Return to Flight Task Group

Public Meeting

December 16, 2004
Marshall Institute, AL

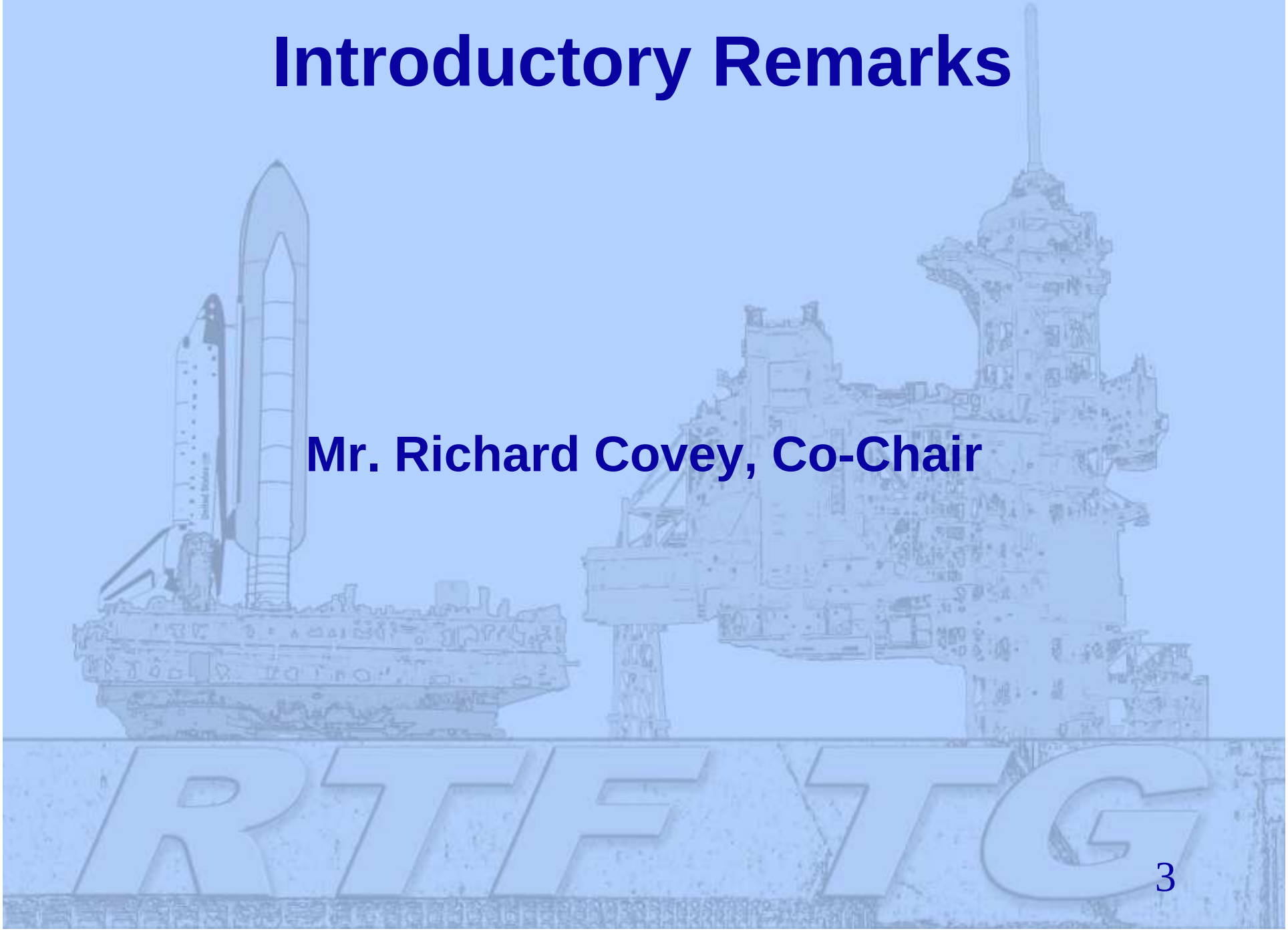
Public Meeting Agenda

December 16, 2004

Marshall Institute, Huntsville Alabama

- **0730 – 0735** Administrative Remarks:
  Mr. Vincent Watkins – Executive Secretary
- **0735 – 0740** Introductory Remarks:
  Mr. Richard Covey – Co-Chair
- **0740 – 0825** Management Panel Fact-Finding Status
  Dr. Dan Crippen
- **0825 – 0950** Operations Panel Fact-Finding Status
  Mr. James Adamson
- **0950 – 1120** Technical Panel Fact-Finding Status
  Mr. Joseph Cuzzupoli
- **1120 – 1130** Integrated Vehicle Assessment Sub-Panel Fact-Finding Status
  Ms. Christine Fox
- **1130 – 1140** Action Item Summary and Closing Remarks
  Mr. Richard Covey – Co-Chair

Introductory Remarks



Mr. Richard Covey, Co-Chair

Management Panel
Fact-Finding Status

Dr. Dan Crippen, Lead

Management Panel
CAIB Recommendations

6.3-2 NASA/NIMA MOA

6.2-1 Scheduling and Resources

6.3-1 MMT Improvements

9.1-1 Organization

7.5-1 Independent Technical Authority

7.5-2 S&MA Organization

7.5-3 Shuttle Integration Office Reorganization

Management Panel
Acceptance Recommendation

R6.3-2 NASA/NIMA MOA – Mr. Gary Geyer

6.3-2 - NASA/NIMA MOA

CAIB Recommendation

Modify the Memorandum of Agreement with the National Imagery and Mapping Agency to make the imaging of each Shuttle flight while on orbit a standard requirement.

6.3-2 - NASA/NIMA MOA

NASA Implementation

Per agreements with other Federal Agencies, NASA is seeking all available data that may assist in the resolution of future investigations. Specific requests for data or the involvement of specific agencies will not be discussed.

6.3-2 - NASA/NIMA MOA

NASA Implementation

- Concluded MOA
- Implementing Interagency Operating Agreement
- Obtaining clearances for essential personnel in all appropriate positions
- Have rehearsed tasking, distribution, and utilization of information

6.3-2 - NASA/NIMA MOA

Panel Assessment Activities

- Agreements are in place
- Compliance has been verified by analysis, demonstration, and integrated simulation
- NASA Closeout package submitted
