

National Aeronautics and  
Space Administration

**George C. Marshall Space Flight Center**  
Marshall Space Flight Center, AL 35812



Reply to Attn of: DA01

TO: Distribution

FROM: DA01/David A. King

SUBJECT: Minutes of the MSFC Quality Council Meeting

The MSFC Quality Council (MQC) met on Tuesday, September 9, 2003. The meeting began at 2:30 p.m., in Building 4200, Conference Room P110. The roster of attendees for the meeting is attached as Enclosure 1. The presentation charts for the meeting are included as Enclosure 2.

OPENING REMARKS (D. KING/DA01, A. ROTH/DE01):

There were no opening remarks.

The agenda for the meeting is included on pages 3-4 of Enclosure 2.

CUSTOMER SATISFACTION SUCCESS STORY (S. ORTEGA/MP51):

Sam Ortega presented a customer satisfaction success story related to the Reusable Solid Rocket Motor (RSRM) process change cycle. Working with Thiokol, a Kaizen improvement approach was implemented, resulting in an electronic system for change packages, fewer delays, improved reviews, and increased customer satisfaction. The presentation charts are included on pages 5-7 of Enclosure 2.

A question was raised about whether this success had been shared with the other Shuttle elements. The presenter was unsure of how other elements handle change packages, but committed to sharing information with the Chief Engineers at an off-site meeting tomorrow.

CONTINUAL IMPROVEMENT SUCCESS STORY (J. BROWN/ED16):

Jeff Brown presented a continual improvement success story related to connection of design efforts at MSFC and JSC utilizing PTC software products. MSFC and JSC linked together to share expertise during the Columbia investigation, and are now working together sharing CAD data as if the engineers were just next door to each other. This new bridge enables collaborative engineering across the agency. Most centers currently have seats in PTC ProEngineer. Future plans are to link additional centers, starting with the

the Code M centers. MSFC is leading the agency in electronic packaging expertise, and JSC has requested support in this area, which will be enhanced with this new capability. The presentation charts are included on pages 8-11 of Enclosure 2.

COLLABORATIVE EFFORTS WITH ORGANIZATIONS OUTSIDE MSFC  
SUCCESS STORY (E. SEMMES/SD41):

Ed Semmes presented a success story on “Strategic Microgravity Research Collaborative Enabling Technologies.” We are in the technology business, and we can’t afford to go it alone. A chart was shown that included the various outside organizations and universities that we collaborate with in support of our Strategic Microgravity Research. Extensive collaborative efforts ensure that research initiatives are responsive to the strategic needs of the agency and helps close technology gaps. Accomplishments and future collaboration plans were discussed, including the upcoming Aerospace Technical Working Group (ATWG) meetings, which are being sponsored by Boeing this year. Contact information, opportunities, and workshop information can be found on the Space Radiation Shielding website at [www.radiationshielding.nasa.gov](http://www.radiationshielding.nasa.gov).

The presentation charts are included on pages 12-17 of Enclosure 2.

Two examples of research efforts were provided to the Council: A block of polyethylene composite, stronger than aluminum, and with good radiation protection qualities; and a 7/16” monkey wrench, which was fabricated within hours to support an astronaut request, using a free form fabrication system.

David King expressed his appreciation for the Microgravity Research collaboration efforts and emphasized that the more partners we have the better the chance for success in enabling technologies.

CONTINUAL LEARNING SUCCESS STORY (D. WELLS/ED33):

Doug Wells presented a continual learning success story related to the short course, “Introduction to Fracture Mechanics, Life Assessment and Fracture Control.” This course has been made available through the efforts of several individuals within the Engineering Directorate and the Customer and Employee Relations Directorate, with visiting instructors from Mississippi State University and the University of Illinois at Urbana-Champaign. The course has been received well. Additional offerings are planned at the Marshall Institute, JSC, and GRC. The presentation charts are included on pages 18-22 of Enclosure 2.

FREEDOM TO MANAGE SUCCESS STORIES (E. RICHARDSON/ED36):

Erin Richardson presented three success stories resulting from the Freedom to Manage initiative. The issue of driving government vehicles home the night before and after travel was discussed in some detail. Travelers are not permitted to make any stops unrelated to their travel while in the government vehicle. David King emphasized that we need to communicate this requirement to travelers and be diligent in following the rules with this new allowance.

There was some additional discussion about communication of successes from this initiative. Axel Roth stated that the number of inputs is coming down and we need to do a better job of publicizing that we are succeeding at changing things in order to encourage folks to use the system. Personnel should also be aware that the IDEAS system is still available for routine suggestions.

The presentation charts are included on pages 23-28 of Enclosure 2.

MQC ACTION ITEMS (A. ROTH/DE01):

The two open MQC Actions were reviewed and closed. No new actions were assigned. The MQC action items are included on pages 29-31 of Enclosure 2.

**MQC-0052 – The audit program should provide for additional targeted audits to be planned when systemic problems are identified during the audits of the organizations. Also, follow-ups for effectiveness should be performed sooner, instead of waiting for the next audit of each organization. (Warren Woods/QS40, Due: January 31, 2003)**

Status: A process to track nonconformance reports for re-verifications between sixty and ninety days of closure has been implemented. This action was closed.

**MQC-0055 - Include a report on Freedom to Manage (F2M) process improvements/success stories at the next MQC meeting. (Axel Roth/DE01 and Johnny Stephenson/ED02, Due: Next MQC Meeting)**

Status: The first report was provided for this meeting. This item will continue to be on the agenda with the other success stories. This action was closed.

BALANCED SCORECARD, CONTINUAL IMPROVEMENT, AND CUSTOMER SATISFACTION (D. MILLER/QS40):

Don Miller provided a status on the Balanced Scorecard, Continual Improvement, and Customer Satisfaction websites on behalf of Michael McLean/CD40. The FY04 center-level metrics have been loaded on the Balanced Scorecard website. Status will be posted beginning October 1.

The Continual Improvement website has not been utilized much by the organizations. The Center Operations Directorate and the Customer and Employee Relations Directorate have posted a total of six new success stories since the last MQC meeting. Organizations are encouraged to use the web site to document their continual improvement activities.

Each organization was requested to provide an update to their customer satisfaction summary on the customer satisfaction web site. Eight organizations have posted updates as requested. Most posted results show a positive range; however, not all organizations have fully implemented a system to determine customer satisfaction. This is an area that needs more focus. Organizations are encouraged to ensure that their customer satisfaction information is kept current on the web site.

The presentation charts are included on pages 32-36 of Enclosure 2.

CONTINUAL LEARNING (B. BREWSTER/CD20):

Bill Brewster provided a status on continual learning for the center. The objective to increase training and development opportunities for MSFC employees by 10% of the FY02 baseline has been met for FY03. Enrollments have also increased. Individual Development Plans (IDPs) will be used in future to assist in planning appropriate course offerings to meet actual needs. Near-term future activities include a cultural assessment across the center to be conducted in October. MSFC has an active cultural diversity program in place. Thanks were extended to the organizations for their continuing support in supplying instructors for the program.

The presentation charts are included on pages 37-40 of Enclosure 2.

SAFETY (D. MILLER/QS40):

Industrial safety metrics have been discussed in the monthly Marshall Team Meetings. Minutes of these meetings are now posted on the Marshall Safety, Health and Environment web page under "MSFC Committees." The presentation charts are included on pages 41-42 of Enclosure 2.

PROCESS PERFORMANCE AND PRODUCT CONFORMITY (R. GLADWIN/VS10 & DEBORAH WILLS/AD35):

Richard Gladwin provided the report on process performance and product conformity for programs and projects. Trend charts for programs and projects included data through July. Five projects, but no programs, indicated a "red" status in July. Adverse trends included project plans that need to be updated, technical issues, and Integrated Financial Management Program (IFMP) problems.

The Program/Project Status Charts are included on pages 44-48 of Enclosure 2.

The status of the Marshall Directives was also provided by Deborah Wills as a measure of our processes. There are currently eight active waivers against eight of the 191 Directives that are in place today. Approximately half of these will expire or be superseded in document revisions in the near future. Also, fifty percent more documents have been revised this year than last. Organizations seem to be making an effort to keep their documents up to date. The documented system appears to be adequate. The status is provided on page 49 of Enclosure 2.

INTERNAL QUALITY AUDIT REPORT (W. WOODS/QS40):

Warren Woods presented the status of the internal audit program. Audits are on track to complete the schedule on time this year. The top two findings are related to maintaining current documentation and various issues related to records. Maintenance of documents is difficult because, even with annual reviews, a document author tends to read what they think their document says and misses outdated information. A checklist to assist with the annual review of Directives will be used again this year. A similar checklist may be

useful for each organization's internal review of their documentation. Records issues continue to improve, but further education and awareness are being planned.

The status chart for internal nonconformance reports (NCRs) was discussed. As of today, there are eighteen open NCRs, one of which is late. The oldest NCR is 325 days old. The responsible organization has been working with the Safety Office to obtain a shorter course offering to meet their training needs for working with high-pressure systems.

The audit schedule for calendar year 2003 was also provided in the charts for information.

The presentation charts are included on pages 50-54 of Enclosure 2.

#### CORRECTIVE AND PREVENTIVE ACTION PROGRAM (J. MCPHERSON/HEI):

John McPherson provided a status of the corrective and preventive action program at MSFC. The corrective and preventive action programs are being employed by the center, with trends indicating a healthy system. All customer feedbacks received have been positive.

Acute Launch Emergency Restraint Tips (ALERTs) continue to be worked down. The number of delinquent ALERTs is down from over three thousand last Fall to just over seven hundred today. It was noted that although processing ALERTs is a real chore, we have gotten value out of the program. There have been eleven MSFC-impacted ALERTs since the last MQC meeting report.

Improvements to the system include a one-time thirty-day extension that may be granted under certain circumstances and email notifications before and when ALERTs become due.

The presentation charts are included on pages 55-58 of Enclosure 2.

