AS THE WORST POSSIBLE OUTCOME,  
PENDING A MORE DETAILED ANALYSIS TO ACCURATELY DETERMINE THE  
FEASIBILITY OF THE STATED RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9089X BASELINE [    ]  
 NASA FMEA #: 0756-2 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9089  
 ITEM: GH2 PRESSURIZATION DISCONNECT TEMPERATURE  
 TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY	REDUNDANCY SCREENS			CIL ITEM
	FLIGHT HDW/FUNC	A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ D ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

FAIL MODE: RUPTURE/LEAKAGE.  
 THIS FAILURE MODE IS ALREADY COVERED BY FMEA 0508-1. UNDER NSTS  
 22206 2.3.3i, THIS FAILURE MODE IS COVERED UNDER LINE LEAKAGE.  
 IOA RECOMMENDS DELETION OF THIS FAILURE MODE.  
 THE SUBSYSTEM MANAGER, VIA HIS DESIGNATED ALTERNATE, J. BORCHES,  
 ACCEPTED THE IOA RECOMMENDATION DURING A MEETING ON 8-30-88.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:	NASA DATA:
ASSESSMENT ID: MPS-9090X	BASELINE [    ]
NASA FMEA #: 0756-3	NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9090  
ITEM: GH2 PRESSURIZATION DISCONNECT TEMPERATURE  
TRANSDUCER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS	CIL ITEM	
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[    ]	[    ]	[    ]	[    ]
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:

FAIL MODE: PROBE STRUCTURAL FAILURE.  
IOA ACCEPTS THE 1/1 FOR RTLS AND TAL ABORTS.  
PROPULSIVE VENTING THROUGH THE OPEN GH2 PRESSURIZATION DISCONNECT  
MAY, DEPENDING ON PLACEMENT AND ORIENTATION, AID THE TUMBLE  
SYSTEM RATHER THAN REDUCE ITS EFFECTIVENESS. LEAKAGE OF GH2 INTO  
THE DISCONNECT CAVITY AFTER MECO IS NOT HAZARDOUS.  
SEE 0503-5.  
IOA ACCEPTS THE RI/NASA RESULT AS THE WORST POSSIBLE OUTCOME,  
PENDING A MORE DETAILED ANALYSIS TO ACCURATELY DETERMINE THE  
FEASIBILITY OF THE STATED RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9091X BASELINE [    ]  
 NASA FMEA #: 0763-1 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9091  
 ITEM: PNEUMATIC SYSTEM CONTROL PANEL & TANK ISOLATOR

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:  
 FAIL MODE: FAIL TO DAMPEN STRUCTURAL VIBRATION.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID:	MPS-9092X	BASELINE [    ]
NASA FMEA #:	0764-1	NEW [ X ]

SUBSYSTEM:           MPS  
MDAC ID:             9092  
ITEM:                 HPOT PURGE INSTALLATION VIBRATION MOUNT

LEAD ANALYST:       W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS		CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS:   (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

FAIL MODE:   FAIL TO ISOLATE SUPPLY LINES FROM HIGH ENERGY  
VIBRATION.

IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9094X  
NASA FMEA #: 0766-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9094  
ITEM: INVAR SPACER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[   ]	[   ]	[   ]	[   ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [   ] [   ] [   ] [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
INADEQUATE [   ]

REMARKS:

FAIL MODE: FAIL TO MAINTAIN INTERFACE PRELOAD DURING THERMAL  
CHANGES.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9095		BASELINE [    ]
NASA FMEA #: 0767-1		NEW [ X ]
SUBSYSTEM: MPS		
MDAC ID: 9095		
ITEM: HEAT SHIELD MATCHED SET		
LEAD ANALYST: W. J. MCNICOLL		

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

FAIL MODE: FAIL TO PROTECT SSME POWERHEAD AND AFT FUSELAGE FROM HOT GASES AND RADIANT HEAT.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:	NASA DATA:
ASSESSMENT ID: MPS-9096	BASELINE [    ]
NASA FMEA #: 0768-1	NEW [ X ]
SUBSYSTEM: MPS	
MDAC ID: 9096	
ITEM: LH2/LO2 17 INCH MANIFOLD FORWARD STRUT ASSEMBLY	
LEAD ANALYST: W. J. MCNICOLL	

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

FAIL MODE: FAIL TO RESTRAIN MANIFOLD IN Z AND Y VEHICLE AXES.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9097  
NASA FMEA #: 0769-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9097  
ITEM: WASHER

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAIL MODE: FAIL TO ROTATE DURING BOLT TORQUING.  
RI/NASA CREATED THIS CIL AFTER THE IOA INTERIM REPORT WAS  
COMPLETE. NO CIL ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9098  
NASA FMEA #: 0770-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9098  
ITEM: LH2 RECIRCULATION RETURN SYSTEM 4-INCH  
DISCONNECT SPHERICAL BEARING

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

FAIL MODE: FAIL TO ALLOW AND MAINTAIN PROPER ALIGNMENT OF  
RECIRCULATION RETURN DISCONNECT.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9099 BASELINE [ ]  
 NASA FMEA #: 0771-1 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9099  
 ITEM: LO2/LH2 RECIRCULATION RETURN SYSTEM 2-INCH  
 DISCONNECT SPHERICAL BEARINGS

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

FAIL MODE: FAILURE TO ALLOW AND MAINTAIN PROPER ALIGNMENT OF  
 PRESSURIZATION DISCONNECT.  
 IOA ACCEPTS THE RI/NASA RESULT.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9100		BASELINE [    ]
NASA FMEA #: 0772-1		NEW [ X ]
SUBSYSTEM: MPS		
MDAC ID: 9100		
ITEM: LH2 PRESSURIZATION CONDITION RETURN SYSTEM MOUNT		
ASSEMBLY		
LEAD ANALYST: W. J. MCNICOLL		

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

FAIL MODE: FAILURE TO RESTRAIN LINE ASSEMBLY IN NON-AXIAL DIRECTION AND MINIMIZE MOVEMENT IN AXIAL DIRECTION.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:

ASSESSMENT ID: MPS-9101  
NASA FMEA #: 0773-1

NASA DATA:

BASELINE [    ]  
NEW [ X ]

SUBSYSTEM:

MPS  
MDAC ID: 9101  
ITEM: GH2/GO2 PRESSURIZATION MANIFOLD ASSEMBLY SLIDING MOUNT

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

FAIL MODE: FAIL TO ALLOW THERMAL EXPANSION/CONTRACTION.  
IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: NASA DATA:  
 ASSESSMENT ID: MPS-9102 BASELINE [   ]  
 NASA FMEA #: 0774-1 NEW [ X ]

SUBSYSTEM: MPS  
 MDAC ID: 9102  
 ITEM: PNEUMATIC SYSTEM CONTROL PANEL 3/8, 1/2 AND 3/4  
 INCH LINE SUPPORT ADAPTER CLAMP ASSEMBLIES

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[   /   ]	[   ]	[   ]	[   ]	[   ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]   [   ]   [   ]   [   ]   [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
 INADEQUATE [   ]

REMARKS:

FAIL MODE: FAIL TO PREVENT LINE FROM SLIDING IN THE AXIAL  
 DIRECTION OR RESTRAIN THE LINE FROM MOVING IN ANY OTHER  
 DIRECTION.  
 IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:		NASA DATA:
ASSESSMENT ID: MPS-9103X		BASELINE [    ]
NASA FMEA #: 0427-1		NEW [ X ]
SUBSYSTEM: MPS		
MDAC ID: 9103		
ITEM: LO2/LH2 POINT LEVEL SENSORS AND ELECTRONICS		
LEAD ANALYST: W. J. MCNICOLL		

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 1 / 1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ] *
IOA	[    /    ]	[    ]	[    ]	[    ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ACCEPTS THE RI/NASA RESULT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: MPS-9104X  
NASA FMEA #: 0431-12

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: MPS  
MDAC ID: 9104  
ITEM: GH2 HIGH POINT BLEED VALVE (PV22)

LEAD ANALYST: W. J. MCNICOLL

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

LOSS OF POSITION INDICATION. CLOSED INDICATION FAILS ON.  
IOA ACCEPTS THE RI/NASA RESULT.



SECTION C.17  
ORBITAL MANEUVERING SUBSYSTEM

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-102  
 NASA FMEA #: 03-3-1002-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 102  
 ITEM: COUPLING, HELIUM FILL

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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 ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA/RI ORIGINALLY PASSED A SCREEN. HOWEVER, DURING MEETING BETWEEN IOA AND SSM, IT WAS AGREED THAT THE A SCREEN SHOULD BE FAILED FOR ALL QD COUPLINGS BASED ON INABILITY TO VERIFY CONDITION OF CAP SEAL AFTER CAP INSTALLATION. IOA AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE AND IS ADDRESSED ON RCS QD COUPLING FMEAS. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS ABOUT POSSIBLE VIOLATIONS OF ORBITER MASS PROPERTIES CONSTRAINTS DURING ENTRY.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" 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: OMS-111  
 NASA FMEA #: 03-3-1003-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 111  
 ITEM: VALVE, HELIUM ISOLATION

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ F ] [ F ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

NASA/RI ORIGINALLY DID NOT COVER THIS FAILURE MODE (RESTRICTED FLOW). HOWEVER, NASA/RI ADDED "RESTRICTED FLOW" TO THE FAILURE MODES ON 03-3-1003-2 (FAILS CLOSED). IOA RECOMMENDS THAT "RESTRICTED FLOW" BE PLACED ON A NEW FMEA SEPARATE FROM "FAILS CLOSED", AND THAT THE B AND C SCREENS BE FAILED. A FLOW RESTRICTION DURING DUAL-LEG OPERATION WOULD NOT BE DETECTABLE (FAIL B SCREEN). ALSO, ANY CONTAMINATION CAN AFFECT BOTH VALVES SIMULTANEOUSLY (FAIL C SCREEN).

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. RESTRICTED FLOW THROUGH ONE VALVE WOULD NOT BE DETECTABLE WHEN BOTH ISOLATION VALVES ARE OPEN DURING OMS BURNS (OMS-1 AND OMS-2), HOWEVER, THESE PARALLEL VALVES ARE USED SINGLY FOR PAD PRE-PRESS AND FOR OMS BURNS AFTER OMS-2. THEREFORE, RESTRICTED FLOW THROUGH ONE VALVE WOULD BE DETECTABLE BEFORE LAUNCH OR AT SOME POINT DURING A MISSION (AFTER OMS-2). HOWEVER, IOA RECOMMENDS FAILURE OF THE B SCREEN FOR PHASES IN WHICH BOTH VALVES ARE USED. IOA ACCEPTS C SCREEN PASSAGE BASED ON THE QUESTIONABLE CREDIBILITY OF CONTAMINATION SUFFICIENT TO BLOCK BOTH VALVES. HOWEVER, ANY UPSTREAM CONTAMINATION COULD AFFECT ALL REDUNDANCY.

REPORT DATE: 21 JULY 1988 C.17-3

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-113	BASELINE [    ]
NASA FMEA #: 03-3-1205-1	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 113  
ITEM: COUPLING-TEST PORT, HIGH PRESSURE HELIUM

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 ]	[ P ]	[ P ]	[    ]
COMPARE	[ / ]	[ N ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ F ]	[ F ]	[ P ]	[ A ] (ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

IOA AGREES WITH FAILURE OF A SCREEN BASED ON INABILITY TO VERIFY CONDITION OF CAP SEALS AFTER CAP INSTALLATION. IOA ALSO AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON RCS QD COUPLING FMEAS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-119  
 NASA FMEA #: 03-3-1004-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 119  
 ITEM: REGULATOR ASSEMBLY, HELIUM PRESSURE

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ F ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ F ]	[ 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 RECOMMENDS THAT THE B SCREEN BE FAILED. A FAILED CLOSED REGULATOR WOULD NOT BE DETECTABLE DURING DUAL-LEG OPERATION. IOA ACCEPTS NASA/RI FAILURE OF C SCREEN. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS ABOUT POSSIBLE VIOLATION OF THE PROPELLANT TANK LANDING CONSTRAINT.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. LOSS OF FLOW THROUGH ONE REGULATOR WOULD NOT BE DETECTABLE WHEN BOTH FLOW PATHS ARE OPEN DURING OMS BURNS (OMS-1 OMS-2), HOWEVER THE PARALLEL PATHS ARE USED SINGLY FOR PAD PRE-PRESS AND FOR BURNS AFTER OMS-2. THEREFORE, LOSS OF FLOW THROUGH ONE REGULATOR WOULD BE DETECTABLE BEFORE LAUNCH OR AT SOME POINT DURING THE MISSION (AFTER OMS-2). HOWEVER, IOA RECOMMENDS THAT THE B SCREEN BE FAILED FOR PHASES IN WHICH BOTH FLOW PATHS ARE USED SIMULTANEOUSLY.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-121  
 NASA FMEA #: 03-3-1004-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 121  
 ITEM: REGULATOR ASSEMBLY, HELIUM PRESSURE

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ F ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ F ]	[ 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 RECOMMENDS THAT THE B SCREEN BE FAILED. A FAILED CLOSED REGULATOR WOULD NOT BE DETECTABLE DURING DUAL-LEG OPERATION. IOA ACCEPTS NASA/RI FAILURE OF C SCREEN. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS ABOUT POSSIBLE VIOLATION OF THE PROPELLANT TANK LANDING CONSTRAINT.  
FINAL RESOLUTION: IOA WITHDRAWS ISSUE. LOSS OF FLOW THROUGH ONE REGULATOR WOULD NOT BE DETECTABLE WHEN BOTH FLOW PATHS ARE OPEN DURING OMS BURNS (OMS-1 OMS-2), HOWEVER THE PARALLEL PATHS ARE USED SINGLY FOR PAD PRE-PRESS AND FOR BURNS AFTER OMS-2. THEREFORE, LOSS OF FLOW THROUGH ONE REGULATOR WOULD BE DETECTABLE BEFORE LAUNCH OR AT SOME POINT DURING THE MISSION (AFTER OMS-2). HOWEVER, IOA RECOMMENDS THAT THE B SCREEN BE FAILED FOR PHASES IN WHICH BOTH FLOW PATHS ARE USED SIMULTANEOUSLY.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-127  
NASA FMEA #: 03-3-1006-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 127  
ITEM: VALVE, VAPOR ISOLATION-OXIDIZER

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 / 1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ / N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ 3 / 1R ] [ P ] [ F ] [ P ] [ A ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

WITH FAILED OPEN VAPOR ISOL VALVE AND SERIES OXID CHECK VALVE POPPETS, THE CONTAMINATION OF REGULATORS BY PROP COULD RESULT IN LOSS OF PROP TANK REPRESS CAPABILITY AND INABILITY TO USE/DEplete OMS PROP, OR OXID CROSSOVER TO THE FUEL SIDE COULD CAUSE A HYPERGOLIC REACTION IN THE LINES. FAILURE OF ONE LEG OF REDUNDANCY (CHECK VALVE POPPET) IS NOT DETECTABLE DURING FLIGHT (FAIL B SCREEN). FINAL RESOLUTION: IOA ACCEPTS 3/3 BASED ON INPUTS FROM J. HOOPER (OMS SSM) ON 5/17/88. 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. SSM DOES NOT CONSIDER MIXING OF PROPS A PROBLEM BECAUSE OF THE LONG LINE PATHS AND THE CREDIBILITY OF PROP CONCENTRATIONS HIGH ENOUGH TO CAUSE PROBLEM. SSM AGREED THAT IOA CONCERNS WERE NOT IMPOSSIBLE, BUT CONSIDERS THE PROBABILITY TO BE "INFINITESIMALLY SMALL". IOA STILL RECOMMENDS 1R/3 BASED ON ULTIMATE WORST CASE EFFECTS, BUT ACCEPTS SSM'S JUDGMENT. SINCE THESE FAILURES AND "PROP EXPOSURE" CAN CAUSE 1R EFFECTS (SEE 03-3-1003-2, 1004-2, 1006-2) THEY SHOULD BE CLASSIFIED AS 1R'S.

REPORT DATE: 21 JULY 1988 C.17-9





APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-133  
NASA FMEA #: 03-3-1007-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 133  
ITEM: VALVE, QUAD CHECK VALVES, FUEL

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ ]	[ ]	[ ]	[ ] *
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:

WITH FAILED OPEN FUEL CHECK VALVE POPPETS, THE CONTAMINATION OF REGULATORS BY PROP COULD RESULT IN LOSS OF PROP TANK REPRESS CAPABILITY AND INABILITY TO USE/DEplete OMS PROP, OR FUEL CROSSOVER TO THE OXID SIDE COULD CAUSE A HYPERGOLIC REACTION IN THE LINES. FAILURE OF ONE POPPET IS NOT DETECTABLE DURING FLIGHT (FAIL B SCREEN).

FINAL RESOLUTION: IOA ACCEPTS 3/3 BASED ON INPUTS FROM J. HOOPER (OMS SSM) ON 5/17/88. 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. SSM DOES NOT CONSIDER MIXING OF PROPS TO BE A PROBLEM BECAUSE OF THE LONG LINE PATHS AND THE QUESTIONABLE CREDIBILITY OF PROP CONCENTRATIONS HIGH ENOUGH TO CAUSE PROBLEM. SSM AGREED THAT IOA CONCERNS WERE NOT IMPOSSIBLE, BUT CONSIDERS THE PROBABILITY TO BE "INFINITESIMALLY SMALL". IOA STILL RECOMMENDS 1R/2 BASED ON ULTIMATE WORST CASE POSSIBLE EFFECTS, BUT ACCEPTS SSM'S JUDGMENT. SINCE THESE FAILURES AND "PROP EXPOSURE" CAN CAUSE 1R EFFECTS (SEE 03-3-1003-2, 1004-2, 1006-2) THEY SHOULD BE CLASSIFIED AS 1R'S.

