

**Remarks for Space Transportation Association Breakfast
Shana Dale
Deputy Administrator
National Aeronautics and Space Administration**

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Thank you Rich (Rich Coleman, president, Space Transportation Association) for that very gracious introduction and thank you for the invitation to speak to the Space Transportation Association this morning. It's great to be among friends and colleagues in the space community again and I look forward to working with Rich and all of you in my official capacity at NASA.

Many of you know me from my work on the Hill and at OSTP. I thought this might be a good opportunity to brief you on my current focus in the Deputy Administrator's position. When Mike Griffin asked that I join the NASA team he explained that he wanted to go back to a management structure that was extremely effective in NASA's most formative years. Under the legendary James Webb, the Administrator who helped set our first course for the Moon, NASA had a very powerful management team with Associate Administrator Robert Seamans and Deputy Administrator Hugh Dryden. With this model, Webb could rely on Seamans' and Dryden's science and technical expertise and extensive Agency management experience. When you add to the mix Webb's own political and government administration

experience, NASA was led by an experienced team with a comprehensive skill set to tackle the challenges facing the Agency, both inside and outside the beltway. While the people have changed, Mike has tapped this model to bring Associate Administrator Rex Geveden and my complementary skill sets together to help power his leadership team. In addition, Mike has assembled a highly respected group of executives to lead NASA's mission offices and centers. I am proud and honored to be a part of this excellent management team that are not only highly experienced and proven leaders, but great people who are committed to leading NASA into our next great challenge, the new "era of exploration."

Two years ago, President Bush came to NASA Headquarters to announce a new strategic direction for the space program. His speech and the underlying policy became known as the "Vision for Space Exploration" or simply the "Vision." Today, we are well engaged in productive work to turn the Vision into a new reality - a multi-decadal, multi-generational effort to extend humanity's exploration reach throughout the solar system – a new era of exploration. This endeavor will require considerable contributions from our partners in industry and the international community. This new era presents many challenges and opportunities for all of us in the aerospace community.

One of my roles is to work with the international and commercial communities to build partnerships and look for ways to leverage each

other's unique capabilities and resources toward the mutual goal of extending humanity into space, learning new truths, discovering new worlds, and in the process, improving our own world.

I have begun this process by reaching out to our international partners. Recently I traveled to Europe and met with leaders from our partner nations in Italy, Germany, France and the European Space Agency (ESA) to begin a dialogue on how we can all work together to realize our exploration goals. In the coming months, I also plan to travel to Japan, Russia and Canada to engage them, in a spirit of partnership, to join us in our mission to extend humanities' reach further into the space frontier. I am hopeful that these partners and others will want to join us in this quest for discovery and I look forward to collaborating with them in the exploration process.

One venue to begin this process of international collaboration on exploration is the upcoming Exploration Strategy Workshop from April 25-28, 2006, at the Ronald Reagan Building and International Trade Center here in Washington. This workshop will be the first step in a series of activities planned for 2006 that will focus on defining a strategy for lunar exploration, including the role of the Moon as a stepping-stone to Mars and other destinations. Participants will include representatives from our partner international space agencies as well as the academic community and commercial industry. This is an important opportunity for our international and commercial partners to join in and determine

how they can contribute and participate in the Moon-Mars exploration endeavor.

Another key focus for me will be working to develop a seamless partnership between government and industry to ensure that every avenue of innovation and efficiency is explored and utilized. This new era of exploration will be the greatest technical challenge we will see in the 21st century, requiring breakthroughs in a wide-range of technical and scientific fields. NASA and the federal government must increasingly look to industry for the innovation and creativity needed to achieve these lofty goals. In addition to working with industry, NASA will look at new ways of doing business to increase efficiencies and encourage new ideas.

An important aspect of our exploration strategy is to open up the door for opportunities in commercial space. Among commercial opportunities that come to mind are such activities as in-space fuel delivery, lunar resource prospecting, and the development and maintenance of lunar surface systems and infrastructure, including lunar habitats, power and science facilities, surface mobility units such as rovers, logistics and resupply, communications and navigation, and *in situ* resource utilization equipment. With these opportunities in mind, it is our goal, working with international partners along with the commercial sector and the academic community, to develop a 10-year lunar exploration strategy by the end of the year.

Before these markets open up, however, NASA is doing something very exciting right now to encourage the development of new commercial markets in space. One of our most important needs is to provide cargo and crew services to the International Space Station, which has had permanent crews for over five years, and which we intend to operate for another decade. It is a service that looks very promising for reliance on the commercial space sector and that is why we've devoted so much funding to this effort.

In January, NASA issued a challenge to U.S. industry, both the established aerospace companies and the emerging entrepreneurial companies. Through our Commercial Orbital Transportations Services Demonstrations announcement or COTS, we are challenging all interested parties to demonstrate through competitive proposals that they can establish capabilities and services to safely and reliably support the Space Station's cargo and crew transportation needs.

This initiative establishes a precedent. For the first time ever, NASA is seeking non-government vehicles and commercial services to provide these capabilities for human space flight. When this happens, hopefully by the end of the decade, our colleagues at the Federal Aviation Administration's OCST will have a role in determining safety requirements for the commercial providers' launch vehicles.