Three organizations reported on their delinquent status:

Science Directorate – Dr. Ann Whitaker provided the report. Delinquent ALERTs are down 70% since last September and can be attributed to a small number of contractors. Additional contractor support will be used to work down the numbers and a monthly status to the directorate management will be conducted. The status for the Science Directorate's ALERTs is included on page 59 of Enclosure 2.

Flight Projects Directorate – Axel Roth provided the report. There are ninety delinquent ALERTs at this time. Many of these can be attributed to the recent illness of an individual assigned to work these. We have not been as diligent as we need to be. These will continue to be worked. Axel reinforced the fact that ALERTs can have an important impact.

Shuttle Office – Sandra Coleman provided the report. There are eight ALERTs that are delinquent. The individuals working these were also involved in the Columbia

investigation and are involved in return to flight. These issues will be worked as soon as possible. We will keep an emphasis on this.

David King reinforced Axel's statements regarding the importance of working ALERTs. Any one of these could result in an incident, so we need to work them diligently.

STATUS OF NQA FINDINGS (M. DEMURRAY/HEI):

Mary DeMurray provided a status of the two findings that resulted from the last surveillance audits of MSFC and the MSFC Resident Office at Thiokol by National Quality Assurance, USA (NQA) in June and July. Both findings were observations. Corrective action has been completed at the Resident Office. The discussion of quality objectives during this meeting today will constitute corrective action for the second finding.

A registration audit for AS9100 certification was conducted in conjunction with the last ISO surveillance audit in June. MSFC is the first NASA facility, as well as the first government site, to be registered to this standard. David King offered kudos to the entire Marshall team for this accomplishment.

The presentation charts are included on pages 60-64 of Enclosure 2.

CLOSING REMARKS (A. ROTH/DE01):

Axel Roth provided closing remarks. The next NQA surveillance audit will be conducted on November 18-19 by two auditors. All MSFC activities are subject to audit; however, emphasis will continue to be on those activities providing products/services to external customers. Additional emphasis will be placed on management commitment. Everyone is encouraged to visit the ISO web page for self-assessment checklists and other information about the upcoming audit.

Organizations should be aware of the NQA audit dates and begin visiting the ISO website to refresh themselves beginning in October.

Return to flight, IFMP, and full cost management are the only major activities that are expected to affect the Marshall Management System.

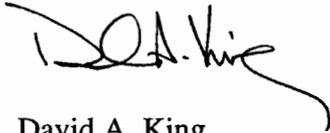
Those in attendance were asked for any suggested changes to the quality policy or objectives based on today's discussion. The policy statement and top-level quality objectives were provided for review. There were no suggestions.

Overall, the suitability, effectiveness, and adequacy of the Marshall Management System appear to be acceptable. No major problems have been identified by any means, including internal and external audits, and customer satisfaction indicators are positive overall.

The presentation charts are included as pages 65-70 of Enclosure 2.

David King stated in closing that it is important that we remain vigilant and continue to work hard to improve. Just because we only had one observation in the last audit does not mean that we cannot get better.

No other items for record were discussed at the meeting. M. DeMurray/HEI kept the meeting minutes.



David A. King  
Chairman  
MSFC Quality Council

Enclosures

- 1 Attendance Roster
- 2 MQC Presentation Charts

Distribution:  
Council Members  
Meeting Attendees

# MSFC QUALITY COUNCIL MEETING

DATE: Tuesday, September 9, 2003 LOCATION/ TIME: BLDG. 4200/P110, 2:30 – 4:30 p.m.

MEETING ATTENDANCE: [Please initial next to your name to record meeting attendance.]

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>	<u>FAX</u>
<b>Director's Office</b>			
<input checked="" type="checkbox"/> David A. King	DA01	544-1914	544-5896
<input type="checkbox"/> James W. Bilbro	DA01	544-3467	544-8345
<input type="checkbox"/> Bob L. Sackheim	DA01	544-1938	
<input type="checkbox"/> Rex Geveden	DD01	544-9335	544-5896
<input checked="" type="checkbox"/> Axel Roth	DE01	544-0451	544-5590
<b>Center Operations Directorate</b>			
<input type="checkbox"/> Sheila Cloud	AD01	544-0120	544-5893
<input checked="" type="checkbox"/> Jim Carter	AD01	544-6630	544-7920
<input type="checkbox"/> Dan Adams	AD10	544-1614	544-8259
<input type="checkbox"/> Allen Elliott	AD10	544-0662	
<input type="checkbox"/> Lucy Boger	AD21	544-0320	
<input type="checkbox"/> Mark Hyder	AD22	544-8821	
<input type="checkbox"/> Annette Tingle	AD34	544-4522	544-8752
<input checked="" type="checkbox"/> Deborah Wills	AD35	544-4525	544-8610
<input type="checkbox"/> Jackie Fletcher	AD35	544-4524	
<input type="checkbox"/> Lisa Adkins	AD40	544-7546	544-6570
<input type="checkbox"/> Dawn Cross Stanley	AD40	544-1835	
<input checked="" type="checkbox"/> Pat Hill	AD41	544-4501	
<input type="checkbox"/> Polly Edwards	AD50	544-4536	544-2101
<input type="checkbox"/> Brad Garland	AD50	544-4537	
<b>Customer &amp; Employee Relations Directorate</b>			
<input checked="" type="checkbox"/> Tereasa Washington	CD01	544-7491	544-6420
<input type="checkbox"/> Susan Cloud	CD01	544-5377	544-2610
<input type="checkbox"/> Pat Shultz	CD20	544-7559	544-4809
<input type="checkbox"/> Caroline Wang	CD30	544-3887	544-6030
<input type="checkbox"/> Steve Durham	CD40	544-0390	544-0007
<input type="checkbox"/> Michael McLean	CD40	544-0397	544-0007
<b>Engineering Directorate</b>			
<input checked="" type="checkbox"/> Bill Kilpatrick	ED01	544-1001	544-5896
<input checked="" type="checkbox"/> Ed Kiessling	ED01	544-1002	544-5896
<input type="checkbox"/> David Throckmorton	ED01	544-1001	544-5896
<input type="checkbox"/> Pat Layky	ED12	544-3481	544-3098
<input checked="" type="checkbox"/> Terry Roberts	ED16	544-3717	544-0900
<input type="checkbox"/> Jim Lindsay	ED20	544-1301	544-0236
<input type="checkbox"/> Craig Garrison	ED27	544-7197	544-8838
<input type="checkbox"/> Patricia Johnson	ED33	544-2633	
<input type="checkbox"/> Rich Wegrich	ED35	544-2626	
<input checked="" type="checkbox"/> Karen Iftikhar	ED44	544-3653	
<b>Flight Projects Directorate</b>			
<input checked="" type="checkbox"/> Axel Roth	FD01	544-0451	544-5590
<input checked="" type="checkbox"/> Robert Crumbley	FD01	544-2464	
<input type="checkbox"/> Anthony R. Lavoie	FD01	544-2332	
<input type="checkbox"/> Jack Stokes	FD22	544-1764	544-5194
<input type="checkbox"/> Kay Martin	FD33	544-2317	
<input type="checkbox"/> Mike Kearney	FD40	544-2029	
<input type="checkbox"/> Bill Mordan	FD40	544-2011	

**Chief Counsel**

<u>W.H.</u> ✓ Bill Hicks	LS01	544-0010	544-0258
_____ Jim Frees	LS01	544-0123	544-5867
_____ Abbie Johnson	LS01	544-0014	544-0258
✓ _____ Jerry Seeman	LS01	544-6580	

**Space Shuttle Propulsion Office**

_____ Alex McCool	MP01	544-0718	544-2432
✓ _____ Sandy Coleman	MP01	544-6201	
✓ _____ Jodie Singer	MP01	544-0612	544-4155
_____ Jeff Spencer	MP21	544-7498	544-7713
<u>JmP</u> _____ John Pea	MP71	544-8437	544-5799

**Equal Opportunity Office**

<u>Ⓟ</u> _____ Charles Scales	OS01	544-4927	544-2411
_____ Willie Love	OS01	544-0088	544-2411
<u>B.S.</u> _____ Billie Swinford	OS01	544-0087	544-2411

**Procurement Office**

<u>W.B.</u> _____ Steve Beale	PS01	544-0257	544-3214
_____ Byron Butler	PS01	544-0253	544-4400
_____ Jerry Williams	PS10	544-0295	544-4401
<u>mm</u> _____ Mike Sweigart	PS20	544-0281	

**Safety and Mission Assurance**

<u>J.D.</u> _____ Jan Davis	QS01	544-0455	
_____ Roy Malone	QS01	544-0506	
_____ Herb Shivers	QS01 (ED40)	544-8903	
<u>T.H.</u> _____ Terry Hamm	QS10	544-7402	544-3241
<u>V.M.</u> _____ Don Miller	QS40	544-8361	544-4857
_____ Ron C. Mize	QS40	544-2485	
<u>K.W.</u> _____ Kerry Warner	QS40	544-7350	544-8585
<u>B.K.W.</u> _____ Warren Woods	QS40	544-2275	544-5685

**Office of Financial Officer**

_____ Frank D. Mayhall	RS01	544-7266	544-4479
_____ Peggy Williamson	RS24	544-3357	544-5863
<u>Sh</u> _____ Sharal Huegele	RS30	544-7286	544-9055

**Science Directorate**

<u>A.W.</u> _____ Ann Whitaker	SD01	544-2481	544-5877
_____ Tom Fleming	SD01	544-3962	544-5975
_____ Emily Kendall	SD02	544-3775	
_____ Robin Henderson	SD10	544-1738	544-8639
_____ Steve Lambing	SD12	544-2277	
_____ Lloyd Love	SD20	544-7702	544-2559
_____ Wes Darbro	SD22	544-7742	544-2559
_____ Cassandra Thompson	SD30	544-3993	
_____ Todd May	SD31	961-1769	
_____ Clark Darty	SD40	544-2728	544-5892
<u>TD</u> _____ Tom Dollman	SD40	544-6568	544-8500-9243
_____ Melanie Bodiford	SD44	544-2067	
_____ Mike Purvey	SD44	544-3592	
_____ Mike McCollough	SD50	544-4368	544-5800
_____ Ed Reichmann	SD50	544-7603	544-5800
_____ Tim Miller	SD60	922-5882	922-5823
_____ Diane Samuelson	SD60	922-5832	922-5723
_____ Roy Young	SD70	544-4965	544-2659
_____ Tommy L. Thompson	SD72	544-3489	544-2659





