MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A04175	**In-Flight Anomaly Number** --	**Contractor Report Number** S-054	**JSC#** --	**KSC#** --
Problem Title BOLT BREAKAGE, LO INTERTANK TO LH2 TANK ATTACHMENT				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 3
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** ET-6	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** BOLT	**PART#** 26L2-9	**SER/LOT#** N/A	**MANUFACTURER** N/A
Test/Operation L - FLD	**Prevailing Condtion** --	**F / U** F	**Fail Mode** --	**Cause** --
System STRUCTURAL	**Defect** DC - BROKEN	**Material** --	**Work Contact** J. FINCHER	**Fail Date** 12/16/1981
Received at MSFC 01/14/1982	**Date Isolated** --	**FMEA Reference** 1.2	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location MAF		**Symptom** --		**Time Cycle** --
Effectivity Text LWT-1 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 05/11/1982	**Defer Date** --	**Add Date** --	**R/C Codes** 1 - DES -- --
Assignee				
Design J. NICKOLS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** M. PESSIN	**Project MGR** --
Approval				
Design J. NICKOLS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** J. ODOM	**Project MGR** --

PAC Assignee	PAC Review Complete	MSFC Closure Date	Status	F/A Completion
M. GLASS	--	08/04/1982	C - CLOSED	--

Problem Type	SEV	Program Name	REVL	OPRINC
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FUNC MOD	Software Effectivity	Software Fail CD	SUBTYPE	Software Closure CD
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RES PERSON L2	Approval Signature L3
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: DURING THE PROCESS OF SECURING ET-6 INTERTANK TO LH2 TANK. A 26L2-9 (9/16") BOLT SHEARED JUST PRIOR TO OBTAINING THE REQ'D TORQUE OF 240 FT/LBS. THE BOLT SHEAR OCCURRED IN THE THREADED AREA ADJACENT TO THE BOLT SHANK

Contractor Investigation/Resolution

CAUSE - INSUFFICIENT NO. OF WASHERS INSTALLED UNDER NUT END OF BOLT WHICH CAUSED SHANKING CONDITION & OVERLOAD OF BOLT. 5/11/82 RESOLUTION - IT WAS OBSERVED THAT AN INSUFFICIENT NO. OF WASHERS WERE USED UNDER THE NUT. THIS PRODUCED A CONDITION WHERE THE NUT ENGAGED IMPERFECT THREADS NEAR THE BOLT SHANK, THEREBY INCREASING BOLT TORSION & SHEARING THE BOLT. FAILURE ANALY SHOWED THE BOLT IS CORRECT MTR (A268) OF PROPER ROCKWELL HARDNESS (C38-40, WITH NO OTHER ABNORMALITITES. ALL BOLTS IN THE SPLICE WHEN FAILURE OCCURRED WERE REMOVED & SUBJECTED TO FAILURE ANALY ALL EXCEEDED NEW BOLT REQMNTS. ALL TORQUE WRENCHES WERE TESTED FOR ACCURACY & WERE WITHIN CALIBRATED VALVES. UPON REINSTALLATION OF NEW BOLT IN ET-6 THREAD PROTRUSION MSRMNTS WERE MADE TO ASSURE BOLTS WERE NOT BEING SHANKED (REF MARS T-49544 MARS .182 IN.). RECURRENCE CONTROL - 5/11/82 - REQUESTED R/C BACK-UP INFO MMC. EFFECTIVITY - ET-3,4,5 - ENGR'G ANALY PROVED WORST CASE MAX. LOAD ON EACH BOLT OCCURS DURING TORQUE OPERATION DUE TO CONTRIBUTING TORSION LOAD OF TORQUE ON BOLT, ALSO ANALY SHOWS SEVERAL BOLTS MAY FAIL WITHOUT STRUCTURAL SEPARATION (CHART 1) THEREFORE ET-3,4,5 OK FOR FLT 'AS IS'. ET-6 - ALL BOLTS WERE REPLACED & A MSRMNT WAS MADE TO ASSURE THREAD PROTRUSION IS LESS THAN .182 IN.& BOLTS ARE NOT BEING SHANKED. ALSO ABOVE ENGR ANALY

IS APPLICABLE TO ET-6. LWT-1 & SUBS - ENGR ANALY IS BEING MADE TO RE-EVALUATE ALL THRU HOLE APPLICATIONS TO VERIFY BOLT LENGTH & APPLICABLE TORQUE VALVES. 5/13/82 - REQUESTED R.C. BACK-UP DATA (CHANGE SUMMARY J30671) PER TELECON. 7/1/82 - REC'D CAPS ADDENDUM. LWT-1 & UP RECURRENCE OF PROB IS PREVENTED BY REVISING TORQUE REQMNTS - REV "A" FLAG 3, SHT 2, OF DWG 80911000000 REDUCES TORQUE VALVE ON FASTENERS FLAG 14, SHT 2 ESTABLISHES REQMNT TO MEASURE EXTENSION PAST NUT AFTER FINAL TORQUE HAS BEEN ACHIEVED. REF ECP J30671. 7/12/82 - CLOSURE DISTRIBUTED

MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System

ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A04175	--	S-054	--	--	--

Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**
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HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**
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Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
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Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
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Correlated Part#	**Correlated Part#**	**Correlated Part#**
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Associated LRU#	**Associated LRU#**	**Associated LRU#**
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MAJOR DESIGN CHANGES

APRV DATE	**DESCRIPTION OF CHANGES**
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ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A04329	**In-Flight Anomaly Number** --	**Contractor Report Number** S-053	**JSC#** --	**KSC#** --
Problem Title GAP EXISTS BETWEEN CABLE TRAY SUPPORT AND TANK LUGS				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 3
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** ET-5	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** LO2 TANK	**PART#** 82612000000	**SER/LOT#** N/A	**MANUFACTURER** MMC
Test/Operation L - FLD	**Prevailing Condtion** --	**F / U** UC	**Fail Mode** --	**Cause** --
System STRUCTURAL	**Defect** --	**Material** --	**Work Contact** E. PRIESTAS	**Fail Date** 01/11/1981
Received at MSFC 02/09/1982	**Date Isolated** --	**FMEA Reference** 1.1.3	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location NSTL		**Symptom** --		**Time Cycle** --
Effectivity Text ET-005, 006, LWT-1 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 02/25/1982	**Defer Date** --	**Add Date** --	**R/C Codes** 1 - DES -- --
Assignee				
Design J. NICKOLS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** M. PESSIN	**Project MGR** --
Approval				
Design J. NICKOLS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** M. PESSIN	**Project MGR** --

PAC Assignee	PAC Review Complete	MSFC Closure Date	Status	F/A Completion
M. GLASS	MG	03/19/1982	C - CLOSED	--

Problem Type	SEV	Program Name	REVL	OPRINC
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FUNC MOD	Software Effectivity	Software Fail CD	SUBTYPE	Software Closure CD
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RES PERSON L2	Approval Signature L3
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Type	Related Document ID
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Related Document Title
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Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: DURING INSTALLATION OF CABLE TRAY SUPPORTS ON HWT-5 IN FINAL ASSY,
A GAP WAS DISCOVERED BETWEEN THE CABLE TRAY & THE LUGS WELDED TO THE
OUTSIDE OF THE LO2 TANK

Contractor Investigation/Resolution

3/1/82 CAUSE - INCORRECT TAPER OF BASE OF WIDE WELD LUGS. RESOLUTION -
ENGR'G DWGS WERE CHANGED TO ADD ADDITIONAL DETAILS TO ACHIEVE BETTER
FIT. ALSO TOOL WAS FABRICATED TO CHECK ALIGNMENT PRIOR TO ASSY & CHECK
HWT-5, 6 & LWT-1, LO2 TANKS. RECURRENCE CONTROL - - ET-005, 006 & LWT-1
LO2 TANKS WERE FOUND DISCREPANT. SHIMS WERE REQ'D TO OBTAIN PROPER FIT
- LWT-2 & SUBS WILL BE FABRICATED USING THE REVISED DWGS & THE
ALIGNMENT CHECKED PRIOR TO ASSY. 3/1/82 - CLOSURE DISTRIBUTED

MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System
ASSESSMENT ADDENDUM REPORT

MSFC Report#	IFA#	Contractor RPT#	JSC#	KSC#	EICN#
A04329	--	S-053	--	--	--

Asmnt Part#	Asmnt Part Name	Asmnt Serial/Lot#
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HCRIT CD --	FCRIT CD --	CAUSE CD --	FAIL MODE --
Asmnt FMEA --	Asmnt FM --	FMEA CSE --	FMEA SCSE --
Asmnt FMEA --	Asmnt FM --	FMEA CSE --	FMEA SCSE --
Asmnt FMEA --	Asmnt FM --	FMEA CSE --	FMEA SCSE --
Correlated Part# --	Correlated Part# --	Correlated Part# --	
Associated LRU# --	Associated LRU# --	Associated LRU# --	
MAJOR DESIGN CHANGES			
APRV DATE --	DESCRIPTION OF CHANGES --		
ASSESSMENT TEXT			

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A04468	**In-Flight Anomaly Number** --	**Contractor Report Number** P-042	**JSC#** --	**KSC#** --
Problem Title TUMBLE VALVE RAIN SHIELD COVER DETACHED				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 3
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** ET-3	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** RAIN SHIELD COVER	**PART#** PD4700193-003	**SER/LOT#** N/A	**MANUFACTURER** MMC
Test/Operation L - FLD	**Prevailing Condtion** --	**F / U** UC	**Fail Mode** --	**Cause** --
System PROPULSION	**Defect** --	**Material** --	**Work Contact** R. RODGERS	**Fail Date** 02/26/1982
Received at MSFC 03/11/1982	**Date Isolated** --	**FMEA Reference** 2.7	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location KSC		**Symptom** --		**Time Cycle** --
Effectivity Text STS-3 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 04/13/1982	**Defer Date** --	**Add Date** --	**R/C Codes** 1 - DES -- --
Assignee				
Design B. DAVIS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** C. CRANE	**Project MGR** --
Approval				
Design B. DAVIS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** J. ODOM	**Project MGR** --

PAC Assignee	PAC Review Complete	MSFC Closure Date	Status	F/A Completion
M. GLASS	MG	04/30/1982	C - CLOSED	--

Problem Type	SEV	Program Name	REVL	OPRINC
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FUNC MOD	Software Effectivity	Software Fail CD	SUBTYPE	Software Closure CD
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RES PERSON L2	Approval Signature L3
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: DURING THE PERFORMANCE OF PROPELLANT TANKING TEST STS-3 (KSC) IT WAS OBSERVED THAT THE TUMBLE VALVE RAIN SHIELD WAS NOT IN PLACE AFTER COMPLETION ON THE TANKING TESTS. THE RAIN SHIELD IS INSTALLED PREPARATORY TO PROPELLANT TANKING TESTS & FLT

Contractor Investigation/Resolution

CAUSE - IT IS SUSPECTED THAT THE RAIN SHIELD BECAME DETACHED AS A RESULT OF WIND & NOSE CAP PURGING. 3/16/82 - STS-3 CONSTRAINT LIFTED: A NEW SEAL WILL BE GLUED IN PLACE PRIOR TO PROPELLANT TANKING & DRYING PERFORMED PER PROCEDURES ESTABLISHED FOR STS-3. RECOGNIZING THE TUMBLE VALVE'S SENSITIVITY TO MOISTURE & THE POSSIBILTY OF VALVE FAILURE IF THE CAP IS AGAIN DETACHED, THE RATIONALE FOR STS-3 CONSTRAINT LIFTING IS BASED ON STS-1 FLT RESULTS (WHEN THE VALVE FAILED) & THE SIMILARITY OF STS-3 TRAJECTORY & ANTICIPATED RE-ENTRY FOOTPRINT. THIS ACTION CLEARS STS-3 FOR LAUNCH & HAS BEEN COORDI-NATED WITH THE ET PROJECT OFFICE - JAMES B. ODOM. 4/13/82 - REC'D ADDENDUM I TO CAPS P-042 RESOLUTION - TO ENSURE RETENTION OF THE RAINSHIELD ON THE TUMBLE VALVE UNTIL LIFT-OFF, COVER IN- STALLATION PROCEDURE (82620000003) WAS REVISED TO REQUIRE THE COVER BE INSTALLED WITH ADHESIVE (M666A). THE ENGR'G DWGS WERE ALSO REVISED TO REFLECT THIS CHANGE. RECURRENCE CONTROL - COVER IS NOW SECURED IN PLACE BY ADHESIVE TO PRECLUDE LOSS PER ECP-B01497 & FEC-ET-132. EFFECTIVITY - ET-003 & SUBS, ET-005 & SUBS

MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System
ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A04468	--	P-042	--	--	--
Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**			
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HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**		
--	--	--	--		
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
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Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
--	--	--	--		
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
--	--	--	--		
Correlated Part#	**Correlated Part#**	**Correlated Part#**			
--	--	--			
Associated LRU#	**Associated LRU#**	**Associated LRU#**			
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MAJOR DESIGN CHANGES					
APRV DATE	**DESCRIPTION OF CHANGES**				
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ASSESSMENT TEXT					

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A04546	**In-Flight Anomaly Number** --	**Contractor Report Number** S-056	**JSC#** --	**KSC#** --
Problem Title BARREL PANEL #1 OUT-OF-ROUND				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 3
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** ET-6	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** LH2 TANK WELD ASSY	**PART#** 80914000000-009	**SER/LOT#** 0000001	**MANUFACTURER** MMC
Test/Operation M - MFG	**Prevailing Condtion** --	**F / U** UC	**Fail Mode** --	**Cause** --
System STRUCTURAL	**Defect** --	**Material** --	**Work Contact** C. VOGEL	**Fail Date** 03/19/1982
Received at MSFC 03/26/1982	**Date Isolated** --	**FMEA Reference** 1.1.1	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location MAF		**Symptom** --		**Time Cycle** --
Effectivity Text ET-6 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 04/06/1982	**Defer Date** --	**Add Date** --	**R/C Codes** 2 - MFG -- --
Assignee				
Design J. NICHOLS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** C. CRANE	**Project MGR** --
Approval				
Design J. NICHOLS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** J. ODOM	**Project MGR** --

PAC Assignee	PAC Review Complete	MSFC Closure Date	Status	F/A Completion
M. GLASS	MG	05/21/1982	C - CLOSED	--

Problem Type	SEV	Program Name	REVL	OPRINC
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FUNC MOD	Software Effectivity	Software Fail CD	SUBTYPE	Software Closure CD
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RES PERSON L2	Approval Signature L3
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: 3/26/82 DESCRIPTION - (REF MARS T-45431) AN OUT-OF-ROUND CONDITION EXISTS IN THE NO. 1 BARREL PANEL ADJACENT TO THE LONGERONS (PANELS 80914800993-001, 80914800995-001, & 80914800993-002). THIS CON- DITION EXISTS IN AN AREA APPROX 60" LONG FROM THE H-2 WELD & 36" WIDE FROM THE HB1-2, HB1-3, HB1-9 & HB1-10 WELDS RESPECTIVELY

