



Safety and Mission Assurance Knowledge Management Update

Mike Lipka

April 8, 2014



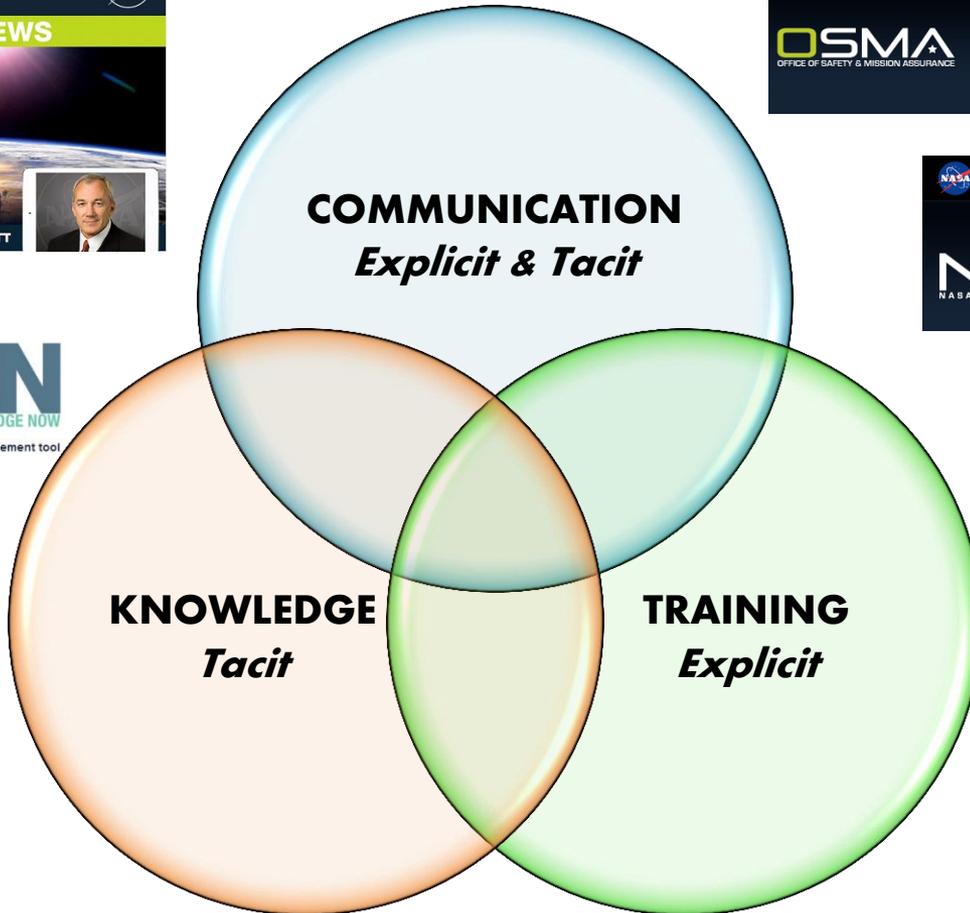
Safety and Mission Assurance KM Strategic Objective

Create a continuous learning culture within Safety and Mission Assurance to support the successful execution of all NASA programs

1. Identify and facilitate knowledge sharing opportunities
2. Develop knowledge sharing tools and processes
3. Educate SMA practitioners
4. Embed knowledge management as an organizational strength



S&MA Continuous Learning Culture



Lessons Learned in Human Space Flight
STEPHEN F. CASH
Feb 21, 2014 11:00 AM - Feb 21, 2014 01:00 PM EST

[Watch](#) [Get SATERN Credit](#)

Space launch systems are an inherently risky endeavor. It takes a tremendous amount of desire for high-performance often results in very complex designs with low margin today is to look at and try to avoid certain pitfalls which can be pr... more

SMA Knowledge Management Partners



Safety and Health Learning Alliance

- An affiliation of Agency, Department of Defense, and professional Safety and Health organizations
- Internal request of NASA Safety and Health professionals to learn how other like organizations approach issues and processes
- Key objectives:
 - **COLLABORATE-** Create a forum for collaboration with trusted advisors
 - **CONCENTRATE-** Accelerate learning with “quick hits” on timely, topical issues and new approaches
 - **CONTEXT-** Learn from your peers what they do and how they do it. Knowledge + Experience = Wisdom
 - **CONNECT-** Establish networking opportunities which extend beyond our events for professional development

