National Aeronautics and
Space Administration

ASAP

Aerospace Safety Advisory Panel

2004

First Quarter

National Aeronautics and
Space Administration

Headquarters
Washington, DC 20546-0001

Q-1 February 2004

The Honorable Sean O'Keefe
Administrator
National Aeronautics and Space Administration
Washington, DC 20546

Dear Mr. O'Keefe:

Thank you for giving us the opportunity to serve our Nation as members of the Aerospace Safety Advisory Panel.

It is with great pleasure that I submit to you our First Quarterly Report for 2004.

The Panel appreciates the full support that you and your staff have given us. NASA's commitment to safety is very obvious to us. We hope that we can continue to be of helpful service to you through our experience, insight, and recommendations.

Cordially,

Joseph W. Dyer, V ADM, USN (Ret)
Chair
Aerospace Safety Advisory Panel

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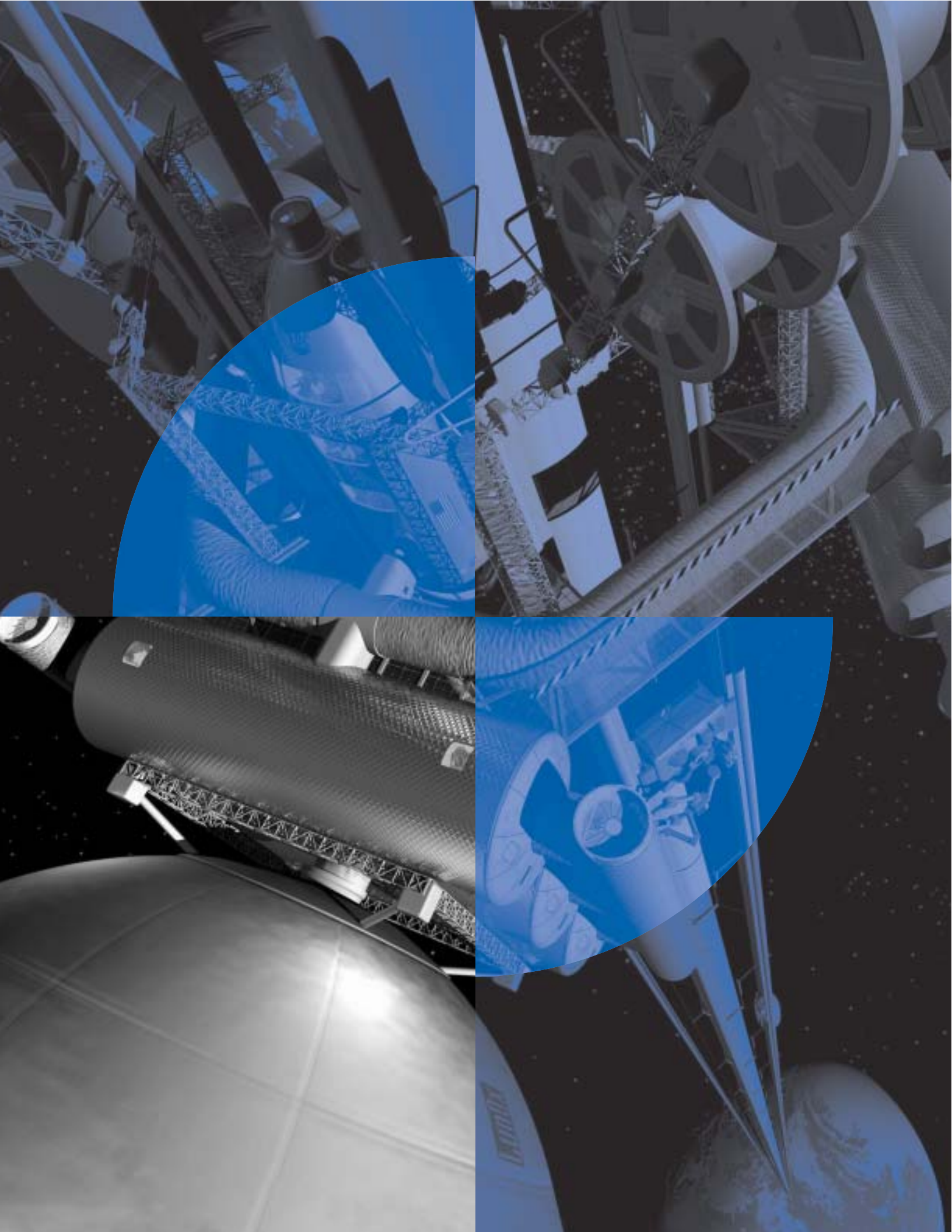
I. Introduction



I. Introduction

This is the First Quarterly Report for the newly reconstituted Aerospace Safety Advisory Panel (ASAP). The NASA Administrator rechartered the Panel on November 18, 2003, to provide an independent, vigilant, and long-term oversight of NASA's safety policies and programs well beyond Return to Flight of the Space Shuttle.

The charter was revised to be consistent with the original intent of Congress in enacting the statute establishing ASAP in 1967 to focus on NASA's safety and quality systems, including industrial and systems safety, risk-management and trend analysis, and the management of these activities. The charter also was revised to provide more timely feedback to NASA by requiring quarterly rather than annual reports, and by requiring ASAP to perform special assessments with immediate feedback to NASA.

ASAP was positioned to help institutionalize the safety culture of NASA in the post-Stafford-Covey Return to Flight environment.

II. Charter

II. Charter

1.0 OFFICIAL DESIGNATION

This charter sets forth the purpose for the panel officially designated as the Aerospace Safety Advisory Panel originally established under Section 6 of the National Aeronautics and Space Administration Authorization Act, 1968, as amended (P.L. 90-67, codified at 42 U.S.C. § 2477).

2.0 OBJECTIVES AND SCOPE

The Panel will review, evaluate, and advise on elements of NASA's safety and quality systems, including industrial and systems safety, risk-management and trend analysis, and the management of these activities. Priority will be given to those programs that involve the safety of human flight.

