

SYSTEM AUDIT REPORT NUMBER 02/35812/S09



THIS REPORT RELATES TO Surveillance

VISIT ON 5/30-31/02

Company George C. Marshall Space Flight Center

Other Sites Visited

1. [ ]

Address Marshall Space Flight Center Huntsville, AL

2. [ ]

Scope: All Products and Services Provided by the Marshall Space Flight Center. MSFC Supports the NASA Agency Infrastructure and is a Major Contributor to all its Scientific and Technical Enterprises

Standard(s) 9001:2000

Support Documentation(s) [ ]

Non-English Languages Used [ ]

Comments/Concerns of the Assessment Team:

Noncompliance noted is minor in nature. Previously identified noncompliances have been satisfactorily addressed or rewritten in this report.

- The visit is deemed to be Satisfactory
Unsatisfactory visits may result in a change to the next audit activity.

- Corrective Action Plan (CAP) Instructions:
Return CAP in 20 working days (all NCs & QS-9000 Ois).
Certificate processing initiates after receipt/acceptance of CAPs.
QS-9000 Ncss must be cleared prior to certificate issuance.
Return CAP in ten days for major NCs issued during surveillance.

NQA ASSESSMENT TEAM

COMPANY INFORMATION

LEAD AUDITOR Rick Giguere

MGT REP Axel Roth

TEAM Judge Lunt

TEAM [ ]

QUALITY MANUAL (REV & ISSUE DATE)

TEAM [ ]

TEAM [ ]

MDP1280.1 Rev. 1, Jan 24, 02

The contents of this report is confidential and must not be disclosed to a third party without prior agreement of NQA, USA and the company named above.
Non-compliances/non-conformances raised or observations noted within this report are the result of limited sampling and therefore non-compliances/non-conformances may exist which have not been identified.
The company representative's signature indicates their agreement and understanding of any non-compliances/non-conformances and observations contained in this report.
Prior to the assessment, the company must have completed a complete system internal audit and subsequent management review documented. The quality system shall be understood throughout the organization.

Signature [Signature] Date 5/31/02

Signature [Signature] Date 5/31/02



**AUDIT RECORD**

**ISO 9000 Applicable  
CLAUSES Standard**

**Non Compliances  
Or Observations**

**Auditor(s)** Rick Giguere Judge Lunt

8.1, 8.2.4	9001:2000	<p>Reviewed General Measurement, Analysis &amp; Improvement requirements as well as Monitoring &amp; Measurement of Product requirements in Buildings 4583 and 4493.</p> <ul style="list-style-type: none"> <li>- Building 4493: Reviewed DCAM project per procedures MPG-8730.1, R/C, MPG-8730.3, R/C. Interviewed Lead Systems Test Engineer and QA Specialist. Test procedure MTCP-FC-DCAM-300 (10/5/01 Run #1 (1st Set) &amp; #2 (2nd Set), 2nd Side Support, Calibration List on page 4, Hardware List page 4 &amp; 5.</li> <li>- Building 4583: Interviewed Instrumentation Project Eng., Control Systems Group Leader, Mech. Team Lead, Test Eng., and Quality Tech. Reviewed 11 Inch Gas Path Fundamentals (GOx Hybrid) Motor Test project per the requirements of TD70-004 R/O. Gas Path Motor #1, Test No. P2101-001, Test Date 5/21/02 by JSB, Test procedure FOP-009-C, Test Cell 103, Reviewed test Data Plots for GOx, Temperature and Pressure.</li> </ul>	0	1
4.2.4	9001:2000	<p>Not reviewed in entirety</p>	1	0
8.2.2	9001:2000	<p>Reviewed the internal audit process as defined in MPG 1280.6. Reviewed the yearly audit schedule, training and independence of auditors, generation of audit reports, processing noncompliances, related corrective actions and follow-up activities. Sampled audits: DA0220021, PS03200201, AS02200201 and audit related questions related to the internal audit process, preventive action and customer supplied product.</p>	1	0
4.2.1, 4.2.2	9001:2000	<p>Reviewed the manual, MPD 1280.1, for changes since last activity and for continued compliance to ISO 9001:2000.</p>	0	0
5.4.1	9001:2000	<p>Reviewed Quality Objectives in the following areas:</p> <ul style="list-style-type: none"> <li>- Building 4612 Engineering Directorate: Objectives are defined as Engineering Products &amp; Services, New Technology Development, People, Infrastructure, and Business. Reviewed status reports on data base.</li> <li>- Building 4250 Calibration Contractor Oversight Effectiveness. Objectives are identified as Equipment in-house over 90 days, Equipment Turnaround time, and Repeat calibrations. Reviewed status reports.</li> <li>- Building 4723 Flight Hardware Support Operations. Objectives are Transportation and Flight Hardware. Reviewed bar chart graph dated 5/14/02.</li> <li>- Building 4570 Control Systems Group. Objectives are Customer Feedback, Products, Services, Customer Relationships, and Financial Management. Data is still being collected and compiled into charts, graphs and summary reports for data base as data comes in.</li> </ul>	0	0

