

Washington Update:



A view of Earth at sunrise from the crew cabin of Columbia.

Space policy was at the forefront of the national agenda in February in the wake of the loss of the Space Shuttle Columbia. And although the ongoing war on terrorism and the war in Iraq have since reclaimed the nation's attention, the behind-the-scenes policy debates about the Space Shuttle, access to space, and the future of human space exploration will continue for many months.

The Columbia was lost just two days before NASA was slated to deliver its FY2004 budget proposal to Capitol Hill, so that proposal has gotten very little attention during the course of the accident investigation. However, that budget contains significant shifts in focus for NASA. Importantly, it also represents the first substantial increase in NASA's funding in several years, going from \$15 billion in FY03 to nearly \$15.5 billion in FY04.

The long-awaited nuclear propulsion and power initiative, dubbed Prometheus, was unveiled and included a budget request of \$279 million. Nuclear propulsion and power is viewed by NASA Administrator Sean O'Keefe as a critical element in a long-term space exploration architecture being developed by the agency, and he is drawing on the expertise of the U.S. Navy, which has operated nuclear powered vessels for several decades and has refined the technology to make reactors safer, more efficient, and more compact.

Additionally, NASA requested \$39 million for the Human Research Initiative to study human factors in missions beyond Earth's orbit. While this funding level is a relatively small investment in this research area, it represents a shift in NASA policy. Under the previous Administration, NASA was not permitted to fund efforts looking at human space exploration beyond the International Space Station (ISS), and this program reflects O'Keefe's desire to map out an exploration strategy that includes both robotic and human missions.

In the space transportation arena, work is proceeding even as the Columbia investigation continues. NASA's FY04 budget request reflects the reality that the Space Shuttle fleet will be needed to complete ISS and perhaps beyond, and the request includes funds to upgrade the fleet and the ground infrastructure to improve safety, reliability, and performance.

However, NASA also recognized—even before the loss of Columbia—that backup options were needed to transfer crew to and from ISS. The Orbital Space Plane (OSP), for which \$550 million is requested in the FY04 budget, is envisioned as that complementary capability, and the details of that program are still in the early stages. But the basic elements of the OSP program require the vehicle to be launched aboard an Evolved Expendable Launch Vehicle (Lockheed Martin's Atlas V and Boeing's Delta IV), carry 4 or more crew, be more maneuverable than the Shuttle while in orbit, and require less preparation time for launch than the Shuttle.

There is also interest among Capitol Hill staff and some in the aerospace industry to restore funding to the Alternate Access to Station (AAS) program, which had been slated for termination this summer. AAS was envisioned as a backup cargo capacity to ISS, and was being managed under the former Space Launch Initiative (SLI). AAS would have opened up competition for cargo delivery services, which makes it attractive as a means of increasing private sector involvement in ISS.

SLI has been refocused in the FY04 budget to include the OSP program and the Next Generation Launch Technology (NGLT) effort, which is funded at \$515 million in NASA's FY04 budget request. NGLT includes research for next generation launch systems and is being closely coordinated with the Department of Defense (DoD) National Aerospace Initiative, which is also conducting R&D for future launch technologies.

The Columbia Investigation

By BRIAN CHASE

The NASA and DoD ties represent a new area of cooperation, particularly since relations between the two agencies has been tense ever since the development of the Space Shuttle. But recognizing that they shared common interests, NASA and DoD officials agreed that a partnership would be the best way to take advantage of the unique experience and expertise that each agency possesses.

One additional variable is a long-awaited White House review of U.S. space policy. Two studies have been started, one related to remote sensing and the other to space transportation. The space transportation policy review, which was ordered last summer as National Security Presidential Directive (NSPD) 15, is expected to reinforce the need to develop next generation launch technologies and to encourage greater cooperation among federal agencies. However, the formal review process has been put on hold pending the Columbia investigation.

Congress has begun its deliberations on the NASA FY04 budget, and there has already been one joint House-Senate hearing on the loss of Columbia. The OSP, space transportation, and the future of human space exploration will all be areas of debate in the coming months as Congress exercises its review of the President's budget request and determines spending levels, and NSS will be engaged with key House and Senate offices and committees throughout the 108th Congress.

Indeed, as you read this the first NSS Legislative Conference will be underway or have been completed in Washington, DC, which provides NSS members the opportunity to visit members of Congress and their staff to communicate the importance of human space exploration. A copy of the NSS presentation being used on Capitol Hill is available on the NSS website at www.nss.org.

The coming months will represent both significant opportunities and significant challenges for the space advocacy community. While we see some very positive developments in NASA's long-term planning—such as the nuclear propulsion and power initiative—there are still political hurdles to ensuring we have sufficient investment in critical areas such as next generation launch systems. Additionally, critics of human space exploration are already taking advantage of the loss of Columbia to press their case to end or severely curtail the human presence in space. NSS will be engaged throughout these policy debates to ensure your voice is heard and that we continue to push outward to open the space frontier. 📌

Wake-up Call

By HON. RALPH M. HALL

The nation's space program is going through challenging times. The loss of the Space Shuttle *Columbia* demonstrated once again that space exploration is not easy or free of risk. We are indebted to the brave women and men who are willing to put their lives on the line in pursuit of our national goals in space.

