REMARKS FOR

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Thank you for that kind introduction, Jim (Muncy).

Good afternoon. I am very honored to be here to speak among some of the space industry's most creative and insightful individuals. Thank you George Whitesides for inviting me here. Congratulations to the National Space Society, which is celebrating its 30th year at this event. It is organizations like this one, and events like this International Space Development Conference, that unify and inspire our Community.

I'd like to share with you this afternoon the vision that we have developed for AST as we promote and foster an emerging commercial space transportation sector. Later this afternoon, you will hear more about new approaches to space exploration, new entrepreneurs who are working on reusable suborbital launch vehicles, public support for space, the economic benefits of space transportation and launch sites, space tourism, and law and space policy. In the next few minutes, I hope to highlight for you how the FAA touches all of these areas with our staff of roughly 59 people.

In years past, we had seen the blueprints for a number of new space transportation concepts – Reusable Launch Vehicles that would lower the cost of access to space and make it possible for average citizens to travel to space for adventure. Several years ago, NASA sponsored industry days that attracted dozens of companies, but many of those RLV developers

disappeared as the agency's priorities changed and the launch market shifted.

Once again, we are seeing a large number of new players entering RLV territory, anxious to fulfill NASA's needs for cargo delivery to the space station and to explore the Moon, Mars and beyond, as well as to capture part of the potentially lucrative commercial personal spaceflight market. **So, what has changed? What makes us think that this time they are here to stay? And what is the role of the government in promoting and facilitating the development of these new launch vehicles and technologies?**

- **CONVERGENCE**

First, I'd suggest that what's changed is Convergence. The impetus has been a convergence of events, goals, and initiatives – all of which point to a future when it is possible to buy "your ticket to space," your conference theme. Not only has the first private manned RLV been launched to space three times, but Space Tourism is also a topic on popular reality television where Richard Branson and Donald Trump have taken their stars on a ride on Zero G. Sometimes the public have to see it in many different mediums of communication, before they think, "Could I?"

In the past year, we have seen a number of things materialize that are producing this momentum. As you heard from Rear Admiral Steidle at lunch, NASA has started implementing the nation's space exploration vision, including requests to purchase commercial methods of delivering cargo to the International Space Station. President Bush issued a new U.S. Space Transportation Policy that is the first to mention commercial human spaceflight by name. It states that the U.S. Government must capitalize on the private sector's entrepreneurial spirit, which offers opportunities to open new commercial markets including public space travel. The policy encourages the use of commercial space transportation and spaceports to meet the nation's needs.

In addition, the private space tourism sector has come alive.

- In October 2004, SpaceShipOne captured the $10 million Ansari X Prize by launching a piloted vehicle to space twice in two weeks. For us at the FAA, it was the first license issued to a commercial RLV – the first in the world.
- Richard Branson announced the creation of his new company, Virgin Galactic, which will operate flights for space tourists in a few years.

- In a marketing deal with Virgin, Volvo aired a Superbowl commercial featuring a contest to win a ride on Virgin Galactic's spaceship and tying its new XC90 vehicle to the performance, safety, and reliability of a space launch vehicle.

This is the time we have all been waiting for, I would suggest – it is a real turning point in public awareness of space transportation. Commercial space is a popular topic today among other previously unengaged conversants. We must not lose this momentum – our efforts must be directed at keeping the unique possibilities that space represents alive and before the American people. With this being National Transportation week, we are investing time and effort to ensure that space has a permanent place in the public's recognition of space as a future mode of transportation.

PUTTING UP THE MONEY

What makes us think these new RLV developments are here to stay? If you look at what has driven major technological advancements in our history, they are often attributed to someone being in the right place at the right time, applying a successful business model – and putting up the money. Entrepreneurs willing to use their resources, and their experiences in other successful start-up ventures, are changing the face of space.

A quick Google search of the terms “entrepreneurs”, “entrepreneurs and history”, and “great entrepreneurs” reveals a number of familiar names. In addition to Wilbur and Orville Wright, Benjamin Franklin, Henry Ford, Thomas Edison, Steve Jobs and Steve Wozniak, appear the names Richard Branson, Bill Gates and Paul Allen, Jeff Bezos. Add to that Elon Musk of SpaceX (known for PayPal), Peter Diamandis of Zero Gravity Corp., John Carmack of Armadillo Aerospace (known for Id Software, programmer of Doom and Quake), and Robert Bigelow, who is sponsoring the $50 million America’s Space Prize (known for Budget Suites of America) … The space industry has been most fortunate in the last couple years to attract some of the most well known entrepreneurs in the world. Their companies and products have demonstrated success and staying power. Who here hasn’t used Windows, Amazon.com, or PayPal? In a few years, it is likely that their willingness to apply that same drive and spirit of innovation, and invest in new space transportation despite the risks, will eventually result in regular tourist flights to space. It will also encourage others to invest in this emerging sector. What’s equally exciting about that – as they invest, they join the ranks of space advocates.

So what is it about space that has attracted this level of entrepreneurship? I would offer two things, 1) timing and 2) opportunities.

Timing, as it is often said, is everything – a new national vision for space exploration, a new national policy for space transportation that acknowledges the critical role of the private sector, enabling legislation that Jim was just talking about that opens the door to commercial human spaceflight, the demonstrated capability of a private manned launch vehicle to reach space, and most importantly, a public market.

I know I'm speaking to the choir when I say that space is the new frontier. Opportunities for great financial gains exist in commercial space and we have some of the data to prove it.