SAFETY & HEALTH
LEARNING ALLIANCE

SHLA Format

- 90 minute quarterly virtual webinars
- Panel session of organizations tell their stories using Adobe Connect
- Participating organizations invite their people
- NSC coordinates events and knowledge sharing:
 - Audio, Video, Event Summary Sheet
- Favorable survey responses
- Approximately 80 participants



<https://nsc.nasa.gov/SHLA>

SHLA Participating Organizations

- American Institute of Aeronautics and Astronautics
- American Institute of Chemical Engineers
- Defense Logistics Agency
- Department of Defense
- Department of Energy
- Los Alamos National Labs
- NASA Safety Center
- General Services Administration
- National Institute of Occupational Safety and Health
- National Safety Council
- National Transportation Safety Board
- Nuclear Regulatory Commission
- Office of the Secretary of Defense
- US Air Force Safety Center
- US Marines Safety Center
- US Coast Guard Safety Center
- US Naval Safety Center



SHLA Events 2013-2014



Leading Indicators

Nuclear
Regulatory
Commission

NASA SMA

Fluor
Engineering



Safety Culture

US Navy

Department of
Energy

Nuclear
Regulatory
Commission

NASA OSMA



NIOSH

National
Institute of
Occupational
Safety and
Health



Risk Management

US Coast
Guard

US Air Force

GSA

SMA Discussion Forum Series

- Increase awareness of Agency Safety and Mission Assurance issues and challenges- The “big picture”
- Improve ability to recognize risk areas in current and future programs
- Improved awareness of Agency risk mitigation processes



Mars Curiosity Panel

RICHARD BRACE, RICHARD PAYNTER, RONALD WELCH AND FRANK HUY

Jul 23, 2013 01:00 - Jul 23, 2013 02:30

Watch

Download ▾

Panelists from NASA's Jet Propulsion Laboratory (JPL) and Independent Verification and Validation (IV&V) Facility will share the Safety and Mission Assurance efforts that helped make the Mars Science Laboratory's (MSL) Curiosity Rover a success. Find out what made Curiosity successf... [more](#)

Discussion Forum Series Events 2013-14

Mars Curiosity Rover



- Richard Brace – JPL (retired)
- Tim Larson – JPL
- Rick Paynter – JPL
- Ron Welch – JPL
- Frank Huy – IV&V

Commercial Cargo Mishap Preparedness and Contingency Planning



- Mark Erminger – JSC (retired)
- Gerry Schumann – OSMA
- Rick Parker- KSC SMA
- Joe Seidler- USAF Range Safety
- Dave Gerlach- FAA

A Knowledge Map for Sailors



Why Were These Maps Effective?

- The graphics make an immediate impression
- Clearly communicated what was going on
- Inspired intuitive reactions and behavior
- Learned something that helped you
 - Repeat successful endeavors
 - Avoid mistakes and peril
- Like any maps which chart human knowledge, they provided glimpses of the world only at a particular point in time

SMA Knowledge Map

- Strong need for Center SMA practitioners to locate information and knowledge from other Centers
 - “Do we have a Life Safety Code/Fire Protection Engineer in house? I have an issue and need expert opinion ASAP.”
 - “I need your assistance on what systems/policies/procedures you are using to assure supervisor accountability in performance evaluations. Are you using report cards? Just a check box on evaluation?”
- At its core, a knowledge management program helps its users to efficiently find information and resources and creates transparency within the sheer amount of information in disparate locations
- **Goal:** Leverage the new Agency knowledge map approach to support the SMA organization



SMA Center Website Inventory

- Completed an initial inventory of Center SMA websites
- Next steps in the SMA knowledge map process:
 - Review SMA Center websites with knowledge owners to understand the context of the information provided
 - Develop high-level categories for information deemed most request/used
 - Develop a SMA knowledge map prototype and get input from OSMA regarding usability
 - Introduce concept to SMA Offices
 - Fine tune and roll out SMA knowledge map from the OSMA web page



SMA Policy News

- Proactive policy updates
- Describes changes made to the NPR
- Includes context: Why it matters and rationale
- Encourages action
- Creates awareness and expedites adoption
- Can be followed by a Discussion Forum Series event



policy NEWS.

NPR 8735.2B

MANAGEMENT OF GOVERNMENT QUALITY ASSURANCE FUNCTIONS FOR NASA CONTRACTS



National Aeronautics and Space Administration

policy NEWS.