REPORT DATE: 21 JULY 1988 C.17-11



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-137  
 NASA FMEA #: 03-3-1205-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 137  
 ITEM: COUPLING-TEST PORT, QUAD CHECK VALVE

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 FAILURE OF A SCREEN BASED ON INABILITY TO VERIFY CONDITION OF CAP SEALS AFTER CAP INSTALLATION. IOA ALSO AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON RCS QD COUPLING FMEAS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-150  
NASA FMEA #: 03-3-2001-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 150  
ITEM: COUPLING-TEST PORT, PROPELLANT PRESSURE CHECK

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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 ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

NASA/RI DID NOT APPEAR TO COVER THIS COUPLING ORIGINALLY. HOWEVER, THE REF DES NUMBERS FOR THIS COUPLING (MD405, 406, 505, 506) HAVE BEEN ADDED TO 03-3-2001-1, PER IOA ISSUE. IOA AGREES WITH NASA/RI FAILURE OF A SCREEN BASED ON INABILITY TO VERIFY CONDITION OF CAP SEAL AFTER CAP INSTALLED. IOA ALSO AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON RCS QD COUPLING FMEAS. IOA ALSO RECOMMENDS THAT THE EFFECTS INCLUDE POSSIBLE VIOLATIONS OF ORBITER ENTRY MASS PROPERTIES CONSTRAINTS AND PROP TANK LANDING WEIGHT CONSTRAINTS, AND POSSIBLE PROP LEAKAGE RESULTING IN CONTAMINATION, FIRE, EXPLOSION, AND EXPOSURE OF EVA AND GROUND CREWS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.17-15

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-156  
NASA FMEA #: 03-3-2001-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 156  
ITEM: COUPLING-TANK VENT

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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 ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

NASA/RI ORIGINALLY PASSED A SCREEN. HOWEVER, DURING MEETING BETWEEN IOA AND SSM, IT WAS AGREED THAT THE A SCREEN SHOULD BE FAILED FOR ALL QD COUPLINGS BASED ON INABILITY TO VERIFY CONDITION OF CAP SEAL AFTER CAP INSTALLATION. IOA AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON RCS QD COUPLING FMEAS. IOA ALSO RECOMMENDS THAT THE EFFECTS INCLUDE POSSIBLE VIOLATIONS OF ORBITER ENTRY MASS PROPERTIES CONSTRAINTS AND PROP TANK LANDING WEIGHT CONSTRAINTS, AND POSSIBLE PROP LEAKAGE RESULTING IN CONTAMINATION, FIRE, EXPLOSION, AND EXPOSURE OF EVA AND GROUND CREWS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988      C.17-16

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-165  
NASA FMEA #: 03-3-2009-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 165  
ITEM: COUPLING-PROP TANK, HORIZONTAL DRAIN PORT

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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 ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

NASA/RI DID NOT APPEAR TO COVER THIS COUPLING ORIGINALLY. HOWEVER, THE REF DES NUMBERS FOR THIS COUPLING (MD479, 480, 579, 580) HAVE BEEN ADDED TO 03-3-2009-1, PER IOA ISSUE. IOA AGREES WITH NASA/RI FAILURE OF A SCREEN BASED ON INABILITY TO VERIFY CONDITION OF CAP SEAL AFTER CAP INSTALLATION. IOA ALSO AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON RCS QD COUPLING FMEAS. IOA ALSO RECOMMENDS THAT A STATEMENT BE ADDED TO THE EFFECTS ABOUT POSSIBLE CORROSION, FIRE, EXPLOSION, AND EXPOSURE OF EVA AND GROUND CREWS DUE TO PROP LEAKAGE.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988      C.17-17

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-168	BASELINE [    ]
NASA FMEA #: 03-3-2001-1	NEW [ X ]
SUBSYSTEM: OMS	
MDAC ID: 168	
ITEM: COUPLING-TANK ACQ. SYSTEM TRAP FILL/VENT PORT	
LEAD ANALYST: C.D. PRUST	

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ F ]	[ F ]	[ P ]	[    ] *
IOA	[ 2 /1R ]	[ P ]	[ NA ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ]	[ F ]	[ F ]	[ P ]	[ A ] (ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

NASA/RI DID NOT APPEAR TO COVER THIS COUPLING ORIGINALLY. HOWEVER, THE REF DES NUMBERS FOR THIS COUPLING (MD426, 427, 526, 527) HAVE BEEN ADDED TO 03-3-2001-1, PER IOA ISSUE. IOA AGREES WITH NASA/RI FAILURE OF A SCREEN BASED ON INABILITY TO VERIFY CONDITION OF CAP SEAL AFTER CAP INSTALLED. IOA ALSO AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON RCS QD COUPLING FMEAS. IOA ALSO RECOMMENDS THAT THE EFFECTS INCLUDE POSSIBLE VIOLATIONS OF ORBITER ENTRY MASS PROPERTIES CONSTRAINTS AND PROP TANK LANDING WEIGHT CONSTRAINTS, AND POSSIBLE PROP LEAKAGE RESULTING IN CONTAMINATION, FIRE, EXPLOSION, AND EXPOSURE OF EVA AND GROUND CREWS.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988      C.17-18







APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-207  
 NASA FMEA #: 03-3-2009-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 207  
 ITEM: COUPLING - PROPELLANT LOW-POINT DRAIN

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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 ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

NASA/RI DID NOT APPEAR TO COVER THIS COUPLING ORIGINALLY. HOWEVER, THE REF DES NUMBERS FOR THIS COUPLING (MD469, 470, 569, 570) HAVE BEEN ADDED TO 03-3-2009-1, PER IOA ISSUE. IOA AGREES WITH NASA/RI FAILURE OF A SCREEN BASED ON INABILITY TO VERIFY CONDITION OF CAP SEAL AFTER CAP INSTALLATION. IOA ALSO AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON RCS QD COUPLING FMEAS. IOA ALSO RECOMMENDS THAT A STATEMENT BE ADDED TO THE EFFECTS ABOUT POSSIBLE CORROSION, FIRE, EXPLOSION, AND EXPOSURE OF EVA AND GROUND CREWS DUE TO PROP LEAKAGE.  
FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.17-21



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-213  
 NASA FMEA #: 03-3-2009-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 213  
 ITEM: COUPLING - PROPELLANT GROUND-PURGE

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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 ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

NASA/RI DID NOT APPEAR TO COVER THIS COUPLING ORIGINALLY. HOWEVER, THE REF DES NUMBERS FOR THIS COUPLING (MD461, 462, 561, 562) HAVE BEEN ADDED TO 03-3-2009-1, PER IOA ISSUE. IOA AGREES WITH NASA/RI FAILURE OF A SCREEN BASED ON INABILITY TO VERIFY CONDITION OF CAP SEAL AFTER CAP INSTALLATION. IOA ALSO AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON RCS QD COUPLING FMEAS. IOA ALSO RECOMMENDS THAT A STATEMENT BE ADDED TO THE EFFECTS ABOUT POSSIBLE CORROSION, FIRE, EXPLOSION, AND EXPOSURE OF EVA AND GROUND CREWS DUE TO PROP LEAKAGE.  
FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" 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: OMS-231  
 NASA FMEA #: 03-3-2001-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 231  
 ITEM: COUPLING - HIGH-POINT BLEED

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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 ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA/RI DID NOT APPEAR TO COVER THIS COUPLING ORIGINALLY. HOWEVER, THE REF DES NUMBERS FOR THIS COUPLING (MD667, 668) HAVE BEEN ADDED TO 03-3-2001-1, PER IOA ISSUE. IOA AGREES WITH NASA/RI FAILURE OF A SCREEN BASED ON INABILITY TO VERIFY CONDITION OF CAP SEAL AFTER CAP INSTALLED. IOA ALSO AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON RCS QD COUPLING FMEAS. IOA ALSO RECOMMENDS THAT THE EFFECTS INCLUDE POSSIBLE VIOLATIONS OF ORBITER ENTRY MASS PROPERTIES CONSTRAINTS AND PROP TANK LANDING WEIGHT CONSTRAINTS, AND POSSIBLE PROP LEAKAGE RESULTING IN CONTAMINATION, FIRE, EXPLOSION, AND EXPOSURE OF EVA AND GROUND CREWS.  
FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988      C.17-24

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-234  
NASA FMEA #: 03-3-2009-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 234  
ITEM: COUPLING-CROSSFEED DRAIN

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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 ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

NASA/RI DID NOT APPEAR TO COVER THIS COUPLING ORIGINALLY. HOWEVER, THE REF DES NUMBERS FOR THIS COUPLING (MD673, 674, 679, 686) HAVE BEEN ADDED TO 03-3-2009-1, PER IOA ISSUE. IOA AGREES WITH NASA/RI FAILURE OF A SCREEN BASED ON INABILITY TO VERIFY CONDITION OF CAP SEAL AFTER CAP INSTALLATION. IOA ALSO AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON RCS QD COUPLING FMEAS. IOA ALSO RECOMMENDS THAT A STATEMENT BE ADDED TO THE EFFECTS ABOUT POSSIBLE CORROSION, FIRE, EXPLOSION, AND EXPOSURE OF EVA AND GROUND CREWS DUE TO PROP LEAKAGE.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988 C.17-25





APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-253  
 NASA FMEA #: 03-3-4507-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 253  
 ITEM: COUPLING - HIGH-POINT BLEED TEST PORT

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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 ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA AGREES WITH NASA/RI FAILURE OF A SCREEN BASED ON INABILITY TO VERIFY CONDITION OF CAP SEAL AFTER CAP INSTALLATION. IOA ALSO AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON RCS QD COUPLING FMEAS. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS ABOUT POSSIBLE FIRE, EXPLOSION, AND EXPOSURE OF EVA AND GROUND CREWS DUE TO PROP LEAKAGE.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" 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: OMS-263  
NASA FMEA #: NONE

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 263  
ITEM: VALVE - BIPROP CAVITY PRESSURE RELIEF

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ X ] *
IOA	[ 3 / 3 ]	[ ]	[ ]	[ ]	[    ]
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 NOW CLASSIFIES THIS ITEM AND FAILURE MODE (RELIEF VALVE FAILS OPEN) AS A 2/1R PFP. IOA DID NOT CONSIDER DOWNSTREAM BIPROP VALVE TO BE REDUNDANT TO RELIEF VALVE IN ORIGINAL ANALYSIS. THIS ITEM AND FAILURE MODE ARE CURRENTLY ADDRESSED ONLY AS A CAUSE ON 03-3-4001-6. IOA RECOMMENDS A NEW 2/1R PFP FMEA FOR THIS ITEM AND FAILURE MODE TO ENSURE THAT THEY RECEIVE ADEQUATE ATTENTION.  
FINAL RESOLUTION: IOA WITHDRAWS ISSUE SINCE "INTERNAL LEAKAGE" OF THE RELIEF VALVE IS LISTED AS A FAILURE MODE ON 03-3-4001-6. THE EFFECTS OF "FAILS OPEN" ARE THE SAME AS A WORST-CASE "INTERNAL LEAKAGE". HOWEVER, IOA RECOMMENDS THAT THE "FAILS OPEN" MODE BE ADDRESSED ON THE FMEA/CIL EITHER AS A CAUSE ON 03-3-4001-6, OR ON A NEW FMEA AND CIL.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-267  
 NASA FMEA #: 03-3-4507-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 267  
 ITEM: COUPLING - BIPROP VALVE DRAIN/PURGE TEST PORT

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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 ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA AGREES WITH NASA/RI FAILURE OF A SCREEN BASED ON INABILITY TO VERIFY CONDITION OF CAP SEAL AFTER CAP INSTALLATION. IOA ALSO AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON RCS QD COUPLING FMEAS. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS ABOUT POSSIBLE FIRE, EXPLOSION, AND EXPOSURE OF EVA AND GROUND CREWS DUE TO PROP LEAKAGE.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" 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: OMS-273  
NASA FMEA #: 03-3-4507-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 273  
ITEM: COUPLING - BIPROP VALVE DRAIN PORT

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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 ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA AGREES WITH NASA/RI FAILURE OF A SCREEN BASED ON INABILITY TO VERIFY CONDITION OF CAP SEAL AFTER CAP INSTALLATION. IOA ALSO AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON RCS QD COUPLING FMEAS. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS ABOUT POSSIBLE FIRE, EXPLOSION, AND EXPOSURE OF EVA AND GROUND CREWS DUE TO PROP LEAKAGE.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS CIL FOR COMPLETENESS, HOWEVER CIL IS ADEQUATE WITHOUT THIS ADDITION.

REPORT DATE: 21 JULY 1988    C.17-32

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-277  
NASA FMEA #: 03-3-4507-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 277  
ITEM: COUPLING-OMS ENGINE TRICKLE PURGE PORT

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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 ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA AGREES WITH NASA/RI FAILURE OF A SCREEN BASED ON INABILITY TO VERIFY CONDITION OF CAP SEAL AFTER CAP INSTALLATION. IOA ALSO AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE MODE AND IS ADDRESSED ON RCS QD COUPLING FMEAS. IOA ALSO RECOMMENDS ADDING A STATEMENT TO THE EFFECTS ABOUT POSSIBLE FIRE, EXPLOSION, AND EXPOSURE OF EVA AND GROUND CREWS DUE TO PROP LEAKAGE.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" 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	NASA DATA:
ASSESSMENT ID: OMS-287	BASELINE [    ]
NASA FMEA #: 03-3-4502-1	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 287  
ITEM: COUPLING-GN2 TANK FILL/VENT

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	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ / ]	[ N ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ F ]	[ F ]	[ P ]	[ A ] (ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

NASA/RI ORIGINALLY PASSED A SCREEN. HOWEVER, DURING MEETING BETWEEN IOA AND SSM, IT WAS AGREED THAT THE A SCREEN SHOULD BE FAILED FOR ALL QD COUPLINGS BASED ON INABILITY TO VERIFY CONDITION OF CAP SEALS AFTER CAP INSTALLATION. IOA AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT "POPPET FAILS OPEN (DURING FLIGHT)" BE ADDED AS A FAILURE MODE ON THIS FMEA. THIS IS A CREDIBLE FAILURE AND IS ADDRESSED ON RCS QD COUPLING FMEAS.  
FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA MAINTAINS RECOMMENDATION THAT "POPPET FAILS OPEN (DURING FLIGHT)" 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: OMS-294  
 NASA FMEA #: 03-3-4511-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 294  
 ITEM: VALVE-GN2 TANK FILL/VENT

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ / ]	[    ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [    ] [    ] [    ] [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA AGREES WITH NASA/RI FAILURE OF B SCREEN. IOA RECOMMENDS THAT THE REDUNDANCY STRING LISTED UNDER THE "E" EFFECTS BE REVISED. IOA CONSIDERS THE STRING TO INCLUDE ONLY THE FILL/VENT COUPLING SEAL AND CAP, ACCUMULATOR, AND OTHER ENGINE. THERE ARE NO ADDITIONAL REDUNDANT VALVES OR COUPLINGS.

FINAL RESOLUTION: IOA NO LONGER CLASSIFIES THIS AS AN "ISSUE" SINCE THE CRITICALITY IS CORRECT. HOWEVER, IOA DOES RECOMMEND THAT THE REDUNDANCY STRING IN THE "E" EFFECTS BE CORRECTED AS SHOWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-299  
 NASA FMEA #: 03-3-4503-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 299  
 ITEM: VALVE-GN2 PRESSURE ISOLATION

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA NOW CLASSIFIES THIS FAILURE (FAILS CLOSED) AS A CRIT 1 DURING A TAL ABORT, BASED ON INABILITY TO COMPLETE ALL ENGINE STARTS AND PURGES WHICH MAY BE REQUIRED DURING A TAL ABORT. NASA/RI AGREED TO MAKE THIS FMEA AN ABORT CRIT 1, PER IOA ISSUE. SEE ASSESSMENT SHEET OMS-303. IOA RECOMMENDS THAT THE "E" EFFECTS BE REVISED. THE DOWNSTREAM REGULATOR IS NOT REDUNDANT FOR A FAILED CLOSED ISOL VALVE.

FINAL RESOLUTION: IOA NO LONGER CLASSIFIES THIS AS AN "ISSUE" SINCE THE CRITICALITY IS CORRECT. HOWEVER, IOA DOES RECOMMEND THAT THE REDUNDANCY STRING IN THE "E" EFFECTS BE CORRECTED AS SHOWN.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-303  
NASA FMEA #: 03-3-4503-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 303  
ITEM: VALVE-GN2 PRESSURE ISOLATION

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ N / ]	[ ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ F ] [ P ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

NASA/RI ORIGINALLY DID NOT COVER THIS FAILURE MODE (RESTRICTED FLOW), BUT ADDED IT TO 03-3-4503-2, PER IOA ISSUE. HOWEVER, IOA RECOMMENDS THAT "RESTRICTED FLOW" (ONLY) BE UPGRADED TO A 2/1R PFP, 1/1 ABORT AND PLACED ON A SEPARATE FMEA. THE INABILITY TO DETECT A FLOW RESTRICTION THROUGH THE VALVE UNTIL THE ACCUMULATOR HAS BEEN DEPLETED AND CANNOT BE REPLENISHED MAKE THE EFFECTS OF THIS FAILURE THE SAME AS 03-3-4505-2 (2/1R PFP, 1/1 ABORT). SEE ASSESSMENT SHEET OMS-305. THIS SINGLE FAILURE RESULTS IN THE LOSS OF ONE OMS ENGINE. THE "FAILED CLOSED" MODE IS DETECTABLE AND THE REMAINING ENGINE START CAN BE SAVED (3/1R PPP, 1/1 ABORT). THE DOWNSTREAM REGULATOR AND ACCUMULATOR ARE NOT REDUNDANT FOR THE "RESTRICTED FLOW" MODE.

FINAL RESOLUTION: IOA WITHDRAWS 1R/2 ISSUE BASED ON THE QUESTIONABLE CREDIBILITY OF A TOTAL FLOW RESTRICTION. EVEN THE SMALLEST FLOW RATE THROUGH A FLOW RESTRICTED VALVE WOULD ALLOW REPRESSURIZATION OF THE ACCUMULATOR AND SUBSEQUENT USE OF THE AFFECTED ENGINE. HOWEVER, A TOTAL FLOW RESTRICTION IN THE ISOLATION VALVE COULD HAVE THE SAME EFFECTS AS A FAILED CLOSED REGULATOR OR CHECK VALVE (1R/2).

