Testimony of

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A Review of NASA's Exploration Program in Transition:
Issues for Congress and Industry

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Chairman Palazzo and distinguished members of the Committee:

I want to thank you for the opportunity to address a subject of critical importance to the aerospace industry and our nation as a whole, which is the need for a clear national strategy for space.

It is true that we face many other significant challenges and that our country is going through a period of transition. However, we must not lose sight of the fact that the aerospace industry directly employs more than 800,000 people across the country, and supports more than two million middle class jobs and 30,000 suppliers from all 50 states, with total industry sales in 2010 exceeding $216B.

As a result, the health of the aerospace engineering and manufacturing base in America is a crucial element of our continued economic recovery and employment growth. But in addition to that, the aerospace industry is unique in its contribution to national security, and if the highly skilled aerospace workforce in the United States is allowed to atrophy, it will have widespread consequences for our future wellbeing and success as a nation.

The U.S. space community is at a crossroads and facing an uncertain future that is unlike any we have seen in decades. This uncertainty significantly impacts our nation's ability to continue accessing and exploring space without being dependent on foreign providers. It also has implications for our national security and the U.S. industrial base.

Thirteen months ago, NASA administrator Charlie Bolden called me, and several other aerospace manufacturers, to tell us that the **Constellation program had been cancelled.**

In the 13 months since that call, NASA has yet to identify a strategy to replace the Space Shuttle.

In addition, there does not appear to be consensus within the Administration regarding the need for the Space Launch System (SLS) and Multi-Purpose Crew Vehicle (MPCV). Further, there clearly is not consensus between Congress and the Administration on NASA's priorities.

This uncertainly has our industry partners and suppliers very concerned about how we can position our businesses to meet NASA's needs, while retaining our critical engineering and manufacturing talent. It is creating a gap which our industry will not be able to fill.

When the Apollo program ended more than three decades ago, in 1975, there was a gap of about six years prior to the first flight of the Space Shuttle program. However, the Shuttle program had been formally announced in January 1972. So, although there was a gap in U.S. human spaceflight, there was not a gap in work on the next generation system.

Clearly this transition was difficult for industry. NASA budgets were reduced but industry **adapted** to this new reality.

During the Space Shuttle era, we saw NASA budgets become overall flat, declining to less than one percent of the federal budget. And although the space industry would like to have seen overall increases, we have known how to plan our business, how to invest, how to meet our customers' needs, and how to compete.

The situation now, however, is much worse. It poses a much greater risk to the U.S. space community, to the engineering workforce, and to U.S. leadership in space. The difference between the Apollo-Shuttle transition and the Shuttle-next generation space exploration system transition is the **perilous unknown.**

We do not know what is next. Shuttle is ending and we have not defined a mission nor ensured what we are working on.

Congress passed an authorization bill that directs NASA how to move to the next generation efforts in space exploration. But NASA has said that due to Constellation contractual obligations they are limited in moving forward with the Authorization bill. This situation is creating a host of problems, and it urgently needs to change. Most importantly, if NASA is going to be relived of Constellation obligations, we need to know how the workforce will be transitioned and how the many financial investments will be utilized for future exploration efforts.

Whereas the Apollo-Shuttle transition created a gap in U.S. human access to space, this next transition is creating a gap in direction, in purpose, in actual work, and in future capabilities.

In order to adequately plan for the future and intelligently deploy resources, the space community needs to have clear goals. **And up until two years ago, we had a goal**. We had a national space strategy and the plan to support it. Unfortunately, at this point, that plan no longer exists.

This lack of a unified strategy, along with the uncertainty it creates and the fact that the NASA transition is being planned without any coordination with industry, makes it impossible for businesses like mine to adequately plan for the future. How can we right-size our businesses and work towards achieving greatest efficiency if we can't define the future need? This is an impossible task.

So, faced with this uncertainty, companies like mine continue to remain focused on fulfilling Constellation requirements pursuant to the Congressional mandate to capitalize on our investment in this program, but we are doing so at significantly reduced contractual baseline levels, forcing reductions in force at both the prime contractor and subcontractor levels.

This reality reflects the fact that the space industrial base is not **FACING a crisis; we are IN a crisis right now.**

And we are losing a national **PERISHABLE** product…our unique **workforce**.

The entire space industrial base is currently being downsized with no net gain of jobs. At the same time, however, we are totally unclear as to what might be the correct levels needed to support the government.

Designing, developing, testing, and manufacturing the hardware and software to access and explore space requires highly skilled people with unique knowledge and technical expertise developed over decades.

These technical experts cannot be grown overnight, and once they leave the industry, they rarely return. If the U.S. develops a tremendous vision for space exploration five years from now, but the people with these critical skills have not been preserved and developed, that vision could not be brought to life.

We need that vision, that commitment, that certainty right now, not five or ten years from now, if we are going to have a credible chance of bringing it to fruition.

In addition to difficulties in retaining our current workforce, the uncertainty facing the U.S. space program is already having a negative impact on our industry's ability to attract new talent from critical science, technology, engineering and mathematics. Young graduates who may have been inspired to follow STEM education plans because of their interest in space and space exploration look at the industry now and see no clear future. This will have implications to the space industrial base for years to come.

Access to space also plays a significant part in the Department of Defense' ability to secure our nation. The lack of a unified national strategy brings uncertainty in volume which means that fixed costs will go up in the short term across all customers until actual demand levels are understood. This means that lack of a clear space policy will have ripple effects in the defense budget and elsewhere, raising costs when it is in everyone's interests to contain costs.

Now, it is of course true that there are uncertainties about the best way to move forward. This was true in the early days of space exploration as well, and in the Apollo and Shuttle eras.

Unfortunately, though, we do not have the luxury of waiting until we have all the answers. **We must not "let the best be the enemy of the good."** In other words, selecting a configuration that we are absolutely certain is the optimum configuration is not as important as expeditiously selecting one of the many workable configurations, so that we can move forward.

This industry has smart people with excellent judgment, and we will figure the details out, but not if we don't get moving soon. NASA must initiate SLS and MPCV efforts without gapping the program efforts already in place intended to support Constellation.

The time for industry and government to work together to define future space is now. We must establish an overarching policy that recognizes the synergy among all government space launch customers to determine the right sustainable industry size, and plan on funding it accordingly.

The need to move with clear velocity is imperative if we are to sustain our endangered U.S. space industrial base, to protect our national security, and to retain our position as the world leader in human spaceflight and space exploration. I believe that if we work together we can achieve these goals, and we are ready to help in any way that we can. But the clock is ticking.

Thank you again for the opportunity to address the committee today. I look forward to responding to any questions you may have.