UPDATES CLARIFY QUALITY ASSURANCE REQUIREMENTS FOR NASA CONTRACTS AUG. 12, 2013

A recent policy release clarifies and updates NASA's requirements for performance of government contract quality assurance functions.

Updates to NASA Procedural Requirements (NPR) 8735.2B, Management of Government Quality Assurance Functions for NASA Contracts were released on Aug. 12, 2013. The changes include new allowances and requirements that reflect NASA's current strategic vision, priorities and resources.

NPR 8735.2B ensures that supplies and services acquired under government contract conform to the contract's quality requirements.

WHAT'S NEW.

The following changes were made to the NPR:

1. The definition of "critical acquisition item" was clarified with the inclusion of detailed questions and references to mission and payload classifications contained in other NASA documents. (See Section 2.1.1.)

WHY IT MATTERS:

The redefinition of critical acquisition items drives the level of government quality assurance to be performed. References that posed a credible risk of loss of human life or serious injury were also considered critical acquisitions. The revised standard is more closely aligned with other NASA classifications of criticality.

RATIONALE:

The revision makes the identification of critical acquisition items easier. Under the previous NPR, critical acquisitions were defined qualitatively and it was not always clear what qualified as a critical item.

2. A note was added clarifying how Federal Acquisition Regulation (FAR) Part 12 and Space Act Agreements constrain government quality assurance. (See Section 2.1.2 d.)

WHY IT MATTERS:

Space Act Agreements and commercial acquisitions are not desirable ways of acquiring highly critical or complex items because they generally do not allow for the necessary quality assurance functions outlined in Section 2.B of the NPR including product examinations, process witnessing and testing functions.

RATIONALE:

The previous NPRs did not reflect these new common ways of acquiring items. Language was needed to ensure practitioners are aware of the limitations attached to these types of acquisitions.

08/12/13

www.nasa.gov

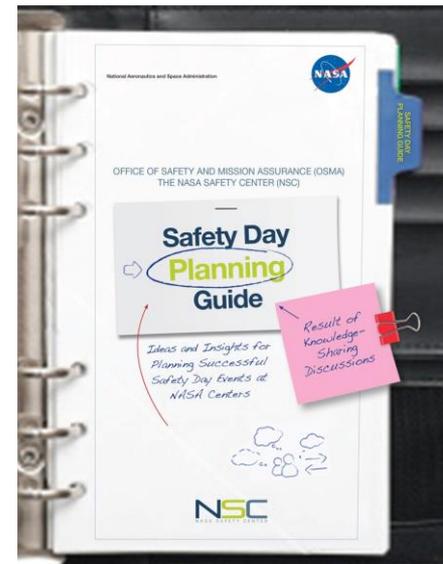
SMA Process Improvement- Safety Day

- Captured existing Center practices and procedures
- Shared insights, experiences, ask questions, identify opportunities- the context of your work
- **Goal:** Collaboration between Centers
 - Identify POCs at other Centers
 - Make your Safety Days an engaging and meaningful event
 - Raise awareness of Center and Agency safety issues
 - Get the most for your investment—money and time
 - Leverage resources across Centers



Safety Day Deliverables

- Safety Day Planning Guide
- Safety Day online community of practice in NSCKN
- Ongoing updates of speakers, activities and themes
- NSC Support
 - Pre-event check in
 - On-site support for Centers



Document Management

- + Add Document(s)
- + Safety Days Activities
- + Safety Days Agendas
- + Safety Days Center Points of Contact
- + Safety Days Feedback/Assessments
- + Safety Days Photos
- + Safety Days Planning Tools
- + Safety Days Presentations
- + Safety Days Promotional Material
- + Safety Days Speakers
- + Safety Days Themes

Other SMA Process Opportunities

- Safety Recognition Programs and Practices
- Safety Culture Improvement Practices
- Safety Awareness Programs (LaRC)
- SMA Tools and Techniques
- OSHA Voluntary Protection Programs Leading Practices ([VPP](#))



NSC KM Wish List for S&MA

- INTEGRATED SEARCH
 - Within our own collection
 - Across Center SMA web pages
 - External
- STRONGER S&MA NETWORKS
 - Across Center SMA Offices- Social Network Analysis
 - Other Agency areas of expertise- NEN CoPs and Working Groups
- MEASURING THE IMPACT OF KNOWLEDGE SHARING
 - What's useful
 - What's missing

Discussion