3.0 PERIOD

The Panel will perform duty for the period specified in Section 9.0.

4.0 REPORTING

The Panel will function in an advisory capacity to the Administrator, and through the Administrator, to those organizational elements responsible for the management of the NASA safety and quality activities.

5.0 PANEL ORGANIZATION AND SUPPORT

5.1 Panel Members: The Panel will consist of a maximum of nine members who will be appointed by the NASA Administrator. Consistent with the 2-year duration of this charter, members will be appointed for 2 years and could be reappointed by the NASA Administrator up to a maximum of 6 years, as originally set forth in 42 U.S.C. § 2477.

5.2 Panel Chairman: One member shall be designated by the Panel as its Chairman.

5.3 Panel Composition: The panel will be composed of recognized safety, management, and engineering experts from industry, academia, and other Government agencies.

5.4 NASA Membership: As originally set forth in 42 U.S.C. § 2477, not more than four Panel members shall be chosen from the officers and employees of the National Aeronautics and Space Administration.

5.5 Panel Support: The NASA Headquarters Office of Safety and Mission Assurance will provide a staff, comprised of full-time NASA employees, to provide support to the Panel.

6.0 PANEL DUTIES

6.1 The duties of the Panel as originally set forth in 42 U.S.C. § 2477 continue:

"The Panel shall review safety studies and operations plans referred to it and shall make reports thereon, shall advise the Administrator with respect to the hazards of proposed or existing facilities and proposed operations and with respect to the adequacy of proposed or existing safety standards and shall perform such other duties as the Administrator may request."

6.2 Quarterly Report: The Panel shall submit quarterly reports to the Administrator. Findings that are time critical will be reported immediately.

6.3 Special Reviews and Evaluations: The Administrator may request certain special studies, reviews, and evaluations. The Panel will submit reports with comments and recommendations as deemed appropriate by the Panel to the Administrator within the timeline specified by the Administrator.

7.0 ESTIMATED ANNUAL COSTS

The NASA Headquarters Office of Safety and Mission Assurance will provide the budget for operation of the Panel. The estimated annual operating cost totals $555,000, including 3.0 work-years for staff support.

8.0 ESTIMATED NUMBER AND FREQUENCY OF MEETINGS

8.1 Meetings: There will be four full Panel meetings each year to perform the duties as described in Section 6.0.

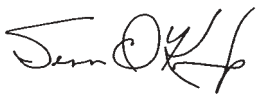
8.2 Special Meetings: Special meetings of the Panel may be required.

9.0 PLANNED TERMINATION DATE

Pursuant to the FACA, 5 U.S.C. App., this charter expires 2 years from approval date and can be renewed if the NASA Administrator determines that it is in the public interest in connection with the performance of Agency duties under the law and with the concurrence of the General Services Administration.

10.0 FILING DATE

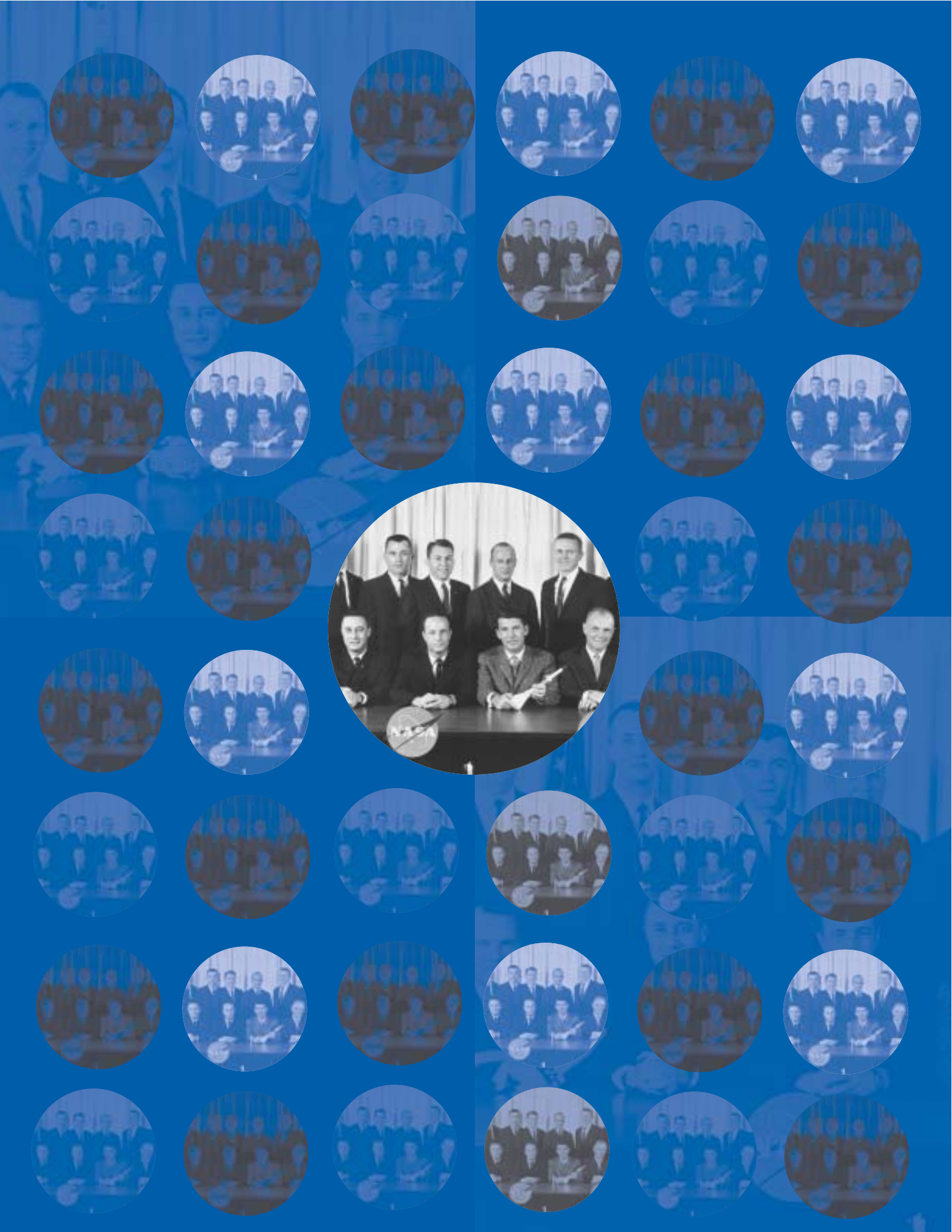
This charter replaces the charter of the NASA Aerospace Safety Advisory Panel dated May 1, 2003, effective on this date.