<b>ISO 9000 CLAUSES</b>	<b>Applicable Standard</b>	<b>AUDIT RECORD</b>		<b>Non Compliances Or Observations</b>
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Auditor(s)	Rick Giguere	Judge Lunt		
7.5.3	9001:2000	Not reviewed in entirety	1	0
7.5.5	9001:2000	<p>Reviewed Chemical Storage requirements per procedures TD70-005, R/B, and TD70-010, R/O. Interviewed TD Group Leader. Sampled the following areas:</p> <ul style="list-style-type: none"> <li>- Building 4564 Explosive Storage Area. Cage is limited access. Material identified as Bomb Assemblies, Igniters, Propellants. Aluminized suit and shield are at the ready. Also, reviewed the Explosives Log book and MSDS information.</li> <li>- Building 4583-IG TEA/TEB storage area. Reviewed MSDS book. Verified condition and storage of 9 Empty containers roped in, 10 full containers chained in, and 2 containers of Russian Atlas Igniter.</li> </ul> <p>Reviewed Storage of Flight Hardware per procedure IS-EMWI-001, R/D. Interviewed Group Leader Transportation. Sampled the following:</p> <ul style="list-style-type: none"> <li>- Building 4723: ESD records for A. Osmer, J. Salisbury, and W. Myers. Also, verified storage of numerous Flight Hardware including Asset numbers F0013978, F0005086, F0013521, F0013981, and S83052.</li> </ul> <p>Reviewed Shipping requirements per procedures MPG-6410.1, R/B, AD40-OWI-004, R/C, and IS-TP-011, R/O. Interviewed Traffic Management Specialist, Transportation Manager, and Packaging Specialist. Sampled the following:</p> <ul style="list-style-type: none"> <li>- Building 4471: a.) Form 57 for project 7-2-T1-25651, for product going from TD11 to Monument, CO via FEDEX, b.) Form 57 for project 7-2-F2-25645, for product going from FD23 to Boeing Huntsville via prepaid. Order is for 14 line items including part numbers AAY582, TTT-231, and TTT-232.</li> </ul>	1	0
7.5.2	9001:2000	<p>Reviewed per procedures ED33-WI-009, R/D, and Ei-Ni-P (7/28/99). Interviewed Materials Engineer, and Group Leader for Metallic Materials &amp; Processing in building 4612, Labs 1 &amp; 2. Sampled the following objective evidence:</p> <ul style="list-style-type: none"> <li>- Work Request 2002-231 for Mark Griffin, Plating Samples #20, 35, 37, 38, 40, 43, 44, 45, 47, 48 and 50, 5 mil pure nickel plating, Interim report with actual thickness data dated 4/30/02 by N.O. Reviewed p/h log with range of 3.8 to 4.2.</li> <li>- Also, reviewed Work Requests 2000-074, and 2000-039,</li> </ul>	1	0

**AUDIT RECORD**

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CLAUSES Standard**

**Non Compliances  
Or Observations**

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**Judge Lunt**

8.5.2, 8.5.3 9001:2000

Reviewed corrective action processing as defined in MPG 1280.4, MSFC Corrective Action System. Sampled RCAR's: 185, 184, 183 for adequate documentation, root cause analysis, actions taken and follow-up. Reviewed the process for corrective and preventive action notification as per MWI 1280.3. Also reviewed preventive action activities as defined in MWI 7120.6, Program/Project Risk Management. Sampled risk management plan for the I-STAR Program, the top ten risks associated with the program, likelihood and consequences.

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8.5.1 9001:2000

Reviewed continual improvement activities as evidenced in the "IDEAS" database and tracking system. Sampled items numbered 02-045, 02-033, 02-040. Evaluated the assessment of inputs, assignment of responsibility, tracking and follow-up to satisfactory implementation.