Contractor Investigation/Resolution

3/26/82 CAUSE - THE OUT-OF-ROUND "FLAT SPOT" ANOMALY WAS DUE TO INSUFFICIENT FORMING OF THE PANELS IN THE 60" X 36" AREA DEFINED ABOVE IN THIS AREA, THE PANEL THICKNESS IS GREATER THAN .17 INCH & THE CURVATURE WILL NOT FLEX INTO THE RADIUS SPECIFIED DURING BARREL FAB DUE TO ITS RIGIDITY. 5/6/82 RESOLUTION - THE OUT OF CONTOUR (FLAT SPOTS) CONDITION IN THE PANELS ADJACENT TO THE LONGERONS IS DUE TO THE LACK OF COMPONENT FORMING IN THE PARTICULAR AREA. WHEN THE PANELS ARE WELDED TO THE LONGERONS, THE THICKNESS IS TOO GREAT FOR THE INDIVIDUAL PANELS TO BEND TO CONTOUR A STRUCTURAL & TPS ANALY WAS PERFORMED ON HWT-6 BASED UPON DIMENSIONAL DATA OBTAINED BEFORE AND AFTER PROOF TEST. THIS ANALY INDICATED NO STRUCTURAL DEGRADATION BUT DID REQUIRE TPS SERRATIONS. A SUBSEQUENT ANALY INDICATES THAT THE TPS SERRATIONS ARE NOT REQ'D SO LONG AS THE TPS ENHANCEMENT PRESS. ARE REQ'D. RECURRENCE CONTROL - MFR'G ENGR'G PROVIDED TOOLING & PROCESS PLANS FOR ADDITIONAL PANEL FORMING FOR LWT-5 WHICH PROVIDED PANELS WITHIN ACCEPTANCE LIMITS EFFECTIVITY - HWT-6 - MARS DISPOSITIONED - USE AS IS. LWT-1, 2, 3 - MARS DISPOSITIONED - USE AS IS. LWT-4 - DC&R ISSUED TO INSPECT & INITIATE MARS. LWT-5 & SUBS - TOOLING CHANGES TO CORRECTLY FORM PANELS

IMPLEMENTED SUCCESSFULLY. 5/12/82 - CLOSURE DISTRIBUTED
MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System
ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A04546	--	S-056	--	--	--
Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**			
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HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**		
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Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
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Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
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Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
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Correlated Part#	**Correlated Part#**	**Correlated Part#**			
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Associated LRU#	**Associated LRU#**	**Associated LRU#**			
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MAJOR DESIGN CHANGES					
APRV DATE	**DESCRIPTION OF CHANGES**				
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ASSESSMENT TEXT					

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A04617	**In-Flight Anomaly Number** --	**Contractor Report Number** E-058	**JSC#** --	**KSC#** --
Problem Title CONNECTOR NB6XXX/BACKSHELL NB-RFI JUMPED THREAD				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 1
HCRIT --	**Sys_Lvl** Y	**Misc Codes** A B **(X)** C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** N/A	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** --
HARDWARE NCA	**NOMENCLATURE** CONNECTOR	**PART#** NB6GE22-41SXT	**SER/LOT#** N/A	**MANUFACTURER** ITT/CANNON
Test/Operation L - FLD	**Prevailing Condtion** --	**F / U** F	**Fail Mode** --	**Cause** --
System ELECTRICAL	**Defect** MB - TORQUE	**Material** --	**Work Contact** J. KENNEDY	**Fail Date** 02/18/1982
Received at MSFC 04/08/1982	**Date Isolated** --	**FMEA Reference** 3.2	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location MMC		**Symptom** --		**Time Cycle** --
Effectivity Text ET-4 AND SUBS, LWT-1 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 04/19/1983	**Defer Date** --	**Add Date** --	**R/C Codes** 2 - MFG -- --
Assignee				
Design L. GUZINSKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** P. DICKERSON	**Project MGR** --
Approval				
Design	**Chief Engineer**	**S & MA**	**Project**	**Project MGR**

L. GUZINSKY	--	D. NEWMAN	P. BRIDWELL	--
PAC Assignee M. GLASS	**PAC Review Complete** MG	**MSFC Closure Date** 05/02/1983	**Status** C - CLOSED	**F/A Completion** --
Problem Type --	**SEV** --	**Program Name** --	**REVL** --	**OPRINC** --
FUNC MOD --	**Software Effectivity** -- -- -- -- --	**Software Fail CD** --	**SUBTYPE** --	**Software Closure CD** --
RES PERSON L2 --	**Approval Signature L3** --			
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Contractor Status Summary				
Reliability/Quality Assurance Concerns, Recommendations:				

Problem Description

REF: T-54945/T-49920 4/9/82 DESCRIPTION - THE NB6GE22-41SXT CONNECTOR, WHEN MATED WITH THE NB-RFI-22 BACKSHELL, FAILED TO MEET THE TORQUE REQMNTS OF 105-110 IN/LBS AS SPECIFIED IN PI-6501. THE SCREW THREADS IN THE BACKSHELL JUMPED THE SCREW THREADS ON THE CONNECTOR AT 75 IN/LBS THIS CONNECTOR, WITH ASSOCIATED RFI BACKHSELL, IS CONNECTED EXTERNALLY TO THE RSS BOX (HARNESS 314W08) & TERMINATED IN THE ORBITER. NOTE: THE COMBINATION OF NB6XXX CONNECTORS & RFI BACKSHELLS ARE USED EXTENSIVELY IN THE RSS SYSTEM

Contractor Investigation/Resolution

4/9/82 CAUSE - INVESTIGATION OF THE FAILED CONNECTOR REVEALED THAT THE EXTERNAL THREADS ON THE NB6GE22 CONNECTOR DOES NOT MEET THE REQMNTS FOR 1 5/16-18 UNEF-2A THREADS AS SPECIFIED IN THE 40M39569 DOCUMENT PRELIMINARY RESULTS OF DC&R E-82-003 INDICATE THAT ALL NB6XXX CONNECTORS (ITT CANNON) IN SHELL SIZES 20, 22, & 18 FAILED TO MEET SCREW THREADS REQMNT 40M39569. 5/7/82 - ET-4 CONSTRAINT LIFTED BASED ON RATIONALE THAT STRESS ANALY HAS DESIGNATED RSS & SRB CIR- CUIT CONNECTORS TO BE INSPECTED, & THIS HAS BEEN ACCOMPLISHED BY MAF AR M2551. STRESS ANALY ALSO VERIFIED ALL OTHER CONNECTORS FOR ET-4 AS BEING STRUCTURALLY SOUND AS THEY HAVE ACHIEVED FLT TORQUE (105-110 IN/LBS) WITHOUT ANOMALY. THIS CHANGE HAS BEEN COORDINATED WITH THE ET PROJECT OFFICE ____JAMES B. ODOM____. 10/6/82 - ET-5 CONSTRAINT IS LIFTED BASED ON THE SAME RATIONALE AS STATED ABOVE FOR ET-4. THIS CHANGE HAS BEEN COORDINATED WITH THE ET PROJ. OFFICE ____JAMES B

ODOM____. 11/22/82 - LWT-1 CONSTRAINT IS LIFTED BASED ON THE SAME RATIONALE AS STATED ABOVE FOR ET-4. IN ADDI-TION DC&R E-82-008-R2 INSPECTED LWT-1; NO DISCREPANCIES WERE FOUND. THIS CHANGE HAS BEEN COORDI- NATED WITH THE E.T. PROJ OFFICE - _____JAMES B. ODOM_____ 4/19/83 RESOLUTION - C/A'S CONSISTED OF SCAR ACTION TO THE VENDOR, MAF PI & RAP CHANGES, & AN INDUSTRY ALERT. EFFECTIVITIES AFFECTED WERE CLEARED BY DC&R INSPECTION & ENGR'G STRESS ANALYSIS. DURING THE COURSE OF THE INVESTIGATION, A CONFLICT IN THE MSFC SPEC 40M39569 WAS DISCOVERED & RESOLVED THRU CLARIFICATION OF THE THREAD REQMNTS BY MSFC RECURRENCE CONTROL - ACTIONS STATED IN SUBJECT CAPS ASSURES ALL CONNECTORS HAVE BEEN INSPECTED & FOUND STRUCTURALLY SOUND, & FUTURE CONNECTORS WILL BE CHECKED WITH THREAD GAGE TOOLS. REF DAR MMC-ET-141-PCIN-67831. 4/19/83 - CLOSURE DISTRIBUTED

MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System

ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A04617	--	E-058	--	--	--

Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**
--	--	--

HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**
--	--	--	--

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Correlated Part#	**Correlated Part#**	**Correlated Part#**
--	--	--

Associated LRU#	**Associated LRU#**	**Associated LRU#**
--	--	--

MAJOR DESIGN CHANGES

APRV DATE	**DESCRIPTION OF CHANGES**
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ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A04769	**In-Flight Anomaly Number** --	**Contractor Report Number** P-043	**JSC#** --	**KSC#** --
Problem Title EXCESSIVE LEAKAGE LO2 FEEDLINE AT STA. 1129 (2.6 SCIM)				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 1
HCRIT --	**Sys_Lvl** Y	**Misc Codes** A B C D E **(X)** F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** ET-4	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** LO2 PROP FEEDLINE	**PART#** 82621011009	**SER/LOT#** ET-4	**MANUFACTURER** MMC
Test/Operation L - FLD	**Prevailing Condtion** --	**F / U** F	**Fail Mode** --	**Cause** --
System PROPULSION	**Defect** --	**Material** --	**Work Contact** J. FINCHER	**Fail Date** 03/05/1982
Received at MSFC 05/10/1982	**Date Isolated** --	**FMEA Reference** 2.1.1	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location KSC		**Symptom** MV - EXT LEAK		**Time Cycle** --
Effectivity Text ET-4 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 05/10/1982	**Defer Date** --	**Add Date** --	**R/C Codes** 2 - MFG -- --
Assignee				
Design R. ZAGRODSKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** C. CRANE	**Project MGR** --
Approval				
Design R. ZAGRODSKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** C. CRANE	**Project MGR** --

PAC Assignee	PAC Review Complete	MSFC Closure Date	Status	F/A Completion
M. GLASS	MG	05/28/1982	C - CLOSED	--

Problem Type	SEV	Program Name	REVL	OPRINC
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FUNC MOD	Software Effectivity	Software Fail CD	SUBTYPE	Software Closure CD
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RES PERSON L2	Approval Signature L3
--	--

Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
--	--

Related Document Title
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Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: MARS T-53237 (PROB 'B' PV3-006911) 5/10/82 - DURING LEAK CHECK OF LO2 FEEDLINE FLANGE AT STA. 1129 A LEAK OF A 2.6 SCIM WAS DETECTED (MAX. ALLOWABLE BY PROCEDURE IS .5 SCIM GN(2). UPON DISASSY OF FEEDLINE FLANGES DISCOVERY OF PARTIALLY MASHED SEALS BETWEEN FLANGES. A REVIEW OF MAF TEST DATA REVEALED NO LEAK WAS DOCUMENTED ON THIS FLANGE

Contractor Investigation/Resolution

5/10/82 CAUSE - PRIMARY & SECONDARY FEEDLINE SEALS WERE DAMAGED DURING INSTALLATION AT MAF. IN- ADEQUATE CLEARANCE/MISALIGNMENT OF FLANGES EXTRUDED THE SEALS WITH A 'WIPING' & CLAMPING ACTION DURING BOLT INSTALLATION. ALSO THE LO2 FORWARD ELBOW STRUT (P/N 8263011036-031) WAS NOT ALIGNED PROPERLY. CORRECTIVE ACTION - ET-4 - SEALS WERE REPLACED AT KSC & SUCCESSFULLY RELEAKED TESTED. RECURRENCE CONTROL - ET-5 - PROPULSION LINES WERE INSTALLED IN 'F/A POSITION 3' WHERE BRIDGE CRANE IS USED & FLOWMETER MONITORED FOR LONGER PERIOD OF TIME. ET-6 - ALIGNMENT PINS WILL BE USED FOR FLANGE CLOSEOUT, TOOLING STRUTS WILL BE ATTACHED FORWARD OF ELBOW SECTION TO COMPRESS BELLOWS TO PROVIDE CLEARANCE FOR SEAL INSPECTION & ATTACHMENT. LWT-1 & SUBS - ALIGNMENT TOOL WILL BE PROVIDED TO GUIDE FLANGES TOGETHER PREVENTING ANY LATERAL MOVEMENT. ALSO LEAK TESTING WILL BE BY THE WATER DISPLACEMENT METHOD FOR INCREASED SENSI- TIVITY, HOWEVER LEAK QUAL WILL CONTINUE BY THE FLOWMETER METHOD. A BRIDGE CRANE INSTALLATION IN F/A POSITION 1 & 2 IS SCHEDULED ON FY83 FUNDING

MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System
ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A04769	--	P-043	--	--	--

Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**
--	--	--

HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**
--	--	--	MV - EXT LEAK

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Correlated Part#	**Correlated Part#**	**Correlated Part#**
--	--	--

Associated LRU#	**Associated LRU#**	**Associated LRU#**
--	--	--

MAJOR DESIGN CHANGES

APRV DATE	**DESCRIPTION OF CHANGES**
--	--

ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A04721	**In-Flight Anomaly Number** --	**Contractor Report Number** T-029	**JSC#** --	**KSC#** --
Problem Title PHENOLIC KNIFE CUTS IN CPR AROUND PALRAMPS				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 3
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B **(X)** C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** ET-4	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** ET-4	**MANUFACTURER** MMC
Test/Operation L - FLD	**Prevailing Condtion** --	**F / U** UC	**Fail Mode** --	**Cause** --
System THERMAL	**Defect** --	**Material** --	**Work Contact** R. HAWKINS	**Fail Date** 03/02/1982
Received at MSFC 04/30/1982	**Date Isolated** --	**FMEA Reference** 1.2	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location KSC		**Symptom** --		**Time Cycle** --
Effectivity Text ET-4 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 06/09/1983	**Defer Date** --	**Add Date** --	**R/C Codes** 3 - F/TE -- --
Assignee				
Design B. DAVIS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** G. CAVALARIS	**Project MGR** --
Approval				
Design	**Chief Engineer**	**S & MA**	**Project**	**Project MGR**