REPORT DATE: 21 JULY 1988 C.17-37



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-322  
 NASA FMEA #: 03-3-4552-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 322  
 ITEM: GN2 ACCUMULATOR

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 1 /1 ]	[ ]	[ ]	[ ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 1 /1 ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT THE RUPTURE MODE BE UPGRADED TO A 1/1 AND PLACED ON A NEW FMEA, SEPARATE FROM THE EXTERNAL LEAKAGE FAILURE MODE. NSTS 22206 REQUIRES THAT POTENTIAL SHRAPNEL EFFECTS BE INCLUDED IN THE CRITICALITY ASSIGNMENT FOR RUPTURE OF NON-FILAMENT-WOUND PRESSURE VESSELS. SHRAPNEL COULD RESULT IN DAMAGE TO VEHICLE, TPS, OMS ENGINE, AND PROP LINES.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE BASED ON ANALYSIS BY NASA/JSC PRESSURE VESSEL PERSONNEL WHICH INDICATED THAT THIS ACCUMULATOR IS A "LEAKER" BY DESIGN. THEREFORE, A SHRAPNEL-PRODUCING RUPTURE IS A NON-CREDIBLE FAILURE MODE FOR THIS ACCUMULATOR. HOWEVER, IOA MAINTAINS CONCERN THAT A MATERIAL OR MANUFACTURING FLAW OR DEFECT, RESULTING IN AN ACCUMULATOR WHICH DOES NOT MEET DESIGN SPECS, COULD RESULT IN A SHRAPNEL-PRODUCING RUPTURE LEADING TO VEHICLE, TPS, OMS ENGINE, OR PROPELLANT LINE DAMAGE. ALSO, NSTS 22206 GROUND RULES SEEM TO REQUIRE THAT THE "RUPTURE" MODE INCLUDE THE EFFECTS OF POTENTIAL SHRAPNEL DAMAGE (SECTION 2.3.3.h). THE ACCUMULATOR MEETS THE DEFINITION OF A PRESSURE VESSEL IN NSTS 22206.

REPORT DATE: 21 JULY 1988 C.17-39

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-330  
NASA FMEA #: NONE

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 330  
ITEM: VALVE-ENGINE CONTROL

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

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 RESTRICTED FLOW OF THE CONTROL VALVE AS A FAILURE MODE ON A FMEA. 03-3-4001-2 DOES INCLUDE "CONTAMINATION" AND "PLUGGED OPENING ORIFICE" AS CAUSES, HOWEVER IOA RECOMMENDS THAT A NEW 2/1R PPP, 1/1 ABORT FMEA BE GENERATED FOR THIS ITEM AND FAILURE MODE. IOA CONSIDERS RESTRICTED FLOW TO BE A CREDIBLE FAILURE MODE FOR COMPONENTS WITH INLET FILTERS OR ORIFICES. THIS ITEM IS NOT MECHANICALLY LINKED TO THE BIPROP VALVES AND SHOULD NOT BE INCLUDED ON THE "FAILS CLOSED" BIPROP VALVE FMEA (03-3-4001-2).

FINAL RESOLUTION: IOA WITHDRAWS ISSUE SINCE 03-3-4001-2 INCLUDES "CONTAMINATION" AND "PLUGGED OPENING ORIFICE" AS CAUSES FOR A FAILED CLOSED CONTROL VALVE AND BIPOPELLANT VALVE ASSEMBLY. THEREFORE, THE RESTRICTED FLOW MODE IS ADDRESSED ON THE CIL. HOWEVER, IOA RECOMMENDS THAT RESTRICTED FLOW BE ADDRESSED AS A FAILURE MODE, RATHER THAN JUST A CAUSE, TO ENSURE THAT IT RECEIVES ADEQUATE ATTENTION.

REPORT DATE: 21 JULY 1988 C.17-40

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-342  
NASA FMEA #: NONE

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: OMS  
MDAC ID: 342  
ITEM: PNEUMATIC ACTUATOR

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ NA ]	[ P ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

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 (PROP LEAKAGE OR MIXING DUE TO SEAL FAILURES). LEAKAGE OF PROP PAST BALL VALVE SEALS AND ACTUATOR SEALS COULD RESULT IN MIXING OF HYPERGOLIC PROPS IN ACTUATOR CAVITIES OR LEAKAGE INTO THE POD CAUSING POSSIBLE CORROSION, FIRE, EXPLOSION, AND EXPOSURE OF EVA AND GROUND CREWS. IOA RECOMMENDS THAT A 3/1R PFP FMEA BE ADDED FOR PROP LEAKAGE PAST SEALS INTO THE ACTUATOR CAVITIES. SEAL FAILURES NOT DETECTABLE DURING FLIGHT (FAIL B SCREEN).

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. THE WORST CASE OF THIS FAILURE MODE IS LEAKAGE OF PROPELLANT INTO THE POD, WHICH IS ALREADY COVERED ON 03-3-2101-1 (STRUCTURAL FAILURE, RUPTURE, EXTERNAL LEAKAGE OF THE BIPROP VALVE HOUSING).

REPORT DATE: 21 JULY 1988      C.17-41

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-363  
NASA FMEA #: 03-3-6409-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 363  
ITEM: BEARING-GIMBAL RING

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ P ] [ P ] [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE UPGRADED TO A 2/1R PPP, 1/1 ABORT. THE INCREASED RCS ACTIVITY REQUIRED TO MAINTAIN VEHICLE CONTROL DURING TAL POST-MECO TWO-ENGINE OMS OPS WITH ONE ENGINE FAILED OUT OF POSITION MAY CONSUME RCS PROP NEEDED TO COMPLETE THE ABORT.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. A QUICK-LOOK ANALYSIS BY IOA INDICATES THAT OVER 3000 LBS OF FORWARD AND AFT RCS PROPELLANT (IN EXCESS OF THAT NEEDED TO COMPLETE A TAL ABORT) SHOULD BE AVAILABLE FOR ORBITER ATTITUDE CONTROL DURING A TAL POST-MECO OMS ET SEP BURN OR DUMP IF THIS FAILURE IS PRESENT. THIS AMOUNT ASSUMES THAT THE 167 SEC TAL AFT RCS DUMP CAN BE INHIBITED. THIS AMOUNT OF RCS PROP SHOULD BE ADEQUATE TO MAINTAIN ATTITUDE CONTROL DURING TAL POST-MECO OMS OPERATIONS WITH ONE OMS ENGINE FAILED OUT OF POSITION. HOWEVER, IOA RECOMMENDS THAT A MORE DETAILED ANALYSIS AND/OR SIMULATION BE PERFORMED TO ENSURE THAT RCS PROP OVERCONSUMPTION RESULTING FROM THIS TAL FAILURE SCENARIO IS NOT A PROBLEM.

REPORT DATE: 21 JULY 1988 C.17-42



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-367  
 NASA FMEA #: 03-3-6402-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 367  
 ITEM: ACME SCREW/NUT TUBE

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ P ] [ P ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE UPGRADED TO A 2/1R PPP, 1/1 ABORT. THE INCREASED RCS ACTIVITY REQUIRED TO MAINTAIN VEHICLE CONTROL DURING TAL POST-MECO TWO-ENGINE OMS OPS WITH ONE ENGINE FAILED OUT OF POSITION MAY CONSUME RCS PROP NEEDED TO COMPLETE THE ABORT. 03-3-6402-2 COVERS THE "GIMBAL OUTPUT DRIVE ASSEMBLY". IOA ALSO RECOMMENDS THAT THE SUBASSEMBLY COMPONENTS INCLUDED ON THIS FMEA BE SEPARATED ONTO INDIVIDUAL FMEAS TO PROVIDE BETTER INSIGHT INTO THE FAILURES POSSIBLE IN THE ASSEMBLY. FINAL RESOLUTION: IOA WITHDRAWS ISSUE. A QUICK-LOOK ANALYSIS BY IOA INDICATES THAT OVER 3000 LBS OF FORWARD AND AFT RCS PROPELLANT (IN EXCESS OF THAT NEEDED TO COMPLETE A TAL ABORT) SHOULD BE AVAILABLE FOR ORBITER ATTITUDE CONTROL DURING A TAL POST-MECO OMS ET SEP BURN OR DUMP IF THIS FAILURE IS PRESENT. THIS AMOUNT ASSUMES THAT THE 167 SEC TAL AFT RCS PROP DUMP CAN BE INHIBITED. THIS AMOUNT OF RCS PROP SHOULD BE ADEQUATE TO MAINTAIN ATTITUDE CONTROL DURING TAL POST-MECO OMS OPERATIONS WITH ONE OMS ENGINE FAILED OUT OF POSITION. HOWEVER, IOA RECOMMENDS THAT A MORE DETAILED ANALYSIS AND/OR SIMULATION BE PERFORMED TO ENSURE THAT RCS PROP OVERCONSUMPTION RESULTING FROM THIS FAILURE SCENARIO IS NOT A PROBLEM.

REPORT DATE: 21 JULY 1988 C.17-43







APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-378  
 NASA FMEA #: 03-3-6406-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 378  
 ITEM: MECHANICAL STOP-SNUBBER

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ P ] [ P ] [ A ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

SSM STATES THAT CRIT WAS DOWNGRADED FROM 2/1R TO 3/3 AS A RESULT OF A REVIEW WITH THE VENDOR. IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE UPGRADED TO A 2/1R PPP, 1/1 ABORT AND PLACED ON THE CIL. IOA MAINTAINS CONCERN THAT THE WORST CASE EFFECT OF A SNUBBER FAILURE COULD BE BINDING OR JAMMING OF THE GIMBAL OUTPUT DRIVE ASSEMBLY OR INCORRECT TVC RESULTING IN LOSS OF THE AFFECTED ENGINE. THE INCREASED RCS ACTIVITY REQUIRED TO MAINTAIN VEHICLE CONTROL DURING TAL POST-MECO TWO-ENGINE OMS OPS WITH ONE ENGINE FAILED OUT OF POSITION MAY CONSUME RCS PROP NEEDED TO COMPLETE THE ABORT. REDUNDANCY SCREEN SHOULD BE BLANK PER NSTS 22206.  
FINAL RESOLUTION: IOA WITHDRAWS ISSUE. IOA WILL NOT DISPUTE CONCLUSION OF OMS TVC SSM AND VENDOR THAT A SNUBBER FAILURE COULD HAVE NO EFFECT AND SHOULD, THEREFORE, BE CLASSIFIED AS A 3/3.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-379	BASELINE [    ]
NASA FMEA #: 03-3-6402-2	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 379  
ITEM: BEARING-NUT TUBE/OUTPUT SHAFT

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS	CIL ITEM	
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ N /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

IOA RECOMMENDS A 2/1R PPP, 1/1 ABORT FOR BINDING/JAMMING OF THESE BEARINGS, WHICH ALLOW THE DRIVE SHAFT TO ROTATE WITHIN THE SURROUNDING TUBULAR HOUSING. THE INCREASED RCS ACTIVITY REQUIRED TO MAINTAIN VEHICLE CONTROL DURING TAL POST-MECO TWO-ENGINE OMS OPS WITH ONE ENGINE FAILED OUT OF POSITION MAY CONSUME RCS PROP NEEDED TO COMPLETE THE ABORT. THIS ITEM AND FAILURE MODE (BINDING/JAMMING) ARE APPARENTLY INCLUDED ON 03-3-6402-2, WHICH COVERS THE "GIMBAL OUTPUT DRIVE ASSEMBLY". IOA RECOMMENDS THAT THE COMPONENTS INCLUDED ON THIS FMEA BE SEPARATED ONTO INDIVIDUAL FMEAS TO PROVIDE BETTER INSIGHT INTO THE FAILURES POSSIBLE IN THE ASSEMBLY. FINAL RESOLUTION: IOA WITHDRAWS ISSUE. A QUICK-LOOK ANALYSIS BY IOA INDICATES THAT OVER 3000 LBS OF FWD AND AFT RCS PROP (BEYOND THAT NEEDED FOR A TAL ABORT) SHOULD BE AVAILABLE FOR ORBITER ATTITUDE CONTROL DURING TAL POST-MECO OMS OPS IF THIS FAILURE IS PRESENT (ASSUMING THE ARCS DUMP CAN BE INHIBITED). THIS AMOUNT SHOULD BE ADEQUATE TO MAINTAIN ATTITUDE CONTROL DURING TAL POST-MECO OPS WITH ONE OME FAILED OUT OF POSITION. HOWEVER, IOA RECOMMENDS A MORE DETAILED ANALYSIS AND/OR SIMULATION BE PERFORMED TO ENSURE THAT RCS PROP OVERCONSUMPTION RESULTING FROM THIS FAILURE SCENARIO IS NOT A PROBLEM.

REPORT DATE: 21 JULY 1988      C.17-48

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-20002X  
NASA FMEA #: NONE

NASA DATA:  
BASELINE [ ]  
NEW [ ]

SUBSYSTEM: OMS  
MDAC ID: 20002  
ITEM: GIMBAL RING BEARING, GIMBAL RING/MOUNTING PAD  
ATTACHMENT

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 1 / 1 ]	[ ]	[ ]	[ ]	[ 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:

IOA DID NOT ANALYZE THIS FAILURE MODE (STRUCTURAL FAILURE OF A GIMBAL RING BEARING) IN THE ORIGINAL ANALYSIS. NASA/RI DO NOT CURRENTLY ADDRESS THIS FAILURE MODE ON THE FMEA/CIL (BINDING OF THIS BEARING IS COVERED ON 03-3-6409-1). IOA RECOMMENDS THAT A NEW 1/1 FMEA BE GENERATED FOR THIS ITEM AND FAILURE MODE. A STRUCTURAL FAILURE OF THIS BEARING COULD RESULT IN DISATTACHMENT BETWEEN THE ENGINE AND GIMBAL RING OR GIMBAL RING AND VEHICLE, RESULTING IN LOSS OF ENGINE RESTRAINT AND POSSIBLE VEHICLE DAMAGE OR PROP LINE BREAKAGE.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. DISATTACHMENT OF THE ENGINE AND VEHICLE DUE TO A GIMBAL RING MOUNTING PAD OR GIMBAL RING BEARING STRUCTURAL FAILURE IS ADEQUATELY ADDRESSED ON 03-3-64011-1. THE MOUNTING PAD ASSEMBLY DESCRIPTION ON 03-3-64011-1 INCLUDES THE GIMBAL RING BEARINGS, AND THE CAUSES INCLUDE "IMPROPER ASSEMBLY" RESULTING IN DISATTACHMENT OF THE ATTACH POINTS. THIS ADEQUATELY ADDRESSES THE IOA CONCERNS.

REPORT DATE: 21 JULY 1988 C.17-49





APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-20008X  
NASA FMEA #: NONE

NASA DATA:  
BASELINE [ ]  
NEW [ ]

SUBSYSTEM: OMS  
MDAC ID: 20008  
ITEM: BEARING - SECONDARY DRIVE GEAR

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ]      [ P ]      [ P ]      [ P ]      [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

NASA/RI DO NOT COVER THIS FAILURE MODE (STRUCTURAL FAILURE). IOA RECOMMENDS THAT THIS ITEM AND FAILURE MODE BE ADDRESSED ON THE FMEA/CIL WITH A 2/1R PPP, 1/1 ABORT CRIT. STRUCTURAL FAILURE OF THESE BEARINGS COULD CAUSE MISALIGNMENT AND BINDING OF THE GIMBAL DRIVE AND LOSS OF TVC FOR THE AFFECTED ENGINE. THE INCREASED RCS ACTIVITY REQUIRED TO MAINTAIN VEHICLE CONTROL DURING TAL POST-MECO TWO-ENGINE OMS OPS WITH ONE ENGINE FAILED OUT OF POSITION MAY CONSUME RCS PROP NEEDED TO COMPLETE THE ABORT. THE SSM STATES THAT THESE BEARINGS (ON EITHER SIDE OF THE SECONDARY DRIVE GEAR) ARE THRUST BEARINGS.

FINAL RESOLUTION: IOA WITHDRAWS 2/1R, 1/1 ABORT ISSUE. J. VERNON (OMS TVC SSM) CONSIDERS THE WORST-CASE EFFECT OF THIS FAILURE TO BE PHYSICAL BINDING/JAMMING OF THE BEARING AND SUBSEQUENT LOSS OF ONE CHANNEL (3/1R), WHICH IS COVERED ON 03-3-6404-1. LOSS OF THE ENTIRE GIMBAL OUTPUT DRIVE (2/1R) IS NON-CREDIBLE. IOA ACCEPTS JUDGMENT OF SSM, BUT RECOMMENDS THAT THE STRUCTURAL FAILURE MODE BE ADDRESSED ON THE FMEA/CIL AS A 3/1R PPP FOR COMPLETENESS, HOWEVER THIS IS NO LONGER A CIL ISSUE. IOA WAS UNABLE TO CONFIRM THAT THESE BEARINGS ARE THRUST BEARINGS.