Sean O'Keefe
Administrator

November 18, 2003
Date

III. Aerospace Safety Advisory Panel Membership



Rear Admiral Walt Cantrell, USN (Ret)

- Former member of Aerospace Safety Advisory Panel
- Member of NASA Stafford-Covey Return to Flight Task Group
- Former Commander, Space and Naval Warfare Systems Command

Rear Admiral Walter H. Cantrell has a history of involvement in the solution of high-profile, technically complex, and/or politically sensitive issues.

He graduated from the U.S. Naval Academy in 1958 with a bachelor's degree in naval science. He also received a master's degree in naval architecture, marine and naval engineering, and a NavEng (professional degree) from MIT in 1965. He is a graduate of the Senior Officials in National Security Program, JFK School of Government at Harvard. He retired from the U.S. Navy in 1995 after an extensive and distinguished career, which included acquisition and program management of nuclear submarines.

He then joined Global Associates Limited as Executive Director for Technology and Systems. From 1996 to 1997, he was President of the Signal Processing Systems Division. Most recently, from 1997 to 2001, he was Program Director, Land Level Transfer Facility, Bath Iron Works, and was responsible for the design and construction of a $260 million, state-of-the-art shipbuilding facility.

Vice Admiral Joe Dyer, USN (Ret)

- Panel Chair
- Executive VP/General Manager, Military Government and Industrial Division, iRobot Corporation
- Former Commander, Naval Air Systems Command

Vice Admiral Joseph W. Dyer was commissioned through the Aviation Reserve Officer Candidate Program following graduation from North Carolina State University with a bachelor's degree in chemical engineering. He subsequently earned a master of science degree in financial management from the Naval Post Graduate School, Monterey, CA. He received his wings in March 1971 and was selected as one of the first "Nuggets" (first tour aviators) to fly the Mach 2, RA-5C *Vigilante*. He flew nationally tasked reconnaissance missions in both the Eastern and Western Hemispheres.

From April 1991 to December 1993, he was the Navy's Chief Test Pilot. From January 1994 to April 1997, he served as F/A-18 Program Manager leading the Engineering and Manufacturing Development (E&MD) effort on the new F/A-18E/F, the continued production and fleet support of the F/A-18C/D, and all F/A-18 foreign military sales. The F/A-18 program won the Department of Defense Acquisition Excellence Award and the Order of Daedalian during this period. Admiral Dyer was assigned as the Commander, Naval Air Warfare Center Aircraft Division, Patuxent River, in July 1997, and one month later assumed additional responsibilities as the Naval Air Systems Command, Assistant Commander for Research and Engineering. In June 2000, he was assigned as the Commander, Naval Air Systems Command.

Admiral Dyer is Executive Vice President and General Manager of the iRobot Corporation's Military Government and Industrial Division. In this position, he works closely with the U.S. Department of Defense to develop reconnaissance robots that will change the way wars are fought in the future.

Dr. Augustine Esogbue

- Professor and Director, Intelligent Systems and Controls Laboratory, School of Industrial and Systems Engineering, Georgia Institute of Technology

Professor Augustine O. Esogbue joined the faculty of the Georgia Institute of Technology (Georgia Tech) in June 1972 as an Associate Professor of Industrial and Systems Engineering under a joint appointment with the Health Systems Research Center. Since his promotion to the rank of Full Professor, with tenure, in the School of Industrial and Systems Engineering at Georgia Tech in 1977, he has held many leadership positions including the Director of the Intelligent Systems and Controls Laboratory, and Founder and Director, Minority Undergraduate Scholars Engineering Research Program (MUSERP) at Georgia Tech. Professor Esogbue holds the prestigious position of Honorary Professor at Daqing Petroleum Institute, Heilongjiang Province, China. Professor Esogbue was formerly Chancellor's Distinguished Professor of Industrial Engineering and Operations Research and Management Sciences at the University of California, Berkeley, an Assistant Professor of Operations Research, and member of the Systems Research Center at Case Western Reserve University in Cleveland, OH. Additionally, he has held honorary appointments as Adjunct Professor of Community Medicine at the Morehouse School of Medicine and in the Department of Mathematical and Computer Sciences at Atlanta University; Columbia University Seminars in Water Resources and Pollution Faculty; and Professor in Residence at Howard University.