B. DAVIS	--	D. NEWMAN	P. BRIDWELL	--	
PAC Assignee M. GLASS	**PAC Review Complete** MG	**MSFC Closure Date** 06/27/1983	**Status** C - CLOSED	**F/A Completion** --	
Problem Type --	**SEV** --	**Program Name** --	**REVL** --	**OPRINC** --	
FUNC MOD --	**Software Effectivity** -- -- -- -- --	**Software Fail CD** --		**SUBTYPE** --	**Software Closure CD** --
RES PERSON L2 --	**Approval Signature L3** --				
Related Document Type --	**Related Document ID** --				
Related Document Title --					
Related Document Type --	**Related Document ID** --				
Related Document Title --					
Related Document Type --	**Related Document ID** --				
Related Document Title --					

Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: PHENOLIC KNIFE CUTS WERE NOTED IN THE CPR SURROUNDING MANY OF THE TRIM AREAS AROUND CLOSEOUTS & SPRAYED ON PROTUBERANCES. THE KNIFE CUTS WERE NOTED DURING THE ET-4 SHAKEDOWN AT KSC, AFTER FINAL INSPECTION AT MAF. CAUSE - SUSPECTS ARE: INADEQUATE LIGHTING FOR INSPECTION, LACK OF ADEQUATE TRAINING OF SHOP PERSONNEL IN MASKING REMOVAL, & LACK OF PROTECTIVE DEVICES FOR CPR SUBSTRATE DURING REMOVAL OF MASKING

Contractor Investigation/Resolution

4/30/82 - INVESTIGATION INTO THE ABOVE SUSPECTED CAUSES IS UNDERWAY AT MAF. 6/10/83 CAUSE - AS STATED PREVIOUSLY - 'SUSPECTED CAUSES'. 6/10/83 RESOLUTION - NEW MASKING REMOVAL TECHNIQUES HAVE BEEN IMPLEMENTED, WHICH EITHER PROVIDE PRO-TECTION FROM OR DELETE PHENOLIC KNIVES PORTABLE LIGHTING HAS BEEN PROVIDED WHERE REQ'D ON THE WORK STANDS IN THE 420 BLDG. THE LIGHTING FOR CELLS B, C, & D WILL BE UPGRADED IN ORDER TO PREVENT KNIFE CUTS FROM BECOMING LATENT DEFECTS. REMEDIAL ACTION - TEMPORARY LIGHTING WAS PROVIDED & NEW MASKING PROCEDURES WERE IMPLEMENTED. LIMITED USE OF PHENOLIC KNIFES. RECURRENCE CONTROL - INSTALLED NEW LIGHTING IN 420 BLDG, INCREASING LIGHT LEVEL TO 60 FT CANDLES. IMPLEMENTED PHENOLIC FREE MASKING REMOVAL TECHNIQUES (MEMO 3614-83-015). 6/13/83 - CLOSURE DISTRIBUTED

MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System
ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A04721	--	T-029	--	--	--

Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**
--	--	--

HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**
--	--	--	--
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Correlated Part#	**Correlated Part#**	**Correlated Part#**
--	--	--
Associated LRU#	**Associated LRU#**	**Associated LRU#**
--	--	--

MAJOR DESIGN CHANGES	
APRV DATE	**DESCRIPTION OF CHANGES**
--	--

ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A04855	**In-Flight Anomaly Number** --	**Contractor Report Number** S-057	**JSC#** --	**KSC#** --
Problem Title CROSSBEAM TWIST, INTERFACE CROSSBEAM				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 3
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B **(X)** C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** CROSSBEAM WELDMENT	**PART#** 80911071789-009	**SER/LOT#** BT	**MANUFACTURER** MMC
Test/Operation M - MFG	**Prevailing Condtion** --	**F / U** UC	**Fail Mode** --	**Cause** --
System STRUCTURAL	**Defect** --	**Material** --	**Work Contact** C. VOGEL	**Fail Date** 01/28/1982
Received at MSFC 05/24/1982	**Date Isolated** --	**FMEA Reference** 1.1	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location MAF		**Symptom** --		**Time Cycle** --
Effectivity Text LWT-2 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 01/12/1984	**Defer Date** --	**Add Date** --	**R/C Codes** 2 - MFG -- --
Assignee				
Design J. NICKOLS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** M. PESSIN	**Project MGR** --
Approval				
Design	**Chief Engineer**	**S & MA**	**Project**	**Project MGR**

J. NICKOLS	--	D. NEWMAN	R. ABRAHAM	--

PAC Assignee M. GLASS	**PAC Review Complete** MG	**MSFC Closure Date** 01/27/1984	**Status** C - CLOSED	**F/A Completion** --

Problem Type --	**SEV** --	**Program Name** --	**REVL** --	**OPRINC** --

FUNC MOD --	**Software Effectivity** -- -- -- -- --	**Software Fail CD** --	**SUBTYPE** --	**Software Closure CD** --

RES PERSON L2 --	**Approval Signature L3** --

Related Document Type --	**Related Document ID** --

Related Document Title
--

Related Document Type --	**Related Document ID** --

Related Document Title
--

Related Document Type --	**Related Document ID** --

Related Document Title
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Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: A. AFTER FAB OF THE WELDED LWT ORIBITER CROSS BEAM, IT WAS
DETERMINED THAT A PERMANENT TWIST EXISTED ALONG THE LENGTH OF THE BEAM
THE DESIGN OF RECORD ALLOWS FOR A .010 TWIST AS MEASURED FROM THE PART
PINNINGS AT THE TAIL RELATIVE TO THE HEAD. THE LWT-BT MEASURED .065. B
DURING THE INSTALLATION OF THE LO2 FEEDLINE ELBOW AT FINAL ASSY FOR
LWT-1 A PROB OCCURRED IN THATTHE ELBOW HAD ONLY A .030 GAP TO THE +Y
SIDE CONNECTION AT EO-5 ON THE CROSS BEAM. DESIGN STIPULA- TION IS .050
MIN. SHIM BE USED (80921011009). SUBSEQUENTLY, THE RETAINER,
80921011921-002 HAD A GAP & ITS PIN HAD TO BE MACHINED TO CORRECT IT
C. AFTER FAB OF THE WELDED LWT CROSS BEAM A BOWING CONDITION (RELATIVE
TO THE 'C'-PLANE) WAS OBSERVED. THIS AFFECTS THE INSTALLATION OF THE H2
PRESS LINE BRACKETS PER DWG 80911071880. THE DESIGN RECORD ALLOWS FOR A
+/- .030 TOL. FROM PARALLEL TO C-PLANE, BUT LWT-3 CROSS BEAM WAS DETER-
MINED TO BE .066 TO .080 OUT OF TOL. (AT LOCATION 138.53 FROM PLANE
'A')

Contractor Investigation/Resolution

CAUSE - A. (1) WELD FIXTURE (T08A5052) SLACK & ALIGNMENT - POSSIBLE
CAUSE; (2) WELD SEQ. B. ASSY FIXTURE (T12A7020) - POSSIBLE CAUSE. C
WELD FAB PROCESS - POSSIBLE CAUSE. RESOLUTION - A. WELD FIXTURE
(T08A5052) IMPROVEMENTS ELIMINATED SLACK & STIFFENED TOOL, ALSO TOOL
WAS REALIGNED TO SPEC. B. ELBOW SHIMMING TOOL (T12A7020) WAS CHECKED &
WAS OUT-OF-SPEC, FIXTURE WAS CORRECTED & SUBSEQUENT CROSS BEAMS WERE
CHECKED & FOUND TO BE GOOD. C. INVESTIGATION DID NOT DETERMINE ANY NEW

MODES FOR CAUSE OF FAILURE. ENGR'G HAS CHANGED THE TOLERANCES TO ALLOW THE BOWING CONDITION WITHIN +/- .060 ALONG PLAN 'C'. THE ORIGINAL TOLERANCE +/- .030. ALSO WELD SEQ CHANGES SHOED POSITIVE RESULTS RECURRENCE CONTROL - THE ABOVE MENTIONED TOOLING, WELD SEQ, & ENGR'G RELAXING OF TOL REQMNT CHANGES WILL ASSURE FUTURE UNITS ARE WITHIN SPECS

MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System

ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A04855	--	S-057	--	--	--

Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**
--	--	--

HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**
--	--	--	--

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Correlated Part#	**Correlated Part#**	**Correlated Part#**
--	--	--

Associated LRU#	**Associated LRU#**	**Associated LRU#**
--	--	--

MAJOR DESIGN CHANGES

APRV DATE	**DESCRIPTION OF CHANGES**
--	--

ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A04857	**In-Flight Anomaly Number** --	**Contractor Report Number** E-060	**JSC#** --	**KSC#** --
Problem Title ECO SENSOR, SHORTED, INSTALLED 180 DEGS OUT				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 1R
HCRIT --	**Sys_Lvl** Y	**Misc Codes** A **(X)** B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** ET-5	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** LOW LEVEL SENSOR	**PART#** MC432-0205-0022	**SER/LOT#** 0000154	**MANUFACTURER** SIMMONDS
Test/Operation A - ATP	**Prevailing Condtion** --	**F / U** F	**Fail Mode** --	**Cause** --
System ELECTRICAL	**Defect** --	**Material** --	**Work Contact** J. KENNEDY	**Fail Date** 05/12/1982
Received at MSFC 05/26/1982	**Date Isolated** --	**FMEA Reference** 3.1.2.11	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location MAF		**Symptom** --		**Time Cycle** --
Effectivity Text ET-4 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 07/14/1982	**Defer Date** --	**Add Date** --	**R/C Codes** 1 - DES -- --
Assignee				
Design L. GUZINSKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** R. ABRAHAM	**Project MGR** --
Approval				
Design L. GUZINSKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** J. ODOM	**Project MGR** --

PAC Assignee	PAC Review Complete	MSFC Closure Date	Status	F/A Completion
M. GLASS	MG	08/18/1982	C - CLOSED	--

Problem Type	SEV	Program Name	REVL	OPRINC
--	--	--	--	--

FUNC MOD	Software Effectivity	Software Fail CD	SUBTYPE	Software Closure CD
--	-- -- -- -- --	--	--	--

RES PERSON L2	Approval Signature L3
--	--

Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
--	--

Related Document Title
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Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: MARS T-19098 & T-54122 1. DURING PERFORMANCE OF SET TEST PROCEDURE 6001-AT, IT WAS NOTED THAT A SHORT TO GROUND EXISTED IN LO2 ECO SENSOR NO. 3 LOCATED ON THE LO2 FEED LINE AT XT-1616. 2. DURING CHECKOUT OF ECO SENSOR FOR ABOVE ANOMALY, IT WAS DISCOVERED THE SENSOR WAS MOUNTED 180 DEGS OUT OF POSITION. THIS CONDITION WOULD CAUSE IMPROPER FLOW OF LO2 THRU THE SENSOR. CAUSE - 1. ONE LEAD OF SENSOR JAMMED BETWEEN COVER PLATE & HOUSING CAUSING SHORT TO GROUND. 2. IMPROPER INSTALLATION OF SENSOR IS ATTRIBUTED TO PERSONNEL MISINTERPRETING THE INSTALLATION DWG BOTH PROBLEMS ARE ATTRIBUTED TO PERSONNEL ERROR

Contractor Investigation/Resolution

7/15/82 - REQUESTED BACK-UP DOC. OF DWG CHANGES. 7/29/82 RESOLUTION - C/A'S HAVE BEEN IMPLEMENTED TO CORRECT ET-5, THE ECO SENSOR WITH THE PINCHED WIRE WAS REMOVED & REPLACED. THE REPLACEMENT UNIT TESTED SUCCESSFULLY. RECURRENCE CONTROL - ET-4 & ET-6 - CONSTRAINT LIFTED BY ECO SENSORS INSPECTION & X-RAY TO ASSURE PROPER ORIENTATION WAS ACHIEVED. LWT-1 THRU LWT-6 - ENGR'G DWG REVISED TO CLARIFY ECO SENSOR ORIENTATION. INSPECTION REQMNT TIGHT- ENED, AND PERSONNEL COUNSELED AS TO PROPER INSTALLATION. LWT-6 & SUBS - B01432 IMPLEMENTS ENGR'G CHANGE DELETING USE OF ECO SENSOR ON ET. 7/29/82 - CLOSURE DISTRIBUTED

MSFC Response/Concurrence

ASSESSMENT ADDENDUM REPORT

MSFC Report#	IFA#	Contractor RPT#	JSC#	KSC#	EICN#
A04857	--	E-060	--	--	--

Asmnt Part#	Asmnt Part Name	Asmnt Serial/Lot#
--	--	--

HCRIT CD	FCRIT CD	CAUSE CD	FAIL MODE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Correlated Part#	Correlated Part#	Correlated Part#
--	--	--

Associated LRU#	Associated LRU#	Associated LRU#
--	--	--

MAJOR DESIGN CHANGES

APRV DATE	DESCRIPTION OF CHANGES
--	--

ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A04994	**In-Flight Anomaly Number** --	**Contractor Report Number** S-055	**JSC#** --	**KSC#** --
Problem Title GAP AROUND LO2 FEEDLINE AND FAIRING NOT ACHIEVED				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 3
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** ET-6	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** LO2 FEEDLINE FAIRING	**PART#** 82611001300	**SER/LOT#** N/A	**MANUFACTURER** N/A
Test/Operation M - MFG	**Prevailing Condtion** --	**F / U** UC	**Fail Mode** --	**Cause** --
System STRUCTURAL	**Defect** --	**Material** --	**Work Contact** K. KILLIAN	**Fail Date** 05/24/1982
Received at MSFC 06/22/1982	**Date Isolated** --	**FMEA Reference** 1.1.3	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location MAF		**Symptom** --		**Time Cycle** --
Effectivity Text ET-4 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 08/04/1983	**Defer Date** --	**Add Date** --	**R/C Codes** 1 - DES -- --
Assignee				
Design J. NICHOLS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** M. PESSIN	**Project MGR** --
Approval				
Design	**Chief Engineer**	**S & MA**	**Project**	**Project MGR**

J. NICHOLS	--	D. NEWMAN	M. PESSIN	--
PAC Assignee M. GLASS	**PAC Review Complete** MG	**MSFC Closure Date** 09/09/1983	**Status** C - CLOSED	**F/A Completion** --
Problem Type --	**SEV** --	**Program Name** --	**REVL** --	**OPRINC** --
FUNC MOD --	**Software Effectivity** -- -- -- -- --	**Software Fail CD** --	**SUBTYPE** --	**Software Closure CD** --
RES PERSON L2 --	**Approval Signature L3** --			
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Contractor Status Summary				
Reliability/Quality Assurance Concerns, Recommendations:				

Problem Description

REF: MARS T-51655, T-50525, T-43554 THE GAP AROUND THE LO2 FEEDLINE & FEEDLINE FAIRING COULD NOT BE ACHIEVED ON HWT-4, 5 & 6. THIS GAP PROVIDES VENTING OF THE INTERTANK & IS REQ'D BY DWG 82611001300. CAUSE - UNDER INVESTIGATION