REPORT DATE: 21 JULY 1988      C.17-51

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-20009X  
NASA FMEA #: 03-3-6402-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 20009  
ITEM: DRIVE GEARS, PRIMARY AND SECONDARY

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ P ] [ P ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

THE SSM STATES THAT THIS FAILURE MODE (STRUCTURAL FAILURE OF THE DRIVE GEARS) IS COVERED BY 03-3-6402-2 (GIMBAL OUTPUT DRIVE ASSEMBLY, BINDING/JAMMING). IOA RECOMMENDS THAT THE SUBASSEMBLY COMPONENTS INCLUDED ON THIS FMEA BE SEPARATED ONTO INDIVIDUAL FMEAS TO PROVIDE BETTER INSIGHT INTO THE FAILURE MODES POSSIBLE IN THE ASSEMBLY. IOA ALSO RECOMMENDS THAT THIS FAILURE MODE BE CLASSIFIED AS A 2/1R, 1/1 ABORT. THE INCREASED RCS ACTIVITY REQUIRED TO MAINTAIN VEHICLE CONTROL DURING TAL POST-MECO TWO ENGINE OMS OPS WITH ONE ENGINE FAILED OUT OF POSITION MAY CONSUME RCS PROP REQUIRED TO COMPLETE THE ABORT. FINAL RESOLUTION: IOA WITHDRAWS ISSUE. A QUICK-LOOK IOA ANALYSIS INDICATES THAT OVER 3000 LBS OF FWD AND AFT RCS PROP (IN EXCESS OF THAT NEEDED TO COMPLETE THE ABORT) SHOULD BE AVAILABLE FOR ORBITER ATTITUDE CONTROL DURING TAL POST-MECO OMS OPS IF THIS FAILURE IS PRESENT (ASSUMES THAT AFT RCS DUMP CAN BE INHIBITED). THIS AMOUNT OF RCS PROP SHOULD BE ADEQUATE TO MAINTAIN ATTITUDE CONTROL DURING TAL POST-MECO OPS WITH ONE OME FAILED OUT OF POSITION. HOWEVER, IOA RECOMMENDS A MORE DETAILED ANALYSIS AND/OR SIMULATION BE PERFORMED TO ENSURE THAT RCS PROP OVERCONSUMPTION RESULTING FROM THIS FAILURE SCENARIO IS NOT A PROBLEM.

REPORT DATE: 21 JULY 1988 C.17-52

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-20011X  
NASA FMEA #: 03-3-6402-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 20011  
ITEM: BEARING - ACTUATOR/VEHICLE ATTACHMENT

LEAD ANALYST: C.D. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 2 /1R ] [ P ] [ P ] [ P ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT THIS FAILURE MODE BE UPGRADED TO A 2/1R PPP, 1/1 ABORT. THE INCREASED RCS ACTIVITY REQUIRED TO MAINTAIN VEHICLE CONTROL DURING TAL POST-MECO TWO-ENGINE OMS OPS WITH ONE ENGINE FAILED OUT OF POSITION MAY CONSUME RCS PROP NEEDED TO COMPLETE THE ABORT. IOA ALSO RECOMMENDS THAT THE SUBASSEMBLY COMPONENTS INCLUDED ON THIS FMEA BE SEPARATED ONTO INDIVIDUAL FMEAS TO PROVIDE BETTER INSIGHT INTO THE FAILURES POSSIBLE IN THE ASSEMBLY.

FINAL RESOLUTION: IOA WITHDRAWS ISSUE. A QUICK-LOOK IOA ANALYSIS INDICATES THAT OVER 3000 LBS OF FWD AND AFT RCS PROP (BEYOND THAT NEEDED TO COMPLETE THE ABORT) SHOULD BE AVAILABLE FOR ORBITER ATTITUDE CONTROL DURING TAL POST-MECO OMS OPS IF THIS FAILURE IS PRESENT (ASSUMES THAT AFT RCS DUMP CAN BE INHIBITED). THIS AMOUNT OF RCS PROP SHOULD BE ADEQUATE TO MAINTAIN ATTITUDE CONTROL DURING TAL POST-MECO OPS WITH ONE OME FAILED OUT OF POSITION. HOWEVER, IOA RECOMMENDS A MORE DETAILED ANALYSIS AND/OR SIMULATION BE PERFORMED TO ENSURE THAT RCS PROP OVERCONSUMPTION RESULTING FROM THIS FAILURE SCENARIO IS NOT A PROBLEM.

REPORT DATE: 21 JULY 1988 C.17-53

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-399  
 NASA FMEA #: 05-6L-2176-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 399  
 ITEM: CONTROLLER, REMOTE POWER"

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ N ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND FAILING THE B SCREEN. THIS FAILURE IS NOT DETECTABLE UNTIL THE ASSOCIATED SWITCH IS PUT IN OPEN POSITION, BUT THIS CAUSES VALVE TO BE STUCK OPEN. IF THE CREW HAD KNOWN ABOUT THE FAILURE, THEY MIGHT NOT HAVE THROWN THE SWITCH INTO OPEN, TO AVOID STICKING THE VALVE OPEN. THEREFORE, FAILURE IS DETECTED BUT DETECTED TOO LATE.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE A STUCK OPEN HE PRESS VALVE IS PREFERABLE TO LEAVING THE VALVE CLOSED JUST TO AVOID A STUCK OPEN VALVE. IT DOES NOT MATTER THAT THIS FAILURE IS DETECTED TOO LATE TO PREVENT THE EFFECT OF THE FAILURE, SINCE THERE MUST BE OTHER FAILURES TO HAVE A SIGNIFICANT 1R EFFECT.

c 9

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-450A  
 NASA FMEA #: 05-6L-2253A-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 450  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /1R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /    ]	[ N ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA'S RECOMMENDED CRITICALITY OF 3/1R IS DRIVEN BY OMS HARDWARE FMEA 03-3-2007-1, SINCE THIS FAILURE CAUSES TANK ISO VALVE TO FAIL OPEN. ACCORDING TO THE LAST AVAILABLE NASA CRITICALITY, THIS FMEA SHOULD BE IN THE NEW NASA CIL LIST BUT IS NOT. IOA ASSUMES THAT NASA DOWNGRADED THIS TO A NONCIL, AND TENTATIVELY CONCURS.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE BOTH IOA AND NASA MADE THIS FMEA A NON-CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-450C  
 NASA FMEA #: 05-6L-2253C-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 450  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [    ] [    ] [    ] [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA DID RECOMMEND FAILING THE B SCREEN SINCE THE MCA STATUS OF RELAY POSITIONS ARE NOT READILY ACCESSIBLE BY THE CREW. THEREFORE, "CLOSE" RELAYS WHICH DO NOT OPEN AND "OPEN" RELAYS WHICH DO NOT CLOSE BECAUSE OF A FAILED OPEN DIODE ARE NOT DETECTABLE AND THE FAILED DIODE IS NOT DETECTABLE INFLIGHT. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE THIS ONE FAILURE HAS NO EFFECT EXCEPT IN COMBINATION WITH OTHER FAILURES, AND SO DETECTING IT VIA TELEMETRY IS ACCEPTABLE. THAT IS, TIME-TO-DETECT IS GENERALLY LESS THAN TIME-TO-EFFECT. HOWEVER, IOA MAINTAINS A CONCERN THAT IT IS NOT READILY DETECTABLE BY THE CREW.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-450E  
 NASA FMEA #: 05-6L-2255-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 450  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /1R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-450F  
 NASA FMEA #: 05-6L-2256-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 450  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /1R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /    ]	[ N ]	[ N ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-450G  
 NASA FMEA #: 05-6L-2256A-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 450  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /1R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-451A  
 NASA FMEA #: 05-6L-2253A-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 451  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS REMOVING THIS FMEA FROM THE CIL. ACCORDING TO THE LAST AVAILABLE NASA CRITICALITY, THIS FMEA SHOULD BE IN THE NEW NASA CIL LIST BUT IS NOT. IOA ASSUMES THAT NASA DOWNGRADED THIS TO A NONCIL, AND IOA TENTATIVELY CONCURS. IOA BELIEVES THIS FAILURE HAS NO EFFECT, SINCE ONLY A MULTIPLEXER-DEMULPLEXER (MDM) IS BEHIND THE "GPC CLOSE" DIODES, AND THAT IS WELL PROTECTED INTERNALLY FROM REVERSE CURRENT.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE BOTH IOA AND NASA MADE THIS FMEA A NON-CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-451C  
 NASA FMEA #: 05-6L-2256B-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 451  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /    ]	[ N ]	[ N ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-452A  
 NASA FMEA #: 05-6L-2253A-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 452  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /1R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N / ]	[ N ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA'S RECOMMENDED CRITICALITY OF 3/1R IS DRIVEN BY OMS HARDWARE FMEA 03-3-2007-1, SINCE THIS FAILURE CAUSES TANK ISO VALVE TO FAIL OPEN. ACCORDING TO THE LAST AVAILABLE NASA CRITICALITY, THIS FMEA SHOULD BE IN THE NEW NASA CIL LIST BUT IS NOT. IOA ASSUMES THAT NASA DOWNGRADED THIS TO A NONCIL. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE BOTH IOA AND NASA MADE THIS FMEA A NON-CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-452C  
 NASA FMEA #: 05-6L-2253C-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 452  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [    ] [    ] [    ] [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA DID RECOMMEND FAILING THE B SCREEN SINCE THE MCA STATUS OF RELAY POSITIONS ARE NOT READILY ACCESSIBLE BY THE CREW. THEREFORE, "CLOSE" RELAYS WHICH DO NOT OPEN AND "OPEN" RELAYS WHICH DO NOT CLOSE BECAUSE OF A FAILED OPEN DIODE ARE NOT DETECTABLE AND THE FAILED DIODE IS NOT DETECTABLE INFLIGHT. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE THIS ONE FAILURE HAS NO EFFECT EXCEPT IN COMBINATION WITH OTHER FAILURES, AND SO DETECTING IT VIA TELEMETRY IS ACCEPTABLE. THAT IS, TIME-TO-DETECT IS GENERALLY LESS THAN TIME-TO-EFFECT. HOWEVER, IOA MAINTAINS A CONCERN THAT IT IS NOT READILY DETECTABLE BY THE CREW.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-452E  
 NASA FMEA #: 05-6L-2255-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 452  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /1R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-452F  
 NASA FMEA #: 05-6L-2256-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 452  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /1R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N / ]	[ N ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-452G  
 NASA FMEA #: 05-6L-2256A-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 452  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /1R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-453A  
 NASA FMEA #: 05-6L-2253A-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 453  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS REMOVING THIS FMEA FROM THE CIL. ACCORDING TO THE LAST AVAILABLE NASA CRITICALITY, THIS FMEA SHOULD BE IN THE NEW NASA CIL LIST BUT IS NOT. IOA ASSUMES THAT NASA DOWNGRADED THIS TO A NONCIL, AND IOA TENTATIVELY CONCURS. IOA BELIEVES THIS FAILURE HAS NO EFFECT, SINCE ONLY A MULTIPLEXER-DEMUTIPLEXER (MDM) IS BEHIND THE "GPC CLOSE" DIODES, AND THAT IS WELL PROTECTED INTERNALLY FROM REVERSE CURRENT.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE BOTH IOA AND NASA MADE THIS FMEA A NON-CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-453C  
 NASA FMEA #: 05-6L-2256B-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 453  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N / ]	[ N ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-454  
 NASA FMEA #: 05-6L-2257-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 454  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ N ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA'S RECOMMENDED CRITICALITY OF 3/2R IS INDIRECTLY DRIVEN BY OMS HARDWARE FMEA 03-3-2008-2, SINCE LOSS OF REDUNDANCY CAUSES CROSSFEED VALVE TO FAIL CLOSED. IOA DID RECOMMEND FAILING THE B SCREEN SINCE THE MCA STATUS OF RELAY POSITIONS ARE NOT READILY ACCESSIBLE BY THE CREW. THEREFORE, "CLOSE" RELAYS WHICH DO NOT OPEN AND "OPEN" RELAYS WHICH DO NOT CLOSE BECAUSE OF A FAILED OPEN DIODE ARE NOT DETECTABLE AND SO THE FAILED DIODE IS NOT DETECTABLE INFLIGHT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE NASA'S SCENARIO IS WORSE AND THIS ONE FAILURE HAS NO EFFECT EXCEPT IN COMBINATION WITH OTHER FAILURES, AND SO DETECTING IT VIA TELEMETRY IS ACCEPTABLE. THAT IS, TIME-TO-DETECT IS GENERALLY LESS THAN TIME-TO-EFFECT. HOWEVER, IOA MAINTAINS A CONCERN THAT IT IS NOT READILY DETECTABLE BY THE CREW.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-454A  
 NASA FMEA #: 05-6L-2257A-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 454  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA'S RECOMMENDED CRITICALITY OF 3/2R IS DRIVEN BY OMS HARDWARE FMEA 03-3-2008-2, SINCE THIS FAILURE CAUSES THE CROSSFEED VALVE TO FAIL CLOSED. ACCORDING TO THE LAST AVAILABLE NASA CRITICALITY, THIS FMEA SHOULD BE IN THE NEW NASA CIL LIST BUT IS NOT.

IOA ASSUMES THAT NASA DOWNGRADED THIS TO A NONCIL.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE BOTH IOA AND NASA MADE THIS FMEA A NON-CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-454C  
 NASA FMEA #: 05-6L-2257C-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 454  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ N ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND FAILING THE B SCREEN SINCE THE MCA STATUS OF RELAY POSITIONS ARE NOT READILY ACCESSIBLE BY THE CREW. THEREFORE, "CLOSE" RELAYS WHICH DO NOT OPEN AND "OPEN" RELAYS WHICH DO NOT CLOSE BECAUSE OF A FAILED OPEN DIODE ARE NOT DETECTABLE AND THE FAILED DIODE IS NOT DETECTABLE INFLIGHT. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE THIS ONE FAILURE HAS NO EFFECT EXCEPT IN COMBINATION WITH OTHER FAILURES, AND SO DETECTING IT VIA TELEMETRY IS ACCEPTABLE. THAT IS, TIME-TO-DETECT IS GENERALLY LESS THAN TIME-TO-EFFECT. HOWEVER, IOA MAINTAINS A CONCERN THAT IT IS NOT READILY DETECTABLE BY THE CREW.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-454F	BASELINE [    ]
NASA FMEA #: 05-6L-2259-1	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 454  
ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C		
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *	
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]	
COMPARE	[    /N ]	[ N ]	[ N ]	[    ]	[    ]	

RECOMMENDATIONS: (If different from NASA)

[    /    ]      [    ]      [    ]      [    ]      [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-454G  
 NASA FMEA #: 05-6L-2260-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 454  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-454H  
 NASA FMEA #: 05-6L-2260A-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 454  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-454I  
 NASA FMEA #: 05-6L-2260B-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 454  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-456  
 NASA FMEA #: 05-6L-2257-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 456  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLEER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[    /N ]	[ N ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA'S RECOMMENDED CRITICALITY OF 3/2R IS INDIRECTLY DRIVEN BY OMS HARDWARE FMEA 03-3-2008-2, SINCE LOSS OF REDUNDANCY CAUSES CROSSFEED VALVE TO FAIL CLOSED. IOA DID RECOMMEND FAILING THE B SCREEN SINCE THE MCA STATUS OF RELAY POSITIONS ARE NOT READILY ACCESSIBLE BY THE CREW. THEREFORE, "CLOSE" RELAYS WHICH DO NOT OPEN AND "OPEN" RELAYS WHICH DO NOT CLOSE BECAUSE OF A FAILED OPEN DIODE ARE NOT DETECTABLE AND SO THE FAILED DIODE IS NOT DETECTABLE INFLIGHT.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE NASA'S SCENARIO IS WORSE AND THIS ONE FAILURE HAS NO EFFECT EXCEPT IN COMBINATION WITH OTHER FAILURES, AND SO DETECTING IT VIA TELEMETRY IS ACCEPTABLE. THAT IS, TIME-TO-DETECT IS GENERALLY LESS THAN TIME-TO-EFFECT. HOWEVER, IOA MAINTAINS A CONCERN THAT IT IS NOT READILY DETECTABLE BY THE CREW.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-456A  
 NASA FMEA #: 05-6L-2257A-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 456  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA'S RECOMMENDED CRITICALITY OF 3/2R IS DRIVEN BY OMS HARDWARE FMEA 03-3-2008-2, SINCE THIS FAILURE CAUSES THE CROSSFEED VALVE TO FAIL CLOSED. ACCORDING TO THE LAST AVAILABLE NASA CRITICALITY, THIS FMEA SHOULD BE IN THE NEW NASA CIL LIST BUT IS NOT.

