“COMMERCIAL SPACE TRANSPORTATION: PARTNERING FOR THE NEXT CENTURY OF FLIGHT”

REMARKS BY

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Good morning. Thank you, Rick (Blucker) for that very generous introduction. Our relationship with you and your staff at the Cape has become so strong during the past few years. I expect that as we head into the future, it will only grow even stronger. I am excited to be here today to discuss how partnerships will take us into the future, as the symposium theme implies, and to describe the ways the FAA is helping to shape the landscape for the next century of space flight.

But first, I want to tell you about an experience I had just a few weeks ago. I was the speaker at the commencement for an 8th grade class in Maryland. I wanted to plant some seeds in these students about the opportunities that await them, particularly in the field of space transportation. But in order to do that, I had to find a way to connect with them. I had to bring our field home to them in a way that they could identify with. So I told them about some of the young, energetic, and

determined people that I work with – both in my office and in the industry AST supports. I told these young people about two of our newest recruits in AST – recent graduates from Embry Riddle Aeronautical University – right here in the great state of Florida. I told them about some of the people who exercise their commitment to a successful space transportation industry 24 hours a day, such as Tim Huddleston of the Aerospace States Association. As I described these innovative, visionary people, I watched the graduates' eyes light up. They wanted to know all about Shandy and Mike – the two new AST staff members I mentioned. They wanted to find out how they became part of our team. And they wanted to know how to ask someone to be a mentor – to guide them into the futures the would seek. It was at this graduation ceremony that I felt I had made a connection – between space and the real opportunities in all of our futures.

Not all were convinced. As I looked across the room, my eyes landed on the grandfather of one of the graduates who, as I talked about the imminent possibility of private citizens traveling to and from space, focused his eyes right on me. That is as he said in a tone that those of us in the front part of the room could hear, “I’m not going anywhere!.”

Reaching out to young people may be the toughest connection we have to make to promote the future of space transportation. It is also one of the most important, which is why it is crucial for all of us – whether in industry, government, or academia – to speak with the same voice, and the same optimism, about space transportation. It is one of the reasons that we in AST emphasize our education and outreach activities – activities in which we partner with many of the people here today, such as Florida Space Authority and Space Tec.

We have a lot of connections to make beyond reaching out to young people, and those connections are some of what you are going to hear about today. There are connections between Earth and space; among the military, NASA, and the FAA at the ranges; between air traffic and space; between existing launch vehicles and launch sites and new space-related developments; between space exploration and space commerce; and many other areas. Making those connections in an effective and meaningful manner will require partnerships across the board. Some of those key partnerships exist today, but we need to expand them in the future. There is a growing interdependency between commercial, civil, and military space.

An example of this interdependency that I know is close to home is the Evolved Expendable Launch Vehicle program, which melds the needs of the government and commercial space communities. EELV serves both government – national security –

launches as well as FAA-licensed commercial launches. And in the future there will likely be other vehicles (perhaps mention SpaceX Falcon) that will serve similar multi-dimensional roles.

These past few years have not been easy for the launch industry. We have suffered from a decline in the demand for commercial launches and an overcapacity of launch vehicles. International launch providers have become increasingly competitive. And we cannot forget the impact of the tragic loss of the Columbia Space Shuttle in February 2003 on its return to the Space Coast.

I see a brightening of the picture from the past few years. As the economy bounces back, so will our industry, according to recent signs. Satellite orders were up last year, almost tripling from the six orders in 2002 to 17 in 2003. More satellites mean more launch opportunities.

In 2003, there were eight launches licensed by AST, generating revenue of about $529 million. For

2004, we have forecast 12 or more licensed launches in the U.S. including orbital and suborbital launches, generating revenue of $575 to $750 million.

FAA/AST has licensed and overseen 163 commercial space launches with an accident-free record. We celebrate this record, but realize it can only be maintained by total commitment to a safety regime that works in cooperation with our partners in the Air Force and NASA. But it also reflects the success we have had in building a skilled and dedicated organization that works with our clients/customers to make it happen.

It is that skilled and dedicated AST staff that is assisting the newest part of our space transportation industry in opening the frontier for suborbital space flight. During this year, which marks the 20th anniversary of the Commercial Space Launch Act, AST issued the first two licenses in the world for manned commercial suborbital RLV

flights. These licenses, given to Scaled Composites and XCOR Aerospace of Mojave, Calif., represent no small tasks. Both required many months of work to ensure the companies' plans met the public safety, environmental, and financial requirements for launch licenses. These two licensing actions represent significant milestones for this promising industry sector and the subsequent flights will bring commercial space flight into the public eye. Indeed on the day the first RLV launched, we in AST, in the FAA, and in the Department of Transportation, wrote a new page in the history of commercial space transportation in the U.S., and in the world. As we meet here, Scaled Composites, led by aerospace innovator Burt Rutan, is preparing for a historic launch into space next week on June 21st. We are also hard at work reviewing a license application for a new launch site at Mojave Airport.