Contractor Investigation/Resolution

3/21/83 PRB STATUS - REPETITIVE PROB. ENGR'G CHANGE IN-WORK TO REVISE SEAL DIMENSIONS. MMC TO PROVIDE COPY OF ENGR'G CHANGE DOCUMENTATION TO MSFC. 8/4/83 - REQUESTED BACKUP DATA FOR LWT-2 THRU LWT-6 ACCEPTANCE 8/22/83 CAUSE - 1) DUE TO LACK OF SUFFICIENT TOOLING THE INSTALLATION OF THE LO2 FEEDLINE WAS NOT ADEQUATELY CONTROLLED RELATIVE TO CENTERLINE FAIRING; 2) THE CENTER OF THE FEEDLINE AFTER INSTALLA- TION IS HIGHER THAN EXPECTED. 3) UNREALISTIC TOL. ON VENT CAP. 8/22/83 RESOLUTION - 1) THE VENT GAP COULD NOT BE MAINTAINED BECAUSE THE LO2 FEEDLINE HAS BEEN INSTALLED TOO CLOSE TO THE EDGE OF THE FAIRING AFTER BULKHEAD. NEW TOOLING (H30695) WILL INSURE THE FEEDLINE IS CENTERED IN THE FAIRING. 2) THE SEAL GAP WAS MODIFIED TO ACCOMMODATE THE FEEDLINE BEING HIGHER THAN EXPECTED, B01587H. 3) THE SEAL TOLERANCES & INSTALLATION DIMENSIONS WERE CHANGED,B01587H. RECURRENCE CONTROL - NEW TOOLING H30695, & DESIGN CHANGES TO THE GAP & SEAL DIMENSIONS. REMEDIAL ACTION - LWT-2 ACCEPTED BY MARS T-56070; LWT-3 ACCEPTED BY MARS T-60250; LTW-4 ACCEPTED BY MARS T-63333; LWT-5 ACCEPTED BY MARS T-65811; LWT-6 ACCEPTED BY MARS T-64733. 8/22/83 - CLOSURE DISTRIBUTED

MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System
ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A04994	--	S-055	--	--	--
Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**			
--	--	--			
HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**		
--	--	--	--		
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
--	--	--	--		
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
--	--	--	--		
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
--	--	--	--		
Correlated Part#	**Correlated Part#**	**Correlated Part#**			
--	--	--			
Associated LRU#	**Associated LRU#**	**Associated LRU#**			
--	--	--			
MAJOR DESIGN CHANGES					
APRV DATE	**DESCRIPTION OF CHANGES**				
--	--				
ASSESSMENT TEXT					

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A05145	**In-Flight Anomaly Number** --	**Contractor Report Number** E-062	**JSC#** --	**KSC#** --
Problem Title DECODER FAILED 'OPEN' DURING POWER-UP				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 1
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** ET-5	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** CABLE	**PART#** 314W07	**SER/LOT#** N/A	**MANUFACTURER** MMC
HARDWARE NCA	**NOMENCLATURE** ELECTRICAL CONNECTOR	**PART#** RTK0614-445-059	**SER/LOT#** N/A	**MANUFACTURER** DEUTSCH
Test/Operation L - FLD	**Prevailing Condtion** --	**F / U** F	**Fail Mode** --	**Cause** --
System ELECTRICAL	**Defect** --	**Material** --	**Work Contact** S. BRAGG	**Fail Date** 06/29/1982
Received at MSFC 07/26/1982	**Date Isolated** --	**FMEA Reference** 3.2	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location KSC		**Symptom** EA - FAILS OFF		**Time Cycle** --
Effectivity Text ET-5 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 07/26/1982	**Defer Date** --	**Add Date** --	**R/C Codes** 0 - EXPL -- --
Assignee				
Design L. GUZINSKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** R. ABRAHAM	**Project MGR** --
Approval				
Design	**Chief Engineer**	**S & MA**	**Project**	**Project MGR**

L. GUZINSKY	--	D. NEWMAN	J. ODOM	--
PAC Assignee M. GLASS	**PAC Review Complete** MG	**MSFC Closure Date** 08/18/1982	**Status** C - CLOSED	**F/A Completion** --
Problem Type --	**SEV** --	**Program Name** --	**REVL** --	**OPRINC** --
FUNC MOD --	**Software Effectivity** -- -- -- -- --	**Software Fail CD** --	**SUBTYPE** --	**Software Closure CD** --
RES PERSON L2 --	**Approval Signature L3** --			
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				

Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: 7/29/82 DESCRIPTION - RSS CONNECTOR P6 OF CABLE 314W07 HAD BROKEN WIRE (CONTACT #20) CAUSING 'OPEN' CIRCUIT & FAILURE OF DECODER TO 'POWER-UP'. (REF FAR T-53279). CAUSE - FAILURE ANALY CONCLUDED WIRE BREAKAGE RESULTED FROM MECHANICAL OVERSTRESS (TENSILE RUPTURE) OF UNKNOWN ORIGIN

Contractor Investigation/Resolution

7/29/82 RESOLUTION - FAILURE ANALY INVESTIGATION REVEALED THIS FAILURE TO BE AN ISOLATED INCIDENT RESULTING FROM TENSILE RUPTURE OF UNKNOWN ORIGIN. AN INVESTIGATION OF CRIMPING METHODS & WIRE STRENGTH PROVED MFR'G METHODS & WIRE IS ADEQUATE REF (FAILURE ANALY MARS T-53279) CORRECTIVE ACTION - ET-5 BROKEN WIRE WAS REPAIRED BY CONNECTOR REPLACEMENT. INSUFFICIENT CRIMPING WAS EXPERIENCED USING KSC TOOL Z07702, HOWEVER AFTER TOOL CALIBRATION, SUCCESSFUL CRIMPING, PULL TEST, & ELECTRICAL TESTS WERE ACHIEVED. RECURRENCE CONTROL - ET-6 & LWT-1 & SUBS - A REVIEW OF DISCREPANCY RECORDS (MARS) SHOWS THE INCIDENTON CONNECTOR RTK0614-445-059/REF DESIGNATOR 314W07-P6 TO BE AN ISOLATED CASE. A REVIEW OF THE PROCESSES SHOW THEM TO BE ADEQUATE. NO FURTHER ACTION IS NECESSARY. 7/30/82 - CLOSURE DISTRIBUTED

MSFC Response/Concurrence

ASSESSMENT ADDENDUM REPORT

MSFC Report#	IFA#	Contractor RPT#	JSC#	KSC#	EICN#
A05145	--	E-062	--	--	--

Asmnt Part#	Asmnt Part Name	Asmnt Serial/Lot#
--	--	--

HCRIT CD	FCRIT CD	CAUSE CD	FAIL MODE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Correlated Part#	Correlated Part#	Correlated Part#
--	--	--

Associated LRU#	Associated LRU#	Associated LRU#
--	--	--

MAJOR DESIGN CHANGES

APRV DATE	DESCRIPTION OF CHANGES
--	--

ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A05275	**In-Flight Anomaly Number** --	**Contractor Report Number** E-063	**JSC#** --	**KSC#** --
Problem Title DEFECTIVE CONNECTOR PIN SOCKET				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 1R
HCRIT --	**Sys_Lvl** Y	**Misc Codes** A **(2)** B **(X)** C D E **(X)** F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** LWT-1	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** CRYOGENIC CONNECTOR	**PART#** 81L2-3	**SER/LOT#** N/A	**MANUFACTURER** DEUTSCH
Test/Operation A - ATP	**Prevailing Condtion** --	**F / U** F	**Fail Mode** --	**Cause** --
System ELECTRICAL	**Defect** --	**Material** --	**Work Contact** S. BRAGG	**Fail Date** 08/01/1982
Received at MSFC 08/17/1982	**Date Isolated** --	**FMEA Reference** 3.2	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location MAF		**Symptom** --		**Time Cycle** --
Effectivity Text ET-5 & 6, LWT-2 & SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 05/02/1983	**Defer Date** --	**Add Date** --	**R/C Codes** 2 - MFG -- --
Assignee				
Design L. GUZINSKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** P. DICKERSON	**Project MGR** --
Approval				

Design	Chief Engineer	S & MA	Project	Project MGR
L. GUZINSKY	--	D. NEWMAN	P. BRIDWELL	--

PAC Assignee	PAC Review Complete	MSFC Closure Date	Status	F/A Completion
M. GLASS	MG	05/18/1983	C - CLOSED	--

Problem Type	SEV	Program Name	REVL	OPRINC
--	--	--	--	--

FUNC MOD	Software Effectivity	Software Fail CD	SUBTYPE	Software Closure CD
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RES PERSON L2	Approval Signature L3
--	--

Related Document Type	Related Document ID
--	--

Related Document Title
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Related Document Type	Related Document ID
--	--

Related Document Title
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Related Document Type	Related Document ID
--	--

Related Document Title
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Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF MARS: T57601 DURING FINAL ACCEPTANCE TESTING ON LWT-1 AT MAF, A DISCONTINUITY PROBLEM WAS EXPERIENCED ON PIN SOCKET #2 OF CONNECTOR, REF DES 327W01-P1. CAUSE: DEFECTIVE PIN SOCKET FERRULE AND SPRING WERE MISSING. INVESTIGATION REVEALED PROBLEM TO BE A LATENT VENDOR DEFECT NATURE OF PROBLEM SUCH THAT ELECTRICAL TEST MAY OR MAY NOT DETECT MISSING PARTS

Contractor Investigation/Resolution

8/31/82 - ET-5 CONSTRAINT LIFTED BASED ON THE FOLLOWNG RATIONALE: - VIB CONFIDENCE TESTING WAS CONDUCTED AT WYLE ON A 81L2-1/2/3 COMBINATION, ASSEMBLED WITH 8 PIN-SOCKETS WITH MISSING FERRULES & CONTACT SPRINGS, & 2 PIN SOCKETS WITH FERRULES & CONTACT SPRING. CONTINUITY WAS MAINTAINED ON BOTH CONFIG'S OF PIN SOCKETS THROUGHOUT THE TEST. - ELECTRICAL TESTS AT MAF & KSC SHOW 81L2-1/2 CONNECTOR CIRCUITS TO BE FULLY OPERATIONAL - STOCK CHECKS AT MAF SHOW AN EXTREMELY LOW NNUMBER OF DEFECTIVE PIN SOCKETS WHEN COMPARED TO THE QTY INSPECTED. - CIRCUITS ASSOCIATED WITH 81L2-1/3 CONNECTORS, WITH EXCEPTION OF ULLAGE TEMP SENSORS, ARE REDUNDANT- THE ONLY CRITICAL CIRCUITS ARE LH2 DEPLETION SENSORS. FOR ET-5 THE PROBABILITY OF USING THIS AS A SHUTDOWN SIGNAL IS 26/(1) MILLION ON ET-6 PROBABILITY IS 13/(1) MILLION. THIS CHANGE HAS BEEN CO-ORDINATED WITH THE ET PROJECT OFFICE - ____JAMES B. ODOM____
11/22/82 - LWT-1 CONSTRAINT IS LIFTED BASED ON THE SAME RATIONALE AS STATED ABOVE FOR ET-5. THIS CHANGE HAS BEEN COORDINATED WITH THE E.T

PROJ OFFICE - _____JAMES B. ODOM_____. 4/21/83 - ET-6 CONSTRAINT IS LIFTED BASED ON SAME RATIONALE AS STATED ABOVE FOR ET-5. THIS CHANGE HAS BEEN COORDINATED WITH THE ET PROJ. OFFICE - ___P. BRIDWELL___ 5/3/83 RESOLUTION - FAILURE INVESTIGATION REVEALED ELECTRICAL CONNECTOR PIN SOCKET DISCONTINUITY WAS CAUSED BY MISSING FERRULE & SPRING WHICH MAINTAINS POSITIVE ELECTRICAL CONTACT. INADEQUATE CRIMPING AT THE VENDOR ALLOWED THE PARTS TO FALL OFF AFTER WIRE CRIMPING, BUT PRIOR TO INSERTION IN CONNECTOR. REMEDIAL ACTION - LWT-1 - MARS T-57601 REWORKED ORIGINAL FAILURE (327W01-P1, PIN-SOCKET #2), ALL PIN-SOCKETS IN THE CONNECTOR WERE INSPECTED & FOUND COMPLETE. MARS T-57999 INSPECTED 302W2-P1 & 305W1-P1 LH2 DEPLETIONSENSORS. RECURRENCE CONTROL - ET-5 & 6 - VIB CONFIDENCE TESTING (REF CAPS TASK III) PROVED MISSING FERRULE & SPRING WOULD NOT CAUSE FAILURE AT VIB LEVELS EXPERIENCED PRIOR TO MECO WHEN ELECT. CONTACT IS NEEDED. ALSO ELEC- TRICAL TESTS SHOW CONNECTORS ARE FULLY OPERATIONAL, & INSPECTION VERIFIED ALL RSS CIRCUITS ARE COMPLETE (REF MAF AR-M2624 TO KSC). LWT-2 THRU LWT-4 - DC&R INSPECTION E-82-012 VERIFIED CONNECTORS COMPLETE & TESTS PROVED CIRCUITS OPERATIONAL. LWT-5/SUBS - ALL CONNECTORS TO BE 100% INSPECTED AT MAF UPON REC'G INSP PER MAF RAP-81L-XXX. C/A HAS BEEN DISCUSSED WITH VENDOR. 5/4/83 - CLOSURE DISTRIBUTED

MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System

ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A05275	--	E-063	--	--	--

Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**
--	--	--

HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**
--	--	--	--
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Correlated Part#	**Correlated Part#**	**Correlated Part#**
--	--	--

Associated LRU#	**Associated LRU#**	**Associated LRU#**
--	--	--

MAJOR DESIGN CHANGES

APRV DATE	**DESCRIPTION OF CHANGES**
--	--

ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A05297	**In-Flight Anomaly Number** --	**Contractor Report Number** T-026	**JSC#** --	**KSC#** --
Problem Title NONCONFORMANCE OF BX250 TO DENSITY REQUIREMENTS				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 3
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** BX250 FOAM	**PART#** BX250	**SER/LOT#** N/A	**MANUFACTURER** STEPAN
Test/Operation L - FLD	**Prevailing Condtion** --	**F / U** UC	**Fail Mode** --	**Cause** --
System THERMAL	**Defect** --	**Material** --	**Work Contact** R. HAWKINS	**Fail Date** 07/25/1981
Received at MSFC 08/19/1982	**Date Isolated** --	**FMEA Reference** 1.2.5	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location KSC		**Symptom** --		**Time Cycle** --
Effectivity Text NONE				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 12/06/1982	**Defer Date** --	**Add Date** --	**R/C Codes** 2 - MFG -- --
Assignee				
Design B. DAVIS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** G. CAVALARIS	**Project MGR** --
Approval				
Design	**Chief Engineer**	**S & MA**	**Project**	**Project MGR**