IOA ASSUMES THAT NASA DOWNGRADED THIS TO A NONCIL.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE BOTH IOA AND NASA MADE THIS FMEA A NON-CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-456C  
 NASA FMEA #: 05-6L-2257C-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 456  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ N ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND FAILING THE B SCREEN SINCE THE MCA STATUS OF RELAY POSITIONS ARE NOT READILY ACCESSIBLE BY THE CREW. THEREFORE, "CLOSE" RELAYS WHICH DO NOT OPEN AND "OPEN" RELAYS WHICH DO NOT CLOSE BECAUSE OF A FAILED OPEN DIODE ARE NOT DETECTABLE AND THE FAILED DIODE IS NOT DETECTABLE INFLIGHT. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE THIS ONE FAILURE HAS NO EFFECT EXCEPT IN COMBINATION WITH OTHER FAILURES, AND SO DETECTING IT VIA TELEMETRY IS ACCEPTABLE. THAT IS, TIME-TO-DETECT IS GENERALLY LESS THAN TIME-TO-EFFECT. HOWEVER, IOA MAINTAINS A CONCERN THAT IT IS NOT READILY DETECTABLE BY THE CREW.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-456F	BASELINE [    ]
NASA FMEA #: 05-6L-2259-1	NEW [ X ]
SUBSYSTEM: OMS	
MDAC ID: 456	
ITEM: DIODE	
LEAD ANALYST: W.A. HAUFLER	

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[    /N ]	[ N ]	[ N ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-456G  
 NASA FMEA #: 05-6L-2260-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 456  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-456H	BASELINE [    ]
NASA FMEA #: 05-6L-2260A-1	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 456  
ITEM: DIODE

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS	CIL ITEM	
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ N ]	[ N ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDROLES.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-456I  
NASA FMEA #: 05-6L-2260B-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 456  
ITEM: DIODE

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

REPORT DATE 21 JULY 1988

C.17-83

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-457A  
 NASA FMEA #: 05-6L-2257A-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 457  
 ITEM: DIODE

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS REMOVING THIS FMEA FROM THE CIL. ACCORDING TO THE LAST AVAILABLE NASA CRITICALITY, THIS FMEA SHOULD BE IN THE NEW NASA CIL LIST BUT IS NOT. IOA ASSUMES THAT NASA DOWNGRADED THIS TO A NONCIL, AND IOA TENTATIVELY CONCURS. IOA BELIEVES THIS FAILURE HAS NO EFFECT, SINCE ONLY A MULTIPLEXER-DEMUTIPLEXER (MDM) IS BEHIND THE "GPC CLOSE" DIODES, AND THAT IS WELL PROTECTED INTERNALLY FROM REVERSE CURRENT.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE BOTH IOA AND NASA MADE THIS FMEA A NON-CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-474  
 NASA FMEA #: 05-6L-2004-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 474  
 ITEM: FUSE, 1A

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-476  
NASA FMEA #: 05-6L-2004-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 476  
ITEM: FUSE, 1A

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-477	BASELINE [    ]
NASA FMEA #: 05-6L-2004-1	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 477  
ITEM: FUSE, 1A

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS	CIL ITEM	
		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:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-483  
NASA FMEA #: 05-6L-2131-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 483  
ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-485  
 NASA FMEA #: 05-6L-2130-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 485  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ N /N ]	[    ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-487  
 NASA FMEA #: 05-6L-2131-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 487  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH THIS FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-489  
 NASA FMEA #: 05-6L-2130-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 489  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ N /N ]	[    ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-491  
 NASA FMEA #: 05-6L-2127-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 491  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:

IOA CONCURS WITH NASA'S CRITS AND SCREENS, BUT IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED IN THE EFFECTS FIELD, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-492  
 NASA FMEA #: 05-6L-2126-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 492  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ NA ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ N ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND FAILING THE B SCREEN. THESE RELAYS ARE NOT  
 STANDBY REDUNDANT TO ANY OTHER ITEMS SINCE THEY ARE NORMALLY  
 OPERATIONAL. SOME OF THESE RELAYS FAILING HAVE NO IMMEDIATE  
 EFFECT AND CANNOT BE DETECTED EXCEPT VIA MCA STATUS SIGNALS WHICH  
 ARE NOT READILY USED BY THE CREW.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE THIS ONE  
 FAILURE HAS NO EFFECT EXCEPT IN COMBINATION WITH OTHER FAILURES,  
 AND SO DETECTING IT VIA TELEMETRY IS ACCEPTABLE. THAT IS,  
 TIME-TO-DETECT IS GENERALLY LESS THAN TIME-TO-EFFECT.  
 HOWEVER, IOA MAINTAINS A CONCERN THAT THIS B SCREEN SHOULD BE  
 "PASS", NOT "NA". THIS IS NOT AN ISSUE SINCE IT DOES NOT IMPACT  
 THE CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-493  
 NASA FMEA #: 05-6L-2126-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 493  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

IOA CONCURS WITH NASA'S CRITS AND SCREENS, BUT IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED IN THE EFFECTS FIELD, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F. IOA'S CRITICALITY IS DRIVEN BY OMS HARDWARE FMEA 03-3-2007-1. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-495	BASELINE [    ]
NASA FMEA #: 05-6L-2127-2	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 495  
ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS	CIL ITEM
		A	B	C
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]
IOA	[ 3 /3 ]	[   ]	[   ]	[   ]
COMPARE	[   /N ]	[ N ]	[ N ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]    [   ]    [   ]    [   ]    [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA CONCURS WITH NASA'S CRITS AND SCREENS, BUT IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED IN THE EFFECTS FIELD, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDROLES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-496  
 NASA FMEA #: 05-6L-2126-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 496  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ NA ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[    /    ]	[    ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA DID RECOMMEND FAILING THE B SCREEN. THESE RELAYS ARE NOT STANDBY REDUNDANT TO ANY OTHER ITEMS SINCE THEY ARE NORMALLY OPERATIONAL. SOME OF THESE RELAYS FAILING HAVE NO IMMEDIATE EFFECT AND CANNOT BE DETECTED EXCEPT VIA MCA STATUS SIGNALS WHICH ARE NOT READILY USED BY THE CREW.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE THIS ONE FAILURE HAS NO EFFECT EXCEPT IN COMBINATION WITH OTHER FAILURES, AND SO DETECTING IT VIA TELEMETRY IS ACCEPTABLE. THAT IS, TIME-TO-DETECT IS GENERALLY LESS THAN TIME-TO-EFFECT. HOWEVER, IOA MAINTAINS A CONCERN THAT THIS B SCREEN SHOULD BE "PASS", NOT "NA". THIS IS NOT AN ISSUE SINCE IT DOES NOT IMPACT THE CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-497	BASELINE [    ]
NASA FMEA #: 05-6L-2126-2	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 497  
ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	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:

IOA CONCURS WITH NASA'S CRITS AND SCREENS, BUT IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED IN THE EFFECTS FIELD, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F. IOA'S CRITICALITY IS DRIVEN BY OMS HARDWARE FMEA 03-3-2007-1. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDROLES.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-499  
 NASA FMEA #: 05-6L-2131-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 499  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-501  
 NASA FMEA #: 05-6L-2130-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 501  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ N /N ]	[    ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-503  
 NASA FMEA #: 05-6L-2131-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 503  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-505  
 NASA FMEA #: 05-6L-2130-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 505  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY	REDUNDANCY SCREENS			CIL ITEM
	FLIGHT HDW/FUNC	A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ N /N ]	[ ]	[ N ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-507  
NASA FMEA #: 05-6L-2127-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 507  
ITEM: RELAY

LEAD ANALYST: W.A. HAUFLEER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:

IOA CONCURS WITH NASA'S CRITS AND SCREENS, BUT IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED IN THE EFFECTS FIELD, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-508  
 NASA FMEA #: 05-6L-2126-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 508  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ NA ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[    /    ]	[    ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA DID RECOMMEND FAILING THE B SCREEN. THESE RELAYS ARE NOT STANDBY REDUNDANT TO ANY OTHER ITEMS SINCE THEY ARE NORMALLY OPERATIONAL. SOME OF THESE RELAYS FAILING HAVE NO IMMEDIATE EFFECT AND CANNOT BE DETECTED EXCEPT VIA MCA STATUS SIGNALS WHICH ARE NOT READILY USED BY THE CREW.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE THIS ONE FAILURE HAS NO EFFECT EXCEPT IN COMBINATION WITH OTHER FAILURES, AND SO DETECTING IT VIA TELEMETRY IS ACCEPTABLE. THAT IS, TIME-TO-DETECT IS GENERALLY LESS THAN TIME-TO-EFFECT. HOWEVER, IOA MAINTAINS A CONCERN THAT THIS B SCREEN SHOULD BE "PASS", NOT "NA". THIS IS NOT AN ISSUE SINCE IT DOES NOT IMPACT THE CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-509  
 NASA FMEA #: 05-6L-2126-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 509  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-510	BASELINE [    ]
NASA FMEA #: 05-6L-2126-2	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 510  
ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS	CIL ITEM	
		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:

IOA CONCURS WITH NASA'S CRITS AND SCREENS, BUT IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED IN THE EFFECTS FIELD, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F. IOA'S CRITICALITY IS DRIVEN BY OMS HARDWARE FMEA 03-3-2007-1. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-512  
 NASA FMEA #: 05-6L-2127-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 512  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
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:

IOA CONCURS WITH NASA'S CRITS AND SCREENS, BUT IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED IN THE EFFECTS FIELD, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-513  
 NASA FMEA #: 05-6L-2126-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 513  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ NA ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ N ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND FAILING THE B SCREEN. THESE RELAYS ARE NOT STANDBY REDUNDANT TO ANY OTHER ITEMS SINCE THEY ARE NORMALLY OPERATIONAL. SOME OF THESE RELAYS FAILING HAVE NO IMMEDIATE EFFECT AND CANNOT BE DETECTED EXCEPT VIA MCA STATUS SIGNALS WHICH ARE NOT READILY USED BY THE CREW.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE THIS ONE FAILURE HAS NO EFFECT EXCEPT IN COMBINATION WITH OTHER FAILURES, AND SO DETECTING IT VIA TELEMETRY IS ACCEPTABLE. THAT IS, TIME-TO-DETECT IS GENERALLY LESS THAN TIME-TO-EFFECT. HOWEVER, IOA MAINTAINS A CONCERN THAT THIS B SCREEN SHOULD BE "PASS", NOT "NA". THIS IS NOT AN ISSUE SINCE IT DOES NOT IMPACT THE CIL.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-514  
 NASA FMEA #: 05-6L-2083-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 514  
 ITEM: RESISTOR, 1.2K 1/4W

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-526  
 NASA FMEA #: 05-6L-2079A-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 526  
 ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: W.A. HAUFLEER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVES, SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE IOA WILL NOT DISPUTE NASA'S MORE SEVERE CRITICALITY, AND AGREES THAT B SCREEN FAILS SINCE BELLOWS LEAK IS UNDETECTABLE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-538  
 NASA FMEA #: 05-6L-2083A-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 538  
 ITEM: RESISTOR, 1.2K 1/4W

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA DID RECOMMEND THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVES, SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE IOA WILL NOT DISPUTE NASA'S MORE SEVERE CRITICALITY, AND AGREES THAT B SCREEN FAILS SINCE BELLOWS LEAK IS UNDETECTABLE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:	1/01/88	NASA DATA:
ASSESSMENT ID:	OMS-544	BASELINE [    ]
NASA FMEA #:	05-6L-2083A-1	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 544  
ITEM: RESISTOR, 1.2K 1/4W

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA DID RECOMMEND THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVES, SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE IOA WILL NOT DISPUTE NASA'S MORE SEVERE CRITICALITY, AND AGREES THAT B SCREEN FAILS SINCE BELLOWS LEAK IS UNDETECTABLE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-558  
 NASA FMEA #: 05-6L-2083-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 558  
 ITEM: RESISTOR, 1.2K 1/4W

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-564	BASELINE [    ]
NASA FMEA #: 05-6L-2083-1	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 564  
ITEM: RESISTOR, 1.2K 1/4W

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	A	B	C	CIL ITEM	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]	*
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]	
COMPARE	[ N /N ]	[ N ]	[    ]	[    ]	[    ]	

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUNDRULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-570  
NASA FMEA #: 05-6L-2079A-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 570  
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA DID RECOMMEND THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVES, SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE IOA WILL NOT DISPUTE NASA'S MORE SEVERE CRITICALITY, AND AGREES THAT B SCREEN FAILS SINCE BELLOWS LEAK IS UNDETECTABLE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-572	BASELINE [    ]
NASA FMEA #: 05-6L-2079-2	NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 572  
 ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS A                  B                  C	CIL ITEM
NASA	[ 2 /1R ]	[ P ]    [ P ]    [ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]    [ P ]    [ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]    [   ]    [   ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]    [   ]    [   ]    [   ]    [   ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-578  
NASA FMEA #: 05-6L-2079-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 578  
ITEM: RESISTOR, 1.2K 1/4W

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[   ]	[   ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]    [   ]    [   ]    [   ]    [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVE(S), SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE INTERPRETATION OF NSTS 22206 REDUNDANCY GROUND RULES.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-580	BASELINE [    ]
NASA FMEA #: 05-6L-2079A-2	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 580  
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA DID RECOMMEND THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVES, SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE IOA WILL NOT DISPUTE NASA'S MORE SEVERE CRITICALITY, AND AGREES THAT B SCREEN FAILS SINCE BELLOWS LEAK IS UNDETECTABLE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-586  
 NASA FMEA #: 05-6L-2028-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 586  
 ITEM: SWITCH TOGGLE LT/RT

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

ACCORDING TO THE LAST AVAILABLE NASA CRITICALITY, THIS FMEA SHOULD BE IN THE NEW NASA CIL LIST, BUT IT IS NOT. IOA ASSUMES THAT NASA DOWNGRADED THIS FMEA TO A NONCIL SINCE IT DOES NOT APPEAR IN THE NEW NASA CIL LIST. IOA DID RECOMMEND THAT NASA USE THE PREVIOUS (LAST AVAILABLE TO IOA) CRITICALITY AND SCREENS (3/1R PFP) AND REINSTATE THIS FMEA AS A CIL.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE A TOGGLE SWITCH STUCK IN GPC POSITION IS CERTAINLY DETECTABLE WHEN THE CREW TRIES TO SWITCH TO OPEN OR CLOSE AND SEES NO RESPONSE FROM THE VALVE'S BARBERPOLE TALKBACK.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-587	BASELINE [    ]
NASA FMEA #: 05-6L-2028-3	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 587  
ITEM: SWITCH TOGGLE LT/RT

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS		CIL ITEM	
		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)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

IOA DID RECOMMEND THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVES, SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE IOA WILL NOT DISPUTE NASA'S MORE SEVERE CRITICALITY, AND AGREES THAT B SCREEN FAILS SINCE BELLOWS LEAK IS UNDETECTABLE.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-588  
 NASA FMEA #: 05-6L-2028-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 588  
 ITEM: SWITCH TOGGLE LT/RT

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

IOA CONCURS WITH NASA'S CRITICALITY, SINCE THE CRIT AGREES WITH OMS HARDWARE FMEA 03-3-2008-2 (CAUSES CROSSFEED VALVE TO FAIL CLOSED). HOWEVER, NASA FAILED B SCREEN BECAUSE ONE OF THE TWO POLES FAILING IS UNDETECTABLE. IOA BELIEVES THIS IS A CARRYOVER FROM WHEN NASA FAILED ONLY ONE CONTACT SET, AND RECOMMENDS PASSING THIS B SCREEN.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE B SCREEN. HOWEVER, IOA RETAINS A CONCERN THAT THIS B SCREEN IS INACCURATE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-589  
NASA FMEA #: 05-6L-2028-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 589  
ITEM: SWITCH TOGGLE LT/RT

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

ACCORDING TO THE LAST AVAILABLE NASA CRITICALITY, THIS FMEA SHOULD BE IN THE NEW NASA CIL LIST, BUT IT IS NOT. IOA ASSUMES THAT NASA DOWNGRADED THIS FMEA TO A NONCIL SINCE IT DOES NOT APPEAR IN THE NEW NASA CIL LIST. IOA DID RECOMMEND THAT NASA USE THE PREVIOUS (LAST AVAILABLE TO IOA) CRITICALITY AND SCREENS (3/1R PFP) AND REINSTATE THIS FMEA AS A CIL.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE A TOGGLE SWITCH STUCK IN GPC POSITION IS CERTAINLY DETECTABLE WHEN THE CREW TRIES TO SWITCH TO OPEN OR CLOSE AND SEES NO RESPONSE FROM THE VALVE'S BARBERPOLE TALKBACK.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-590  
 NASA FMEA #: 05-6L-2028-3

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 590  
 ITEM: SWITCH TOGGLE LT/RT

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

IOA DID RECOMMEND THAT BELLOWS FAILURE SHOULD NOT BE CONSIDERED AND CRITICALITY THUS REDUCED, SINCE IT CONSTITUTES A "MULTIPLE UNRELATED FAILURE" WHICH IS BEYOND THE SCOPE OF IOA'S INTERPRETATION OF NSTS 22206. NASA IS RIGHT THAT THIS FAILURE COULD CAUSE CONTINUOUS POWER ON THE ASSOCIATED VALVES, SINCE THE SIGNAL THROUGH THIS ITEM WOULD INHIBIT CLOSING OR OPENING WHEN THE VALVES REACH FULL CLOSED OR OPEN. HOWEVER, NASA'S SCENARIO WITH ANOTHER FAILURE CONSISTING OF BELLOWS RUPTURE IS IRRELEVANT. A BELLOWS RUPTURE ANYTIME EXPOSING ELECTRICAL COMPONENTS AND VALVE MOTOR TO PROPELLANT IS SERIOUS, NOT JUST WHEN THE VALVE MOTOR IS CONTINUOUSLY ON AND HOT. THAT IS, THIS FAILURE DOES NOT SIGNIFICANTLY CONTRIBUTE TO THE BELLOWS RUPTURE FAILURE. FURTHERMORE, THE VALVES ARE PROTECTED FROM CONTINUOUS POWER BY AN ELECTRICAL THERMAL SHUTOFF DEVICE WITHIN THE VALVE MOTOR AT NO MORE THAN 352 F.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, SINCE IOA WILL NOT DISPUTE NASA'S MORE SEVERE CRITICALITY, AND AGREES THAT B SCREEN FAILS SINCE BELLOWS LEAK IS UNDETECTABLE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-591  
 NASA FMEA #: 05-6L-2028-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 591  
 ITEM: SWITCH TOGGLE LT/RT

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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:

IOA CONCURS WITH NASA'S CRITICALITY, SINCE THE CRIT AGREES WITH OMS HARDWARE FMEA 03-3-2008-2 (CAUSES CROSSFEED VALVE TO FAIL CLOSED). HOWEVER, NASA FAILED B SCREEN BECAUSE ONE OF THE TWO POLES FAILING IS UNDETECTABLE. IOA BELIEVES THIS IS A CARRYOVER FROM WHEN NASA FAILED ONLY ONE CONTACT SET, AND RECOMMENDS PASSING THIS B SCREEN.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, ACCEPTING NASA'S MORE CONSERVATIVE B SCREEN. HOWEVER, IOA RETAINS A CONCERN THAT THIS B SCREEN IS INACCURATE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-594  
NASA FMEA #: 05-6L-2027-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 594  
ITEM: SWITCH TOGGLE LT/RT

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ NA ]	[ P ]	[ ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N / ]	[ ]	[ N ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA'S RECOMMENDED CRITICALITY IS DRIVEN BY OMS HARDWARE FMEA 03-3-2007-2, SINCE THIS FAILURE CAUSES THE TANK ISOLATION VALVE TO FAIL CLOSED. ALSO, NASA FAILED ONLY ONE POLE, CONSIDERING THE OTHER POLE AS REDUNDANT, WHEREAS IOA CONSIDERED THE WORST CASE FAILURE MODE BY FAILING A PART COMMON TO BOTH POLES (E.G. TOGGLE LEVER). THIS IS THE REASON FOR IOA'S HIGHER CRITICALITY. NASA CONSIDERED ONE POLE TO BE STANDBY REDUNDANT TO THE OTHER AND SO HAD "NOT APPLICABLE" FOR B SCREEN.