Professor Esogbue is the author of 4 books, 18 book chapters, over 150 technical publications, and nearly 300 technical presentations worldwide. In recognition of his accomplishments, he has been elected Fellow of the following reputable organizations: the American Association for the Advancement of Science (AAAS), the Institute of Electrical and Electronic Engineers (IEEE), the Nigerian Academy of Sciences (NAS), the African Scientific Institute (ASI), and the Kerr L. White Institute for Health Services Research (KLWI). Professor Esogbue was honored as the first recipient of the Golden Torch Award for Lifetime Achievement in Education given by the National Society of

Black Engineers, the premier award recognition for African Americans in science, engineering, and technology. Dr. Esogbue also was named as the first recipient of the Andrew P. Sage Best Paper of the Year Award given by IEEE-Systems, Man, and Cybernetics Society in 1999. His accomplishments are chronicled in several *Who's Who* publications including *Who's Who in the World, International Who's Who in Engineering, American Men and Women of Science, Who's Who in Technology, The International Directory of Distinguished Leadership, International Who's Who of Intellectuals*, and *Who's Who Among African Americans.*

His research and consulting interests include dynamic programming, fuzzy sets, decisionmaking and control in a fuzzy environment, and operations research with applications to sociotechnical systems such as health care, water resource management, and disaster control planning. As the Director of the Intelligent Systems and Controls Laboratory, he is investigating a hybrid approach to intelligent control via fuzzy sets, neural networks, and reinforcement learning theories, as well as its application to various large-scale, nonlinear, and uncertain dynamical systems. He has conducted numerous funded research projects for various agencies including NSF, EPRI, NASA, Agency for Health Research and Quality (AHRQ), Army Research Office (ARO), and NIH. Current applied research activities are directed at patient safety enhancement via systems technology imperatives.

Dr. Esogbue has a record of prolonged service to various communities including the National Society of Black Engineers (National Advisor since 1989), Atlanta Sister Cities Commission (Commissioner since 1975), Leadership Atlanta Development Corporation (1979), Georgia Council on International Visitors (Trustee, 2001), Georgia Goodwill Ambassador Corps (Outstanding Citizen, 2001), the Georgia Tech Athletic Board (Trustee, 2000), and the 100 Black Men of America (1990, Chair, Collegiate 100).

Major General Rusty Gideon, USAF (Ret)

- Former Commander, Air Force Safety Center and Chief of Safety for USAF

Major General Francis C. Gideon, Jr., graduated from the U.S. Air Force Academy in 1966 with a bachelor's degree in engineering sciences. He also earned a master's degree in systems management from the Air Force Institute of Technology.

General Gideon was the Chief of Safety of the U.S. Air Force and Commander, Headquarters Air Force Safety Center, Kirtland Air Force Base, NM. He served as the Senior Uniformed Adviser to the Chief of Staff and the Secretary of the Air Force on all issues involving the safety of a combined active duty, guard, reserve, and civilian force of more than 700,000 people serving approximately 2,300 locations in the United States and overseas.

His career has touched many aspects of the Air Force mission as fighter pilot and experimental test pilot, and in acquisition, intelligence, and logistics. His assignments span the globe from Thailand to England. He commanded one of the Air Force's three test wings and its center for scientific and technical intelligence. He is a command pilot with almost 3,000 hours flying in 30 kinds of aircraft. He was an A-10 test pilot and flew 220 combat missions in Southeast Asia in F-100s and F-4s.

Ms. Deborah Grubbe, P.E.

- Former consultant, Columbia Accident Investigation Board
- DuPont Corporate Director of Safety and Health

Ms. Deborah L. Grubbe is accountable for leading new initiatives in global safety and occupational health for a $27 billion corporation. Deborah was formerly the Operations Director for two global businesses—DuPont Nonwovens and DuPont Photopolymers and Electronic Materials. In this position she was responsible for manufacturing, engineering, safety, environmental, and information systems. Ms. Grubbe is also a past Director of DuPont Engineering's 700-person engineering technology organization. Her 15 different assignments in more than 25 years range from capital project implementation through manufacturing, management, and human resources.

Deborah received a bachelor's degree in chemical engineering from Purdue University and was a Winston Churchill Fellow at the University of Cambridge, England. She is the former co-chair of the Benchmarking and Metrics Committee of the Construction Industry Institute, and is a member of the National Institute of Standards and Technology Visiting Committee on Advanced Technology. As part of the National Research Council, she has advised the U.S. Army on the demilitarization of the U.S. chemical weapons stockpile. In 2002, Ms. Grubbe was honored as Engineer of the Year in the State of Delaware.

Mr. John Marshall

- Delta Airlines, Vice President, Corporate Safety and Compliance

Mr. John C. Marshall has responsibility for five departments at Delta, including Flight Safety, Industrial Safety, Environmental Services, Emergency Planning and Operations, and Safety Analysis and Quality Assurance. Inherent in these organizations are FAA, DOT, DOD, OSHA, and EPA compliance-driven programs for accident prevention, accident investigations, and accident response. He also has collateral responsibilities for integrating safety and compliance programs for Delta's wholly owned subsidiaries, including Comair, Atlantic Southeast Airlines, Delta Global Services, and Delta Technologies, into Delta's mainstream programs. Under his leadership, Delta has been recognized for having industry-leading programs focused on reducing aircraft mishaps, employee injuries, and aircraft ground damages, while enhancing environmental compliance programs.

Mr. Marshall presently serves as the industry co-chair of the Commercial Aviation Safety Team (CAST). CAST is a joint industry-Government program to develop and implement an integrated, data-driven strategy to reduce the U.S. commercial aviation fatal accident rate by 80 percent by 2007. Participants include aircraft and engine manufacturers, passenger and cargo airlines, labor unions, Flight Safety Foundation, Air Transport and Regional Airline Associations, NASA, DOD, and the FAA. Mr. Marshall is a past chairman of the Air Transport Association of America's Safety Council and the Society of Automotive Engineer's Aerospace Symposium. He currently serves on boards for the National Defense Transportation Association's Military Subcommittee, Safe America (a nationwide nonprofit organization focusing on safety awareness), the Flight Safety Foundation, and the Nature Conservancy's International Leadership Council.