B. DAVIS	--	D. NEWMAN	G. BRIDWELL	--
PAC Assignee M. GLASS	**PAC Review Complete** MG	**MSFC Closure Date** 01/18/1983	**Status** C - CLOSED	**F/A Completion** --
Problem Type --	**SEV** --	**Program Name** --	**REVL** --	**OPRINC** --
FUNC MOD --	**Software Effectivity** -- -- -- -- --	**Software Fail CD** --	**SUBTYPE** --	**Software Closure CD** --
RES PERSON L2 --	**Approval Signature L3** --			
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Contractor Status Summary				
Reliability/Quality Assurance Concerns, Recommendations:				
Problem Description REF MARS: T-44359, T-44395, T44397, T37680 LEAD-IN AND LEADOUT FOAM SAMPLES DO NOT CONFORM TO PI-1503 REQUIREMENTS FOR DENSITY. THE SAMPLES ARE ABOVE THE ALLOWED 1.8 TO 2.6 RANGE				
Contractor Investigation/Resolution CAUSE - TEST METHODS OF SUPPLIER & MMC WERE NOT STANDARDIZED. ALSO DIFFERENT SPRAY GUNS WERE USED FOR TEST ('AR' TYPE) & APPLICATION (TYPE 'D') VARYING CHARACTERISTICS OF THESE GUNS ALSO CAUSED FOAM MTRL DENSITY VARIATIONS. RECURRENCE CONTROL - TESTING TECHNIQUES WILL BE COORDINATED BETWEEN MAF, Q.E. LAB & THE SUPPLIER A STD TEST METHOD DOCUMENT. THE RAP WAS REVISED ADDING NEW SPRAY SCHEDULES IDENTICAL TO PRODUC- TION SPRAY SCHEDULES. THE STP-1503 DOCUMENT WAS REVISED TO REQUIRE TEST PANEL SPRAYING INSTEAD OF CUP DENSITY TESTS. 12/9/82 - CLOSURE DISTRIBUTED				
MSFC Response/Concurrence				

MSFC Problem Reporting and Corrective Action (PRACA) System
ASSESSMENT ADDENDUM REPORT

MSFC Report#	IFA#	Contractor RPT#	JSC#	KSC#	EICN#

A05297	--	T-026	--	--	--

Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**
--	--	--

HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**
--	--	--	--

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Correlated Part#	**Correlated Part#**	**Correlated Part#**
--	--	--

Associated LRU#	**Associated LRU#**	**Associated LRU#**
--	--	--

MAJOR DESIGN CHANGES

APRV DATE	**DESCRIPTION OF CHANGES**
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ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A05364	**In-Flight Anomaly Number** --	**Contractor Report Number** T-030	**JSC#** --	**KSC#** --
Problem Title PRIMER LIFT-OFF, LOX TANK				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 1
HCRIT --	**Sys_Lvl** Y	**Misc Codes** A B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** LWT-3	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** PRIMER LOX TANK	**PART#** 80912005000-009	**SER/LOT#** N/A	**MANUFACTURER** --
Test/Operation M - MFG	**Prevailing Condtion** --	**F / U** F	**Fail Mode** --	**Cause** --
System THERMAL	**Defect** --	**Material** --	**Work Contact** J. GUZMAN	**Fail Date** 06/24/1982
Received at MSFC 08/31/1982	**Date Isolated** --	**FMEA Reference** 1.2.3	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location MAF		**Symptom** --		**Time Cycle** --
Effectivity Text ET-5 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 03/16/1983	**Defer Date** --	**Add Date** --	**R/C Codes** 3 - F/TE -- --
Assignee				
Design B. DAVIS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** G. CAVALARIS	**Project MGR** --
Approval				
Design	**Chief Engineer**	**S & MA**	**Project**	**Project MGR**

B. DAVIS	--	D. NEWMAN	G. BRIDWELL	--
PAC Assignee M. GLASS	**PAC Review Complete** MG	**MSFC Closure Date** 07/27/1983	**Status** C - CLOSED	**F/A Completion** --
Problem Type --	**SEV** --	**Program Name** --	**REVL** --	**OPRINC** --
FUNC MOD --	**Software Effectivity** -- -- -- -- --	**Software Fail CD** --	**SUBTYPE** --	**Software Closure CD** --
RES PERSON L2 --	**Approval Signature L3** --			
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Contractor Status Summary				
Reliability/Quality Assurance Concerns, Recommendations:				

Problem Description

REF: EXTENSIVE PRIMER LIFT-OFF ON LWT-3 LOX TANK O-GIVE & BARREL PRIMER INITIALLY REMOVED BY MMS J414 TAPE DURING SLA PANEL BONDING OPERATIONS. WET & DRY TAPE TESTING REVEALED ADDITIONAL AREAS OF POOR PRIMER. CAUSE - SPILLAGE OF ENGRAPPED LIQUID FROM CELL 'E' ACCESS PLATFORMS & CEILING

Contractor Investigation/Resolution

9/2/82 - THIS CRIT 1 PROB IS NOT A CONSTRAINT BECAUSE THERE IS NO EVIDENCE OF SIMILAR SPILLS OCCUR- RING ON ANY LOX TANKS PRIOR TO LWT-3 THEREFORE THE PROB IS NOT SYSTEMATIC. THIS CONSTRAINT DECI- SION HAS BEEN COORDINATED WITH THE ET PROJ. OFFICE _____JBO_____. 11/23/82 - THIS PROB IS NOW A LAUNCH CONSTRAINT THE JUSTIFICATION STATED ABOVE (FOR NOT BEING A CONSTRAINT) IS NO LONGER ACCEPTABLE AS SIMILAR SPILLS & PRIMER LIFT-OFF HAS OCCURRED ON LWT-4 LO2 & LH2 TANKS THIS CHANGE HAS BEEN COORDINATED WITH THE ET PROJ. OFFICE _____JBO_____. 11/23/82 - LWT-1 CONSTRAINT LIFTED BASED ON THE FOLLOWING RATIONAL: LWT-1 PASSED THE WET TAPE TEST, STRIPPABLE COATING WAS DIFFICULT TO REMOVE, ABLATOR MASKING TAPE REMOVAL & ABRASIVE CLEANING WITH SCOTCH-BRITE STRESSED THE PRIMER SIMILAR TO WET TAPE TEST. ALL OF THE ABOVE MENTIONED OPERA- TIONS VERIFIED GOOD PRIMER ADHESION HAS BEEN ACHIEVED ON LWT-1. THIS CHANGE HAS BEEN COORDINATED WITH THE ET PROJ. OFFICE _____JBO_____. 3/21/83 RESOLUTION - THE INVESTIGATION OF CELL 'E' CONTAMINATION RESULTING IN LO2 & LH2 PRIMER DEBOND REVEALED MANY SOURCES OF LIQUID ENTRAPMENT & POSSIBLE SPILLS, ALSO THE FACILTY ITSELF WAS INADEQUATE IN SEVERAL

AREAS. RECURRENCE CONTROL - EXTENSIVE FACILITY MODS WERE MADE TO ELIMINATE ALL SOURCES OF LIQUID ENTRAP- MENT & ACCUMULATION OF MOISTURE. ALSO CLEANING PROCEDURE OP-20V53-TE WAS REVISED TO PROVIDE MINIMUM OF 8 HRS DRYING TIME AFTER FINAL RINSE. THE ADEQUACY OF THE CLEANING PROCEDURE WAS VERIFIEDBY ENGR'G TEST. REF CAPS T-030C ADDENDUM I & II. 3/22/83 - CLOSURE DISTRIBUTED. 4/15/83 - MMC TO REVISE CAPS TO INCLUDE ADDITIONAL BACK-UP PER D. NEWMAN. 6/4/83 - ET-6 CONSTRAINT IS LIFTED BASED ON THE FOLLOWING RATIONALE: NO DEOXIDIZER SPILLS OCCURRED ON ET-6, MINOR PRIMER LIFT-OFF DID OCCUR ON THE FORWARD O-GIVE FITTING DUE TO LOCAL CONTAMINATION DIFFICULTY IN CLEANING THE FITTING. LOX TANK FOR ET-6 WAS PROCESSED WITH NO INDICATION OF PRIMER LIFT-OFF. THIS CHANGE HAS BEEN COORDINATED WITH THE ET PROJ. OFFICE - ___G.P.BRIDWELL___. 4/15/83 - NASA/MSFC PROJ DISAGREED WITH CAPS CLOSURE STATING TANK FARM AUDIT CORRESPONDENCE SHOULD BE INCLUDED 6/26/83 - REC'D CAPS ADDENDUM REVISING PG 6 C/A SUMMARY REFERENCING NASA/MSFC AUDIT & CORRESPONDENCEWITH MMC WHICH RESULTED IN THE EXTENSIVE FACILITY MODS. 7/7/83 - CLOSURE REDISTRIBUTED

MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System

ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A05364	--	T-030	--	--	--

Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**
--	--	--

HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**
--	--	--	--
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Correlated Part#	**Correlated Part#**	**Correlated Part#**
--	--	--

Associated LRU#	**Associated LRU#**	**Associated LRU#**
--	--	--

MAJOR DESIGN CHANGES

APRV DATE	**DESCRIPTION OF CHANGES**
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ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A05365	**In-Flight Anomaly Number** --	**Contractor Report Number** E-061	**JSC#** --	**KSC#** --
Problem Title SAFETY WIRE, RSS COAX CONNECTORS				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 1
HCRIT --	**Sys_Lvl** Y	**Misc Codes** A B **(X)** C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** ET-8 & 10	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** COAXIAL CONNECTOR	**PART#** M39012/01.0503	**SER/LOT#** N/A	**MANUFACTURER** N/A
Test/Operation M - MFG	**Prevailing Condtion** --	**F / U** UC	**Fail Mode** --	**Cause** --
System ELECTRICAL	**Defect** DC - BROKEN	**Material** --	**Work Contact** C. CAMPBELL	**Fail Date** 06/30/1982
Received at MSFC 08/31/1982	**Date Isolated** --	**FMEA Reference** 3.2	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location MAF		**Symptom** --		**Time Cycle** --
Effectivity Text LWT-2 AND SUBS, HWT-6				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 01/11/1983	**Defer Date** --	**Add Date** --	**R/C Codes** 5 - TRNG -- --
Assignee				
Design L. GUZINSKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** P. DICKERSON	**Project MGR** --
Approval				

Design	Chief Engineer	S & MA	Project	Project MGR
L. GUZINSKY	--	D. NEWMAN	P. DICKERSON	--

PAC Assignee	PAC Review Complete	MSFC Closure Date	Status	F/A Completion
M. GLASS	MG	01/25/1983	C - CLOSED	--

Problem Type	SEV	Program Name	REVL	OPRINC
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FUNC MOD	Software Effectivity	Software Fail CD	SUBTYPE	Software Closure CD
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RES PERSON L2	Approval Signature L3
--	--

Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
--	--

Related Document Title
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Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: RSS COAX CONNECTORS EXPERIENCED THE FOLLOWING PROBS ON LWT-1 & LWT 3: 1) 'STRIP-OUT' OF SAFETY WIRE HOLES. 2) REQ'D SAFETY WIRE MISSING 3) INCORRECTLY INSTALLED "P" CLAMPS. 4) "P" CLAMPS TOO LARGE. CAUSE - 1) IMPROPER USE OF SAFETY WIRE TOOL (TL-09831-013). 2) PERSONNEL ERROR 3) MISINTERPRETATION OF DWG REMQNTS. 4) DESIGN DEFICIENCY

Contractor Investigation/Resolution

9/3/82 - ET-5 CONSTRAINT LIFTED BASED ON FOLLOWING RATIONALE: - ACTION REQUEST M2607 WAS ISSUED TO KSC FOR INSPECTION & CLEARANCE OF ET-5. ONE "P" CLAMP & ASSOCIATED SAFETY WIRE WAS FOUND LOOSE. THE DISCREPANCIES WERE CORRECTED. THIS CHANGE HAS BEEN COORDINATED WITH THE ET PROJ OFFICE -____JAMES B. ODOM____. 11/22/82 - LWT-1 CONSTRAINT LIFTED BASED ON THE SAME RATIONALE AS STATED ABOVE ON ET-5; HOWEVER, MARS T-54198 WAS INITIATED TO CORRECT THE DISCREPANCIES & HAS BEEN COMPLETED. THIS CHANGE HAS BEEN COORDINATED WITH THE E.T. PROJ OFFICE - _____JAMES B ODOM_____. 1/12/83 RESOLUTION - MULTIPLE PROBS WERE ENCOUNTERED WITH THE RSS ANTENNA CONNECTORS. RESOLUTION ISAS FOLLOWS: 1) STRIP-OUT OF SAFETY WIRE HOLES: CAUSE WAS DETERMINED TO BE EXCESSIVE FORCE WHILE SAFETY WIRING. 2) MISSING SAFETY WIRE WAS ATTRIBUTED TO PERSONNEL ERROR. 3) "P" CLAMP PROBS WERE ATTRIBUTED TO A DESIGN DEFICIENCY & MISINTERPRETATION OF DWG REQMNTS. RECURRENCE CONTROL - 1) PRODUCTION TIP #.054 WAS ISSUED TO IDENTIFY THE DELICATE NATURE OF THESE

CONNECTORS TO PERSONNEL.2) PERSONNEL OF RESPONSIBLE DEPARTMENTS WERE MADE AWARE OF THE MISSING SAFETY WIRE & ADVISED CON- CERNING THE SITUATION. 3) LIASION CALL M330-1754 HAS FURNISHED AN ADDITIONAL DWG VIEW TO CLARITY "P" CLAMP ORIENTATION AS WELL AS REDUCE CLAMP SIZE TO PROVIDE A MORE STABLE ARRANGEMENT. 1/14/83 - CLOSURE DISTRIBUTED
MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System

ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A05365	--	E-061	--	--	--
Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**			
--	--	--			
HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**		
--	--	--	--		
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
--	--	--	--		
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
--	--	--	--		
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
--	--	--	--		
Correlated Part#	**Correlated Part#**	**Correlated Part#**			
--	--	--			
Associated LRU#	**Associated LRU#**	**Associated LRU#**			
--	--	--			
MAJOR DESIGN CHANGES					
APRV DATE	**DESCRIPTION OF CHANGES**				
--	--				
ASSESSMENT TEXT					