George C. Marshall  
Space Flight Center

# Marshall Quality Council

September 9, 2003



# Opening Remarks

David King – Axel Roth



- Success Stories
  - Customer Satisfaction (Sam Ortega – MP51)
  - Continual Improvement (Jeff Brown – ED16)
  - Collaborative Efforts with Organizations Outside MSFC (Ed Semmes – SD41)
  - Continual Learning (Doug Wells – ED33)
  - Freedom to Manage (Erin Richardson – ED36)
- MQC Action Items Status (Axel Roth – DE01)
- Balanced Scorecard, Continual Improvement, and Customer Satisfaction (Michael McLean – CD40)
- Continual Learning (Bill Brewster – CD20)
- Safety



- Process Performance and Product Conformity (Richard Gladwin – VS10 & Deborah Wills - AD35)
- Internal Quality Audit Report (Warren Woods – QS40)
- Corrective and Preventive Action Program (John McPherson - HEI)
- Status of NQA Findings (Mary DeMurray - HEI)
- Closing Remarks (Axel Roth – DE01)
  - Next NQA Audit – ISO 9001 and AS 9100
  - Changes That Could Affect the MMS
  - Issues & Recommendations
  - Assessment of the suitability, adequacy, and effectiveness of the MMS



# Customer Satisfaction

*Sam Ortega – MP51*



- **History**

- The RSRM Level III process change cycle coordinated by RSRM subsystem engineers and Thiokol change engineers for lab support personnel to review process changes has been used for many years. The process was cumbersome, unpredictable and not viewed favorably by our customers, lab support personnel, due to lack of feedback on any given change package



- **Improvement Taken**

- A Kaizen improvement approach was implemented to reduce paper, transition time, time involved and increased positive participation

- **Results**

- With the changes incorporated so far, the level of response and interaction has improved 60% with repeated comments of satisfaction that our customers feel informed and more in control of the process
- Continual improvement changes to be incorporated in the near future have been reviewed by our customers and have received unanimous approval and support

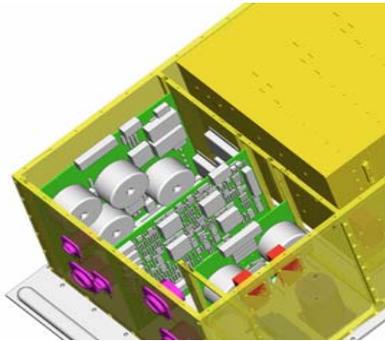


# Continual Improvement

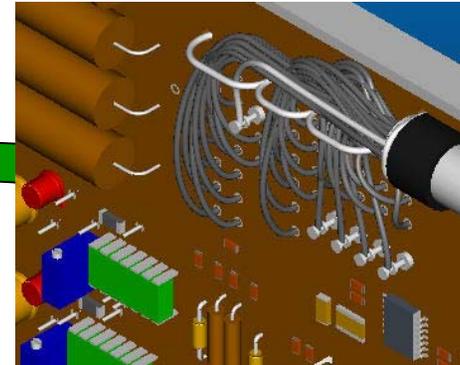
*Jeff Brown – ED16*



PTC ProEngineer



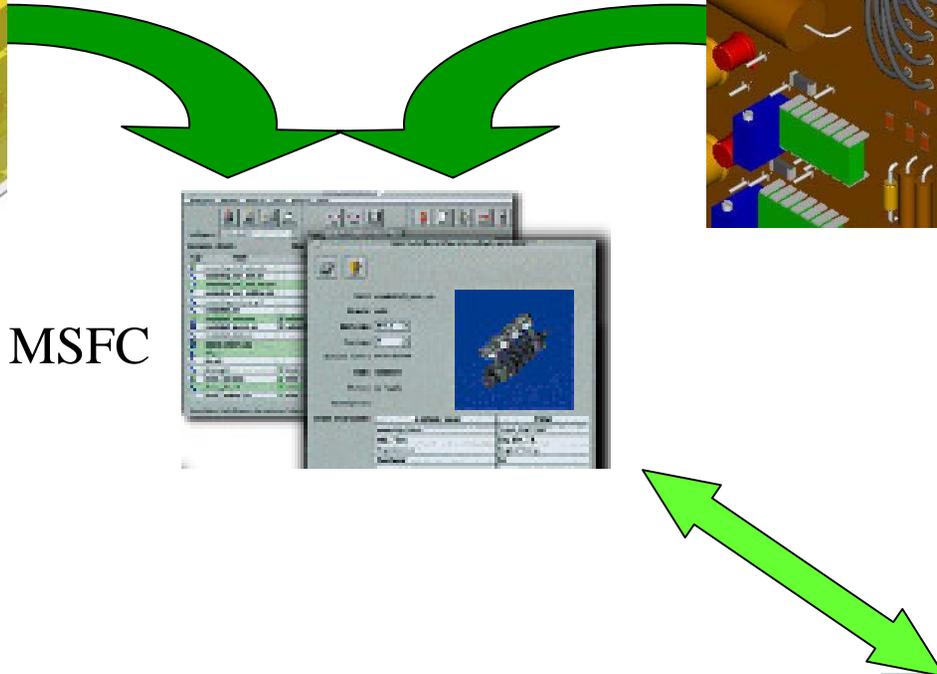
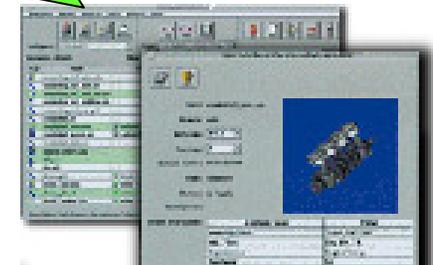
PTC ProEcad & ProCabling



PTC IntraLINK @ MSFC



PTC IntraLINK @ JSC





- MSFC & JSC are now connected
  - Other centers to be connected in future
  - JSC leading effort
- Benefits and new capabilities
  - Jointly work projects at lower, detailed level
  - Share CAD data (libraries, designs, etc.)
  - Share expertise (i.e. Columbia investigation)
- Bottom Line: Gained capability to work together as One NASA.





# Collaborative Effort with Organizations Outside of MSFC

*Ed Semmes – SD41*





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Strategic Microgravity Research Collaborative Enabling Technologies  
– Ed Semmes

- Introduction

- The Science Directorate’s Microgravity Science and Applications Department (MSAD) currently manages three programs sponsored by Office of Biological & Physical Research’s (OBPR) Strategic Microgravity Research Initiative:
  - Space Radiation & Shielding Program (SRSP)
  - In-Space Fabrication & Repair (ISFR)
  - Materials Science for In-Space Propulsion Systems
- These three programs address the Code U organizing questions responding to the ONE NASA vision:
  - Question 1) How can we assure survival of humans traveling far from earth?
  - Question 3) What new opportunities can our research bring to expand the understanding of the laws of nature and enrich lives on Earth?
  - Question 4) What technology must we create to enable the next explorers to go beyond where we have been?
- Wide collaboration on science research and technologies is required to successfully perform the MSFC leadership role.



Strategic Microgravity Research Collaborative Enabling Technologies  
– Ed Semmes

- Collaborative Accomplishments

- What? - Five months, three “new start” programs, three technical workshops, hundreds of materials scientists, physicists and engineers from universities, industry, NASA and other government agencies coming together to produce technical roadmaps directing new research funding.
- How? – A dedicated team of Science, Engineering and Transportation Directorate employees joined together to plan, invite, coordinate and conduct the workshop’s collaborative process of identifying customer technology requirements, documenting the proceedings and making recommendations to Enterprise level champions.
- When?
  - Space Radiation Shielding Program (SRSP) Consortia Workshop-March 17-18 and Deep Space Test Bed Workshop - June 9.
  - Materials Science for In-Space Propulsion Systems Workshop – May 15-16.
  - In-Space Fabrication & Repair (ISFR) Workshop – July 8-10.
- Where? – Workshops were conducted at the NSSTC and the Marshall Institute.



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Strategic Microgravity Research Collaborative Enabling Technologies  
– Ed Semmes

- Future Collaboration Plans
  - Support at multiple Conferences and International Conventions sharing knowledge and experiences.
  - Conduct subsequent Program Technical Workshops refining and further defining technology roadmaps and responsiveness to customer requirements.
  - Intergovernmental Personnel Assignments and Visiting Scientist Agreements expanding research efforts, knowledge base and fortifying extramural relationships.
  - Participate in upcoming Aerospace Technical Working Group (ATWG) meetings (Fall '03 and Spring '04), employing a larger industry/academia and government community.
  - Educational Outreach initiatives including local high schools and universities.
  - Develop and maintain Program website kiosks of content, accomplishments, contacts, opportunities and workshop announcements.
  - Development of central computer clusters to share investigator's modeling efforts, code development and other resource intensive applications in a collaborative environment.



Strategic Microgravity Research Collaborative Enabling Technologies  
– Ed Semmes

- **Summary**

- Expanding strategic activities to a larger scientific and engineering community creates dynamic leverage potential over a closed system approach.
- Collaboration expands our strategic research initiatives, enabling complex issues to be resolved by multi-dimensional and broad discipline expertise.
- Absent extensive collaborative efforts, our Programs risk initiating research unresponsive to the strategic needs of the agency and/or delaying the closing of technology gaps.
- Synergy with extramural technology development can help us accelerate maturation processes and deliver “ready-to-use” technologies to NASA’s enterprises.