Mr. Marshall came to Delta on September 1, 1997, with experience gained through his 26-year aviation career with the U.S. Air Force. His Air Force assignments included duties as a fighter pilot, Special Assistant to the Air Force Vice Chief of Staff, Fighter

Squadron Commander, Base Commander, and Fighter Wing Commander. During his career, he primarily flew F-4s, F-15s, A-10s, and F-16s, as well as a variety of other aircraft. Mr. Marshall later served as the Inspector General of the Pacific Air Forces and then became the Director of Operations of the Pacific Air Forces. While in the Pacific, he oversaw the safe and efficient operations of over 400 combat aircraft, including developing plans and policies used for executing his command's annual flying program. In his last assignment, he served as the United State's Director of Security Assistance for the Middle East, where he was responsible for all sales, marketing, training, and logistic support between the United States and 11 countries in the Middle East, Africa, and Southwest Asia during and immediately after the Gulf War.

Mr. Marshall received his bachelor's degree in civil engineering from the Air Force Academy in Colorado. He also is a graduate from the National War College, and he holds a master's degree in personnel management from Central Michigan University and a master's degree in civil engineering (environmental) from the University of Hawaii.

Dr. Rosemary O'Leary

- Member, NASA Stafford-Covey Return to Flight Task Group
- Professor, Public Administration and Political Science, Maxwell School of Citizenship and Public Affairs, Syracuse University

An elected member of the U.S. National Academy of Public Administration, Dr. O'Leary was recently a senior Fulbright scholar in Malaysia. Previously, she served as a professor of public and environmental affairs at Indiana University and as co-founder and co-director of the Indiana Conflict Resolution Institute. She has worked as the Director of Policy and Planning for a state environmental agency and as an Environmental Attorney.

Dr. O'Leary teaches graduate courses in public organizations and management, concentrating on organization change, organization culture, and the management of scientific and technical organizations. She has worked as a consultant to the U.S. Department of the Interior, the U.S. Environmental Protection Agency, the Indiana Department of Environmental Management, the International City/County Management Association, the National Science Foundation, and the National Academy of Sciences.

Dr. O'Leary is the author or editor of 5 books and more than 75 articles on public management. She has won seven national research awards, including Best Book in Public and Nonprofit Management for 2000 (given by the Academy of Management), Best Book in Environmental Management and Policy for 1999 (given by the American Society for Public Administration), and the Mosher Award, which she won twice, for best article by an academician published in *Public Administration Review*.

Dr. O'Leary was recently awarded the Syracuse University Chancellor's Citation for Exceptional Academic Achievement, the highest research award at the university. She has won eight teaching awards as well, including the national Excellence in Teaching Award given by the National Association of Schools of Public Affairs and Administration, and she was the recipient of the Distinguished Service Award given by the American Society for Public Administration's Section on Environment and Natural Resources Administration. O'Leary has served as national chair of the Public Administration Section of the American Political Science Association and as the national chair of the Section on Environment and Natural Resources Administration of the American Society for Public Administration.

Mr. Steve Wallace

- Former member of Columbia Accident Investigation Board
- Director, Office of Accident Investigation, Federal Aviation Administration

Mr. Steven B. Wallace was named Director of the FAA Office of Accident Investigation in May 2000. He has overall responsibility for FAA accident and incident investigation activities, related training and quality control programs, and implementation of corrective measures based on investigation findings.

From 1991 to 2000, Mr. Wallace was the FAA's Senior Representative at the U.S. Embassy in Rome, Italy, serving as the principal FAA contact for civil aviation authorities and the aviation industry in a 29-country geographic area spanning Central Europe, the Mediterranean, and the Middle East.

From 1984 to 1991, Mr. Wallace was Manager of the FAA's Transport Airplane Directorate Standards Staff in Seattle, a group of engineers, pilots, and technical writers responsible for developing requirements for certification of transport aircraft.

Mr. Wallace began his FAA career as an attorney in the New York (1976–1979) and Seattle (1979–1984) regional offices. He earned a bachelor's degree in psychology from Springfield College, a Juris doctor degree from St. John's University School of Law, and was admitted to legal practice before New York State and Federal courts. A licensed pilot since 1977, Mr. Wallace holds a commercial pilot's license with multi-engine and instrument ratings.

Mr. Rick Williams

- Alcoa Corporate Safety Director

Mr. Rick E. Williams is responsible for developing strategies to improve the company's global safety performance, while also providing technical support and guidance on safety issues to Alcoa business leaders. In this role, he also shares the Alcoa safety experience with customers and other external organizations.

Mr. Williams has over 25 years of experience in manufacturing, including roles in operations, human resources, safety, and community and Government affairs. He has served in plant, business unit, and corporate assignments. Prior to his current assignment, Rick was the Director of Human Resources for Alcoa Primary Metals located in Knoxville, TN. In this role, he led the integration efforts of both the Alumax and Reynolds acquisitions into the Alcoa Primary Metals organization. Prior to that he served as Vice President of Human Resources for Alumax Primary Metals in Norcross, GA.

Mr. Williams graduated from the University of Maryland with a bachelor's degree in business in 1976. He later continued his studies at the University of Maryland, and, in 1994, he received a master of Government administration degree in human resources.

Brigadier General Joe Smith, U.S. Army, Ex-Officio Member

- Commander, Army Safety Center, and Director of Army Safety
- Former Assistant Division Commander (Support), 82nd Airborne Division, Operation Iraqi Freedom, Iraq
- Former Chief of Staff, 10th Mountain Division (Light Infantry), Operation Enduring Freedom, Afghanistan

Brigadier General Joseph A. Smith is currently serving as both the Director of Army Safety on the Special Staff of the Chief of Staff, U.S. Army, and the Commander of the U.S. Army Safety Center at Ft. Rucker, AL. A Master Aviator with over 2,500 flight hours, Smith is qualified in the UH-1 *Iroquois*, UH-60 *Blackhawk*, MH-60K, OH-58D, and the MH-6 *Scout* aircraft.