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A05427	**In-Flight Anomaly Number** --	**Contractor Report Number** P-044	**JSC#** --	**KSC#** --
Problem Title MONO-BALL RESTRICTED BY DISTORTED CONICAL WASHERS				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 3
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** ET-6	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** PRESSURIZATION SYS	**PART#** 80921021009	**SER/LOT#** N/A	**MANUFACTURER** MMC
Test/Operation L - FLD	**Prevailing Condtion** --	**F / U** UC	**Fail Mode** --	**Cause** --
System PROPULSION	**Defect** --	**Material** --	**Work Contact** J. FINCHER	**Fail Date** 09/01/1982
Received at MSFC 09/13/1982	**Date Isolated** --	**FMEA Reference** 2.1.3	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location KSC		**Symptom** --		**Time Cycle** --
Effectivity Text ET-6 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 11/12/1982	**Defer Date** --	**Add Date** --	**R/C Codes** 1 - DES -- --
Assignee				
Design R. ZAGRODZKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** C. CRANE	**Project MGR** --
Approval				
Design B. DAVIS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** G. BRIDWELL	**Project MGR** --

PAC Assignee	PAC Review Complete	MSFC Closure Date	Status	F/A Completion
M. GLASS	MG	01/18/1983	C - CLOSED	--

Problem Type	SEV	Program Name	REVL	OPRINC
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FUNC MOD	Software Effectivity	Software Fail CD	SUBTYPE	Software Closure CD
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RES PERSON L2	Approval Signature L3
--	--

Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: AN OBSERVATION WAS MADE ON ET-5 AT KSC WHICH REVEALED THAT WASHERS ON THE FIXED SUPPORT BRACKETS ON LH & LO2 PRESS. LINES WERE DISTORTED FURTHER INVESTIGATION & INSPECTION REVEALED THAT A GAP LESS THAN .010 IN. EXISTED BETWEEN THE DISTORTED CONICAL SHAPED WASHER & THE MONO-BALL BEARING RACE WHICHWOULD RESTRICT THE BEARING FREEDOM TO ROTATE. THIS INSTALLATION IS COMMON IN 3 LOCATIONS ON HWT CONFIG. & 4 LOCATION ON LWT. CAUSE - THE SPECIFIC TORQUE VALVE OF 70 TO 80 FT/LBS IS EXCESSIVE & APPLIES STRESSES TO THE WASHER CREATING A DISTORTED CONDITION

Contractor Investigation/Resolution

1/6/83 RESOLUTION - HWT-5 CONDITION WAS EVALUATED BY STRESS ENGR'G & DISPOSITIONED TO USE-AS-IS BASED ON ANALY & TEST DATA. HWT-6, LWT-1 WERE DISPOSITIONED BY ENGR'G FOR USE-AS-IS. LWT-2 & SUBS TORQUE TO BE REDUCED FROM 70-80 FT/LBS TO 30-40 FT/LBS BY DCN TO DWG 80921021009 EVALUATION OF ALL OTHER BEARING INSTALLATIONS DETERMINED THAT OTHER CONFIGS. ARE NOT TORQUED, BUT ARE CLEVIS ATTACHMENTS NOT SUBJECT TO THIS PROB. RECURRENCE CONTROL - DWG CHANGE PRECLUDES RECURRENCE BY DECREASING TORQUE VALVE. 1/6/83 - CLOSURE DISTRIBUTED

MSFC Response/Concurrence

MSFC Report#	IFA#	Contractor RPT#	JSC#	KSC#	EICN#
A05427	--	P-044	--	--	--

Asmnt Part#	Asmnt Part Name	Asmnt Serial/Lot#
--	--	--

HCRIT CD	FCRIT CD	CAUSE CD	FAIL MODE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Correlated Part#	Correlated Part#	Correlated Part#
--	--	--

Associated LRU#	Associated LRU#	Associated LRU#
--	--	--

MAJOR DESIGN CHANGES

APRV DATE	DESCRIPTION OF CHANGES
--	--

ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A05480	**In-Flight Anomaly Number** --	**Contractor Report Number** S-058	**JSC#** --	**KSC#** --
Problem Title FWD OGIVE WELDING UNACCEPTABLE				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 3
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B **(X)** C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** LWT-4	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** FWD OGIVE WELD ASSY	**PART#** 80912100000-009	**SER/LOT#** N/A	**MANUFACTURER** MMC
Test/Operation M - MFG	**Prevailing Condtion** --	**F / U** UC	**Fail Mode** --	**Cause** --
System STRUCTURAL	**Defect** DE - WLDBRS	**Material** --	**Work Contact** C. VOGEL	**Fail Date** 07/21/1982
Received at MSFC 09/22/1982	**Date Isolated** --	**FMEA Reference** 1.1.3	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location MAF		**Symptom** --		**Time Cycle** --
Effectivity Text LWT5 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 04/27/1983	**Defer Date** --	**Add Date** --	**R/C Codes** 2 - MFG -- --
Assignee				
Design J. NICHOLS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** M. PESSIN	**Project MGR** --
Approval				
Design	**Chief Engineer**	**S & MA**	**Project**	**Project MGR**

J. NICHOLS	--	D. NEWMAN	M. PESSIN	--
PAC Assignee M. GLASS	**PAC Review Complete** MG	**MSFC Closure Date** 06/10/1983	**Status** C - CLOSED	**F/A Completion** --
Problem Type --	**SEV** --	**Program Name** --	**REVL** --	**OPRINC** --
FUNC MOD --	**Software Effectivity** -- -- -- -- --	**Software Fail CD** --	**SUBTYPE** --	**Software Closure CD** --
RES PERSON L2 --	**Approval Signature L3** --			
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Contractor Status Summary				
Reliability/Quality Assurance Concerns, Recommendations:				

Problem Description

REF: (A) LWT FWD OGIVE WELD (0-1) COMPARED TO SAME WELD HWT EXHIBITS SIGNIFICANT INCREASE IN WELD DEFECTSREQ'G REPAIR. THESE DEFECTS ARE CHARACTERIZED BY POROSITY & OXIDE INCLUSIONS. THIS RESULTS IN INCRASED REPAIR TIME WITH SOME REPAIRS REQ'G MULTIPLE HEATS. (B) PEAKING & MISMATCH OVER A MAJOR PORTION OF THE O-1 WELD HAVE OCCURRED ON LWT-5 & FORWARD OGIVES.LWT-6 HAD AVG'D 8.4 DEGS INVERTED PEAKING OVER 80% OF THE AREA BEFORE ANY HEAT REPAIRS WITH A MAX. OF 11 DEGS PEAKING

Contractor Investigation/Resolution

4/27/83 CAUSE - A) NO SPECIFIC ITEM COULD BE ISOLATED FOR THE INCREASED WELD DEFECTS SEEN BETWEEN LWT & HWT 0-1 WELDS. LWT-5 WHICH WAS THE WORST IS CONSIDERED AN ISOLATED CASE. THE 0-1 WELD IS PERFORMED THE HORIZONTAL POSITION WHICH WILL MAKE ENTRAPMENT OF DEFECTS MORE LIKELY THAN THE NORMAL VERTICAL ORIENTATION. B) THE SEVERE PEAKING MEASURED ON THE 0-1 WELD ON LWT-6 WAS THE RESULT OF TOOLING (ALSO OBSERVED ON LWT-5 BUT WAS DOCUMENTED AFTER MULTIPLE HEAT REPAIRS). THE ACTIVATION PRESS APPLIED TO THE EX- TERNAL FINGERS MANDREL WAS GREAT ENOUGH TO CAUSE THE GORE PANELS TO FLEX IN THAT AREA WITH THE CHILL BAR OFF-SET FROM THE MANDREL CONTACT LINE. 4/27/83 RESOLUTION - A) WELD DEFECTS SEEN IN THE 0-1 WELD ARE ENTRAPPED BECAUSE OF THE HORIZONTAL WELD POSITION IN WHICH THE WELD IS MADE. THE SPECIFIC SOURCE(S) OF THE DEFECTS IS INDETERMINABLE, HOWEVER THE QUANTITY OF DEFECTS HAVE BEEN REDUCED BY INCORP'D A 4TH WELD PASS & ARE IN THE RANGE OF WHAT WAS REPORTED DURING HWT WELDING. B) PEAKING WAS CAUSED BY HAVING UNCONTROLLED LINE PRESS

APPLIED TO THE EXTERNAL FINGERS MANDREL WHICH FLEXED THE FORWARD OGIVE GORE PANELS RADIALLY INWARD. C/A INCORP'D A REGULATING VALVE FOR REDUCED PRESSURES. A CAM ACTIVATED BACK-UP CHILL BAR IS SCHEDULED FOR LWT-16 EFFECTIVITY WHICH WILL PROVIDE ADDITIONAL CONTROL. THIS REGULATOR VALVE CHANGE HAS RESULTED IN CONTROLLING PEAKING TO AN AVG OF 3 DEGS. THE SPEC REQ'S 6.5 DEGS. LWT-5 DISPOSITIONED BY MARS T-54381 LWT-6 REPAIRED PER STD PROCEDURES. LWT-7 & SUBS WILL HAVE INCORP'D C.A FOR PEAKING. LWT-6 & SUBS WILL HAVE ADDITIONAL WELD PASS. LWT-16 & SUBS WILL BE BUILT ON TOOLING WITH CAM ACTUATED MANDREL. 4/28/83 - CLOSURE DISTRIBUTED

MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System
ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A05480	--	S-058	--	--	--

Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**
--	--	--

HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**
--	--	--	--

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Correlated Part#	**Correlated Part#**	**Correlated Part#**
--	--	--

Associated LRU#	**Associated LRU#**	**Associated LRU#**
--	--	--

MAJOR DESIGN CHANGES

APRV DATE	**DESCRIPTION OF CHANGES**
--	--

ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A05766	**In-Flight Anomaly Number** --	**Contractor Report Number** E-064	**JSC#** --	**KSC#** --
Problem Title HIGH HEATER RESISTANCE, BIPOD HEATER				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 3
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** LWT-1	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** BIPOD HEATER	**PART#** PD6400508-009	**SER/LOT#** 0000075	**MANUFACTURER** EMERSON
Test/Operation A - ATP	**Prevailing Condtion** --	**F / U** UC	**Fail Mode** --	**Cause** --
System ELECTRICAL	**Defect** --	**Material** --	**Work Contact** C. CAMPBELL	**Fail Date** 08/27/1982
Received at MSFC 11/10/1982	**Date Isolated** --	**FMEA Reference** 3.0	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location MAF/KSC		**Symptom** --		**Time Cycle** --
Effectivity Text ET-5,6, LWT-1 & SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 06/07/1983	**Defer Date** --	**Add Date** --	**R/C Codes** 1 - DES -- --
Assignee				
Design J. NICHOLS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** P. DICKERSON	**Project MGR** --
Approval				
Design	**Chief Engineer**	**S & MA**	**Project**	**Project MGR**

J. NICHOLS	--	D. NEWMAN	P. BRIDWELL	--
PAC Assignee M. GLASS	**PAC Review Complete** MG	**MSFC Closure Date** 07/14/1983	**Status** C - CLOSED	**F/A Completion** --
Problem Type --	**SEV** --	**Program Name** --	**REVL** --	**OPRINC** --
FUNC MOD --	**Software Effectivity** -- -- -- -- --	**Software Fail CD** --	**SUBTYPE** --	**Software Closure CD** --
RES PERSON L2 --	**Approval Signature L3** --			
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				

Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: DURING FINAL ACCEPTANCE TESTING OF LWT-1 AT MAF A BIPOD HEATER (S/N 75) WAS FOUND TO HAVE A HIGH ELE. RESISTANCE. THIS DECREASED TO WITHIN ACCEPTABLE LIMITS AFTER THE HEATER WAS CYCLED AT 105
SUBSEQUENT DISPOSITION OF THIS PROB AT MAF WAS TO USE-AS-IS. DURING TESTING OF LWT-1 AT KSC THE HIGH ELE. RESISTANCE PROB RECURRED. DURING A CHECK OF HEATERS INSTOCK AT MAF, 1 HEATER (S/N 80) WAS FOUND TO HAVE A HIGH ELE. RESISTANCE

Contractor Investigation/Resolution

6/7/83 CAUSE - WAS DETERMINED TO BE A HIGH RESISTANCE CONNECTION WITHIN THE HEATER. 6/7/83 RESOLUTION - FAILURE INVESTIGATION REVEALED THE CAUSE - CONTAMINATED MECHANICAL CONNECTION INSIDE THE HEATER. LWT-1 WAS CLEARED BY REMOVAL & REPLACEMENT OF HEATER AT KSC. HWT-5, HWT-6, LWT-2, & LWT-3 WERE CLEARED BASED ON MAF & KSC ATP RESULTS. 6/7/83 REMEDIAL ACTION - ENGR'G TO REVISE HEATER TEST REQMNTS TO INCLUDE A PROCEDURE THAT WILL APPLY VOLTAGE TO BREAK DOWN A HIGH RESISTANCE CONNECTION 6/7/83 RECURRENCE CONTROL - VENDOR WILL REVISE MFG PROCESS TO INCLUDE WELDING THE TERMINALS IN PLACEINSTEAD OF COMPRESS ATTACHMENT. THIS CHANGE WILL ASSURE A GOOD CONDUCTIVE PATH EXISTS. 6/9/83 - CLOSURE DISTRIBUTED

MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System
ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A05766	--	E-064	--	--	--

Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**
--	--	--

HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**
--	--	--	--
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**
--	--	--	--

Correlated Part#	**Correlated Part#**	**Correlated Part#**
--	--	--
Associated LRU#	**Associated LRU#**	**Associated LRU#**
--	--	--

MAJOR DESIGN CHANGES	
APRV DATE	**DESCRIPTION OF CHANGES**
--	--

ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A05873	**In-Flight Anomaly Number** --	**Contractor Report Number** P-045	**JSC#** --	**KSC#** --
Problem Title PRIMARY SEAL LEAKAGE, GH2 VENT DUCT				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 3
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** LWT-1	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** CRYOGENIC SEAL	**PART#** 55L2-3	**SER/LOT#** N/A	**MANUFACTURER** RACO
Test/Operation L - FLD	**Prevailing Condtion** --	**F / U** F	**Fail Mode** --	**Cause** --
System PROPULSION	**Defect** --	**Material** --	**Work Contact** J. FINCHER	**Fail Date** 10/18/1982
Received at MSFC 12/15/1982	**Date Isolated** --	**FMEA Reference** 2.2.4	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location KSC		**Symptom** MV - EXT LEAK		**Time Cycle** --
Effectivity Text NONE				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 01/12/1983	**Defer Date** --	**Add Date** --	**R/C Codes** 2 - MFG -- --
Assignee				
Design L. GUZINSKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** C. CRANE	**Project MGR** --
Approval				
Design L. GUZINSKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** P. BRIDWELL	**Project MGR** --