- Verified presentation of integrated simulation/evaluation results
- Recommendation: Accept for Full Closure

6.2-1 Scheduling & Resources

Summary Status

Plan

- FY05 budget approved by Congress at requested level

Implementation

- NASA reallocating funds to Shuttle - assertion of sufficient resources for RTF

Further Work

- Assess impact of recent budget cuts to program and workforce

Recommendation: Keep as Open

6.3-1 MMT Improvements

Summary Status

Plan

- Developed but evolving

Implementation

- Nine full MMT sims – full (end-to-end) first week in March

Further Work

- Task Group has presented program with closeout criteria and documentation

Recommendation: Keep as Open

9.1-1 Organization

The CAIB and Technical Authority

"The practices noted here suggest that responsibility and authority for decisions involving technical requirements and safety should rest with an independent technical authority."

"Organizations that successfully operate high-risk technologies have a major characteristic in common: they place a premium on safety and reliability by structuring their programs so that technical and safety engineering organizations own the process of determining, maintaining, and waiving technical requirements with a voice that is equal to vet independent of Program Managers, who are governed by cost, schedule and mission-accomplishment goals."

"The Naval Reactors Program, SUBSAFE program and the Aerospace Corporation are examples of organizations that have invested in redundant technical authorities and processes to become highly reliable."

Excerpted from:
Conclusion, Organizational Causes: Evaluating Best Safety Practices,
CAIB Report Volume 1, Chapter 7.3

9.1-1 Organization

The CAIB and Technical Authority (cont'd)

Recommendation R7.5-1

R7.5-1: Establish an independent Technical Engineering Authority that is responsible for technical requirements and all waivers to them, and will build a disciplined, systematic approach to identifying, analyzing, and controlling hazards throughout the life cycle of the Shuttle System. The independent technical authority does the following as a minimum.