# Continual Learning Success Story

*Doug Wells – ED33*



# Introduction to Fracture Mechanics, Life Assessment and Fracture Control - A Successful Short Course

Doug Wells	ED33
Preston McGill	ED33
Wayne Gregg	ED22
Greg Swanson	ED22
Rob Wingate	ED22
Mike Suits and team	ED32
Bob Dodds	UIUC
Jim Newman	MSU



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*Introduction to Fracture Mechanics, Life Assessment and Fracture Control  
A Successful Short Course - Doug Wells*

## Overview

- The course is the second offering in a planned series of lectures and symposia on the subject of fracture control
- Topics covered in the course:
  - Fracture mechanics
  - Structural life assessment
  - Fracture control
  - Non-destructive evaluation
- 15 hours over three days at the Marshall Institute
- Over 200 professionals will have attended by September 2003
- Attending organizations: ED, TD, FD, SD, QS, ATK-Thiokol, Pratt & Whitney, Rocketdyne, USA, Boeing, HEI, Sverdrup, SAIC, Lockheed-Martin
- Requests to teach the course at JSC and GRC



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*Introduction to Fracture Mechanics, Life Assessment and Fracture Control  
A Successful Short Course - Doug Wells*

## History

- The short course is a part of the Engineering Initiative in Fracture and Fatigue
  - The MSFC Engineering Initiative in Fatigue and Fracture (EIFF) is a voluntary effort within the Engineering Directorate.
  - The purpose of the EIFF is to pursue a systematic approach to improving the fracture control process, including analytical tools, standards, guidelines, and *awareness*.
    - This lecture series is a part of the EIFF efforts to improve workforce awareness and education in fracture control.
  - Other EIFF activities include developing standards and guidelines for fracture control implementation and sponsoring development of new engineering tools, analytical technologies, and research efforts focused on the problems in fracture and fatigue of most concern to the aerospace industry.

## Why

- The sole purpose of fracture control is the safety of manned space flight
  - The fracture control process is required for all manned systems
- *Improved understanding by the workforce improves effectiveness, reduces implementation burden, and improves the safety of our manned systems*
  - The perceived need to improve workforce awareness comes directly from the MSFC Fracture Control Board experience



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*Introduction to Fracture Mechanics, Life Assessment and Fracture Control  
A Successful Short Course - Doug Wells*

## Reasons for success

- Active, personalized promotion - all classes must have a technical champion
- Informative, inviting announcement distributed widely by email
- Reduced civil service/contractor barriers to training
  - Easier when cost of course is not based on a price-per-student, but fixed
- Effective instruction, highly respected guest lecturers
- Accommodating schedule - 8 hour classes are impractical for most engineers
- Quality learning environment provided by the Marshall Institute and facilitation of the MSFC education/training department
- Quality course materials - reference text and notes are required
- Continuous search for improvements

## Areas of Improvement

- Improvements implemented into the course
  - Problem set
  - Video demonstrations of NDE techniques
- Other areas identified for improvements to the course
  - Existing barriers between CS and contractor employee education (financial)
  - Course incentives



# Freedom to Manage

*Erin Richardson – ED36*



## Goal of Freedom to Manage Initiative

*...Remove barriers to more efficient management, with the expectations of improved accountability and performance*



# Success Story # 1

## Barrier Identified

Pick-up of Government Vehicle Day of Travel at MSFC Made Employees Drive Many Unnecessary Miles Before Beginning Trip.

## Suggestion

Allow Employees to Take Vehicle Home Night Before.

## Implementation

Employees Are Now Allowed to Drive Government Vehicle Home Night Before Taking It on TDY.



## Success Story # 2

### Barrier Identified

Incorrect Inventory Valuation; Too Many Hours Spent Tracking Property That in Real Dollars Is Not Worth Much.

### Suggestion

Depreciate Equipment Values Appropriately. When the Value Falls Below a Certain Level, Drop It From the Inventory, Unless There Are Mitigating Circumstances That Require Tracking the Location of the Property.

### Implementation

HQ Approved to Raise the Tracking Threshold to Original Purchase Price of \$5000.



# Success Story # 3

## Barrier Identified

Large Number of Signatures Required to Acknowledge Personnel Certifications Causes Delays and Requests for Extensions in Documents.

## Suggestion

Eliminate Some of the Certifying Signatures. Perhaps Require One Certification From Safety.

## Implementation

Personnel Certification Form -- MSFC Form 4083 -- Is Being Revised to Eliminate the Examiner's Signature; And the Contractor and NASA Certification Officer Signature Blocks Will Be Replaced With a Single Block.



# How to Reach Us

From Inside Marshall:

or

<http://f2m.msfc.nasa.gov/>



# MQC Action Items Status

*Axel Roth – DE01*



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MQC Action Items Status MQC-0052 - Axel Roth

MQC-0052 – *The audit program should provide for additional targeted audits to be planned when systemic problems are identified during the audits of the organizations. Also, follow-ups for effectiveness should be performed sooner, instead of waiting for the next audit of each organization.*

- Developed additional fields in the IQA database for tracking re-verification of NCRs
- Developed new procedure which addresses the re-verification of recently closed NCRs
- The internal audit program has an ongoing process of staffing a team of longer term audit support personnel who will perform the follow-up between 60 and 90 days of closure
- We have reviewed 219 NCRs that were closed since the development of IQA and have identified those NCRs which need additional follow-up work
- Recommend closure of this action



---

MQC Action Items Status - MQC-0055 - Axel Roth

MQC-0055 – *Include a report on Freedom to Manage (F2M) process improvements/success stories at the next MQC meeting. (Axel Roth/DE01 and Johnny Stephenson/ED02, Due: Next MQC Meeting)*

- Recommend closure of this action item based on the presentation just given by Erin Richardson



# Balanced Scorecard, Continual Improvement & Customer Satisfaction

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**September 9, 2003**

*Presented to the Marshall Quality Council  
by  
Michael McLean  
Customer & Employee Relations (CaER) Directorate*



**Balanced Scorecard, Continual Improvement & Customer Satisfaction**  
**Michael McLean / CD40**

*“Until we measure,  
we do not know.”*

*Thomas Jefferson*



**Balanced Scorecard, Continual Improvement & Customer Satisfaction**  
**Michael McLean / CD40**

**– BALANCED SCORECARD –**

- ▶ **Web site is loaded with 97 Center-level FY 2004 MSFC metrics.**
- ▶ **Status will be posted beginning October 1, 2003.**
- ▶ **Site may be accessed through “Inside Marshall” or through the Continual Improvement or Customer Satisfaction Web sites.**



Balanced Scorecard, Continual Improvement & Customer Satisfaction  
Michael McLean / CD40

**– CONTINUAL IMPROVEMENT –**

Org.	Success Stories
AD*	18
CD*	15
ED	7
FD	24
LS	1
MP	1
OS	2

Org.	Success Stories
PS	2
QS	3
RS	1
SD	18
TD	5
UP	0
VS	1

Total of 98 success stories

\* Indicates change since last MQC.

Note: Data from CI Website  
09/08/03 9:00 a.m.



**Balanced Scorecard, Continual Improvement & Customer Satisfaction**  
**Michael McLean / CD40**

**– CUSTOMER SATISFACTION –**

- ▶ **Current\*:** CD, RS, ED, OS, FD, LS, QS, TD
- ▶ **Not current\*:** UP, AD, PS, SD, MP, VS
- ▶ **Most posted results show positive range.**
- ▶ **Most non-current Directorates' last postings May 2003. POC's asked to post results in real-time.**

*\* As of 9:00 a.m. September 8, 2003.*



# Continual Learning

*Bill Brewster – CD20*



EODD Continual Learning – Bill Brewster

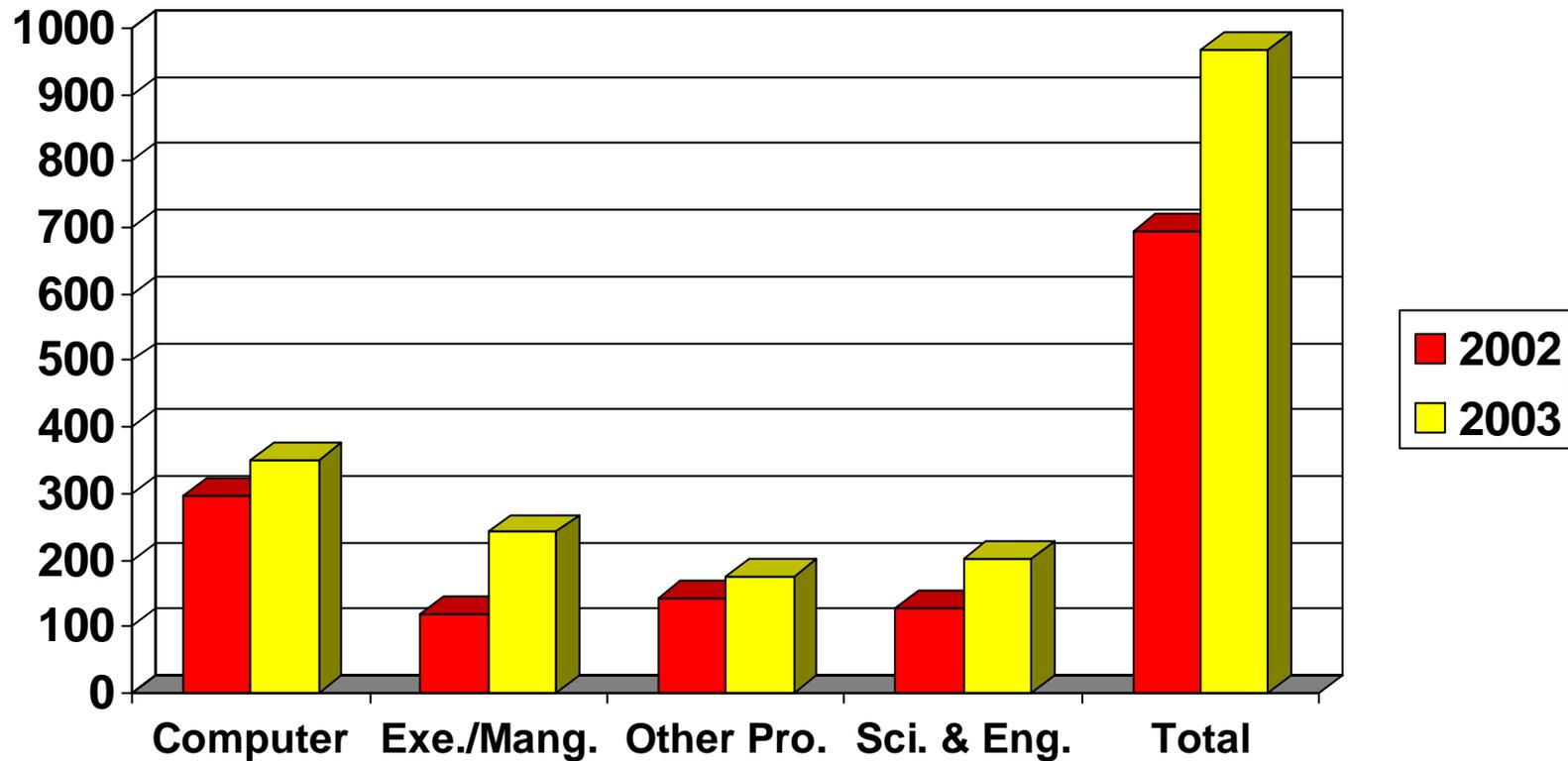
Objective for FY2003: Implementing the MSFC Cultural Roadmap. Increase training and development opportunities for MSFC employees by 10% of FY2002 baseline.