PAC Assignee	PAC Review Complete	MSFC Closure Date	Status	F/A Completion
M. GLASS	MG	02/04/1983	C - CLOSED	--

Problem Type	SEV	Program Name	REVL	OPRINC
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FUNC MOD	Software Effectivity	Software Fail CD	SUBTYPE	Software Closure CD
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RES PERSON L2	Approval Signature L3
--	--

Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
--	--

Related Document Title
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Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: 12/15/82 - DURING PERFORMANCE LEAK CHECK OF GH2 VENT DUCT AT UMBILICAL CARRIER PLATE INTERFACE, A LEAK OF 3.1 SCIM WAS INDICATED AT THE LEAK PORT. DISASSY OF FLANGES REVEALED PRIMARY SEAL DAMAGE, HOWEVER PROCEDURAL REVIEW AT MAF, REFLECTED NO LKGE WAS DETECTED DURING LEAK TEST AT MAF. CAUSE - DAMAGE OCCURRED TO SEAL DURING THE INSTALLATION SEQ. A DISCREPANCY REPORT (DR D52662) WAS WRITTEN WHICH REFLECTED A SEQ. OF OPERATION TO INSTALL THE VENT DUCT AFTER THE VENT/RELIEF VALVE WAS INSTALLED. THIS OUT OF SEQ. PLAN REQ'D PARTIAL REMOVAL OF THE UMBILICAL CARRIER DIS- CONNET. DURING ALIGNMENT & REINSTALLATION OF THE LH2 VENT DUCT & THE UCP THE SEAL WAS DAMAGED. THE CAUSE FOR NOT DETECTING THE LEAK AT MAF IS BECAUSE THE SEAL WAS FOLDED & CLAMPED OVER THE LEAK PORT OPENING. TEFLON IS VERY SENSITIVE TO 'FLOW' OR STRESS RELIEVING, WHICH OPENED UP A SLIGHT LEAK PATH THRU THE LEAK PORT AT KSC

Contractor Investigation/Resolution

1/17/83 - REQUESTED ADDITIONAL BACK-UP DATA REF (ET PC FAX #1) 1/25/83 - REC'D CAPS ADDENDUM I. 1/26/83 RESOLUTION - TO PRECLUDE THIS TYPE OF SEAL DAMAGE THE MFR'G PROCESS PLAN HAS BEEN REVISED (REF MPP80921121039-009 & MEMO 3614-82-300). TO INDICATE THAT OPERATION IS SEQ. CRITICAL. THE LH2 VENT DUCT WILL BE INSTALLED, (FIRST) THEN THE BELLOWS COMPRESSION TOOL, (SECOND) FOLLOWED BY THE VENT/RELIEF VALVE (LAST). IF THIS SEQ. IS FOLLOWED NO SEAL DAMAGE WILL OCCUR. CORRECTIVE ACTION: LWT-1 - SEAL WAS REPLACED AT KSC & LEAK CHECK PERFORMED SUCCESSFULLY. LWT-2 - SEAL WAS INSTALLED PER REVISED MPP DOCUMENT,

ADDITIONALLY TAPE WAS INSTALLED EXTERIOR TO FLANGE JOINT TO BLOCK THE SECONDARY SEAL TO DIVERT GAS THRU THE LEAK PORT IF BOTH PRIMARY & SECONDARY SEALS LEAK. 1/27/83 - CLOSURE DISTRIBUTED
MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System

ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A05873	--	P-045	--	--	--
Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**			
--	--	--			
HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**		
--	--	--	MV - EXT LEAK		
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
--	--	--	--		
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
--	--	--	--		
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
--	--	--	--		
Correlated Part#	**Correlated Part#**	**Correlated Part#**			
--	--	--			
Associated LRU#	**Associated LRU#**	**Associated LRU#**			
--	--	--			
MAJOR DESIGN CHANGES					
APRV DATE	**DESCRIPTION OF CHANGES**				
--	--				
ASSESSMENT TEXT					

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A05941	**In-Flight Anomaly Number** --	**Contractor Report Number** E-066	**JSC#** --	**KSC#** --
Problem Title LO2 LEVEL SENSOR FAILED RESISTANCE TEST				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 1R
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** LWT-2	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** LO2 LEVEL SENSOR	**PART#** MC432-0205-0019	**SER/LOT#** 464	**MANUFACTURER** SIMMONDS
Test/Operation M - MFG	**Prevailing Condtion** --	**F / U** F	**Fail Mode** --	**Cause** --
System ELECTRICAL	**Defect** --	**Material** --	**Work Contact** S. BRAGG	**Fail Date** 10/12/1982
Received at MSFC 12/23/1982	**Date Isolated** --	**FMEA Reference** 3.1.1.1	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location MAF		**Symptom** --		**Time Cycle** --
Effectivity Text NONE				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 01/12/1983	**Defer Date** --	**Add Date** --	**R/C Codes** 0 - EXPL -- --
Assignee				
Design L. GUZINSKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** P. DICKERSON	**Project MGR** --
Approval				
Design	**Chief Engineer**	**S & MA**	**Project**	**Project MGR**

L. GUZINSKY	--	D. NEWMAN	J. BRIDWELL	--
PAC Assignee M. GLASS	**PAC Review Complete** MG	**MSFC Closure Date** 01/27/1983	**Status** C - CLOSED	**F/A Completion** --
Problem Type --	**SEV** --	**Program Name** --	**REVL** --	**OPRINC** --
FUNC MOD --	**Software Effectivity** -- -- -- -- --	**Software Fail CD** --	**SUBTYPE** --	**Software Closure CD** --
RES PERSON L2 --	**Approval Signature L3** --			
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Contractor Status Summary				
Reliability/Quality Assurance Concerns, Recommendations:				

Problem Description

REF: SENSOR FAILED RESISTANCE TEST REQUIREMENT DURING PERFORMANCE OF TP-7C05-FA. THE TEST REQUIREMENT IS 120-170 OHMS. THE READING OBSERVED WAS AN OPEN CIRCUIT. 1/12/83 CAUSE - FAILURE MODE WAS DETERMINED TO BE A BROKEN ELE. WIRE AT A WELD LOCATION. CAUSE WAS NOT DETERMINED. PROB IS CONSIDERED TO BE A RANDOM FAILURE

Contractor Investigation/Resolution

1/12/83 RESOLUTION - A LO2 LEVEL SENSOR FAILED TESTING (OPEN CIRCUIT) ON LWT-2 DURING CHECKOUT IN FINAL ASSY AT MAF. FAILURE ANALY OF THE SENSOR BY RI DETERMINED THE FAILURE MODE TO BE A BROKEN ELEMENT WIRE AT A WELD LOCATION WITHIN THE SENSOR. THE SPECIFIC CAUSE OF THE BROKEN WIRE WAS NOT DETERMINED. RI'S INVESTIGATION CONCLUDED THAT THE FAILURE WAS RANDOM IN NATURE & THAT PREVIOUSLY IMPLEMENTED CORRECTIVE ACTIONS WERE ADEQUATE. RECURRENCE CONTROL - NONE REQ'D, ISOLATED FAILURE LAUNCH CONSTRAINT REMOVAL - LWT-2 WAS CLEARED BY REPLACING FAILED SENSOR, HWT-6, LWT-1, LWT-3 & SUBSARE CLEARED BY NORMAL TESTING. THIS CHANGE HAS BEEN COORDINATED WITH THE ET PROJ OFFICE - X__JAMES B ODOM____. 1/13/83 - CLOSURE DISTRIBUTED

MSFC Response/Concurrence

MSFC Report#	IFA#	Contractor RPT#	JSC#	KSC#	EICN#
A05941	--	E-066	--	--	--

Asmnt Part#	Asmnt Part Name	Asmnt Serial/Lot#
--	--	--

HCRIT CD	FCRIT CD	CAUSE CD	FAIL MODE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Correlated Part#	Correlated Part#	Correlated Part#
--	--	--

Associated LRU#	Associated LRU#	Associated LRU#
--	--	--

MAJOR DESIGN CHANGES

APRV DATE	DESCRIPTION OF CHANGES
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ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A05942	**In-Flight Anomaly Number** --	**Contractor Report Number** E-067	**JSC#** --	**KSC#** --
Problem Title CONNECTOR PINS PULLED OUT				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 1
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** LWT-2	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** CONNECTOR	**PART#** NB6GE22-41SXT	**SER/LOT#** N/A	**MANUFACTURER** ITT
Test/Operation M - MFG	**Prevailing Condtion** --	**F / U** F	**Fail Mode** --	**Cause** --
System ELECTRICAL	**Defect** --	**Material** --	**Work Contact** S. BRAGG	**Fail Date** 12/03/1982
Received at MSFC 12/23/1982	**Date Isolated** --	**FMEA Reference** 3.2	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location MAF		**Symptom** EU - TOL/DRWNG		**Time Cycle** --
Effectivity Text LWT-1 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 04/04/1983	**Defer Date** --	**Add Date** --	**R/C Codes** 2 - MFG -- --
Assignee				
Design L. GUZINSKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** P. DICKERSON	**Project MGR** --
Approval				
Design	**Chief Engineer**	**S & MA**	**Project**	**Project MGR**

L. GUZINSKY	--	D. NEWMAN	P. BRIDWELL	--
PAC Assignee M. GLASS	**PAC Review Complete** MG	**MSFC Closure Date** 04/27/1983	**Status** C - CLOSED	**F/A Completion** --
Problem Type --	**SEV** --	**Program Name** --	**REVL** --	**OPRINC** --
FUNC MOD --	**Software Effectivity** -- -- -- -- --	**Software Fail CD** --	**SUBTYPE** --	**Software Closure CD** --
RES PERSON L2 --	**Approval Signature L3** --			
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				
Related Document Type --	**Related Document ID** --			
Related Document Title --				

Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: DURING ELECTRICAL CONNECTOR TEST, THE FOLLOWING DISCREPANCIES WERE IDENTIFIED: PIN 'T' PULLED FROM 314W02-J1; PIN 'R' PULLED FROM 314W02-J2 AND OTHER PINS WHICH APPEARED TO BE UNDERCRIMPED. CAUSE: USE OF IMPROPERLY ADJUSTED CRIMPING TOOL

Contractor Investigation/Resolution

1/6/82 - LWT-1 CONSTRAINT IS LIFTED BASED ON THE FOLLOWING RATIONALE: - LWT-1 HAS SUCCESSFULLY TESTED GOOD IN BOTH PROCESS & FINAL SYSTEM TESTING. - APPROX 30% OF ALL PINS (1500) WERE TESTED SUCCESSFULLY ON LWT-2 & LWT-3 SUBSEQUENT TO THIS FAILURE. THIS CHANGE HAS BEEN COORINDATED WITH THE ET PROJ OFFICE - ___JBO___. 4/4/83 CAUSE - FAILURE ANALY OF THE DISCREPANT HARDWARE DETERMINED THAT ALL DISCREPANCIES WERE CAUSED BY UNDERCRIMPING. THE UNDERCRIMPED CONDITIONS ARE ATTRIBUTED TO INADVERTENT USE OF AN IMPROPERLY ADJUSTED CRIMP TOOL (TL-361-1-16) 4/4/83 RESOLUTION - THE FOLLOWING ACTIONS WERE TAKEN TO PREVENT FUTURE OCCURRENCE OF THE UNDER CRIMPED CONDITION: - EACH CRIMP TOOL WILL BE CALIBRATED TO ONE PREDETERMINED SETTING & LEAD SEALED TO PRECLUDE UN-AUTHORIZED ADJUSTMENT. - EACH TOOL WILL BE CERTIFIED BY TENSILE TESTING 3 SAMPLES AFTER CRIMPING OPERATIONS & BEFORE FINAL ACCEPTANCE OF THE FABRICATEED ASSY. ANY FAILURE WILL BE CAUSE FOR REJECTION OF ALL CRIMPS PRODUCED BY THE TOOL SUBSEQUENT TO ITS LAST CERTIFICATION. - RECORDS WILL BE KEPT IN THE MPP TO PROVIDE IDENTIFICATION BETWEEN THE FINISHED PRODUCT, TOOLS & PERSONNEL. REF STP 6504, PI6504. 4/5/83 - CLOSURE DISTRIBUTED

MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System
ASSESSMENT ADDENDUM REPORT

MSFC Report#	**IFA#**	**Contractor RPT#**	**JSC#**	**KSC#**	**EICN#**
A05942	--	E-067	--	--	--
Asmnt Part#	**Asmnt Part Name**	**Asmnt Serial/Lot#**			
--	--	--			
HCRIT CD	**FCRIT CD**	**CAUSE CD**	**FAIL MODE**		
--	--	--	EU - TOL/DRWNG		
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
--	--	--	--		
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
--	--	--	--		
Asmnt FMEA	**Asmnt FM**	**FMEA CSE**	**FMEA SCSE**		
--	--	--	--		
Correlated Part#	**Correlated Part#**	**Correlated Part#**			
--	--	--			
Associated LRU#	**Associated LRU#**	**Associated LRU#**			
--	--	--			
MAJOR DESIGN CHANGES					
APRV DATE	**DESCRIPTION OF CHANGES**				
--	--				
ASSESSMENT TEXT					

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A05943	**In-Flight Anomaly Number** --	**Contractor Report Number** E-065	**JSC#** --	**KSC#** --
Problem Title LH2 ULLAGE TEMP SENSOR - OPEN				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 3
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B C D E F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** ET-5	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** TEMPERATURE SENSOR	**PART#** PD7400095-009	**SER/LOT#** 403, 404	**MANUFACTURER** HY-CAL
Test/Operation F - FLT	**Prevailing Condtion** --	**F / U** F	**Fail Mode** --	**Cause** --
System ELECTRICAL	**Defect** --	**Material** --	**Work Contact** C. CAMPBELL	**Fail Date** 11/13/1982
Received at MSFC 12/23/1982	**Date Isolated** --	**FMEA Reference** 3.1.2.8	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location KSC		**Symptom** --		**Time Cycle** --
Effectivity Text NONE				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 02/24/1983	**Defer Date** --	**Add Date** --	**R/C Codes** 0 - EXPL -- --
Assignee				
Design L. GUZINSKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** P. DICKERSON	**Project MGR** --
Approval				

Design	Chief Engineer	S & MA	Project	Project MGR
L. GUZINSKY	--	D. NEWMAN	P. BRIDWELL	--
PAC Assignee	**PAC Review Complete**	**MSFC Closure Date**	**Status**	**F/A Completion**
M. GLASS	MG	05/04/1983	C - CLOSED	--
Problem Type	**SEV**	**Program Name**	**REVL**	**OPRINC**
--	--	--	--	--