FINAL RESOLUTION: NASA ACCEPTED IOA'S POSITION ON THIS ISSUE. A NASA EPD&C EXPERT AGREED THAT IT WAS POSSIBLE FOR A TOGGLE SWITCH ROLLERS AND SPRINGS TO BREAK AND SHORT ACROSS THE CLOSE POSITION OF BOTH POLES.

IN FACT, OTHER SUBSYSTEMS' FMEAS ARE USING THIS FAILURE MODE. THE NASA OMS SSM THEN AGREED TO ACCEPT THIS ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-597  
NASA FMEA #: 05-6L-2027-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 597  
ITEM: SWITCH TOGGLE LT/RT

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ NA ]	[ P ]	[ ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N / ]	[ ]	[ N ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA'S RECOMMENDED CRITICALITY IS DRIVEN BY OMS HARDWARE FMEA 03-3-2007-2, SINCE THIS FAILURE CAUSES THE TANK ISOLATION VALVE TO FAIL CLOSED. ALSO, NASA FAILED ONLY ONE POLE, CONSIDERING THE OTHER POLE AS REDUNDANT, WHEREAS IOA CONSIDERED THE WORST CASE FAILURE MODE BY FAILING A PART COMMON TO BOTH POLES (E.G. TOGGLE LEVER). THIS IS THE REASON FOR IOA'S HIGHER CRITICALITY. NASA CONSIDERED ONE POLE TO BE STANDBY REDUNDANT TO THE OTHER AND SO HAD "NOT APPLICABLE" FOR B SCREEN.

FINAL RESOLUTION: NASA ACCEPTED IOA'S POSITION ON THIS ISSUE. A NASA EPD&C EXPERT AGREED THAT IT WAS POSSIBLE FOR A TOGGLE SWITCH ROLLERS AND SPRINGS TO BREAK AND SHORT ACROSS THE CLOSE POSITION OF BOTH POLES.

IN FACT, OTHER SUBSYSTEMS' FMEAS ARE USING THIS FAILURE MODE. THE NASA OMS SSM THEN AGREED TO ACCEPT THIS ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-610  
 NASA FMEA #: 03-3-2803-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 610  
 ITEM: SENSOR TEMPERATURE, FUEL TANK LOWER

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 2 / 2 ]	[ ]	[ ]	[ ]	[ X ]
COMPARE	[ N / N ]	[ ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

LOSS OF MISSION WOULD OCCUR IN THE LIFTOFF PHASE. A TEMPERATURE SENSOR FAILURE COULD LEAD TO WRONGLY FAILING THE OMS FUEL PROPELLANT TANK LEADING TO THE ESTABLISHMENT OF A SHALLOW ATO BEFORE SENSOR FAILURE IS DETERMINED. NO REDUNDANCY AND MISSION LOSS IMPLIES A CRIT OF 2/2. SEE JSC 20923 PCN-1 AND FLIGHT RULE 6-2 AND 6-40K.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE OF THE REINTERPRETATION OF THE FLIGHT RULES WHICH IMPLIES THAT ONE SENSOR FAILING WOULD NOT LEAD TO AN ABORT DECISION. IN FLIGHT RULE 6-2, IF LOW OR HIGH TEMPERATURE, THEN OMS PROP TANK IS LOST (BUT NOT FAILED). IN RULE 6-40K, OMS PROP TANK IS LEAK/FAILED IF PRESSURE (NOT TEMP) IS LOW OR HIGH.





APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-633  
 NASA FMEA #: 05-6L-2206-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 633  
 ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ N ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND FAILING THE B SCREEN SINCE THE FIRST FAILURE'S EFFECT (GN2 PRESS ISO VALVE STUCK OPEN) IS NOT DETECTABLE, EXCEPT FOR AN MDM FA3 VALVE POSITION SIGNAL. BUT SINCE FSSRS DID NOT MENTION THAT SIGNAL, THE IOA ASSUMED THAT THE SOFTWARE DOES NOT USE THE SIGNAL TO DETECT VALVE STUCK OPEN.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE THIS ONE FAILURE HAS NO EFFECT EXCEPT IN COMBINATION WITH OTHER FAILURES, AND SO DETECTING IT VIA THE GNC SYSTEM SUMMARY 2 CRT DISPLAY OR TELEMETRY IS ACCEPTABLE.

THAT IS, TIME-TO-DETECT IS GENERALLY LESS THAN TIME-TO-EFFECT. HOWEVER, IOA MAINTAINS A CONCERN THAT IT IS NOT READILY DETECTABLE BY THE CREW.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-641	BASELINE [    ]
NASA FMEA #: 05-6L-2206-2	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 641  
ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS	CIL ITEM
		A	B	C
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]
IOA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]
COMPARE	[ / ]	[ ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ]	[ ]	[ ]	[ ]	[ ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

IOA DID RECOMMEND FAILING THE B SCREEN SINCE THE FIRST FAILURE'S EFFECT (GN2 PRESS ISO VALVE STUCK OPEN) IS NOT DETECTABLE, EXCEPT FOR AN MDM FA3 VALVE POSITION SIGNAL. BUT SINCE FSSRS DID NOT MENTION THAT SIGNAL, THE IOA ASSUMED THAT THE SOFTWARE DOES NOT USE THE SIGNAL TO DETECT VALVE STUCK OPEN.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE THIS ONE FAILURE HAS NO EFFECT EXCEPT IN COMBINATION WITH OTHER FAILURES, AND SO DETECTING IT VIA THE GNC SYSTEM SUMMARY 2 CRT DISPLAY OR TELEMETRY IS ACCEPTABLE.

THAT IS, TIME-TO-DETECT IS GENERALLY LESS THAN TIME-TO-EFFECT. HOWEVER, IOA MAINTAINS A CONCERN THAT IT IS NOT READILY DETECTABLE BY THE CREW.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-689	BASELINE [    ]
NASA FMEA #: NONE	NEW [    ]

SUBSYSTEM: OMS  
MDAC ID: 689  
ITEM: SENSOR PRESSURE, OMS ENGINE REG OUT

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 2 / 2 ]	[    ]	[    ]	[    ]	[ X ]
COMPARE	[ N / N ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA RECOMMENDS GENERATING A FMEA FOR THIS ITEM. NASA HAS NO APPARENT FMEA TO EXPLICITLY COVER THIS ITEM. THE CLOSEST NASA FMEA IS 03-3-4581-1 FOR "OMS ENGINE PNEUMATIC PRESSURE SENSOR" INSTEAD OF "OMS ENGINE REGULATOR OUTLET PRESSURE SENSOR".  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE TURNING OFF ONE APPARENTLY FAILED OMS ENGINE WILL NOT CAUSE LOSS OF MISSION, AND THIS CRIT SHOULD BE 3/2R PPP, A NONCIL, AT WORST. THE OMS 1, 2, AND DEORBIT BURNS CAN ALL BE PERFORMED WITH ONE OMS ENGINE OR AFT THRUSTING RCS JETS WITHOUT AFFECTING THE MISSION. HOWEVER, IOA RETAINS A CONCERN THAT THIS ITEM IS NOT DIRECTLY COVERED ON ANY FMEA.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-706	BASELINE [    ]
NASA FMEA #: 05-6L-2210-2	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 706  
ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE MORE THAN ONE OTHER FAILURE IS REQUIRED TO LOSE CREW/VEHICLE. ALSO, MALFUNCTION PROCEDURE 11.5B STATES THIS "WILL RESULT IN HEATER BURNOUT", NOT OVERHEATING. HOWEVER, IOA MAINTAINS A CONCERN THAT CREW WOULD NOT FIRE OMS ENGINE WITH HOT PROPELLANT. THUS IOA RECOMMENDS A "3/1R PPP", BUT SINCE THIS IS NOT A CIL, IOA WITHDRAWS IT AS AN ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-708  
NASA FMEA #: 05-6L-2210-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 708  
ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE MORE THAN ONE OTHER FAILURE IS REQUIRED TO LOSE CREW/VEHICLE. ALSO, MALFUNCTION PROCEDURE 11.5B STATES THIS "WILL RESULT IN HEATER BURNOUT", NOT OVERHEATING. HOWEVER, IOA MAINTAINS A CONCERN THAT CREW WOULD NOT FIRE OMS ENGINE WITH HOT PROPELLANT. THUS IOA RECOMMENDS A "3/1R PPP", BUT SINCE THIS IS NOT A CIL, IOA WITHDRAWS IT AS AN ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-710  
 NASA FMEA #: 05-6L-2210-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 710  
 ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE MORE THAN ONE OTHER FAILURE IS REQUIRED TO LOSE CREW/VEHICLE. ALSO, MALFUNCTION PROCEDURE 11.5B STATES THIS "WILL RESULT IN HEATER BURNOUT", NOT OVERHEATING. HOWEVER, IOA MAINTAINS A CONCERN THAT CREW WOULD NOT FIRE OMS ENGINE WITH HOT PROPELLANT. THUS IOA RECOMMENDS A "3/1R PPP", BUT SINCE THIS IS NOT A CIL, IOA WITHDRAWS IT AS AN ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-712  
NASA FMEA #: 05-6L-2210-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 712  
ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE MORE THAN ONE OTHER FAILURE IS REQUIRED TO LOSE CREW/VEHICLE. ALSO, MALFUNCTION PROCEDURE 11.5B STATES THIS "WILL RESULT IN HEATER BURNOUT", NOT OVERHEATING. HOWEVER, IOA MAINTAINS A CONCERN THAT CREW WOULD NOT FIRE OMS ENGINE WITH HOT PROPELLANT. THUS IOA RECOMMENDS A "3/1R PPP", BUT SINCE THIS IS NOT A CIL, IOA WITHDRAWS IT AS AN ISSUE.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-714	BASELINE [    ]
NASA FMEA #: 05-6L-2210-2	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 714  
ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[    /    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-715  
NASA FMEA #: 05-6L-2210-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 715  
ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-718	BASELINE [    ]
NASA FMEA #: 05-6L-2210-2	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 718  
ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[    /    ]      [    ]      [    ]      [    ]      [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-720  
 NASA FMEA #: 05-6L-2210-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 720  
 ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-722  
 NASA FMEA #: 05-6L-2210-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 722  
 ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-724  
 NASA FMEA #: 05-6L-2210-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 724  
 ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-728  
 NASA FMEA #: 05-6L-2210-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 728  
 ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-730	BASELINE [    ]
NASA FMEA #: 05-6L-2210-2	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 730  
ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS		CIL ITEM
		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)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-732  
 NASA FMEA #: 05-6L-2210-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 732  
 ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-734  
 NASA FMEA #: 05-6L-2210-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 734  
 ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-736  
 NASA FMEA #: 05-6L-2210-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 736  
 ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-740  
NASA FMEA #: 05-6L-2210-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 740  
ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE MORE THAN ONE OTHER FAILURE IS REQUIRED TO LOSE CREW/VEHICLE. ALSO, MALFUNCTION PROCEDURE 11.5B STATES THIS "WILL RESULT IN HEATER BURNOUT", NOT OVERHEATING. HOWEVER, IOA MAINTAINS A CONCERN THAT CREW WOULD NOT FIRE OMS ENGINE WITH HOT PROPELLANT. THUS IOA RECOMMENDS A "3/1R PPP", BUT SINCE THIS IS NOT A CIL, IOA WITHDRAWS IT AS AN ISSUE.

REPORT DATE 21 JULY 1988

C.17-151

C-10

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-742  
NASA FMEA #: 05-6L-2210-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 742  
ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE MORE THAN ONE OTHER FAILURE IS REQUIRED TO LOSE CREW/VEHICLE. ALSO, MALFUNCTION PROCEDURE 11.5B STATES THIS "WILL RESULT IN HEATER BURNOUT", NOT OVERHEATING. HOWEVER, IOA MAINTAINS A CONCERN THAT CREW WOULD NOT FIRE OMS ENGINE WITH HOT PROPELLANT. THUS IOA RECOMMENDS A "3/1R PPP", BUT SINCE THIS IS NOT A CIL, IOA WITHDRAWS IT AS AN ISSUE.

REPORT DATE 21 JULY 1988

C.17-152

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-744  
NASA FMEA #: 05-6L-2210-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 744  
ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE MORE THAN ONE OTHER FAILURE IS REQUIRED TO LOSE CREW/VEHICLE. ALSO, MALFUNCTION PROCEDURE 11.5B STATES THIS "WILL RESULT IN HEATER BURNOUT", NOT OVERHEATING. HOWEVER, IOA MAINTAINS A CONCERN THAT CREW WOULD NOT FIRE OMS ENGINE WITH HOT PROPELLANT. THUS IOA RECOMMENDS A "3/1R PPP", BUT SINCE THIS IS NOT A CIL, IOA WITHDRAWS IT AS AN ISSUE.

REPORT DATE 21 JULY 1988

C.17-153





APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-748  
NASA FMEA #: 05-6L-2210-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 748  
ITEM: DRIVER, HYBRID

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE MORE THAN ONE OTHER FAILURE IS REQUIRED TO LOSE CREW/VEHICLE. ALSO, MALFUNCTION PROCEDURE 11.5B STATES THIS "WILL RESULT IN HEATER BURNOUT", NOT OVERHEATING. HOWEVER, IOA MAINTAINS A CONCERN THAT CREW WOULD NOT FIRE OMS ENGINE WITH HOT PROPELLANT. THUS IOA RECOMMENDS A "3/1R PPP", BUT SINCE THIS IS NOT A CIL, IOA WITHDRAWS IT AS AN ISSUE.

REPORT DATE 21 JULY 1988

C.17-155

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-846  
NASA FMEA #: 05-6L-2134-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 846  
ITEM: RELAY

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS RAISING THIS CRITICALITY TO 2/1R SINCE THIS FAILURE IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF TWO OR MORE HEATERS ON SIMULTANEOUSLY WHEN THE REDUNDANT HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROXIMATELY TWO MINUTES AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, AFTER SOME STUDYING REMOVED THE CONCERN FOR HOT PROP OR STRUCTURAL DAMAGE. ALSO MALFUNCTION PROCEDURE 11.5B STATES "SIMULTANEOUS OPERATION OF BOTH A,B HTR CKTS WILL RESULT IN HEATER BURNOUT". HOWEVER, IOA RETAINS A CONCERN, RECOMMENDING A "3/1R PFP" CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-848  
NASA FMEA #: 05-6L-2134-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 848  
ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS RAISING THIS CRITICALITY TO 2/1R SINCE THIS FAILURE IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF TWO OR MORE HEATERS ON SIMULTANEOUSLY WHEN THE REDUNDANT HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROXIMATELY TWO MINUTES AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, AFTER SOME STUDYING REMOVED THE CONCERN FOR HOT PROP OR STRUCTURAL DAMAGE. ALSO MALFUNCTION PROCEDURE 11.5B STATES "SIMULTANEOUS OPERATION OF BOTH A,B HTR CKTS WILL RESULT IN HEATER BURNOUT". HOWEVER, IOA RETAINS A CONCERN, RECOMMENDING A "3/1R PFP" CRITICALITY.

REPORT DATE 21 JULY 1988

C.17-157

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-850  
 NASA FMEA #: 05-6L-2134-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 850  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS RAISING THIS CRITICALITY TO 2/1R SINCE THIS FAILURE IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF TWO OR MORE HEATERS ON SIMULTANEOUSLY WHEN THE REDUNDANT HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROXIMATELY TWO MINUTES AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, AFTER SOME STUDYING REMOVED THE CONCERN FOR HOT PROP OR STRUCTURAL DAMAGE. ALSO MALFUNCTION PROCEDURE 11.5B STATES "SIMULTANEOUS OPERATION OF BOTH A,B HTR CKTS WILL RESULT IN HEATER BURNOUT". HOWEVER, IOA RETAINS A CONCERN, RECOMMENDING A "3/1R PFP" CRITICALITY.

REPORT DATE 21 JULY 1988

C.17-158

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-852  
 NASA FMEA #: 05-6L-2134-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 852  
 ITEM: RELAY

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS RAISING THIS CRITICALITY TO 2/1R SINCE THIS FAILURE IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF TWO OR MORE HEATERS ON SIMULTANEOUSLY WHEN THE REDUNDANT HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROXIMATELY TWO MINUTES AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, AFTER SOME STUDYING REMOVED THE CONCERN FOR HOT PROP OR STRUCTURAL DAMAGE. ALSO MALFUNCTION PROCEDURE 11.5B STATES "SIMULTANEOUS OPERATION OF BOTH A & B HEATER CIRCUITS WILL RESULT IN HEATER BURNOUT". HOWEVER, IOA RETAINS A CONCERN, RECOMMENDING A "3/1R PFP" CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-895  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 895  
 ITEM: THERMAL SWITCH, LT/RT GSE SERVICE PNL GROUP 1

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE MORE THAN ONE OTHER FAILURE IS REQUIRED TO LOSE CREW/VEHICLE. ALSO, MALFUNCTION PROCEDURE 11.5B STATES THIS "WILL RESULT IN HEATER BURNOUT", NOT OVERHEATING. HOWEVER, IOA MAINTAINS A CONCERN THAT CREW WOULD NOT FIRE OMS ENGINE WITH HOT PROPELLANT. THUS IOA RECOMMENDS A "3/1R PPP", BUT SINCE THIS IS NOT A CIL, IOA WITHDRAWS IT AS AN ISSUE. IOA RECOMMENDS COVERING POD AND CROSSFEED ITEMS SEPARATELY, SINCE THEIR CRITS AND EFFECTS ARE DIFFERENT.