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7.6 9001:2000

Reviewed per procedure MPG-8730.5, R/F. Interviewed Contract Monitor for Calibration Lab and Calibration Lab Technicians. Sampled numerous examples of calibrated instruments, labels, and associated records in several areas including:  
 - Building 4650: a.) Torque Cell #M634249 due 6/13/02, b.) Torque Instrument #M634545 due 6/13/02, c.) Pressure Balance #624847 due 4/2/03, d.) Multi Meter #103408 due 8/16/02.  
 - Building 4612: a.) Gage Blocks #M636978 due 2/19/04, b.)  
 - Building 4493: a.) Torque Wrench #M03886 due 11/5/02, b.) 0 to 40 Pressure Gage #M03886 due 3/22/03,  
 - Building 4583: a.) Sensor #M630581 due 4/17/04, b.) Sensor #M635831 due 7/17/03  
 - Witnessed Calibration of several instruments in the Calibration Lab including: a.) Wave Form Monitor #623715 per procedure 1-0525 (3/12/99) using Master Standards #1898533 (1/2/03) and #1018208 (1/7/03), b.) Gen. Sweep #M64104 per procedure 1-0491 (3/25/99) using Master Standards #1894399 (5/3/03) and #M63479 (11/5/02), c.) Radius Gage Set #M647626 per procedure 2-0070 (5/13/98) using Master Standard #1740621 (9/17/02).

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5.6, 5.4.1, 8.2.1 9001:2000

Reviewed presentation package for management review scheduled to take place 5/23/02, but postponed for one month. Included a review of open action items from previous meeting, Internal Audit results, Process performance and product conformance measures, status of corrective and preventive actions, customer satisfaction measures, improvement opportunities, and changes that could effect the QMS. Interviewed the management representative on his involvement in communicating the effectiveness of the QMS.

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**Total**

**9 2**

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# AUDIT REPORT NUMBER 02/35812/S09



Ref No.	Clause No.	Applicable Standard	NON-CONFORMANCE AND OBSERVATIONS/OPPORTUNITIES FOR IMPROVEMENT RAISED	NC/OBS/OI
1	5.4.1	9001:2000	Reference NQA audit report 01/35812/S08/SP01, Observation #1. The MSFC Implementation plan identifies a broad landscape of objectives that span the organization, but it is unclear as to the depth that these objectives are employed throughout the organization to the extent that individuals would understand their contribution to established objectives.	O
2	8.2.2	9001:2000	A review of internal audit reports and associated records reveals that the objective evidence of what was audited, as provided through written observations, is not consistently reflective of actual procedural requirements. For example, all observations related to the audit of internal audits as per MPG 1280.6 were reviewed. None of the eight observations noted were related to any procedural requirement found in the governing document. A similar check was performed against requirements for preventive actions with similar results.	NC
3	8.5.3	9001:2000	Procedure MWI 1280.3, Corrective and Preventive Action Notification System, Para. 6.4, states that a monthly status report will be generated by the MSFC Alert Coordinator. This requirement is no longer reflective of the process currently in place, since an on-line system has been in place.	NC
4	4.2.4	9001:2000	Micrometer calibration records for plating job 2000-074 are not available for review.	NC
5	7.6	9001:2000	There are two incorrect calibration instruments identified on the Measurement List for job P2101-001. - M623395 should be M62395 - M639775 should be M639575	NC
6	7.5.2	9001:2000	In Test Stand Building 4583, procedure TD70-004, R/O, para 4.2 requires the Test Requester to sign off on all TCP's. On document 103-TCP-004 (3/8/02) the Test Requester did not sign off as required.	NC
7	8.2.4	9001:2000	Calibrated instrument due dates are not being updated in the DCAM Test procedure as Calibrated Instruments are being re-calibrated. Also, APP-D of procedure SD43-OWI-001, R/C, does not clearly address this situation.	O
8	7.5.3	9001:2000	Product Identification requirements are not clearly defined for the 27 different assemblies and subassemblies in procedure MTCP-FC-DCAM-300 (10/5/01).	NC
9	7.5.5	9001:2000	Form 57 for project #7-2-F2-25645, going from FD23 to Boeing Huntsville, calls for p/n XXX-809 but the parts are marked as XXX-806.	NC

Signed for NQA

Signed for Company

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Ref No.	Clause No.	Applicable Standard	NON-CONFORMANCE AND OBSERVATIONS/OPPORTUNITIES FOR IMPROVEMENT RAISED	NC/OBS/OI
10	7.6	9001:2000	The Developmental Plating Area does not have documented OI Calibration requirements for Labs 1 & 2. See procedure MPG-8730.5, R/F, para 2.1.3.5.	NC
11	7.6	9001:2000	Several calibration instruments in Labs 1 & 2 of the Developmental Plating Area are not identified as to what calibration category they should be in. See Weight Sets (6/20/01), Gage Blocks .1", .2", .0295", .0495", and .0745", Multimeters, and Temperature Controllers.	NC

Signed for NQA

Signed for Company