FUNC MOD	Software Effectivity	Software Fail CD	SUBTYPE	Software Closure CD
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RES PERSON L2	Approval Signature L3
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: DURING LAUNCH OF ET-3 AND ET-5 THE LH2 ULLAGE TEMP SENSOR GAVE AN OPEN CIRCUIT INDICATION. CAUSE: UNKNOWN - UNEXPLAINED ANOMALY

Contractor Investigation/Resolution

2/25/83 RESOLUTION - A MAF STOCK CHECK WAS PERFORMED TO EXAMINE UNITS FOR PHYSICAL DEFECTS (NO DIS- CREPANCIES WERE NOTED). TESTS WERE PERFORMED WHICH SUBJECTED SAMPLE UNITS TO ENVIRONMENTAL EX- TREMES (BEYOND FLT CONDITIONS). THE RESULTS SHOWED NO EVIDENCE OF FAILURE OR DAMAGE TO THE SPECI- MENS. A REVIEW OF MAF, KSC & VENDOR ATP PROCEDURES FOUND THEM TO BE ADEQUATE. ET-6 & LWT-1 & SUBS WERE CLEARED BASED UPON THE REVIEWS, TESTS & INSPECTIONS. THE CAUSE OF THE FAILURE IS UNKNOWN RECURRENCE CONTROL - NONE REQ'D - ALL INVESTIGATIONS & TESTS PERFORMED SHOW ABSOLUTELY NO EVIDENCE OF TEMP PROBE ANOMALIES OR FAILURES 2/25/83 - CLOSURE DISTRIBUTED

MSFC Response/Concurrence

MSFC Report#	IFA#	Contractor RPT#	JSC#	KSC#	EICN#
A05943	--	E-065	--	--	--

Asmnt Part#	Asmnt Part Name	Asmnt Serial/Lot#
--	--	--

HCRIT CD	FCRIT CD	CAUSE CD	FAIL MODE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Asmnt FMEA	Asmnt FM	FMEA CSE	FMEA SCSE
--	--	--	--

Correlated Part#	Correlated Part#	Correlated Part#
--	--	--

Associated LRU#	Associated LRU#	Associated LRU#
--	--	--

MAJOR DESIGN CHANGES

APRV DATE	DESCRIPTION OF CHANGES
--	--

ASSESSMENT TEXT

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A05946	**In-Flight Anomaly Number** --	**Contractor Report Number** E-068	**JSC#** --	**KSC#** --
Problem Title WIRE SHORT TO SHIELD HARNESS 303W10				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 1R
HCRIT --	**Sys_Lvl** N	**Misc Codes** A **(1)** B **(X)** C D E **(X)** F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** EXTERNAL TANK	**PART#** 82601000000	**SER/LOT#** LWT-1	**MANUFACTURER** MMC
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** WIRE	**PART#** E6590081	**SER/LOT#** N/A	**MANUFACTURER** N/A
Test/Operation L - FLD	**Prevailing Condtion** F - FUNCTIONAL	**F / U** F	**Fail Mode** EL - SHORT	**Cause** MAW - MFG-ASY-WORK
System ELECTRICAL	**Defect** DA - ROUGH	**Material** F - INSUL	**Work Contact** S. BRAGG	**Fail Date** 12/13/1982
Received at MSFC 01/04/1983	**Date Isolated** --	**FMEA Reference** 3.2	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location KSC		**Symptom** EL - SHORT		**Time Cycle** --
Effectivity Text NONE				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 02/24/1983	**Defer Date** --	**Add Date** --	**R/C Codes** 0 - EXPL -- --
Assignee				
Design L. GUZINSKY	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** P. DICKERSON	**Project MGR** --
Approval				

Design	Chief Engineer	S & MA	Project	Project MGR
L. GUZINSKY	--	D. NEWMAN	P. DICKERSON	--

PAC Assignee	PAC Review Complete	MSFC Closure Date	Status	F/A Completion
M. GLASS	MG	04/07/1983	C - CLOSED	--

Problem Type	SEV	Program Name	REVL	OPRINC
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FUNC MOD	Software Effectivity	Software Fail CD	SUBTYPE	Software Closure CD
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RES PERSON L2	Approval Signature L3
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Related Document Type	Related Document ID
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Related Document Title
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Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: DURING PRE-FRF CHECKOUT OF ST-6 AT KSC A SHORT TO SHIELD WAS IDENTIFIED ON A SRB POWER CIRCUIT. SUBSEQUENT TO FRF THE SHORT WAS ISOLATED TO CABLE HARNESS 303W10, PIN B' ON LWT-1

Contractor Investigation/Resolution

CAUSE - A DEFECT IN THE KAPTON INSULATION OF THE WIRE RESULTED IN A SHORT CIRCUIT OF THE WIRE'S CONDUCTOR TO THE OVERALL SHIELD WHEN THE CABLE TRAY FILLED WITH RAIN WATER. THE CAUSE OF THE DEFECTIN KAPTON INSULATION COULD NOT BE DETERMINED DUE TO THE EXTENSIVE ARCING DAMAGE HOWEVER MFR'G DAMAGE AT MAF IS THE MOST PROBABLE REASON. 1/7/83 - LWT-1 CONSTRAINT IS LIFTED BASED ON THE FOLLOWING RATIONALE: - SHORTED WIRE WAS REPAIRED & RETESTED (REF AR M2663, SUPA). - ECP B01575 WILL ADD DRAIN HOLES TO CABLE TRAY TO ASSURE NO WATER BUILDUP. THIS CHANGE HAS BEEN COORDINATED WITH THE ET PROJ OFFICE - ____JAMES B. ODOM____ 2/25/83 RESOLUTION - FAILURE ANALY REVEALED THE CAUSE TO BE A DEFECT IN THE KAPTON INSULATION WHICH BROKE DOWN WHEN THE CABLE TRAY COLLECTED RAIN WATER. LWT-1 WAS CLEARED FOR LAUNCH BY REPAIR AT KSC.ALSO, DRAIN HOLES WERE ADDED TO THE CABLE TRAYS. HWT-6 & LWT-2 & SUBS WILL BE MODIFIED TO INCLUDE CABLE TRAY DRAIN HOLES. A REVIEW OF MFR'G INSPECTION & TEST REQMNTS (BOTH VENDOR & MAF) WAS CON- DUCTED & PROVED THEM ADEQUATE. THIS FAILURE IS, THEREFORE, CONSIDERED TO BE AN ISOLATED FAILURE. MAF QUALITY & PRODUCTION PERSONNEL HAVE BEEN ADVISED OF THIS

DISCREPANCY. R/C: NONE REQ'D, ISOLATEDINCIDENCE. 2/28/83 - CLOSURE DISTRIBUTED
MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System

ASSESSMENT ADDENDUM REPORT

MSFC Report# A05946	**IFA#** --	**Contractor RPT#** E-068	**JSC#** --	**KSC#** --	**EICN#** --
Asmnt Part# E6590081	**Asmnt Part Name** WIRE	**Asmnt Serial/Lot#** N/A			
HCRIT CD --	**FCRIT CD** 1R	**CAUSE CD** MAW - MFG-ASY-WORK	**FAIL MODE** EL - SHORT		
Asmnt FMEA 3.12.10.2	**Asmnt FM** --	**FMEA CSE** --	**FMEA SCSE** --		
Asmnt FMEA --	**Asmnt FM** --	**FMEA CSE** --	**FMEA SCSE** --		
Asmnt FMEA --	**Asmnt FM** --	**FMEA CSE** --	**FMEA SCSE** --		
Correlated Part# HARNESS 303W10	**Correlated Part#** --	**Correlated Part#** --			
Associated LRU# N/A	**Associated LRU#** --	**Associated LRU#** --			
MAJOR DESIGN CHANGES					
APRV DATE --	**DESCRIPTION OF CHANGES** --				
ASSESSMENT TEXT					

MSFC Problem Reporting and Corrective Action (PRACA) System
WHOLE RECORD REPORT(+ ADDENDUM)

MSFC Record # A05950	**In-Flight Anomaly Number** --	**Contractor Report Number** S-059	**JSC#** --	**KSC#** --
Problem Title ELONGATED HOLES, FRAME SEGMENT				
EICN# --	**ELEMENT** ET	**Contractor** MMMSS	**FSCM#** --	**FCRIT** 3
HCRIT --	**Sys_Lvl** N	**Misc Codes** A B C D E **(X)** F G H I J K L M N O		
HARDWARE EIM	**NOMENCLATURE** --	**PART#** --	**SER/LOT#** --	**MANUFACTURER** --
HARDWARE LRU	**NOMENCLATURE** N/A	**PART#** N/A	**SER/LOT#** N/A	**MANUFACTURER** N/A
HARDWARE NCA	**NOMENCLATURE** FRAME SEGMENT	**PART#** 80914801980-XXX	**SER/LOT#** N/A	**MANUFACTURER** AHF
Test/Operation M - MFG	**Prevailing Condtion** F - FUNCTIONAL	**F / U** UC	**Fail Mode** MSI - INSULATION	**Cause** MA - MFG-ASY
System STRUCTURAL	**Defect** MD - M SIZE	**Material** N - HOLE	**Work Contact** C. VOGEL	**Fail Date** 08/13/1982
Received at MSFC 01/04/1983	**Date Isolated** --	**FMEA Reference** 1.1.1	**IFA: Mission Phase** --	**Mission Elapsed Time** --
Location MAF		**Symptom** MI - INSULATION		**Time Cycle** --
Effectivity Text LWT-12 AND SUBS				
Vehicle Effectivity Codes				
Vehicle 1 --	**Vehicle 2** --	**Vehicle 3** --	**Vehicle 4** --	**Vehicle 5** --
Mission Effectivity Codes				
Mssn 1 --	**Mssn 2** --	**Mssn 3** --	**Mssn 4** --	**Mssn 5** --
Estimated Completion Dates				
MSFC Approved Defer Until Date --	**Contractor Req Defer Until Date** --	**LVL 3 Close** --	**Remark / Action** --	
Investigation / Resolution Summary				
Last MSFC Update 10/07/1987	**CN RSLV SBMT** 03/28/1983	**Defer Date** --	**Add Date** --	**R/C Codes** 2 - MFG -- --
Assignee				
Design J. NICHOLS	**Chief Engineer** --	**S & MA** D. NEWMAN	**Project** M. PESSIN	**Project MGR** --
Approval				
Design	**Chief Engineer**	**S & MA**	**Project**	**Project MGR**

J. NICHOLS	--	D. NEWMAN	P. BRIDWELL	--	
PAC Assignee M. GLASS	**PAC Review Complete** MG	**MSFC Closure Date** 04/28/1983	**Status** C - CLOSED	**F/A Completion** --	
Problem Type --	**SEV** --	**Program Name** --	**REVL** --	**OPRINC** --	
FUNC MOD --	**Software Effectivity** -- -- -- -- --	**Software Fail CD** --		**SUBTYPE** --	**Software Closure CD** --
RES PERSON L2 --	**Approval Signature L3** --				
Related Document Type --	**Related Document ID** --				
Related Document Title --					
Related Document Type --	**Related Document ID** --				
Related Document Title --					
Related Document Type --	**Related Document ID** --				
Related Document Title --					

Contractor Status Summary

Reliability/Quality Assurance Concerns, Recommendations:

Problem Description

REF: FRAME SEGMENTS, 80914801980-XXX, ARE INSTALLED IN THE HYDROGEN TANK, ORIGINALLY DELIVERED PER N/R DWG REQMNTS, HOWEVER A DCN-A WAS ISSUED REQ'G HOLES WITHOUT THE HI-LOKS INSTALLED ON -019 & -020 PARTS SUBSEQUENT REMOVAL OF HI-LOKS AT MAF REVEALED ELONGATED HOLES

Contractor Investigation/Resolution

CAUSE - ELONGATION OCCURRED DURING VENDOR FAB. HOLES ARE PREDRILLED BEFORE INSTALLATION. RIVETS ARE INSTALLED BEFORE THE HI-LOKS. THIS CAUSES A SLIGHT MOVEMENT IN THE DETAIL PARTS WHICH REQ'S THE HI-LOK HOLES BE REDRILLED CAUSING THE ELONGATION. 3/30/83 RESOLUTION - DURING REWORK ON THE 80914801980-019, HYDROGEN TANK FRAME 1973.5 IT WAS DIS-COVERED THAT THE HI-LOK HOLES WERE OVER TOLERANCE & ELONGATED - THIS WAS A LATENT DEFECT. VENDOR PROCEDURES ALLOWED RIVETS TO BE INSTALLED PRIOR TO HI-LOKS WITH ALL HOLES BEING PREDRILLED DUE TO THE TOLERANCES BEING GREATER ON THE RIVETS THAN THE HI-LOCS, THE PREDRILLED HOLES HAD TO BE REDRILLED TO INSTALL HI-LOKS. THE SUPPLIER'S PROCEDURES HAVE BEEN CORRECTED. HI-LOKS ARE INSTALLED PRIOR TO THE RIVETS. CORRECTIVE ACTION - LWT-1 THRU LWT-7 - CONDITION WAIVERED BY STRESS ENGR'G MEMO NO 3512-82-272 LWT-8 THRU LWT-11 - TO BE INSPECTED PER DC & RS-82-016 & REPAIRED BY DRILLING & SLEEVING THE ELONGATED HOLES AS REQ'D PER SRI-M002. RECURRENCE CONTROL - LWT-12 & UP VENDOR PROCEDURES CORRECTED PER SCAR-3761-82-227. 3/31/83 - CLOSED DISTRIBUTED

MSFC Response/Concurrence

MSFC Problem Reporting and Corrective Action (PRACA) System
ASSESSMENT ADDENDUM REPORT

MSFC Report# A05950	**IFA#** --	**Contractor RPT#** S-059	**JSC#** --	**KSC#** --	**EICN#** --
Asmnt Part# 80914801980-XXX	**Asmnt Part Name** FRAME SEGMENT	**Asmnt Serial/Lot#** N/A			
HCRIT CD --	**FCRIT CD** 3	**CAUSE CD** MPP - MFG-PRC-INST	**FAIL MODE** EV - NOT-TO-SPEC		
Asmnt FMEA 1.1.1	**Asmnt FM** --	**FMEA CSE** --	**FMEA SCSE** --		
Asmnt FMEA --	**Asmnt FM** --	**FMEA CSE** --	**FMEA SCSE** --		
Asmnt FMEA --	**Asmnt FM** --	**FMEA CSE** --	**FMEA SCSE** --		
Correlated Part# N/A	**Correlated Part#** --	**Correlated Part#** --			
Associated LRU# N/A	**Associated LRU#** --	**Associated LRU#** --			
MAJOR DESIGN CHANGES					
APRV DATE --	**DESCRIPTION OF CHANGES** --				
ASSESSMENT TEXT					