

**Remarks to AIAA Awards Luncheon
By Richard J. Gilbrech
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Good afternoon and thank you for your warm welcome. It's great to be in San Diego for AIAA's Space 2008 Conference and Expo. On Oct. 1, NASA will celebrate our 50th birthday, but for more than 75 years, the American Institute of Aeronautics and Astronautics has existed as one of the world's most highly regarded professional societies for scientists and engineers devoted to progress in aviation, space and defense. Throughout our 50 years of existence, NASA and its missions have benefited greatly from AIAA's essential role in stimulating technical accomplishment and standards-driven excellence in all space-related fields.

The men and women of NASA now are engaged in the work that will enable our nation to return humans to the moon, send robotic explorers and ultimately human pioneers to Mars, and explore other destinations in our solar system and beyond. In taking on this challenge, we will be counting on AIAA to continue your indispensable work of advancing the sciences and technology of aeronautics and astronautics, and promoting the professionalism of those engaged in these pursuits.

You've probably figured out by now that the main attraction isn't showing and you're stuck with the warm up band. If you have ever worked for the federal government, you have likely run across the cryptic phrase "other duties as assigned." Well this is one of those occasions. Mike Griffin has asked for me to speak on his behalf today and it must have seemed like such a good idea that Chris Scolese, our associate administrator, asked me to cover his panel immediately following lunch. So like it or not, you're going to get a healthy dose of me today. All joking aside, both made every attempt to be here but at this particular juncture, they had to remain in Washington to attend several critical Hill meetings.

I would like to express my appreciation to AIAA for inviting Mike to speak today and for allowing me to fill in for him on short notice. I also would like to thank Northrop Grumman for sponsoring this awards luncheon. I offer my congratulations to all the distinguished award recipients here as well. I am pleased to accept the Summerfield Book Award on Mike's behalf. Mike asked me to read the following statement:

"I would like to convey my sincere thanks to the AIAA for this award. I value most highly those awards whose recognition is unconnected with the fact of my being, for a short period of time, the administrator of NASA. None ranks more highly than this award for Space Vehicle Design, which was a labor of love for Jim and me. I am particularly pleased to share it with Jim, the man who taught me much of what I know of space system engineering. Again, thank you."

As an engineer and having read the book cover to cover, I agree it is a great collection of topics and deserves all the accolades this award represents. It is one of the few instances

where a complete reading gives one an overall view of the system challenges facing spacecraft designers without stopping you cold from sheer volume of detail.

Before I move off the topic of Mike Griffin, I wanted to share my perspective having been a career NASA civil servant for 17 years, with the last two and a half years spent directly on Mike's leadership team. Mike has been one of the best bosses I've ever worked with and note I said with, not for – there is a subtle but important distinction. As many of you know, there is little guesswork involved in knowing where Mike stands on any particular topic or issue. The old computer display term "What You See Is What You Get" definitely applies to Mike and I find it very refreshing.

Shortly after coming on board as administrator, he established a governance structure separating programmatic authority from institutional technical authority to address concerns raised by the Columbia Accident Investigation Board, which I believe has been very effective. He set about creating a "10 healthy centers" strategy to distribute work around the agency to keep all of our centers viable. He encouraged our civil servant workforce to "Be NASA." He brought a renewed sense of enthusiasm and pride back into the human spaceflight arena with this mantra and furthered it by assigning major human spaceflight development work in-house, such as the Ares launch vehicle.

His long years of working on a strategy to return to the moon and enable human beings to go to other destinations brought hope to those of us that had almost lost hope that NASA ever would move our human presence beyond low earth orbit or LEO. The current path he has set us upon capitalizes on the best combination of administration space policy and congressional legislation I believe we have had since Apollo, and in my opinion, his plan is logical and eminently achievable.

So what is the Exploration Plan?

1. Complete the International Space Station (ISS) to both fulfill our international commitments and also enable human research for exploration. Currently, our exploration human research program is addressing 17 of 28 identified astronaut risks on ISS. On a personal note, my Caltech classmate, Greg Chamitoff, is currently orbiting overhead as a member of the Expedition 18 crew. Seeing him on NASA TV every morning when I come to work, floating around working in space is surreal and energizes me every day to extend our human reach beyond LEO in the hopes that, one day, he will be kicking up dust on the moon or eventually Mars.
2. Retire the old system, the space shuttle.
3. Bring on the new system, Constellation.