BG Smith has served extensively in Army Air Assault, Airborne, and Special Operations units to include company-level aviation command in both the 101st Airborne Division (Air Assault) and the 160th Special Operations Aviation Regiment (SOAR) (Airborne); battalion-level aviation command in both Panama and with the 160th SOAR; and brigade-level command with the 10th Aviation Brigade, 10th Mountain Division (Light). BG Smith has served combat tours in Operation Just Cause (Panama), Operation Desert Storm (Kuwait and Iraq), Operation Enduring Freedom (Afghanistan), and Operation Iraqi Freedom (Iraq). He also has served as the Deputy Chief of Staff for Aviation for the United States Special Operations Command and has peace-keeping experience with Operation Joint Forge (SFOR 6) in Bosnia.

IV. First Quarterly Meeting Minutes

National Aeronautics and Space Administration

AEROSPACE SAFETY ADVISORY PANEL
PUBLIC MEETING

January 29, 2004

NASA Headquarters
Washington, DC

MEETING MINUTES

Mark D. Erminger

V ADM Joseph W. Dyer, USN (Ret)

AEROSPACE SAFETY ADVISORY PANEL (ASAP)
PUBLIC MEETING

January 29, 2004

NASA Headquarters
Washington, DC

Panel Attendees
V ADM Joseph W. Dyer, USN (Ret), Chair
R ADM Walter H. Cantrell, USN (Ret)
Dr. Augustine O. Esogbue
Maj Gen Francis C. Gideon, Jr., USAF (Ret)
Ms. Deborah L. Grubbe
Mr. John C. Marshall
Mr. Steven B. Wallace
Mr. Rick E. Williams
Mr. Mark D. Erminger, Executive Director

Panel Members not in Attendance
Dr. Rosemary O'Leary
BG Joseph A. Smith, U.S. Army, Ex-Officio Member

The first 30 minutes of the meeting were reserved for public comment on safety in NASA. No members of the public requested time to make a public comment, and no members of the public submitted any written comments.

INTRODUCTION

Admiral Joseph Dyer introduced himself and welcomed the attendees. He stated that the Panel was in a learning mode. Sean O'Keefe, Bryan O'Connor, and Bill Readdy were very supportive of the Panel and spent a good deal of time with them.

Panel members introduced themselves and gave a brief summary of their background and experience.

OPENING COMMENTS

Admiral Dyer began the meeting by discussing three topics: the charter, the "Three A's," and special interest items or the "To-Do List."

Charter

The charter, signed by Administrator O'Keefe on November 18, 2003, was derived from Section 6 of the NASA Authorization Act of 1968, following the Apollo 1 fire. The duties of the Panel include advising the Administrator on system safety, culture, organization, processes and standards, facilities and operations, and best practices from industry. The Panel will hold four formal meetings per year with additional time for fact finding, as necessary. Administrator O'Keefe's charge is to determine if NASA is complying with what NASA says. The Panel is to provide institutional oversight and not focus on any unique activity. The Panel is to guard against imperceptible erosion of safety compliance that can happen over time and to carefully observe checks and balances among cost and schedule pressures vis-à-vis safety and technical authority. The Panel will control and steer the inquiries, and will have NASA's full support.

The "Three A's"—Access, Accountability, and Autonomy

What is our access? Administrator O'Keefe is quick to answer: "What you need, you get." The accountability follows the "Corporate Board" model but focuses on safety. The Panel will meet quarterly, assess and inform, apply a broad range of experiences from outside, and infuse best practices. The Administrator commits to follow through and provide feedback to the Panel. For autonomy, the Panel is outside the day-to-day pressures of NASA. The Panel's strongest foundation for autonomy is the strong technical conscience, demonstrated personal integrity, and professional reputation of the members.

Special Interest Items

The first one is cultural change. The Panel is interested in further understanding how organizations can lose focus on safety over time.

The second is NASA leadership focus and dedication to safety. We feel good about what we've learned initially, but it is one that is absolutely necessary for full success.

The third item is knowledge retention as driven by demographics, an aging workforce, the experience base, contracting out, and recruitment.

Mr. Steve Wallace commented about new legislation authorizing NASA to offer retention bonuses and other incentives. There are large numbers of employees eligible for retirement. Some people may be staying until NASA is "back on its feet." The large number of contractor positions may be more attractive.

Ms. Deborah Grubbe observed that technical capability and retention were identified by NASA as focus areas to work on, and NASA started that work before the Columbia incident.

Mr. John Marshall emphasized that the Panel's focus needs to be on the issue of organization and culture because it contributed to the accident and is the most difficult issue to address. The aviation industry has inherent risk and faces this every day. We know that schedule pressures will continue. Budget restrictions will continue. In the last couple of days, it is obvious that NASA understands that area will require constant attention.

Dr. Augustine Esogbue pointed out that NASA is recognized for pushing the frontiers of knowledge in some scientific and technological areas, but the Agency will need to continue/develop relationships with some premier centers of knowledge to address areas with identified deficiencies. As in most high-tech organizations, there are deficiencies such as the well-known "brain drain" problem. NASA will have to establish

effective mechanisms to address the knowledge acquisition and retention problem, especially as experts within the organization begin to retire.

Ms. Grubbe said that the Agency recognizes that improvement is needed. There are some very strong foundational elements that can be built on, and there is more integration required across NASA.

Admiral Dyer said setting out to balance safety with cost and schedule is one of the places where NASA has advanced the ball.

Mr. Rick Williams stated that it is not intuitive as to how the organization fits together, and it is something about which we will have to learn more.

Admiral Dyer said that the "One NASA" effort is to get better alignment, integration, and coordination across NASA's 10 Centers. It is not fully understood to the Panel as of yet; the topic is listed for further research.

Mr. Wallace noted that NASA applied all of the Columbia Accident Investigation Board (CAIB) recommendations across the entire Agency beyond the Shuttle Program and developed a very thorough matrix, including all 10 Centers.

Dr. Esogbue said that NASA is a very good example of a large, complex organization, and it will be helpful to integrate and coordinate activities to attain the Agency's goals. Systems engineering tools may prove especially helpful here.