• Metrics: Baseline established for FY2002 for the following Continuous Learning Programs:

- Astar
  - Cooperative Education
  - Fellowship Program
  - Mentoring
  - New Employee Orientation
  - Part-Time Studies
  - Professional Interns
  - Technology Assisted Learning
  - Awards
  - Engineer Development
  - Full-Time Students
  - Organizational Development
  - Professional Development
  - Special Events Coordination
  - Online Training
  - Self Study Learning Center
- Various Programs including: ISO 9000, IT Security, Cultural Diversity, Safety Health Environment (SHE), Leadership, and Program Management/Leadership



***EODD Continual Learning***





### Accomplishments

- Increased focus on Organizational Development
  - Centers Leadership Development Series
- Increased focus on Project Management and Systems Engineering Skills
- Continued expansion of technology assisted training
- Strengthened Cooperative Education & New Employee Programs
- Established Project Management Board

### Current Initiatives/Goals

- Implement comprehensive metrics
- Culture Assessment Value Audit
- Individual Development Plan (IDP) Roll-out.
- Coordinator Leads
- New NASA On-Line Registration System (NORS) & Astar Roll-out.
  - Fifth International Symposium on Liquid Space Propulsion
  - Chandra X-Ray Observatory Symposium
- NASA National Recruitment Initiative
- Define Training and Experience required for Project Manager Personnel
- Pursuing CEU Accreditation for Self Study Learning Center courses
- Implementing required reading list for the IDP process



# Safety



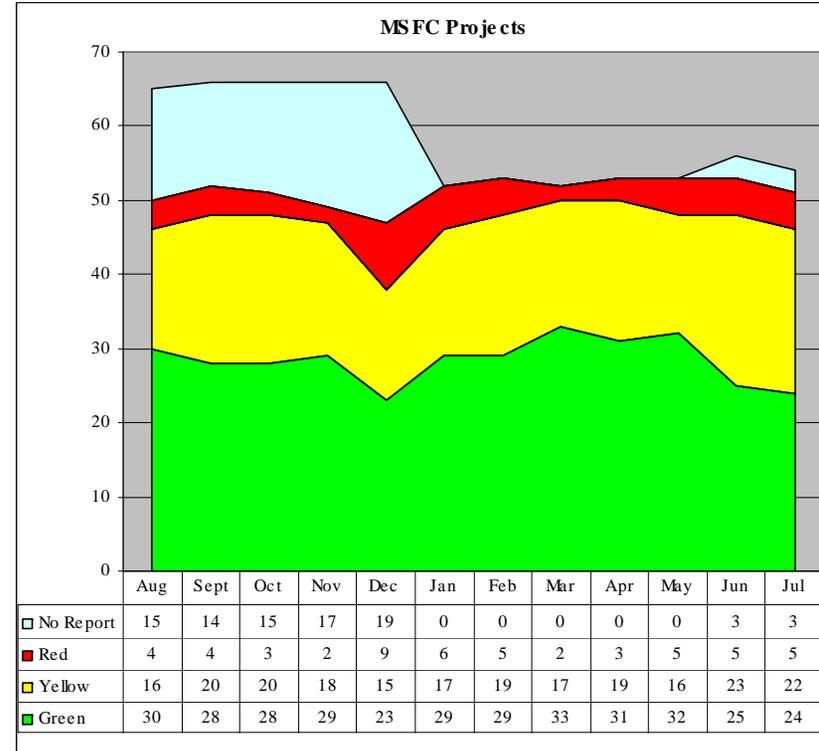
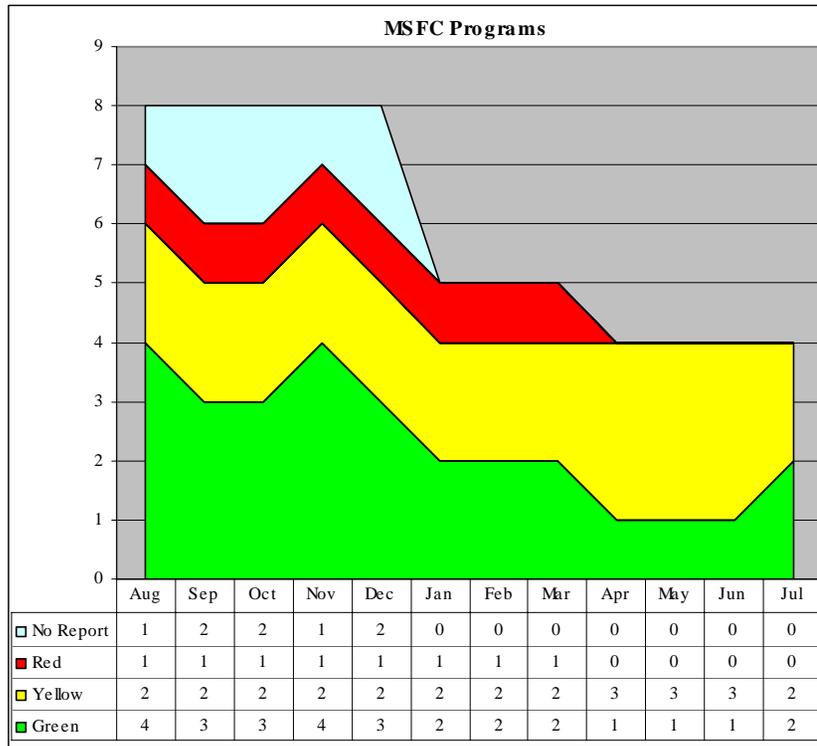
- All Industrial Safety Issues and Metrics have been presented to Senior Management since the June NQA Audit on the following dates:
  - July 7, 2003
  - August 4, 2003
  - September 2, 2003
- Marshall Team Meeting (MTM) Minutes will be added to the Safety Website



# Process Performance and Product Conformity

*Richard Gladwin – VS10  
& Deborah Wills – AD35*

# Health Status Trend of MSFC Programs/Projects



- Green represents *Progress according to Plan*
  - Meeting management plans\* or commitments.
  - No action required.
- Yellow represents an *Area of concern\*\**
  - Deviating from plans\* or commitments, but approved contingency/reserves exists to recover and successfully complete the program/project as approved.
  - Needs attention. Problem can be resolved within the reporting organization.
- Red represents a *Significant problem\*\**
  - Deviating from plans\* or commitments, with insufficient approved contingency/reserves to recover and successfully complete the program/project as approved.
  - Needs action. Help required beyond the reporting organization to address the problem.

\* In Implementation, the appropriate document is the approved program/project plan. If used in Formulation, report against appropriate approval document (e.g. FAD or equivalent).  
 \*\* Any "Yellow" or "Red" assessment requires a brief explanation of the problem and an action plan.



Programs and Projects Reporting RED during June 2003 – Rich Gladwin

	Project	Mgt	Cost	Sch	Tech	Explanation	Rebaseline to MSFC PMC
SD	SOLAR-B	G	Y	R	Y ↓	<p><u>Cost:</u> Impact from slip in Japanese camera delivery. LM FPP cost over-run.</p> <p><u>Schedule:</u> Late delivery of EIS components to UK. Slip of XRT instrument to Japan.</p> <p><u>Tech:</u> EIS acceptance package was inadequate. XRT has problems with tooling.</p>	Presented 08/20/03
UP	DART	R ↓	R ↓	R	R ↓	<p><u>Mgt:</u> TD52 backed out of systems engineering role.</p> <p><u>Cost:</u> DCR costs impacts ~ \$10 million.</p> <p><u>Schedule:</u> DCR impacts launch date by 6 months..</p> <p><u>Tech:</u> DCR produced 86 RIDS. S-band failed and components sent back for qualification inadequacies.</p>	TBD
UP	X-37	Y	R	R	Y	<p><u>Mgt:</u> Competing for limited resources.</p> <p><u>Cost:</u> Expect improvement based on Aug 1 Administrator's briefing..</p> <p><u>Schedule:</u> ALTV flight date slip due Summer '04 due to wing repair.</p> <p><u>Tech:</u> ALTV chute and control surface issues in work. OV wing leading edge, hot structures, and Li-ion battery issues</p>	TBD
TD	PROSEDS	G	R	Y	G	<p><u>Cost:</u> Only portions of spacecraft money are provided.</p> <p><u>Schedule:</u> Seeking a new launch manifest</p>	After funding issues are solved
MP	SSME AHMS Phase 1	G	Y	R	G	<p><u>Cost:</u> Impacts from the noise issue are within project reserves.</p> <p><u>Schedule:</u> 4.5 month schedule slip to the planned first flight. Waiting for Shuttle Program approval of re-baseline</p>	Presented 07/16/03