An investigation is now underway to determine the specific cause of the *Columbia* accident as well as any contributing factors. I hope that the Accident Board will be successful, and we need to give it time to do its job. I am not interested in assigning blame for the tragic events, but I do want us to find out what happened, fix whatever needs fixing, and then resume Shuttle flight operations. Our human spaceflight effort is an important part of America's future in space, and we should not walk away from it simply because it entails risk.

At the same time, I think the loss of *Columbia's* crew should be a wakeup call. In the 17 years since the *Challenger* disaster, very little has been done to improve the odds of survival for Shuttle crews in the event of an accident. That troubles me. NASA needs to make a vigorous effort to reassess options for crew survivability systems for the Space Shuttle. Weight margins and other constraints that may have been limiting factors in the past may no longer be significant considerations now that the Space Station is largely assembled.

In a similar vein, I am troubled by the on-again off-again approach to the development of a U.S. crew rescue vehicle (CRV) for the International Space Station. Consistent with our international agreements, the U.S. had a program to develop a CRV. NASA and OMB walked away from the project two years ago, and now we are being told that we will have to depend on a new Orbital Space Plane (OSP) program—a program that is still just on paper—to provide a CRV, with the proviso that the OSP-based CRV will not be ready until the end of this decade. The logic behind these starts and stops eludes me.

The fundamental question we have to confront is whether we are willing to delay developing systems that could increase the chances for survival of our Shuttle and Space Station astronauts in the event of an emergency, or whether we instead should try to provide that extra protection as soon as practicable. I think that the responsible answer to that question is obvious, and I intend to work to focus attention on this issue in the coming weeks and months.

Rep. Ralph Hall, Fourth Congressional District of Texas, was elected to Congress in 1980, and is the ranking member on the Committee on Science, and former Chairman of its Space Subcommittee. He is also the senior member of the Energy and Commerce Subcommittee. He served previously from 1950 to 1962 as County Judge of Rockwall County, Texas, and in the Texas State Senate from 1962 to 1972. A Rockwall native, Rep. Hall was a Navy carrier pilot during World War II, earned his L.L.B. from Southern Methodist University, and is married and has three sons and five grandchildren.



The Importance of Space Exploration

By U.S. SEN. SAM BROWNBACK

Over the past 100 years, America has soared from the first flight of the Wright Brothers in 1903, through the vision of Dr. Werner Von Braun to the moon, and on to the vastness of space aboard the International Space Station. Although America has recently suffered a tremendous loss with the *Columbia* shuttle accident, we certainly will not stop our pursuit of space exploration.

NASA has, from its inception, been charged with making the impossible possible. From the early days of the Mercury Program, through the advancements in Gemini, and the triumphant successes of Apollo, NASA has given us a sense of national pride. Yet we must not let our pride fool us into thinking that NASA's work is commonplace. Each time a shuttle launches and a mission is accomplished, it is a miraculous, humbling event.

Space exploration is risky and there will certainly always be risk involved. But as President Kennedy so accurately said in 1962, "We choose to go to the moon...and do the other things, not because they are easy, but because they are hard..."

In fact, American society itself is built upon the idea that success only comes from a stern effort. Our nation came into being as part of this understanding, that liberty had to be fought for. American independence was not given, but earned.

The importance of persistence throughout history seems almost too obvious to clarify. We universally celebrate our heroes who drive past obstacles and hardships. But it seems as if we often take them for granted. When faced with current challenges, such as the loss of the Space Shuttle *Columbia*, many are quick to hesitate and mellow. They assume that success is born easily; that setbacks are failures in principle rather than unfortunate steps in practice along the way.

America is strong. She is steadfast. And she is brave. We cannot let tragedy block our path to the goal. We must not back down.

As Chairman of the Science, Technology, and Space Subcommittee in the Senate, I plan to take an active role in ensuring the dreams of these seven astronauts are not forgotten. As NASA determines what went so terribly wrong, we will be diligent in doing everything we can in the Congress to give NASA the support it needs to make sure we press forward with scientific advances, and that nothing like this happens again.

Our next step will be to determine what the future of space exploration holds for Americans— what our goal is and how we get there. The loss of the *Columbia* should serve as a step in our quest to advance American exploration. It should not hinder or challenge the objective, but make us steadfast in our resolve. The tragedy that NASA is enduring will not dissuade or discourage America from venturing into space. Our commitment to space exploration is firm. And our commitment to discovery remains. America will return to the skies and we will do so with pride.

Sen. Sam Brownback was elected to the Senate in 1996, and serves as Chairman of the Senate Subcommittee on Science, Technology, and Space of the Senate Commerce and Science Committee, and also serves on the Senate Committee on Appropriations, the Committee on Foreign Relations, and the Joint Economic Committee. Mr. Brownback was elected to the House of Representatives in 1994 following a career as a Lawyer, following graduation with a Law Degree from the University of Kansas and a Bachelor of Science degree from Kansas State University. He is married and has five children.



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President John F. Kennedy, 1962