

America's Future in Space:

Aligning the Civil Space Program with National Needs

Briefing for the NASA Advisory Council

July 16, 2009

Gen. Lester L. Lyles - *Chair*

Statement of Task

- An ad hoc committee will prepare a report to advise the nation on key goals and critical issues in 21st century U.S. civil space policy.
- The committee will identify overarching goals that are important for our national interest.
- Issues that are critically important to achieving these goals and ensuring the future progress of the U.S. civil space program will be identified, and actions to address unresolved issues will be recommended.

SoT cont.

- Using its best objective judgment and recognizing other national priorities, the committee will explore a possible long term future for U.S. civil space activities that is built upon lessons learned and past successes; is based on realistic expectations of future resources; and is credible scientifically, technically, and politically.
- The committee considered “civil space” to include all government, commercial, academic, and private space activities not directly intended for military or intelligence use. The committee did not include NASA’s aeronautics program as an element of civil space.
- Full SoT can be found as Appendix B in the report.

Committee Membership

- LESTER L. LYLES, Consultant (U.S. Air Force, retired), *Chair*
- RAYMOND S. COLLADAY, Lockheed Martin Corporation (retired), *Vice Chair*
- LENNARD A. FISK, University of Michigan, *Vice Chair*
- JAY APT, Carnegie Mellon University
- JAMES B. ARMOR, JR., ATK Space Systems
- WANDA M. AUSTIN, The Aerospace Corporation
- DAVID BALTIMORE, California Institute of Technology
- ROBERT BEDNAREK, SES AMERICOM/NEW SKIES
- JOSEPH A. BURNS, Cornell University
- PIERRE CHAO, Center for Strategic and International Studies and Renaissance Strategic Advisors
- KENNETH S. FLAMM, University of Texas at Austin
- JOAN JOHNSON-FREESE, U.S. Naval War College
- PAUL D. NIELSEN, Carnegie Mellon University
- MICHAEL S. TURNER, University of Chicago
- THOMAS H. VONDER HAAR, Colorado State University

Context

- The committee's overall conclusion is that a preeminent U.S. civil space program with strengths and capabilities aligned for tackling widely acknowledged national challenges—environmental, economic, and strategic—is a national imperative today, and will continue to grow in importance in the future.
- ...the U.S. civil space program should be preeminent in the sense that it can influence, by example, nations' use of space. To be a strategic leader in a globalized world requires that the United States have a civil space program whose breadth, competence, and level of accomplishment ensures that U.S. leadership is demonstrated, accepted, and welcomed.

Goals for the U.S. Civil Space Program (1)

- *To re-establish leadership for the protection of Earth and its inhabitants through the use of space research and technology.*
- *To sustain U.S. leadership in science by seeking knowledge of the universe and searching for life beyond Earth.*
- *To expand the frontiers of human activities in space.*

Goals for the U.S. Civil Space Program (2)

- *To provide technological, economic, and societal benefits that contribute solutions to the nation's most pressing problems.*
- *To inspire current and future generations.*
- *To enhance U.S. global strategic leadership through leadership in civil space activities.*

Foundational Elements

- *Coordinated national strategies*
- *A competent technical workforce*
- *An effectively sized and structured infrastructure*
- *A priority investment in technology and innovation*

Recommendations

- Addressing National Imperatives
- Climate and Environmental Monitoring
- Scientific Inquiry
- Advanced Space Technology
- International Cooperation
- Human Spaceflight
- Organizing to Meet National Challenges

Backup

Addressing National Imperatives

- *Emphasis should be placed on aligning space program capabilities with current high-priority national imperatives, including those where space is not traditionally considered. The U.S. civil space program has long demonstrated a capacity to effectively serve U.S. national interests.*

Climate and Environmental Monitoring

- *NASA and NOAA should lead the formation of an international satellite-observing architecture capable of monitoring global climate change and its consequences and support the research needed to interpret and understand the data in time for meaningful policy decisions.*

Scientific Inquiry

- *NASA, in cooperation with other agencies and international partners, should continue to lead a program of scientific exploration and discovery.*

Advanced Space Technology

- *NASA should revitalize its advanced technology development program by establishing a DARPA-like organization within NASA as a priority mission area to support preeminent civil, national security (if dual-use), and commercial space programs.*

International Cooperation

- *The government, under White House leadership, should pursue international cooperation in space proactively as a means to advance U.S. strategic leadership and meet national and mutual international goals.*

Human Spaceflight

- *NASA should be on the leading edge of actively pursuing human spaceflight, to extend the human experience into new frontiers, challenge technology, bring global prestige, and excite the public's imagination.*

Organizing to Meet National Challenges

- *The President of the United States should task senior executive-branch officials to align agency and department strategies; identify gaps or shortfalls in policy coverage, policy implementation, and in resource allocation; and identify new opportunities for space-based endeavors that will help to address the goals of both the U.S. civil and national security space programs.*