# Programs and Projects Reporting YELLOW during July 2003 – Rich Gladwin

	Program/Project	Mg t	Cost	Sch	Tech	Explanation
SD	Space Product Development (SPD)	G	G	Y	G	S- STS-107 accident has impacted the SPD flight manifest.
SD	Extreme Universe Space Observatory (EUSO)	G	G	G	Y	T- Optical testing and higher fidelity error budget indicates throughput may be inadequate.
SD	Material Science Research Rack (MSRR-1)	G↑	Y	G	G	C- Resolving mapping of SDOS costs to IFMP.
SD	Microgravity Science Glovebox (MSG)	Y	Y	G	G	M- Project plan not approved by Center Director. C- Resolving mapping of SDOS costs to IFMP. Added ESA payloads and Soyuz mission cost identified. FY03 carry-in insufficient.
SD	Biotech Carriers (BiC)	Y	G	G	Y↓	M- Project plan not approved by Center Director. T- BiC STES may not provide 4°C environment.
SD	CGH	Y	G	Y	G	M-Project plan not approved by Center Director. S- QMI furnace mods impacting pre-CDR testing. CDR may slip.
SD	Delta-L	Y	G	G	G	M- Project plan not approved by Center Director.
SD	EGN	Y	G	G	G	M- Project plan not approved by Center Director
SD	g-Limit	Y	Y	G	Y	M- Project plan not approved by Center Director. C- Launch delay impacting project cost. T- Flight unit and flight unit spare magnet anomaly testing complete.
SD	OPCGA	Y	Y	G	G	M- Project plan not approved by Center Director. POP03 submit defers flights in FY04. C- Drive gear failure anomaly investigation.
SD	PEP	Y	G	Y	G	M- Project plan not approved by Center Director. S- QMI furnace mods impacting pre-CDR testing. CDR may slip.
SD	Quench Module Insert (QMI)	Y	G	G	G	M- ESA IRD has not been signed.
TD	Rocket Engine Prototype	Y	G	Y	G	M-Reduction in FY04 funding will reduce level of insight. Lacking lead subsystem manager. S-Late delivery of water cooled nozzle and other issues may delay 40K preburner testing at SSC.
TD	ISTAR/RBCC	G	G	Y	G	S- Direct Connect Combustor Rig emerging requirements have delayed CDR by 2 months.
TD	Integrated Powerhead Demonstrator	Y	G	G	Y↓	M- Project documentation has not been baselined. T- Based on the Rev M1 Power Balance the IPD engine system will not be able to attain the 100% power level requirement.
TD	Propulsion Technology and Integration	Y	G↑	Y	G	M- Project documentation has not been baselined.
TD	In-Space Propulsion Technology	Y	Y	G	G	M- Project documentation has not been baselined. C- FY03 reserves low due to \$5M redirection. Budget rephased by Code S.
FD	Biological Research Project (BRP)	G	Y	Y	Y	M- Project plan update in work. C- Plan does not include software changes. Cost threat - potential flight rack impacts. S- Interim DD250 signed-closure plan for open items. T- BSSPCM Design issue resolution in repair/test. Relay board issues being worked by Boeing Seattle.
FD	ECLSS	G	Y	Y	Y	C- Cost threats reported weekly. S- WPA and OGA 10 weeks late for delivery. T- WPA and OGA pumps require redesign to meet life cycle requirements.
FD	Nodes 2/3	G	Y	G	G	C- Full funding for sub-system support contractor not received.
MP	External Tank (ET )	G	Y	Y	Y	C, S, T - In process of identifying "Return-to-Flight" options.
MP	Solid Rocket Booster (SRB)	G	G	Y	Y	S, T- SRB continues to work RTF items (ETA ring, NDE on forward and aft separation bolt, ET/SRB bolt catcher, BSM igniter).
AD	IFM Integration	G	G	G	Y	T- Working with SAP to address OSS note and patch support.
RS	IFM Core Financial	G	Y	G	G	C- Use of project reserves due to SAP software issue.



Programs/Projects that Improved from Yellow to Green – Rich Gladwin

- Gravity Probe B program
- Auxiliary Propulsion project (under NGLT)



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## Adverse Trends from Red/Yellow Projects – Rich Gladwin

- **Management (16)**
  - Project plans need to be updated (9)
  
- **Cost (14)**
  - Technical issues discovered that impact cost (4)
  - IFMP problems (3)
  
- **Schedule (15)**
  - Technical issues discovered that impact schedule (5)
  
- **Technical (10)**
  - Redesign required (4)



Process Performance and Product Conformity – Deborah Wills

- 191 Directives
- 8 active Deviations/Waivers against 8 Directives
  - MPG 1130.1 – MSFC Implementation Planning Process – 1 Waiver (FY03)
  - MWI 1280.5 – MSFC ALERT Processing – 1 Waiver (For MSG facility)
  - MPG 1410.2 – Processing MSFC Directives – 1 Deviation (MPG to be revised)
  - MPG 5000.1 - Purchasing - 1 Waiver
  - MWI 7120.2 – Data Requirements Identification/Definition – 1 Deviation
  - MWI 7120.6 - Program/Project Risk Management - 1 Waiver
  - MPG 8060.2 – Non-Flight & Non-Facility Design – 1 Deviation (STS-107 investigation test hardware only)
  - MWI 5113.1 – Governmentwide Commercial Purchase Card Operation Procedures
- The documented system appears to be adequate



# Internal Quality Audit Report

Warren Woods

Data collected 9/8/2003



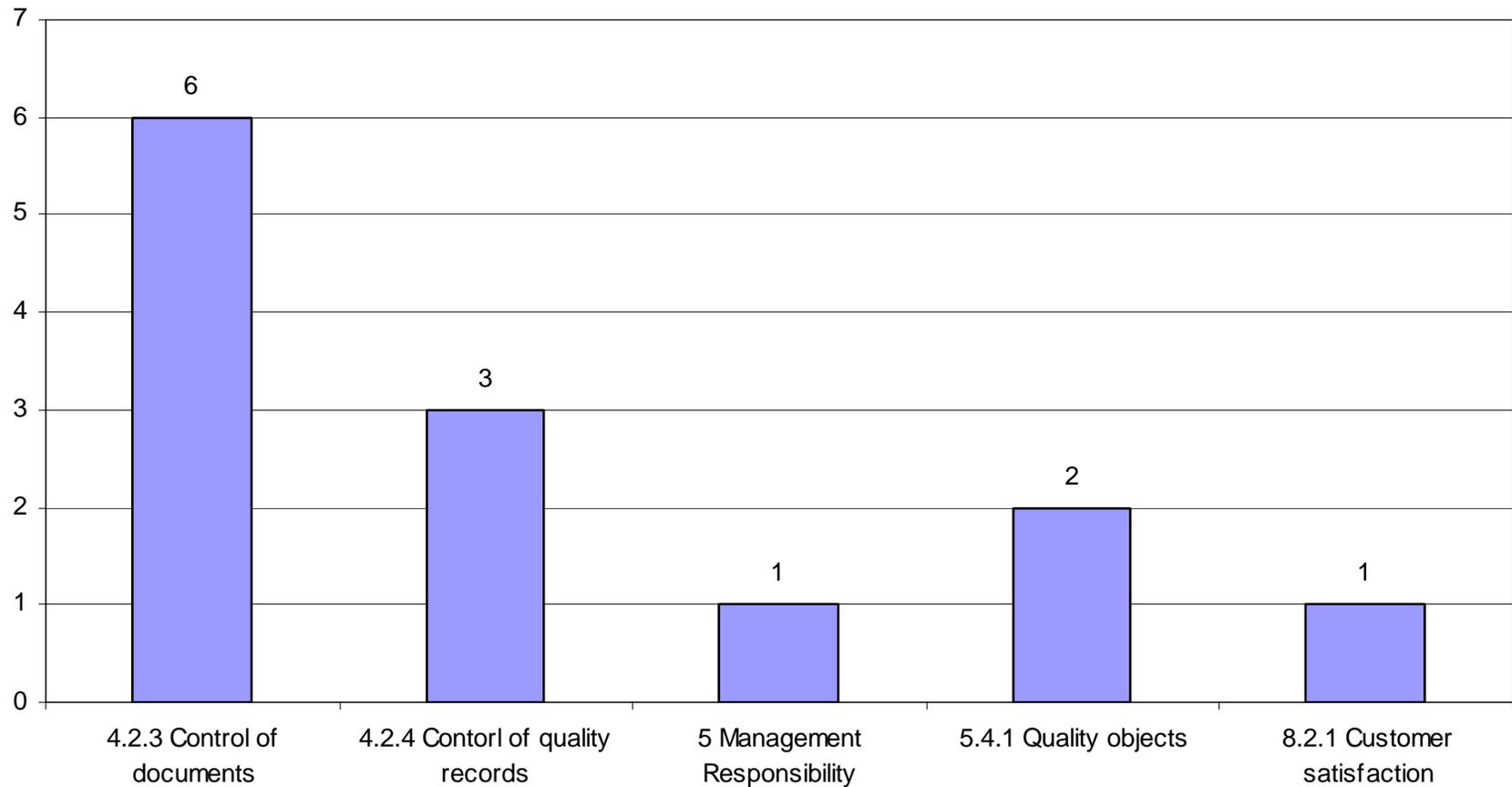
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Internal Quality Audit Report – Warren Woods

- Four internal audits were completed since the last MQC (including the resident office at ATK Thiokol in Utah)
- On schedule to complete the 2003 internal audit cycle in mid-November 2003
- Top Findings
  - Document and Data Control – References not kept up-to-date or obsolete
  - Records – Multiple Issues



## Total Major and Minor Nonconformances





- Status of Open NCRs
  - 18 Open Non-Conformance Reports (NCRs)
  - One is late as of 9/8/03
  - The oldest is 325 days old
  