For what we hope will result in a Space Act agreement or agreements, we are putting up about a half-billion dollars over the five

years of our current budget runout for those companies that have the best proposals for Earth-to-orbit space flight demonstrations of any one or combination of four capabilities: first, external un-pressurized cargo delivery and disposal; second, internal pressurized cargo delivery and disposal; third, internal cargo delivery and return, and fourth, crew transportation. Given the probable need for (1) logistics support during International Space Station assembly, (2) the need for cargo and crew transport during the time between Shuttle retirement in 2010 and the Crew Exploration Vehicle coming online, and (3) the ongoing need for this capability even after the CEV comes online, this is a substantial opportunity for the commercial sector.

We were pleased to receive Phase One proposals for the COTS demonstrations from a wide variety of organizations across the full spectrum of industry. We expect to announce the proposals selected to receive funded agreements this summer. We hope that successful flight demonstrations of the selected capability will occur in the 2008-2010 timeframe. During the first phase of this technology demonstration initiative, NASA intends to provide capital and assistance similar to an investor to help provide the necessary stimulation to ensure the success of this venture. The second phase of the technology demonstration initiative is the possible purchase by NASA of commercial transportation services to and from the Space Station on a purely commercial basis relationship with the transportation suppliers.

There are several features of this COTS initiative that are much different than a typical NASA procurement and which will provide maximum flexibility for commercialization. Under this initiative, the space transportation systems that result from this project shall be owned by the companies that develop them, not by NASA. With COTS we will have a limited negotiated right to purchase back the property at a reduced cost. We also will have limited rights to terminate the contract once it is underway. NASA also typically requires specific cost accounting standards from our contractors and has certain audit rights. In this case, our only interest is in whether the milestone is met.

There are other features of the initiative worth mentioning. We also will have our NASA Centers offer to provide reimbursable support to participants, such as wind tunnel testing. The bidders for this announcement are allowed to have the participation of foreign suppliers of parts and services, subject to current U.S. laws and policies such as the Iran-Syria Nonproliferation Act and ITAR.

All of these policies are designed to minimize NASA requirements and oversight. It will truly be up to the participant to get the job done to our satisfaction. Once a demonstration of a service is proven, we plan to buy the service in a commercial transaction, subject to the normal rules of congressional authorization and appropriation. The provider will be free, of course, to also provide these new services to non-NASA customers. And this should (1) help spread development costs, thereby

reducing the price paid by the government customer; and (2) further enhance this portion of the commercial space industry.

We believe NASA has structured a business arrangement that will promote genuine competition and one that is good for the private sector as well as the public interest. I'm confident that this kind of financial incentive for purely commercial industry will encourage serious providers to emerge.

Obviously, this represents a significant and welcome departure in the way that NASA conducts business. We should remember, however, that NASA has been purchasing commercial launch services for our space and Earth science missions for a long time. We are committed to expanding the agency's base of launch service providers to include emerging U.S. companies. One way we've approached this goal is to change the entry requirements to no longer require the provider to demonstrate a proven flight history. Our colleagues in the Defense Department deserve credit for paving the way for this policy, through their decision to allow an unproven launch vehicle to send up a satellite built by Air Force Academy Cadets. Now, by encouraging a more competitive market, NASA seeks to help lower launch costs and provide a better return on investment to the taxpayer.

Another approach that NASA is taking to harness the power of the free market to fuel its exploration goals is to promote investment and reward innovation. NASA's Centennial Challenges Program, for

example, will use the tool of prize competitions, so successfully demonstrated by the X PRIZE, to plant the seeds of these future commercial activities. Although the dollars involved are currently smaller than the Commercial Crew/Cargo Project, over the next couple years, you should expect to see NASA roll out multi-hundred thousand dollar to multi-million dollar prize competitions for demonstrations of projects such as subscale orbital fuel depots, human lunar rovers, oxygen production from lunar regolith, advanced power storage and transmission, non-toxic rocket engines, platforms for communications relays, low-cost space pressure suits, lunar lander analogs and telerobotic construction.

NASA also recently issued a Request for Information from its Innovative Partnership Program to explore the idea of a venture capital project with the working title “Red Planet Capital.” The concept is an investment vehicle used to support innovative, dual-use technologies which will help NASA achieve its mission and help better position these technologies for future commercial use. Red Planet looks to address several challenges that are not being met through the traditional procurement process, or through less traditional mechanisms like prizes, license agreements, and space act agreements, specifically:

- To attract and motivate private sector innovators and investors who have not typically conducted business with NASA, including tapping more efficiently into the pool of

small, leading-edge, organizations which are responsible for much of the innovative hi-tech thinking and research in the US;

- To leverage existing external venture capital to encourage development of technologies and products likely to be of future use to NASA's mission;
- To improve and expedite public/private partnership formation, through the redesign of administrative, management, and legal processes and procedures.

We've already received a strong response to the RFI and those proposals are being evaluated now. Over the next few weeks we will identify the top grouping and begin a more in depth interview process. Our hope is to have a selection made by the end of April.

To sum it up, you might say that our partnership strategy consists of the three I's – building International cooperation, promoting Investment and rewarding Innovation. There are no guarantees when one tries novel programs like these -- and in some respects we are venturing into uncharted territory -- but we are confident that industry will respond in a way that will reap long term benefits in building a stronger and more diversified commercial space enterprise and provide the innovations necessary to drive the new era of exploration into the far frontiers of space.

I thank you once again for your warm welcome, and for your commitment to working with NASA to help open up this era of tremendous possibility. Thank you again.