Why should we do Exploration and why the moon?

1. Human exploration on the global stage is a strategic capability for our nation. There is enormous value to be seen leading a challenging, important enterprise like ISS or a lunar return - things that others want to join in.
2. We are stuck in LEO. It's time to move out.

3. We need the lunar proving ground three days from home before sending astronauts on a 30-month trip to Mars.
4. This isn't Apollo all over again. While I am here today because of my fascination and admiration for Apollo, Constellation will deliver three times more mass to the lunar surface, twice the crew for twice the stay initially, and be able to go anytime, anywhere.

What about Science and Exploration?

To me, human spaceflight, science and robotic missions go hand-in-hand. They are interwoven like a quilt, not separate handkerchiefs one can choose. The upcoming shuttle mission to service the Hubble Space Telescope is a great example of how human involvement not only extends the life of a science mission, but can upgrade and renew a wonderful scientific instrument like Hubble. I am working actively with the Science Mission Directorate on ways to collaborate on lunar science and other objectives beyond the moon that could be addressed by Constellation's impressive lift capabilities (current Ares V lift capability: 71 metric tons to trans lunar injection, 188 metric tons to LEO, 10-meter shroud).

Is it worth the cost?

Polls revealed that the average American believes NASA gets 24 percent of the federal budget. That would put us on par with our DoD friends in the room today and I would have a much bigger smile on my face if that were the case. The reality is NASA's budget is 0.6 percent of the federal budget. Is it worth the investment? Looking back at history, more than 200 years ago, Thomas Jefferson sought congressional financing for what became the Lewis and Clark expedition. They overran their budget, lost a considerable amount of their equipment, fell so far behind schedule that they were given up for dead, and failed to achieve their primary goal – finding a suitable water route from the headwaters of the Missouri River to the Pacific Ocean. As this nation sought to expand westward, Daniel Webster the famous 18th century senator decried this "waste of public monies in exploring the Western Desert." Can anyone imagine the United States as a world leader today if these exploration efforts had been halted as mere folly? I can tell you in the year 3000 human beings will be out in the solar system. The question is what language will they speak?

Ironically, my biggest concern for the future of human space exploration isn't related to technical challenges and we have our share in front of us. The overriding concern I have is whether we will have the stability of commitment and purpose from our national leadership in continuing the path we have started.

The Constellation program is well beyond viewgraphs now, deeply engaged in the design, development, and testing of the Orion and Ares I, and we will be ramping up our work on the Ares V cargo launch vehicle and Altair lunar lander in the weeks and months ahead. Ares I is actually wrapping up its preliminary design review today, and hardware for our first full scale test flight, Ares I-X, is expected to ship to Kennedy this fall for a

2009 launch. The Lunar Reconnaissance Orbiter/Lunar Crater Observing and Sensing Satellite mission is progressing towards launch in 2009 as well, and will fill in most of our knowledge gaps concerning the lunar surface.

As we take the next steps to set foot back on the moon, we are seeking partnerships with industry and international partners. This past year we awarded five broad area announcements to industry to review the NASA design of the Altair. In June, we awarded 12 broad area announcements for lunar surface system support and released a request for information for Ares V design support. Later this month on September 25, at the US Chamber of Commerce in Washington, NASA will be hosting a briefing where we will share with industry and other interested parties the status of our lunar transportation architecture, namely Ares V and Altair. We will discuss how we plan to extend our near term industry involvement for the future with the goal of releasing a request for proposals by the end of the calendar year. I will be attending the International Astronautical Congress later this month in Scotland to discuss potential roles the international community can fill in our lunar surface system development.

We also have the challenge of meeting ISS transportation needs during the gap between the retirement of the space shuttle and the beginning of Constellation systems operations. That's why I'm here today and Mike and Chris are back in DC working hard to resolve issues that are threatening access to Soyuz flights during this gap. At the same time, we are continuing support of the Commercial Orbital Transportation Services by opening the first rung of the exploration ladder, LEO, to the commercial market.

NASA has had a great first 50 years and I hope my generation is given the chance to write new chapters in the history books on the next 50 years. What a story it will be as we prepare to set NASA on a path to "build towns on the moon and put footprints on Mars."

Thank you and I'd be happy to take your questions now.