- Schedule
  - SD internal audit 9/8
  - CD internal audit 9/22



Internal Quality Audit Report – Warren Woods

***IQA Report: Internal Audit Schedule***

***Revised 2003 Schedule (07/02/03)***

Audit Number	Date	Organization(s) Audited	Supporting Organizations																
			AD	CD	DA	ED	FD	LS	MP	OS	PS	QS	RS	SD	TD	UP	VS	All	Lead
QS03200301	Apr. 21 2003	Office of the Associate Director (DE01) Office of the Deputy Director (DD01) Office of the Director (DA01) Safety and Mission Assurance Office (QS01)	1			1	1		1				1	1				5	FD
PS04200301	Apr. 28 2003	Procurement Office (PS01)	1			1		1		1		1						5	MP
MC06200301	May. 06 2003	Space Shuttle Projects Office (MP01) Safety and Mission Assurance Office (QS01)	1			1		1		1								1	QS
ED05200301	May. 19 2003	Engineering Directorate (ED01)	1			1		1		1		1	1	1	1	1		6	SD
MP07200301	Jul. 14 2003	Office of Chief Financial Officer (RS01) Space Shuttle Projects Office (MP01)	1			1	1		1									4	PS
TD08200301	Aug. 11 2003	Space Transportation Directorate (TD01)	1	1		1	1											5	CD
SD09200301	Sep. 08 2003	Science Directorate (SD01)	1			2					1		1	1	1	1		6	VS
CD09200301	Sep. 22 2003	Office of Chief Counsel (LS01) Equal Opportunity Office (OS01) Customer and Employee Relations Directorate (CD01)	1			1	1	1	1				1					5	TD
AD10200301	Oct. 20 2003	Systems Management Office (VS01) Center Operations Directorate (AD01)	1			2			1			1	1	1	1			6	UP
UP10200301	Oct. 27 2003	Space Launch Initiative (UP01)	1			1	1		1		1			1				6	FD
FD11200301	Nov. 17 2003	Flight Projects Directorate (FD01)	1			2			1			2	1					7	SD
<b>Total support from Organizations</b>			<b>3</b>	<b>1</b>	<b>0</b>	<b>11</b>	<b>6</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>6</b>	<b>7</b>	<b>3</b>	<b>6</b>	<b>56</b>	



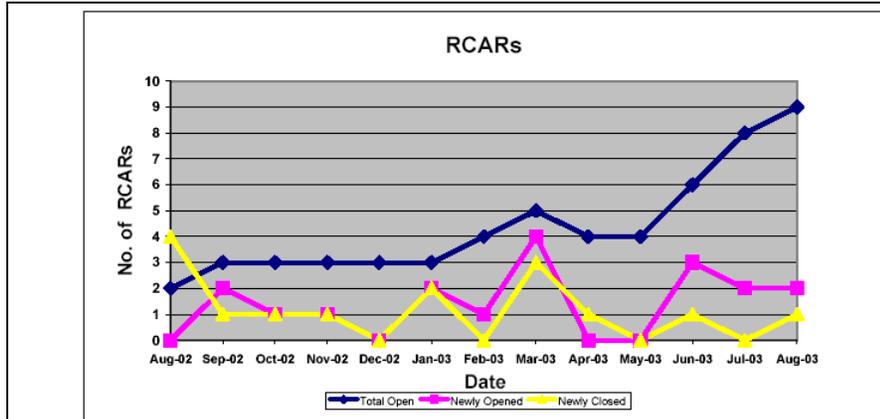
# Corrective & Preventive Action Program

John McPherson

Data collected 9/8/2003

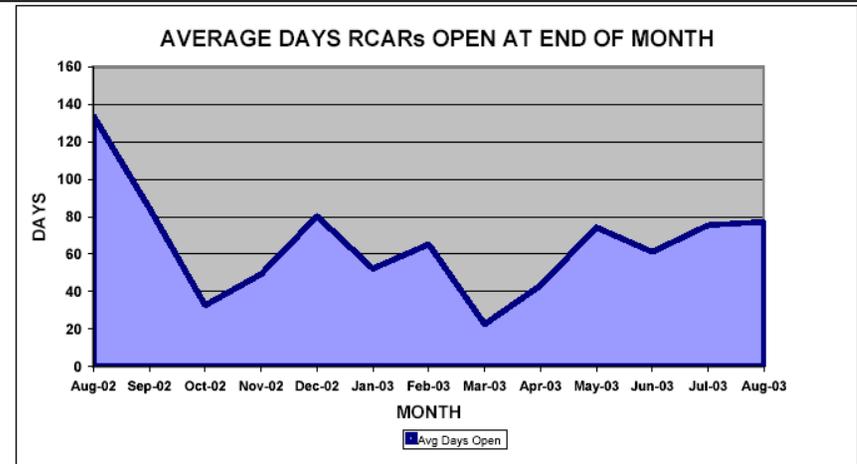


## Corrective & Preventive Action Program – John McPherson



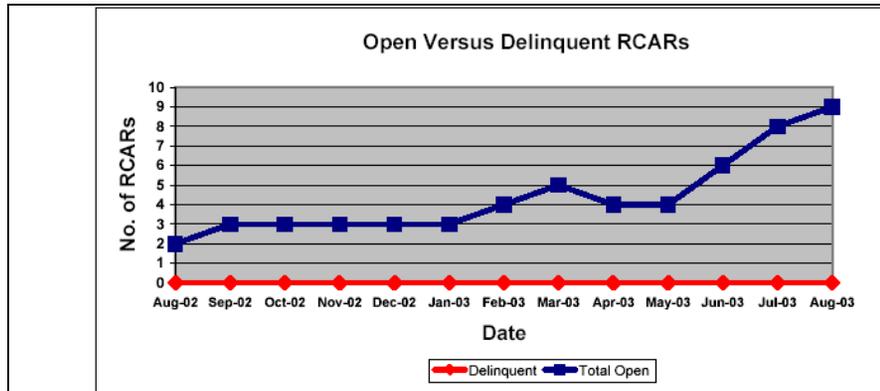
Total Open RCARs:	2	3	3	3	3	3	4	5	4	4	6	8	9
Newly Opened RCARs:	0	2	1	1	0	2	1	4	0	0	3	2	2
Newly Closed RCARs:	4	1	1	1	0	2	0	3	1	0	1	0	1

HEI/J McPherson 08/31/2003



Average Days Open:	134	85	33	49	80	52	65	23	43	74	61	76	77
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HEI/J McPherson 08/31/2003



Delinquent Responses:	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Open RCARs:	2	3	3	3	3	3	4	5	4	4	6	8	9
Percent Delinquent:	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

HEI/J McPherson 08/31/2003

	TOTAL Since 10/97	Made to RCARs	TOTAL Since 5/1/03	Made to RCARs
DR	550	65	49	4
QSDN	120	80	3	3
Cust Fdbk	176	2	9	0
<b>TOTAL</b>	<b>846</b>	<b>147</b>	<b>61</b>	<b>7</b>

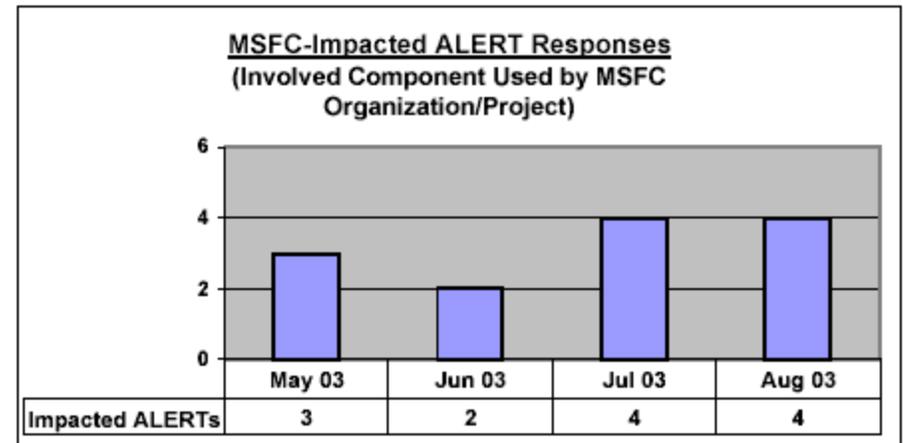
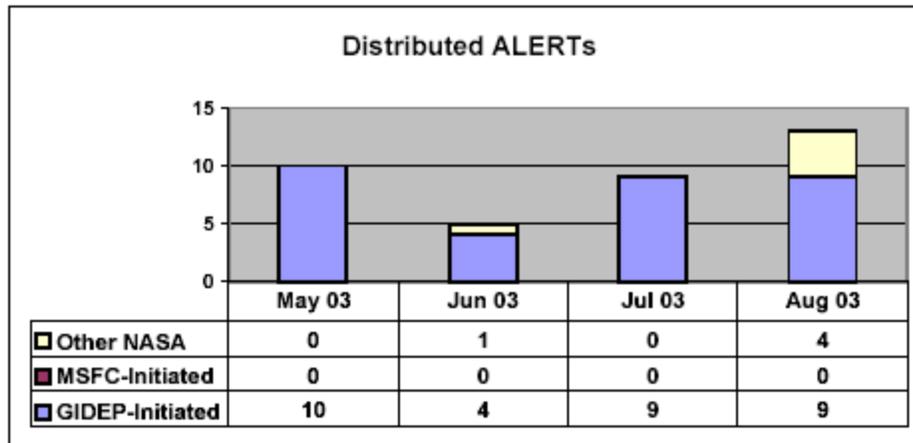
HEI/J McPherson 8/31/03



Preventive Action Program – John McPherson

**Corrective/Preventive Action Notifications (CANs) – NONE Issued**

**GIDEP and NASA ALERTs and Parts Advisories**



**MSFC-Impacted ALERTs**

DZ-P-02-01 BROKEN CHAIR, SEAT FRAMES - HERMAN MILLER	QS50
N9-S-03-01 3MODE SURGE, SPIKE PROTECTOR, BURNED OUT - QVS, INC	QS50
NA-GSFC-2003-03 FLOUROPOLYMER DEGRADATION RESULTING IN CORROSION OF PACKAGED PRE-WIRED CONNECTORS - VARIOUS	SOLAR-B
F3-A-03-05 FILM, Z-RAY - KODAK INDUSTRIEIX	EXPRESS RACK, RSRM
QB-S-03-01 PRESSURE TRANSDUCER, SILICONE OIL FILLED - DRUCK INCORPORATED	X-37