Admiral Dyer identified the Stafford-Covey transition to ASAP as an important item of interest. We need to spend time understanding how ASAP will dovetail with Return to Flight. We also have a need for outside expertise on special issues. There is a large body of knowledge on high-potential organizations. Knowledge of how to manage risk has really progressed across Government and industry. We need to talk to the experts. One of the strengths of the Panel is the ability to reach such people.

The last identified item of interest is "What is it that keeps you up at night?" This is a question that Ms. Grubbe often brings to the table.

An abbreviated summary of yesterday's fact finding follows.

OCCUPATIONAL SAFETY METRICS AND PEP SURVEY

General Rusty Gideon summarized this discussion.

The Office of Safety and Mission Assurance briefed metrics and Performance Evaluation Profile (PEP) safety metrics that are captured in the Incident Reporting Information System (IRIS). There are three types of metrics: corrective actions as a result of a mishap, illness and injury data, and other items such as property damage, close call, etc. The results are available to Center leadership, the Enterprises, and the Safety Office. The Safety Office publishes summary data. Detailed data is only available at the Center level. PEP is a survey given to all employees. It is anonymous. It started in 1999 to help the Center leadership evaluate their safety program for continuous improvement and is collected annually. Agencywide feedback is shared at an annual meeting of Safety Directors.

Out of that briefing came the following issues:

- Metrics are not available across NASA because of privacy and contractual concerns. The Panel thought there should be a way to share the data.
- The Panel asked themselves if occupational safety was a valid topic for ASAP. The answer is "Yes" because it can be an indicator of organizational health.
- Does schedule and cost emphasis lead to an acceptance of higher risk?
- Are the metrics good metrics? We didn't have a chance to look into the details. This came down to best practices. Ms. Grubbe had a list of some of the best practices that came out of DuPont.
- Side issue of Safety Offices highlighted in the CAIB. The safety function should have direct line authority without being subservient to the program and should be resourced directly from Headquarters.

Mr. Marshall asked the question on where occupational health fits in and whether or not there is any action being taken on the metrics. Is this a valid subject? Yes. It is part of the risk-management process. How you do with the employees relates to how you do on flight safety. You need to look at your metrics. What gets measured gets done. We need metrics that look forward. This needs to be integrated so that you have a composite view of the health of your organization. This also needs to include contractors.

SERVICE LIFE EXTENSION PROGRAM (SLEP)

Mr. Marshall summarized this discussion.

This briefing was very informational and really started the hard-core dialog on the issues NASA is addressing. SLEP was started to provide a sustainment for the Integrated Space Transportation Plan. There have been two major changes since this started: the accident and the President's plan that dramatically reshaped the program. SLEP Summit II is next month. Three ASAP members will participate to understand the changes that need to take place. The second component of the briefing discussed transition of the Return to Flight (RTF) process. The real issue is how SLEP reacts to changes as a result of RTF. This is evolving, and it is too premature to comment.

The last part was the prioritization process and ranking. It started out sustaining to 2022, and now it is 2010, but that date is flexible.

ASAP had a number of questions for the briefer. What is the weakness of the process? They need a numerical way to give a return on investment so that they can differentiate between options and get the most bang for their buck. The second is the handoff between CAIB, Stafford-Covey, and the Panel. The last issue was questions on organizational matters. SLEP is hardware and software focus on issues. The RTF Board will capture issues on a holistic sense. SLEP is a strategic planning process for long-term investment to ensure safety of Shuttle missions in the future.

Mr. Wallace said that the CAIB recommended the Space Shuttle Program be recertified if operated after 2010. If the CAIB knew the Space Shuttle would sunset in 2010, CAIB

would have asked NASA to lay out a plan to ensure Shuttle safety does not deteriorate leading up to 2010. General Kostelnik told us he intended to put down three healthy vehicles.

Admiral Dyer said that it is always harder than you think, and you always fly longer than you expect. It takes real discipline and focus to continue to make the investments in safety of the sunset program when the dollars to deal with the future are wanton.

INTERNATIONAL SPACE STATION (ISS) CONTINUING FLIGHT

Dr. Esogbue summarized this discussion.

One characteristic of NASA is that the programs are highly visible. The International Space Station and the Space Shuttle are good examples of such high-profile programs. Both are interrelated and managed under one Deputy Associate Administrator, but the ISS Continuing Flight is highly dependent on the Space Shuttle. The ISS Continuing Flight briefing was particularly interesting for it addresses an ongoing program. The ISS group conducted an indepth analysis of the CAIB Report to see how the recommendations and observations impacted their activity. Prior to Columbia, a program was put in place to manage cost and risk. It is important to recognize that the Space Station is an ongoing effort. A key question is, "What are the effects of grounding a component of the Space Station?" The strength of the international partnerships and lines of communications were emphasized as key to keeping the program in place. The safety of the crew and vehicle is a concern and a major challenge. Space Station has developed an Implementation Plan to respond to the CAIB. The plan is being continuously updated. Similar to other units within NASA, the group identified the CAIB recommendations that applied as well as those that did not apply. The status of the plan has been widely distributed to various stakeholders and, in particular, published on the NASA public Web site.

NASA reported that the Space Station has in place the organizational framework and team to stay on course and get inputs from various technical and discipline experts. The team is able to respond to most problems that may arise. When asked how they

dealt with issues not raised in the CAIB Report, the ISS team replied that they have a continuous improvement plan that goes above and beyond the CAIB Report, with safety as an imperative. The team stressed that it considers continuing safe day-to-day operations a top priority. Further, there is a need to determine closeout criteria for each CAIB recommendation and observation. Some of the group's ongoing and future work includes determination of closeout criteria, review of program prioritization, and assessment of other sections of the CAIB Report. It is understood that there is a need to maintain an interface with ASAP, as appropriate.

A number of issues were pointed out. For example, how does the group properly address safety issues, including reliability and sustainability for systems that are not yet fully developed or well understood? The group is aware of this and is working on it.