The FAA's Office of Commercial Space Transportation conducted a study in 2004 to quantify the economic impact of commercial space transportation and the industries it enables. Commercial space transportation was responsible for more than $95 billion of economic activity, $23.5 billion in earnings, and more than 575,000 jobs.

This past February, AST released the "Suborbital Reusable Launch Vehicles and Emerging Markets" report. I hope you've seen that; if you haven't it's on our web site. This report contains a review of the most applicable near-term business markets open to newly developing suborbital vehicles including tourism and adventure travel, science, research, remote sensing, and advertising and sponsorship. The report also contains

descriptions of 17 active U.S. suborbital vehicle companies and profiles of space tourism companies and spaceports.

According to Futron Corporation's Space Tourism Market Study, the space tourism market could generate revenues in excess of $1 billion per year by 2021. That's a very important data point. When we talk to Congress, that's when their eyes light up, when we talk about revenue generation. Suborbital space tourism will likely generate the largest demand, with the potential for 15,000 passengers and $700 million in revenues per year by 2021.

Richard Branson's Virgin Galactic, which plans to operate a fleet of five vehicles starting in 2007 at a price of about $200,000 per person per flight – rather daunting but it will come down – has already received without any advertising more than 7,000 requests for initial reservations, and as we have heard about 1,500 down payments. Rocketplane and Aera Corp. have also announced ticket sales.

SpaceShipOne, while a mighty beginning, is only the beginning for this market, and with more near-term successes, we expect to see more investment in the sector. Planned events like the X Prize Cup in New Mexico this fall will continue to raise the level of excitement about the opportunity.

SO WHAT IS THE FAA'S ROLE IN VIEW OF THESE CHANGES AND NEW MARKET POSSIBILITIES?

The FAA is helping these developers achieve their goals. Under the Commercial Space Launch Act of 1984, U.S. citizens are required to obtain a license from the Department of Transportation prior to conducting a launch. The FAA's Office of Commercial Space Transportation has carried out that authority for 171 orbital expendable launch vehicle and suborbital reusable launch vehicle missions, and let me just say with zero accidents. That's quite a record when you think about it, given the risks of space flight. Last year, after working on reusable launch vehicle and human spaceflight issues for several years, including the development of regulations and guidelines, the Office, known as AST, issued the first RLV launch license to Scaled Composites. As is the case with firsts, this was a learning experience for the FAA and has helped us better position ourselves to handle other RLV builders' requests.

SpaceShipOne required a corporate approach at the FAA because the launch system was made up of both aircraft-like and launch vehicle components. Working corporately is how we will achieve the new challenges we face with "hybrid" vehicles. Ultimately, the White Knight carrier aircraft received an Experimental Airworthiness Certificate (EAC),

SpaceShipOne received an EAC for certain flights, and SpaceShipOne received the first launch system license of this type from AST from the FAA for powered flights.

In December of last year, the President signed the Commercial Space Launch Amendments Act of 2004, which provided a definition of suborbital rockets to make it clear that hybrid vehicles, such as SpaceShipOne and Rocketplane, must receive a launch license. This law also states that the Secretary of Transportation should ensure that only one license or experimental permit is required from DOT to conduct activities involving crew or space flight participants, including launch and reentry. That preserves the intent of the original act for one-stop-shop.

In the spirit of this legislation, we are working on ways to streamline and institutionalize the corporate FAA approach with a one-stop shop in AST. With AST as the primary organization, we are drawing on the resources of other lines of business in order to produce the best results in enabling the commercial space transportation industry. The law also gives authority and instructs AST to regulate launch vehicles carrying passengers, or space flight participants. In response we are writing regulations for suborbital vehicles with flight crew and space flight participants that preserve our statutory responsibility to protect the public on the ground –the

uninvolved public – while allowing the spaceflight participant, the passenger to take their own risk. We are also developing an experimental permit that will reduce the time and burden on developers testing their vehicles prior to commercial operations.

We reach out to a number of RLV developers and entrepreneurs through our Commercial Space Transportation Advisory Committee and its working groups, George Whiteside, Elon Musk and Jeff Greason are three of our newest members who will make their first appearnce as members at our COMSTAC meeting next week on the 26th. I encourage you all to attend. We reach out by offering companies – even in the earliest stages of development – to come meet with us and learn about our licensing process, by soliciting feedback on our guidelines for commercial human spaceflight, by regularly dialoguing with developers, by holding AST workshops on site licensing, by hosting public meetings, and by publicly disseminating market statistics and forecasts. Those are just some of the means of reaching out. Maintaining public safety is our number one priority at the FAA. Our role of facilitating, encouraging, and promoting the space transportation industry is also very, very important to us. We understand that this industry is evolving rapidly, and that it is often unpredictable, but AST is prepared to meet the challenge.

One of the ways we are doing this is by looking for ways to be more flexible in regulating the industry. For example, while we will never compromise public safety, we are looking for ways to streamline the environmental requirements required to obtain licenses and reduce the regulatory burden on launch vehicle and launch site operators. The regulatory process is the long pole in our licensing process.

We all want to see this industry succeed. Most of the progress is driven by the private sector – and in no small part by the daring, insightful entrepreneurs I mentioned, some of whom you will hear from during this conference. We're working every day in government to make it easier for entrepreneurs and others to pursue their dreams.

Thank you for your attention, and I look forward to doing business with you.