**MSFC-Impacted ALERTs (continued)**

NA-GSFC-2003-04 TERRESTRIAL SOURCES OF X-RAY RADIATION & THEIR EFFECTS ON NASA FLIGHT HARDWARE - N/A	G-LIMIT
G4-P-03-01 TIN PLATED PIECE PARTS - N/A	X-37
IB7-P-03-01 SILICON SWITCHING TRANSISTORS IN SSME SOLDER DIPPED, UP PACKAGES - SEMICOA	
H9-A-03-01 DAMAGED MESH-BACK AERON CHAIRS - HERMAN MILLER	ED40
H6-P-03-01 ZINC WHISKER-INDUCED FAILURES OF ELECTRONIC SYSTEMS - N/A	ED40

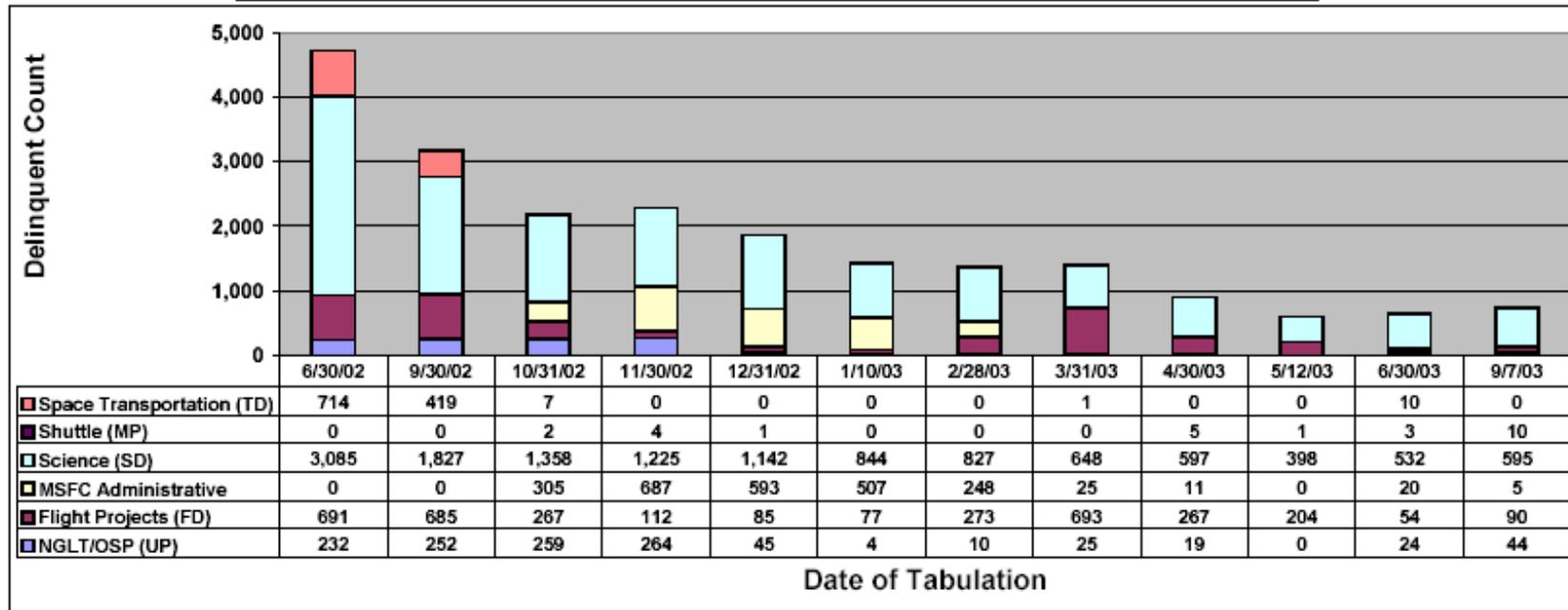
HEI/J. McPherson 8/31/2003



**Major MSFC ALERT Activities**

- **Delinquent ALERT responses down from 899 on April 30, 2002 to 744 on September 7, 2003**

**MSFC DELINQUENT ALERT RESPONSE TRACKING: BY RESPONSIBLE ORGANIZATION**



TOTAL DELINQUENT RESPONSES:	4,722	3,183	2,198	2,292	1,866	1,432	1,358	1,392	899	603	643	744
	6/30/02	9/30/02	10/31/02	11/30/02	12/31/02	1/10/03	2/28/03	3/31/03	4/30/03	5/12/03	6/30/03	9/7/03
MSFC Administrative:												
Center Operations (AD)					593	507	248	25	11	0	20	5
Engineering (ED)					62	2	9	4	0	0	9	0
Safety & Mission Assurance (QS)					510	485	224	2	0	0	10	5
					21	20	15	19	11	0	1	0

RE: J. McPherson 9/6/2003



### Science Directorate's ALERTs Status – Dr. Ann Whitaker

- Progress in more timely ALERTs assessment/closure
  - Delinquent ALERTs numbers down 70% since September, 2002
  - Each ALERT is replicated for 36 separate project-elements of varying size and contractor type - most contractors are usually responsive & effective
- Most late ALERTs @ a few, small, hardware contractors
  - One \$25K-level contractor has been almost non-responsive
    - Funding to this small contractor has been withheld re 210 delinquent ALERTs
  - Two other contractors have fallen behind on 135 total ALERTs
    - Personnel have recently focused on verification activities to meet hardware delivery schedule for other elements; anticipate recovery on ALERTs
  - One usually good contractor now late on 80 ALERTs (multiple elements)
    - Contractor focused/performed flawlessly on just-completed Phase 3 Safety Review
  - Another 170 late ALERTs are spread across 14 different project-elements
- Improved processes to close ALERTs
  - ESA ALERT assessment problem solved locally
  - EG&G to assess ALERTs (catch-up/future) after some H/W deliveries
    - Minimal hardware risk since probability of an impacting ALERT is small
  - Monthly ALERTs status to SD Managers (Project, Group, Department)



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# Status of NQA June 2003 ISO Surveillance and AS9100 Upgrade Audit Findings

Mary DeMurray



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Status of NQA June 2003 Audit Findings - Mary DeMurray/ HEI

- NQA Surveillance Audit Findings

Observations	1
Minor Nonconformances	0
Total Findings	<hr/> 1

- Generated 1 NCR from the NQA Finding
  - Corrective action implemented in today's meeting
- Recommended for continued registration to ISO 9001



- Recommended for registration to AS9100
  - SAE AS9100, “Quality Systems – Aerospace – Model for Quality Assurance in Design, Development, Production, Installation and Servicing”
- Certificate issued July 1, 2003
- MSFC is the first NASA facility as well as the first government site to be registered to the AS9100 standard
- Registration provides recognition of the processes which had already been in place at MSFC and alignment with the aerospace industry



# Status of NQA July 2003 Surveillance at MSFC Resident Office, Thiokol Audit Findings

Mary DeMurray



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Status of NQA July 2003 Audit Findings - Mary DeMurray/ HEI

- NQA Surveillance Audit Findings

Observations	1
Minor Nonconformances	0
Total Findings	<hr/> 1

- Generated 1 NCR from the NQA Finding
  - Corrective action has been completed



# Closing Remarks

Axel Roth



- Next Surveillance Audit November 18 - 19, 2003 (ISO 9001:2000 & AS9100)
- All MSFC activities are subject to audit
- Emphasis will be on Management Commitment
- Self-Assessment Checklists will be provided on the ISO web site for reference

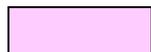


Clauses Selected November Surveillance Audit – Axel Roth

4.2.1/4.2.2	<b>Quality Manual</b>
4.1, 5.1, 5.2, 5.3, 5.4.2, 5.5	<b>Management Activities – Documentation Requirements, Management Commitment, Customer Focus, Quality Policy, QMS Planning, and Responsibility, Authority, &amp; Commitment</b>
5.4.1	<b>Quality Objectives</b>
5.6	<b>Management Review</b>
6.1 & 6.2	<b>Resources &amp; Competence</b>

6.3 & 6.4	<b>Infrastructure &amp; Work Environment</b>
8.2.1	<b>Customer Satisfaction</b>
8.2.2	<b>Internal Audit</b>
8.4	<b>Analysis of Data</b>
8.5.1	<b>Continual Improvement</b>
8.5.2/8.5.3	<b>Corrective/Preventive Action</b>

Notes: Control of Documents and Records will be included as it pertains to the selected clauses.



Signifies clauses that will be reviewed each visit



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Changes That Could Affect the MMS, Issues & Recommendations - Axel Roth

- Changes That Could Affect the MMS
  - Return to Flight
  - Full Cost
  - IFMP (new modules)
- Issues & Recommendations
  - Recommend everyone visit and ensure familiarity with the ISO web site during the month prior to the NQA audit
  - Based on today's discussion are there any suggested Changes to Objectives/Quality Policy?



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Changes That Could Affect the MMS, Issues & Recommendations - Axel Roth

- Quality Policy

- MSFC policy is to provide quality products and services to our customers through the Marshall values: people, customers, excellence, teamwork, and innovation

- Quality System Objectives

<u>Objective</u>	<u>MSFC Value</u>
Create a safe and healthy environment	People
Satisfy our customers with our products and services	Customers
Provide a continuously learning workforce	Excellence
Improve corrective action response time	Teamwork
Continually improve our processes	Innovation



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Overall Status of the Marshall Management System – Axel Roth

- Overall, the suitability, effectiveness, and adequacy of the Marshall Management System (MMS) appear to be acceptable
  - Internal and external audits indicate no major problems with the MMS
  - Only two new deviations/waivers have been requested since the last MQC on May 14
  - Customer Satisfaction indicators are positive overall