Admiral Walter Cantrell said that the Columbia accident created a whole new set of problems requiring extensive change to the ISS plan of a year ago. The ISS Program worked with the international partners to adjust. Coping with the number of changes and challenges to keep the ISS operational has been a tremendous accomplishment.

NASA ENGINEERING AND SAFETY CENTER (NESC)

Mr. Williams summarized this discussion.

The NESC's new organizational charter was approved in August 2003, and NESC started in November of last year. NESC has a core group of discipline experts distributed across all 10 Centers and has the ability to pull additional resources to work on tasks. The purpose is to coordinate and conduct robust engineering and safety assessments. NESC has already had a number of customers and has investigated and documented dissenting opinions. The rotational assignment is intended to expose a large group of engineers to developmental assignments. We discussed that NESC is not the solution to CAIB 7.5.1, but could serve as a resource to assist that function. There are multiple entry paths to identify concerns. There is a process to do risk assessments to prioritize NESC work, with the outcome subject to a peer review.

In general, the Panel was impressed with NESC progress. NESC shared several examples. One was an issue raised with a dissenting opinion. The employee was given a reward to reinforce that behavior and to give a visible message that this is the kind of organization to which NASA wants to evolve.

An additional issue was the reporting relationship of the NESC and the competition for resources.

The final discussion was on how NESC fits into the overall process of talent management or broadly managing a functional subject matter capability.

Dr. Esogbue said that the NESC was needed and had great potential. The problem poses other challenges in training and development. Very few schools in the country teach systems engineering today; although efforts are being made to revitalize and redirect these programs.

Admiral Dyer said that his career as General Manager of iRobot Corporation involves building a culture. This is a lot easier than changing a culture. He lauded NASA for giving safety a powerful seat beside the program manager with a solid institutional foundation behind it. That is one of the two key and essential shifts that must be in place to stand and go forward. He personally feels good about that. The second issue is how technical authority is exercised across all of the NASA Centers. He doesn't yet understand how technical competency will reach across the entire organization.

Mr. Marshall mentioned that one of the challenges is how to institutionalize this for the long haul.

Ms. Grubbe said that constituencies needed to be clearly identified. Employees with technical expertise that are not part of the NESC need to support it to make it successful.

Admiral Dyer said the technical authority and safety are closely tied together. Right after someone raises the issue of safety, there quickly follows a technical debate.

General Gideon said that people must be able to see something to identify an issue. That must be a metric. Foam is a good example. It was a metric that wasn't responded to correctly.

Mr. Wallace said that the CAIB wanted to separate standards ownership from schedule and budget pressure. The safety voice was not independently funded, and the program chose the degree of safety that it wanted.

Admiral Cantrell said that preserving the ability to bring technical resources to bear on the critical problems is the challenge. Establishment of achievable technical requirements and rigorous technical resolution of problems is the key to safe and reliable operations. NESC is a potential source of this essential technical rigor. NESC is a high-value resource. NASA is operating in a resource-starved environment. The high-value resource may not necessarily be applied in the place where it is needed.

STAFFORD-COVEY TASK GROUP TRANSITION

Mr. Wallace summarized this discussion.

We briefly discussed the role of Stafford-Covey and the issue of continuity of oversight of implementation of CAIB recommendations. We have one member from the CAIB and two from Stafford-Covey. One of the undefined responsibilities is the role of ASAP in the longer term. Stafford-Covey disbands shortly prior to the next launch. The expected effort required cannot be accomplished by eight people meeting quarterly. This is a major concern remaining on the table.

AGENCYWIDE ASSESSMENT OF THE CAIB REPORT

Ms. Grubbe summarized this discussion.

This topic also includes the "One NASA" effort. "One NASA" focuses on employee productivity, feedback, and culture, and was begun before the Columbia accident. The results were merged and compared to the CAIB recommendations. This effort goes beyond the Space Shuttle to all NASA employees and the NASA culture. The CAIB Report was distributed to all 66,000 NASA employees and onsite contractors. It also was discussed in face-to-face meetings. The Ombuds program is one recent result of the effort. The seven categories of this report aligned with the CAIB recommendations. This is a very good product, but it is too early to assess its impact. People need to decide how the results affect them. We would like to remain informed about the impact of this product.

CONCLUSION

Admiral Dyer offered one topic that had been overlooked and asked if there were more. In Mr. O'Keefe's charge to take a broad perspective, we were charged to focus on all space flight, not just human flight. There are three phases to this undertaking: near-term operations, mid-term exploration, and future exploration/technologies. We should look across all horizons.

Dr. Esogbue said there were issues to keep in mind such as the priceless contributions NASA makes to other sectors of the society at large. One example is patient safety that started in aviation safety and has even used NASA as a framework. For some continuing challenges facing NASA, there is a need to stay connected with centers of learning where new technologies, hard and soft, are being developed. One such example is the technology for handling soft data and including them in quantitative evaluation models.

Mr. Wallace reminded everyone that the Panel is a two-day-old organization.

Mr. Williams said that, although it is early in our existence, there is clearly an obligation to help fix what was wrong.

General Gideon said that expectations and special interest items are right on target. The Panel probably would not find a detailed technical issue such as the foam. The Panel is here to look at culture, leadership, organization, and best practices. That is the value that we can add.

Admiral Cantrell said there is anxiety with the rate of progress toward establishing the Independent Technical Authority recommended by the CAIB.

MEETING ADJOURNED

Admiral Dyer adjourned the meeting and opened the floor to questions from the public who attended the meeting.

V. Recommendations


FLIGHT DIRECTOR


FLIGHT DIRECTOR

The members of the Aerospace Safety Advisory Panel have decided not to make any specific recommendations in this first report because the Panel has just started to meet and is in the process of becoming familiar with the many different NASA activities that have an impact on safe and reliable operations. The Panel has identified some areas that will require further probing and penetration, which may result in specific recommendations in the future.