REPORT DATE 21 JULY 1988            C.17-160



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-899  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 899  
 ITEM: THERMAL SWITCH, LT/RT KEEL WEB HEATER SYSTEM  
 GROUP 1

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE MORE THAN ONE OTHER FAILURE IS REQUIRED TO LOSE CREW/VEHICLE. ALSO, MALFUNCTION PROCEDURE 11.5B STATES THIS "WILL RESULT IN HEATER BURNOUT", NOT OVERHEATING. HOWEVER, IOA MAINTAINS A CONCERN THAT CREW WOULD NOT FIRE OMS ENGINE WITH HOT PROPELLANT. THUS IOA RECOMMENDS A "3/1R PPP", BUT SINCE THIS IS NOT A CIL, IOA WITHDRAWS IT AS AN ISSUE. IOA RECOMMENDS COVERING POD AND CROSSFEED ITEMS SEPARATELY, SINCE THEIR CRITS AND EFFECTS ARE DIFFERENT.

REPORT DATE 21 JULY 1988      C.17-162



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-901  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 901  
 ITEM: THERMAL SWITCH, LT/RT KEEL WEB HEATER SYSTEM  
 GROUP 2

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE MORE THAN ONE OTHER FAILURE IS REQUIRED TO LOSE CREW/VEHICLE. ALSO, MALFUNCTION PROCEDURE 11.5B STATES THIS "WILL RESULT IN HEATER BURNOUT", NOT OVERHEATING. HOWEVER, IOA MAINTAINS A CONCERN THAT CREW WOULD NOT FIRE OMS ENGINE WITH HOT PROPELLANT. THUS IOA RECOMMENDS A "3/1R PPP", BUT SINCE THIS IS NOT A CIL, IOA WITHDRAWS IT AS AN ISSUE. IOA RECOMMENDS COVERING POD AND CROSSFEED ITEMS SEPARATELY, SINCE THEIR CRITS AND EFFECTS ARE DIFFERENT.

REPORT DATE 21 JULY 1988

C.17-163

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-903  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 903  
 ITEM: THERMAL SWITCH, LT/RT LOWER INBOARD Y WEB GROUP  
 1

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE MORE THAN ONE OTHER FAILURE IS REQUIRED TO LOSE CREW/VEHICLE. ALSO, MALFUNCTION PROCEDURE 11.5B STATES THIS "WILL RESULT IN HEATER BURNOUT", NOT OVERHEATING. HOWEVER, IOA MAINTAINS A CONCERN THAT CREW WOULD NOT FIRE OMS ENGINE WITH HOT PROPELLANT. THUS IOA RECOMMENDS A "3/1R PPP", BUT SINCE THIS IS NOT A CIL, IOA WITHDRAWS IT AS AN ISSUE. IOA RECOMMENDS COVERING POD AND CROSSFEED ITEMS SEPARATELY, SINCE THEIR CRITS AND EFFECTS ARE DIFFERENT.

REPORT DATE 21 JULY 1988 C.17-164

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-905  
NASA FMEA #: 03-3-7002-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 905  
ITEM: THERMAL SWITCH, LT/RT LOWER INBOARD Y WEB GROUP  
2

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE MORE THAN ONE OTHER FAILURE IS REQUIRED TO LOSE CREW/VEHICLE. ALSO, MALFUNCTION PROCEDURE 11.5B STATES THIS "WILL RESULT IN HEATER BURNOUT", NOT OVERHEATING. HOWEVER, IOA MAINTAINS A CONCERN THAT CREW WOULD NOT FIRE OMS ENGINE WITH HOT PROPELLANT. THUS IOA RECOMMENDS A "3/1R PPP", BUT SINCE THIS IS NOT A CIL, IOA WITHDRAWS IT AS AN ISSUE. IOA RECOMMENDS COVERING POD AND CROSSFEED ITEMS SEPARATELY, SINCE THEIR CRITS AND EFFECTS ARE DIFFERENT.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:	1/01/88	NASA DATA:
ASSESSMENT ID:	OMS-907	BASELINE [    ]
NASA FMEA #:	03-3-7002-2	NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 907  
 ITEM: THERMAL SWITCH, LT/RT OME COMPT GROUP 1

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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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(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-909  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 909  
 ITEM: THERMAL SWITCH, LT/RT OME COMPT GROUP 2

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

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REPORT DATE 21 JULY 1988

C.17-167



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-913  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 913  
 ITEM: THERMAL SWITCH, LT/RT OME COVER GROUP 2

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

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REPORT DATE 21 JULY 1988

C.17-169

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-915	BASELINE [    ]
NASA FMEA #: 03-3-7002-2	NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 915  
ITEM: THERMAL SWITCH, LT/RT RCS HOUSING GROUP 1

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS A	B	C	CIL ITEM
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

IOA DID RECOMMEND RAISING THIS CRIT TO 2/1R SINCE IT IS ONE FAILURE AWAY FROM LOSS OF CREW/VEHICLE, AND DAMAGE MAY OCCUR BEFORE IT IS DETECTED. FIRST FAILURE RESULTS IN THE ASSOCIATED HEATER SET FAILED ON. A SECOND FAILURE IN THE SAME HEATER GROUP WOULD RESULT IN BOTH ELEMENTS OF SOME HEATERS ON SIMULTANEOUSLY WHEN THE OTHER HEATER GROUP IS ACTIVE. THIS RESULTS IN A TEMPERATURE EXCEEDING THE POD STRUCTURAL QUALIFIED LIMIT OF 425F IN APPROX. 2 MIN. AND POSSIBLE LOSS OF CREW/VEHICLE DUE TO STRUCTURAL DAMAGE. NASA'S BASELINE FMEA HAZARDS FIELD PARTIALLY SUPPORTS THIS.

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-917  
NASA FMEA #: 03-3-7002-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 917  
ITEM: THERMAL SWITCH, LT/RT RCS HOUSING GROUP 2

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

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REPORT DATE 21 JULY 1988

C.17-171

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-919  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 919  
 ITEM: THERMAL SWITCH, LT/RT UPPER INBOARD Y-WEB GROUP  
 1

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-921  
NASA FMEA #: 03-3-7002-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 921  
ITEM: THERMAL SWITCH, LT/RT UPPER INBOARD Y-WEB GROUP  
2

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

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REPORT DATE 21 JULY 1988

C.17-173

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-923  
NASA FMEA #: 03-3-7002-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 923  
ITEM: THERMAL SWITCH, LT/RT UPPER OUTBOARD Y WEB GROUP  
1

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

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REPORT DATE 21 JULY 1988

C.17-174

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-925  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 925  
 ITEM: THERMAL SWITCH, LT/RT UPPER OUTBOARD Y WEB GROUP  
 2

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		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)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-927  
 NASA FMEA #: 05-6L-2031-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 927  
 ITEM: SWITCH, TOGGLE RCS/OMS HEATER LT/RT POD GROUP 2

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /N ]	[ ]	[ N ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA RECOMMENDS UPGRADING THE CRIT TO 2/1R, AND PASSING THE B SCREEN. NASA FAILED ONLY ONE POLE OR CONTACT SET, CONSIDERING THE OTHER POLE AS REDUNDANT, WHEREAS IOA CONSIDERED THE WORST CASE FAILURE MODE BY FAILING A PART COMMON TO BOTH POLES (E.G. TOGGLE LEVER). THIS IS THE REASON FOR IOA'S HIGHER CRITICALITY AND NASA'S FAILED B SCREEN, SINCE ONE POLE MAY BE UNDETECTABLE, BUT NOT BOTH. THIS COULD ALSO RESULT IN BOTH REDUNDANT HEATERS FAILED ON AND OVERHEATING. WORST CASE EFFECT IS LOSS OF CREW/VEHICLE (1R) FROM LOSS OF ABILITY TO DUMP PROPELLANT, THUS LANDING HEAVY, SINCE CREW WOULD NOT FIRE OMS ENGINE WITH HOT PROPELLANT. THIS ALSO COULD POSSIBLY LEAD TO STRUCTURAL DAMAGE OF THE POD. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, AFTER SOME STUDYING REMOVED THE CONCERN FOR HOT PROP OR STRUCTURAL DAMAGE. ALSO MALFUNCTION PROCEDURE 11.5B STATES "SIMULTANEOUS OPERATION OF BOTH A,B HTR CKTS WILL RESULT IN HEATER BURNOUT". HOWEVER, IOA RETAINS A CONCERN, RECOMMENDING A "3/1R PFP" CRITICALITY.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88	NASA DATA:
ASSESSMENT ID: OMS-994	BASELINE [    ]
NASA FMEA #: 03-3-7801-1	NEW [ X ]
SUBSYSTEM: OMS	
MDAC ID: 994	
ITEM: CENTER - AFT FUSLG OXIDIZER XFEED LINE TEMP SENSOR	
LEAD ANALYST: W.A. HAUFLER	

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	A	B	C	CIL ITEM
NASA	[ 3 / 3 ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 2 / 2 ]	[    ]	[    ]	[    ]	[ X ]
COMPARE	[ N / N ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

IOA ASSUMED NO LAUNCH IF A SENSOR INDICATES CROSSFEED TEMPS OUTSIDE THE DESIRED LIMITS (<50 F OR >90F) UNLESS SENSOR FAILURE WAS DETERMINED AND THE RISKS OF LOSS OF DETECTABILITY FOR THE THERMAL SYSTEM IS EXCEPTED (THIS ENSURES CROSSFEED FOR ABORTS). WORST CASE EFFECT WOULD BE A FALSE INDICATION OF HEATER SYSTEM FAILED OFF ON A MISSION CRITICAL CROSSFEED LINE, LEADING TO DELAYED LAUNCH AND/OR POSSIBLE LOSS OF MISSION DUE TO LOSS OF INTERCONNECT/CROSSFEED CAPABILITY. THIS IMPLIES A CRIT 2/2 SINCE NO REDUNDANCY. SEE FLIGHT RULES 6-9A (VS) 6-73D AND MALF. PROC. OMS 11.5A NOTES 2,3,4.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE, ACCORDING TO JSC 22206, A DELAYED LAUNCH DOES NOT COUNT AS A LOSS OF MISSION (CRIT 2R).



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-994A  
 NASA FMEA #: 03-3-2804-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 994  
 ITEM: CENTER - AFT FUSLG OXIDIZER XFEED LINE TEMP  
 SENSOR

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 2 / 2 ]	[    ]	[    ]	[    ]	[ X ]
COMPARE	[ N / N ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA ASSUMED NO LAUNCH IF A SENSOR INDICATES CROSSFEED TEMPS OUTSIDE THE DESIRED LIMITS (<50 F OR >90F) UNLESS SENSOR FAILURE WAS DETERMINED AND THE RISKS OF LOSS OF DETECTABILITY FOR THE THERMAL SYSTEM IS EXCEPTED (THIS ENSURES CROSSFEED FOR ABORTS). WORST CASE EFFECT WOULD BE A FALSE INDICATION OF HEATER SYSTEM FAILED OFF ON A MISSION CRITICAL CROSSFEED LINE, LEADING TO DELAYED LAUNCH AND/OR POSSIBLE LOSS OF MISSION DUE TO LOSS OF INTERCONNECT/CROSSFEED CAPABILITY. THIS IMPLIES A CRIT 2/2 SINCE NO REDUNDANCY. SEE FLIGHT RULES 6-9A (VS) 6-73D AND MALF. PROC. OMS 11.5A NOTES 2,3,4.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE, ACCORDING TO JSC 22206, A DELAYED LAUNCH DOES NOT COUNT AS A LOSS OF MISSION (CRIT 2).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-997  
 NASA FMEA #: 03-3-7801-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 997  
 ITEM: LEFT - AFT FUSLG OXIDIZER XFEED LINE TEMP SENSOR  
 LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 2 / 2 ]	[ ]	[ ]	[ ]	[ X ]
COMPARE	[ N / N ]	[ ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA ASSUMED NO LAUNCH IF A SENSOR INDICATES CROSSFEED TEMPS OUTSIDE THE DESIRED LIMITS (<50 F OR >90F) UNLESS SENSOR FAILURE WAS DETERMINED AND THE RISKS OF LOSS OF DETECTABILITY FOR THE THERMAL SYSTEM IS EXCEPTED (THIS ENSURES CROSSFEED FOR ABORTS). WORST CASE EFFECT WOULD BE A FALSE INDICATION OF HEATER SYSTEM FAILED OFF ON A MISSION CRITICAL CROSSFEED LINE, LEADING TO DELAYED LAUNCH AND/OR POSSIBLE LOSS OF MISSION DUE TO LOSS OF INTERCONNECT/CROSSFEED CAPABILITY. THIS IMPLIES A CRIT 2/2 SINCE NO REDUNDANCY. SEE FLIGHT RULES 6-9A (VS) 6-73D AND MALF. PROC. OMS 11.5A NOTES 2,3,4.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE, ACCORDING TO JSC 22206, A DELAYED LAUNCH DOES NOT COUNT AS A LOSS OF MISSION (CRIT 2R).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-997A  
NASA FMEA #: 03-3-2804-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 997  
ITEM: LEFT - AFT FUSLG OXIDIZER XFEED LINE TEMP SENSOR

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 2 / 2 ]	[ ]	[ ]	[ ]	[ X ]
COMPARE	[ N / N ]	[ ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA ASSUMED NO LAUNCH IF A SENSOR INDICATES CROSSFEED TEMPS OUTSIDE THE DESIRED LIMITS (<50 F OR >90F) UNLESS SENSOR FAILURE WAS DETERMINED AND THE RISKS OF LOSS OF DETECTABILITY FOR THE THERMAL SYSTEM IS EXCEPTED (THIS ENSURES CROSSFEED FOR ABORTS). WORST CASE EFFECT WOULD BE A FALSE INDICATION OF HEATER SYSTEM FAILED OFF ON A MISSION CRITICAL CROSSFEED LINE, LEADING TO DELAYED LAUNCH AND/OR POSSIBLE LOSS OF MISSION DUE TO LOSS OF INTERCONNECT/CROSSFEED CAPABILITY. THIS IMPLIES A CRIT 2/2 SINCE NO REDUNDANCY. SEE FLIGHT RULES 6-9A (VS) 6-73D AND MALF. PROC. OMS 11.5A NOTES 2,3,4.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE, ACCORDING TO JSC 22206, A DELAYED LAUNCH DOES NOT COUNT AS A LOSS OF MISSION (CRIT 2).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE:	1/01/88	NASA DATA:	
ASSESSMENT ID:	OMS-998	BASELINE	[    ]
NASA FMEA #:	03-3-7801-1	NEW	[ X ]

SUBSYSTEM:            OMS  
MDAC ID:              998  
ITEM:                  LEFT AFT OXIDIZER XFEED LINE TEMP SENSOR

LEAD ANALYST:        W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 2 / 2 ]	[    ]	[    ]	[    ]	[ X ]
COMPARE	[ N / N ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS:    (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

REMARKS:

IOA ASSUMED NO LAUNCH IF A SENSOR INDICATES CROSSFEED TEMPS OUTSIDE THE DESIRED LIMITS (<50 F OR >90F) UNLESS SENSOR FAILURE WAS DETERMINED AND THE RISKS OF LOSS OF DETECTABILITY FOR THE THERMAL SYSTEM IS EXCEPTED (THIS ENSURES CROSSFEED FOR ABORTS). WORST CASE EFFECT WOULD BE A FALSE INDICATION OF HEATER SYSTEM FAILED OFF ON A MISSION CRITICAL CROSSFEED LINE, LEADING TO DELAYED LAUNCH AND/OR POSSIBLE LOSS OF MISSION DUE TO LOSS OF INTERCONNECT/CROSSFEED CAPABILITY. THIS IMPLIES A CRIT 2/2 SINCE NO REDUNDANCY. SEE FLIGHT RULES 6-9A (VS) 6-73D AND MALF. PROC. OMS 11.5A NOTES 2,3,4.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE, ACCORDING TO JSC 22206, A DELAYED LAUNCH DOES NOT COUNT AS A LOSS OF MISSION (CRIT 2R).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-998A  
NASA FMEA #: 03-3-2804-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 998  
ITEM: LEFT AFT OXIDIZER XFEED LINE TEMP SENSOR

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 2 / 2 ]	[    ]	[    ]	[    ]	[ X ]
COMPARE	[ N / N ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

IOA ASSUMED NO LAUNCH IF A SENSOR INDICATES CROSSFEED TEMPS OUTSIDE THE DESIRED LIMITS (<50 F OR >90F) UNLESS SENSOR FAILURE WAS DETERMINED AND THE RISKS OF LOSS OF DETECTABILITY FOR THE THERMAL SYSTEM IS EXCEPTED (THIS ENSURES CROSSFEED FOR ABORTS). WORST CASE EFFECT WOULD BE A FALSE INDICATION OF HEATER SYSTEM FAILED OFF ON A MISSION CRITICAL CROSSFEED LINE, LEADING TO DELAYED LAUNCH AND/OR POSSIBLE LOSS OF MISSION DUE TO LOSS OF INTERCONNECT/CROSSFEED CAPABILITY. THIS IMPLIES A CRIT 2/2 SINCE NO REDUNDANCY. SEE FLIGHT RULES 6-9A (VS) 6-73D AND MALF. PROC. OMS 11.5A NOTES 2,3,4.  
FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE, ACCORDING TO JSC 22206, A DELAYED LAUNCH DOES NOT COUNT AS A LOSS OF MISSION (CRIT 2).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-1001  
 NASA FMEA #: 03-3-7801-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 1001  
 ITEM: RIGHT - AFT FUSLG OXIDIZER XFEED LINE TEMP  
 SENSOR

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 2 / 2 ]	[    ]	[    ]	[    ]	[ X ]
COMPARE	[ N / N ]	[    ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

IOA ASSUMED NO LAUNCH IF A SENSOR INDICATES CROSSFEED TEMPS OUTSIDE THE DESIRED LIMITS (<50 F OR >90F) UNLESS SENSOR FAILURE WAS DETERMINED AND THE RISKS OF LOSS OF DETECTABILITY FOR THE THERMAL SYSTEM IS EXCEPTED (THIS ENSURES CROSSFEED FOR ABORTS). WORST CASE EFFECT WOULD BE A FALSE INDICATION OF HEATER SYSTEM FAILED OFF ON A MISSION CRITICAL CROSSFEED LINE, LEADING TO DELAYED LAUNCH AND/OR POSSIBLE LOSS OF MISSION DUE TO LOSS OF INTERCONNECT/CROSSFEED CAPABILITY. THIS IMPLIES A CRIT 2/2 SINCE NO REDUNDANCY. SEE FLIGHT RULES 6-9A (VS) 6-73D AND MALF. PROC. OMS 11.5A NOTES 2,3,4.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE, ACCORDING TO JSC 22206, A DELAYED LAUNCH DOES NOT COUNT AS A LOSS OF MISSION (CRIT 2R).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-1001A  
 NASA FMEA #: 03-3-2804-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 1001  
 ITEM: RIGHT - AFT FUSLG OXIDIZER XFEED LINE TEMP  
 SENSOR

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 2 / 2 ]	[ ]	[ ]	[ ]	[ X ]
COMPARE	[ N / N ]	[ ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA ASSUMED NO LAUNCH IF A SENSOR INDICATES CROSSFEED TEMPS OUTSIDE THE DESIRED LIMITS (<50 F OR >90F) UNLESS SENSOR FAILURE WAS DETERMINED AND THE RISKS OF LOSS OF DETECTABILITY FOR THE THERMAL SYSTEM IS EXCEPTED (THIS ENSURES CROSSFEED FOR ABORTS). WORST CASE EFFECT WOULD BE A FALSE INDICATION OF HEATER SYSTEM FAILED OFF ON A MISSION CRITICAL CROSSFEED LINE, LEADING TO DELAYED LAUNCH AND/OR POSSIBLE LOSS OF MISSION DUE TO LOSS OF INTERCONNECT/CROSSFEED CAPABILITY. THIS IMPLIES A CRIT 2/2 SINCE NO REDUNDANCY. SEE FLIGHT RULES 6-9A (VS) 6-73D AND MALF. PROC. OMS 11.5A NOTES 2,3,4.

FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE, ACCORDING TO JSC 22206, A DELAYED LAUNCH DOES NOT COUNT AS A LOSS OF MISSION (CRIT 2).





APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-1002A  
 NASA FMEA #: 03-3-2804-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 1002  
 ITEM: RIGHT AFT OXIDIZER XFEED LINE TEMP SENSOR

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 2 / 2 ]	[ ]	[ ]	[ ]	[ X ]
COMPARE	[ N / N ]	[ ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

IOA ASSUMED NO LAUNCH IF A SENSOR INDICATES CROSSFEED TEMPS OUTSIDE THE DESIRED LIMITS (<50 F OR >90F) UNLESS SENSOR FAILURE WAS DETERMINED AND THE RISKS OF LOSS OF DETECTABILITY FOR THE THERMAL SYSTEM IS EXCEPTED (THIS ENSURES CROSSFEED FOR ABORTS). WORST CASE EFFECT WOULD BE A FALSE INDICATION OF HEATER SYSTEM FAILED OFF ON A MISSION CRITICAL CROSSFEED LINE, LEADING TO DELAYED LAUNCH AND/OR POSSIBLE LOSS OF MISSION DUE TO LOSS OF INTERCONNECT/CROSSFEED CAPABILITY. THIS IMPLIES A CRIT 2/2 SINCE NO REDUNDANCY. SEE FLIGHT RULES 6-9A (VS) 6-73D AND MALF. PROC. OMS 11.5A NOTES 2,3,4.  
 FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE, ACCORDING TO JSC 22206, A DELAYED LAUNCH DOES NOT COUNT AS A LOSS OF MISSION (CRIT 2).

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-1004  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 1004  
 ITEM: FUEL & OXIDIZER FLEX LINE OVER TEMP (LT DECK)

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA GROUPED POD AND CROSSFEED HEATERS IN ONE FMEA, BUT THEIR CRITS AND EFFECTS ARE QUITE DIFFERENT, SO THEY SHOULD BE ON SEPARATE FMEAS. THIS FMEA COVERS BOTH 'CONTROL TEMP' AND 'OVER TEMP' THERMAL SWITCHES. OVER TEMP IS STANDBY REDUNDANT TO CONTROL TEMP. SINCE THERE ARE NO TEST POINTS BETWEEN THEM, AND NO WAY TO ARTIFICIALLY FAIL A CONTROL TEMP THERMAL SWITCH, THERE IS NO WAY TO TEST ON THE GROUND FOR AN OVER TEMP THERMAL SWITCH FAILING CLOSED. THEREFORE, IOA RECOMMENDS FAILING THE A SCREEN. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE OMRSD TEST CAO20 LISTS THEM SEPARATELY AS TESTED, AND TESTED ONLY BEFORE FIRST FLIGHT. ALSO, EACH THERMAL SWITCH CAN BE STIMULATED SEPARATELY USING FREON CANS AND HAIRDRYERS OR HEAT GUNS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-1006  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 1006  
 ITEM: FUEL & OXIDIZER FLEX LINE OVER TEMP (RT DECK)

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

NASA GROUPED POD AND CROSSFEED HEATERS IN ONE FMEA, BUT THEIR CRITS AND EFFECTS ARE QUITE DIFFERENT, SO THEY SHOULD BE ON SEPARATE FMEAS. THIS FMEA COVERS BOTH 'CONTROL TEMP' AND 'OVER TEMP' THERMAL SWITCHES. OVER TEMP IS STANDBY REDUNDANT TO CONTROL TEMP. SINCE THERE ARE NO TEST POINTS BETWEEN THEM, AND NO WAY TO ARTIFICIALLY FAIL A CONTROL TEMP THERMAL SWITCH, THERE IS NO WAY TO TEST ON THE GROUND FOR AN OVER TEMP THERMAL SWITCH FAILING CLOSED. THEREFORE, IOA RECOMMENDS FAILING THE A SCREEN. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE OMRSD TEST CAO20 LISTS THEM SEPARATELY AS TESTED, AND TESTED ONLY BEFORE FIRST FLIGHT. ALSO, EACH THERMAL SWITCH CAN BE STIMULATED SEPARATELY USING FREON CANS AND HAIRDRYERS OR HEAT GUNS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-1008  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 1008  
 ITEM: FUEL & OXIDIZER LOWER CENTER FEED LINE OVER TEMP

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA GROUPED POD AND CROSSFEED HEATERS IN ONE FMEA, BUT THEIR CRITS AND EFFECTS ARE QUITE DIFFERENT, SO THEY SHOULD BE ON SEPARATE FMEAS. THIS FMEA COVERS BOTH 'CONTROL TEMP' AND 'OVER TEMP' THERMAL SWITCHES. OVER TEMP IS STANDBY REDUNDANT TO CONTROL TEMP. SINCE THERE ARE NO TEST POINTS BETWEEN THEM, AND NO WAY TO ARTIFICIALLY FAIL A CONTROL TEMP THERMAL SWITCH, THERE IS NO WAY TO TEST ON THE GROUND FOR AN OVER TEMP THERMAL SWITCH FAILING CLOSED. THEREFORE, IOA RECOMMENDS FAILING THE A SCREEN. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE OMRSD TEST CAO20 LISTS THEM SEPARATELY AS TESTED, AND TESTED ONLY BEFORE FIRST FLIGHT. ALSO, EACH THERMAL SWITCH CAN BE STIMULATED SEPARATELY USING FREON CANS AND HAIRDRYERS OR HEAT GUNS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-1010  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 1010  
 ITEM: FUEL & OX LOWER CENTER XFEED LINE CONTROL TEMP

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [    ] [    ] [    ] [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA GROUPED POD AND CROSSFEED HEATERS IN ONE FMEA, BUT THEIR CRITS AND EFFECTS ARE QUITE DIFFERENT, SO THEY SHOULD BE ON SEPARATE FMEAS. THIS FMEA COVERS BOTH 'CONTROL TEMP' AND 'OVER TEMP' THERMAL SWITCHES. OVER TEMP IS STANDBY REDUNDANT TO CONTROL TEMP. SINCE THERE ARE NO TEST POINTS BETWEEN THEM, AND NO WAY TO ARTIFICIALLY FAIL A CONTROL TEMP THERMAL SWITCH, THERE IS NO WAY TO TEST ON THE GROUND FOR AN OVER TEMP THERMAL SWITCH FAILING CLOSED. THEREFORE, IOA RECOMMENDS FAILING THE A SCREEN. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE OMRSD TEST CAO20 LISTS THEM SEPARATELY AS TESTED, AND TESTED ONLY BEFORE FIRST FLIGHT. ALSO, EACH THERMAL SWITCH CAN BE STIMULATED SEPARATELY USING FREON CANS AND HAIRDRYERS OR HEAT GUNS.



APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-1016  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 1016  
 ITEM: FUEL & OXIDIZER LOWER RIGHT FEED LINE OVER TEMP

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [    ] [    ] [    ] [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA GROUPED POD AND CROSSFEED HEATERS IN ONE FMEA, BUT THEIR CRITS AND EFFECTS ARE QUITE DIFFERENT, SO THEY SHOULD BE ON SEPARATE FMEAS. THIS FMEA COVERS BOTH 'CONTROL TEMP' AND 'OVER TEMP' THERMAL SWITCHES. OVER TEMP IS STANDBY REDUNDANT TO CONTROL TEMP. SINCE THERE ARE NO TEST POINTS BETWEEN THEM, AND NO WAY TO ARTIFICIALLY FAIL A CONTROL TEMP THERMAL SWITCH, THERE IS NO WAY TO TEST ON THE GROUND FOR AN OVER TEMP THERMAL SWITCH FAILING CLOSED. THEREFORE, IOA RECOMMENDS FAILING THE A SCREEN. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE OMRSD TEST CAO20 LISTS THEM SEPARATELY AS TESTED, AND TESTED ONLY BEFORE FIRST FLIGHT. ALSO, EACH THERMAL SWITCH CAN BE STIMULATED SEPARATELY USING FREON CANS AND HAIRDRYERS OR HEAT GUNS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-1024  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 1024  
 ITEM: FUEL HI PT BLEED LINE OVER TEMP

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

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APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-1026  
NASA FMEA #: 03-3-7002-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 1026  
ITEM: FUEL HI PT BLEED LINE T-4 UMB OVER TEMP

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

NASA GROUPED POD AND CROSSFEED HEATERS IN ONE FMEA, BUT THEIR CRITS AND EFFECTS ARE QUITE DIFFERENT, SO THEY SHOULD BE ON SEPARATE FMEAS. THIS FMEA COVERS BOTH 'CONTROL TEMP' AND 'OVER TEMP' THERMAL SWITCHES. OVER TEMP IS STANDBY REDUNDANT TO CONTROL TEMP. SINCE THERE ARE NO TEST POINTS BETWEEN THEM, AND NO WAY TO ARTIFICIALLY FAIL A CONTROL TEMP THERMAL SWITCH, THERE IS NO WAY TO TEST ON THE GROUND FOR AN OVER TEMP THERMAL SWITCH FAILING CLOSED. THEREFORE, IOA RECOMMENDS FAILING THE A SCREEN. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE OMRSD TEST CAO20 LISTS THEM SEPARATELY AS TESTED, AND TESTED ONLY BEFORE FIRST FLIGHT. ALSO, EACH THERMAL SWITCH CAN BE STIMULATED SEPARATELY USING FREON CANS AND HAIRDRYERS OR HEAT GUNS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-1030  
NASA FMEA #: 03-3-7002-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: OMS  
MDAC ID: 1030  
ITEM: L FUEL & OXIDIZER LO PT BLEED LINE OVER TEMP

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[    /    ]	[ N ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

NASA GROUPED POD AND CROSSFEED HEATERS IN ONE FMEA, BUT THEIR CRITS AND EFFECTS ARE QUITE DIFFERENT, SO THEY SHOULD BE ON SEPARATE FMEAS. THIS FMEA COVERS BOTH 'CONTROL TEMP' AND 'OVER TEMP' THERMAL SWITCHES. OVER TEMP IS STANDBY REDUNDANT TO CONTROL TEMP. SINCE THERE ARE NO TEST POINTS BETWEEN THEM, AND NO WAY TO ARTIFICIALLY FAIL A CONTROL TEMP THERMAL SWITCH, THERE IS NO WAY TO TEST ON THE GROUND FOR AN OVER TEMP THERMAL SWITCH FAILING CLOSED. THEREFORE, IOA RECOMMENDS FAILING THE A SCREEN. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE OMRSD TEST CAO20 LISTS THEM SEPARATELY AS TESTED, AND TESTED ONLY BEFORE FIRST FLIGHT. ALSO, EACH THERMAL SWITCH CAN BE STIMULATED SEPARATELY USING FREON CANS AND HAIRDRYERS OR HEAT GUNS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-1038  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 1038  
 ITEM: OXIDIZER HI PT BLEED LINE OVER TEMP

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [    ] [    ] [    ] [    ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA GROUPED POD AND CROSSFEED HEATERS IN ONE FMEA, BUT THEIR CRITS AND EFFECTS ARE QUITE DIFFERENT, SO THEY SHOULD BE ON SEPARATE FMEAS. THIS FMEA COVERS BOTH 'CONTROL TEMP' AND 'OVER TEMP' THERMAL SWITCHES. OVER TEMP IS STANDBY REDUNDANT TO CONTROL TEMP. SINCE THERE ARE NO TEST POINTS BETWEEN THEM, AND NO WAY TO ARTIFICIALLY FAIL A CONTROL TEMP THERMAL SWITCH, THERE IS NO WAY TO TEST ON THE GROUND FOR AN OVER TEMP THERMAL SWITCH FAILING CLOSED. THEREFORE, IOA RECOMMENDS FAILING THE A SCREEN. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE OMRSD TEST CAO20 LISTS THEM SEPARATELY AS TESTED, AND TESTED ONLY BEFORE FIRST FLIGHT. ALSO, EACH THERMAL SWITCH CAN BE STIMULATED SEPARATELY USING FREON CANS AND HAIRDRYERS OR HEAT GUNS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-1040  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 1040  
 ITEM: OXIDIZER HI PT BLEED LINE T-4 UMB OVER TEMP

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[ ]	[ ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

REMARKS:

NASA GROUPED POD AND CROSSFEED HEATERS IN ONE FMEA, BUT THEIR CRITS AND EFFECTS ARE QUITE DIFFERENT, SO THEY SHOULD BE ON SEPARATE FMEAS. THIS FMEA COVERS BOTH 'CONTROL TEMP' AND 'OVER TEMP' THERMAL SWITCHES. OVER TEMP IS STANDBY REDUNDANT TO CONTROL TEMP. SINCE THERE ARE NO TEST POINTS BETWEEN THEM, AND NO WAY TO ARTIFICIALLY FAIL A CONTROL TEMP THERMAL SWITCH, THERE IS NO WAY TO TEST ON THE GROUND FOR AN OVER TEMP THERMAL SWITCH FAILING CLOSED. THEREFORE, IOA RECOMMENDS FAILING THE A SCREEN. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE OMRSD TEST CAO20 LISTS THEM SEPARATELY AS TESTED, AND TESTED ONLY BEFORE FIRST FLIGHT. ALSO, EACH THERMAL SWITCH CAN BE STIMULATED SEPARATELY USING FREON CANS AND HAIRDRYERS OR HEAT GUNS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
 ASSESSMENT ID: OMS-1044  
 NASA FMEA #: 03-3-7002-2

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: OMS  
 MDAC ID: 1044  
 ITEM: R FUEL & OXIDIZER LO PT BLEED LINE OVER TEMP

LEAD ANALYST: W.A. HAUFLE

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ F ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ N ]	[    ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [    ] [    ] [    ] [    ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

REMARKS:

NASA GROUPED POD AND CROSSFEED HEATERS IN ONE FMEA, BUT THEIR CRITS AND EFFECTS ARE QUITE DIFFERENT, SO THEY SHOULD BE ON SEPARATE FMEAS. THIS FMEA COVERS BOTH 'CONTROL TEMP' AND 'OVER TEMP' THERMAL SWITCHES. OVER TEMP IS STANDBY REDUNDANT TO CONTROL TEMP. SINCE THERE ARE NO TEST POINTS BETWEEN THEM, AND NO WAY TO ARTIFICIALLY FAIL A CONTROL TEMP THERMAL SWITCH, THERE IS NO WAY TO TEST ON THE GROUND FOR AN OVER TEMP THERMAL SWITCH FAILING CLOSED. THEREFORE, IOA RECOMMENDS FAILING THE A SCREEN. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE, BECAUSE OMRSD TEST CAO20 LISTS THEM SEPARATELY AS TESTED, AND TESTED ONLY BEFORE FIRST FLIGHT. ALSO, EACH THERMAL SWITCH CAN BE STIMULATED SEPARATELY USING FREON CANS AND HAIRDRYERS OR HEAT GUNS.

APPENDIX C  
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/01/88  
ASSESSMENT ID: OMS-21001X  
NASA FMEA #: 03-3-8001-1

NASA DATA:  
BASELINE [ ]  
NEW [ ]

SUBSYSTEM: OMS  
MDAC ID: 21001  
ITEM: DEDICATED SIGNAL CONDITIONER

LEAD ANALYST: W.A. HAUFLER

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA DID RECOMMEND UPGRADING THIS FMEA TO 2/2, 1/1 ABORT, THUS ADDING THIS TO THE CIL LIST. IOA'S CRIT IS BASED ON THE HIGHEST CRITICALITY OF THE SIGNALS ROUTED THROUGH THE SIGNAL CONDITIONERS. THESE WORST CASE SIGNALS ARE FROM OMS ENGINE TEMPERATURE PRESSURE SENSORS (E.G. ENGINE REGULATOR OUTLET PRESSURE SENSOR; OMS-689 OR SECTION 4.2.3.B.6). LOSS OF A VITAL ENGINE MEASUREMENT WILL PREVENT THE CREW FROM USING THAT OMS ENGINE FOR NONCRITICAL BURNS, RESULTING IN LOSS OF MISSION. FINAL RESOLUTION: IOA WITHDREW THIS ISSUE BECAUSE THE EPD&C CIL ISSUES THAT THIS ISSUE IS BASED ON WERE WITHDRAWN.









**MCDONNELL DOUGLAS ASTRONAUTICS COMPANY -  
ENGINEERING SERVICES  
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