- **Develop and maintain technical standards for all Space Shuttle Program projects and elements**
- **Be the sole waiver-granting authority for all technical standards**
- **Conduct trend and risk analysis at the sub-system, system, and enterprise levels**
- **Own the failure mode, effects analysis, and hazard reporting systems**
- **Conduct integrated hazard analysis**
- **Decide what it and is not an anomalous event**
- **Independently verify launch readiness**
- **Approve the provisions of the recertification program called for in Recommendation R9.1-1.**

The Technical Engineering Authority should be funded directly from NASA Headquarters, and should have no connection to or responsibility for schedule or program cost.

Excerpted from:
Recommendations, CAIB Report Volume 1, Chapter 7.6

9.1-1 Organization

Technical Authority Definition

Technical Authority is the authority, responsibility, and accountability to establish, approve, and maintain technical requirements, processes and policy.

Technical Authority is the sole decision maker on what is technically acceptable in order to deliver products that are safe and reliable.

9.1-1 Organization

Technical Authority Principles*

1. Resides in an individual, not an organization
2. Clear and unambiguous
3. Independent of the Program Manager
4. Credible (based on knowledge, experience, resources, personnel pipeline), and
5. Visible and accepted as valid, i.e., has influence and prestige.

Each separately necessary, but not sufficient in isolation.

9.1-1 Organization

Who is the Technical Authority

- The mandatory NASA Procedural Requirement (NPR) 1000.3A, issued July 30, 2004, to define the transformed NASA, in section 4.10.2.8 states:

  "The Chief Engineer is responsible for: Serving as the Agency Independent Technical Authority, delegating this authority through the issuance of warrants."

The NASA Chief Engineer is the Technical Authority responsible for all NASA technical requirements affecting safe and reliable operations.

9.1-1 Organization

Proposed Technical Warrants

The Chief Engineer, NASA Technical Authority for Engineering, will issue warrants including:

- **Technical Warrants in particular technical disciplines or areas. These Technical Warrant Holders will be technical experts who have the authority, responsibility, and accountability to establish, approve, and maintain technical requirements (i.e., specifications, standards, processes, procedures) for their assigned technical area.**

- **Technical Warrants at the total systems level. These Technical Warrant Holders will be systems engineering experts who have the authority, responsibility, and accountability to establish, approve, and maintain the technical requirements for the system integration of a total vehicle or program system. These Warrant Holders will utilize Warrant Holders in particular technical areas and disciplines, as required and appropriate.**

9.1-1 Organization

Proposed Technical Warrant Holder

Responsibilities

- Establishing and maintaining technical requirements
- Approving changes and/or variances to technical requirements
- Maintaining individual technical expertise
- Ensuring products capable of safe and reliable operations
- Using sound technical rationale and
- Being accountable for technical decisions.

Independence

- Organizationally, will not report to program or project managers
- Are not dependent on Program funding, and
- Have a direct line to the Agency's Technical Authority via the Warrant, without going through Programs.

9.1-1 Organization

ITA (7.5-1) Summary

Responsive, disciplined Technical Authority is requirement for NASA to continue to effectively and safely conduct the Nation's Space activities.

Technical Authority must be independent of programmatic influences of cost and schedule.

Sound engineering and technical decision-making process must be sustained in NASA.

Must function as technical conscience.

- **Leaders must ensure the value (conscience) of Technical Authority is ingrained in the culture, in the people.**

9.1-1 Organization

Summary Status

Plan

- ITA (7.5-1) Plan developed and NASA direction signed by Administrator
- SMA (7.5-2) Plan developed but evolving
- SEIO (7.5-3) Plan under development.

Implementation

- In process

Preliminary NASA closeout package submitted

Recommendation: Keep as Open