FAA/AST has previously licensed four non-federal launch sites in the United States – California, Florida, Virginia, and Alaska. We are now engaged in discussions with proposed inland launch sites including Mojave and Oklahoma. In the future, we anticipate there will be a network of non-federal launch sites throughout the United States, enabling a commercial launch sector that is responsive to both national needs and emerging applications such as space tourism. We are seeing companies take advantage of these potential opportunities by locating near future space launch sites. Many companies have already converged similarly in Florida in support of the civil, commercial, and military launch programs that exist here.

It is those new opportunities for orbital and suborbital launches that will create the next giant leap for space transportation. The leap to a commercially-driven and innovative launch sector

will empower our progress in the next century of space flight. The promise of suborbital and eventually orbital space tourism holds benefits for all users of our national aerospace system. The **same** developments that will provide economic benefits through space commerce will also help meet national needs. For instance, the type of routine access to space by RLVs envisioned by the founders of the X Prize Foundation and companies like XCOR embodies many of the same goals sought by NASA and the Defense Department for responsive space access. AST and the industry we serve have already taken several small steps but I assure you, this is only the beginning.

AST's involvement with the industry doesn't end with licensing launches and launch sites. We have also developed relationships with government and industry focused on improving the safety of launch activity and on promoting the development of a competitive industry in the United States.

AST has an ongoing real, unparalleled relationship with the Air Force focused on improving safety at the launch ranges. Last year, we established our first field office at Patrick Air Force Base in Florida, staffed by Mr. Al Wassel – what an excellent move that was. This year, I am pleased to report that Air Force Lt. Col. Austin Jameson joined us full time in our Washington Headquarters, strengthening the strong partnership we have forged with the Air Force around safety.

Another activity we have been conducting, in partnership with the Air Force, is to develop a single set of safety standards that would apply to launches from federal and non-federal launch sites in the U.S. I am pleased to say that this rulemaking is progressing. These national safety standards will make operations at the ranges – both federal and non-federal - seamless for all users. Another welcomed by-product is the creation of a system of safety checks and balances between the

two agencies, which reflects Columbia Accident Investigation Board recommendations regarding independent safety oversight. The beauty of this partnership is that we both have the same goal – coordinating between the FAA and Air Force safety assessments and non-compliance issues in a manner transparent to the industry.

I personally take part in another important partnership with the Air Force by serving as a member of the Common Standards Working Group (CSWG) Senior Steering Group. Together with Maj. Gen. Kehler (Director of the National Security Space Office), Maj. Gen. Blaisdell (Director of Space Operations and Integration), and Maj. Gen.-select Fraser (Director of Operations for Space Command, we are guiding the CSWG in its mission to develop, promote, and sustain common launch safety standards for government and commercial users of federal and non-federal launch sites. All these activities are components of the joint Air Force/FAA Memorandum of

Agreement on Safety for Space Transportation and Range Activities signed in January 2001.

Our efforts to promote the industry through partnerships with other organizations have been quite busy this year. AST has partnered with the Aerospace States Association, led by Oklahoma Lt. Gov. Mary Fallin and under the excellent day-to-day leadership of executive director Tim Huddleston, to look at the elements of a national space vision focused on national economic interests. We continue to develop a space commerce model with ASA and to jointly raise public awareness about the commercial opportunities that space transportation developments offer. We also are working closely with the X Prize Foundation, which anticipates awarding a $10 million prize before the end of this year to the person or entity that launches a rocket capable of carrying three people to 100 kilometers (62.5 miles), returns safely to Earth, and repeats the launch using the same vehicle within two weeks.

Many of us were also heartened and excited by the announcement by President Bush outlining a challenging new vision for our nation's space program, a renewed commitment to boldly pursue knowledge and discovery.

Laying out this new vision for U.S. space exploration does not directly address the future of the commercial launch industry, but I believe the private sector could have a role if it steps forward to rise to the challenge of the President's call. The delivery of cargo in support of the exploration initiative would seem a real opportunity, particularly (in a post shuttle environment) after the shuttle is phased out in 2010. Here at the Cape, I know you are all thinking about how these new opportunities will develop. More to follow in the upcoming Aldridge Commission report.

The presidential decision directive supporting the January 14 announcement states the NASA

Administrator should “pursue commercial opportunities for providing transportation and other services supporting the International Space Station and exploration missions beyond low Earth orbit.”

I truly believe the President’s initiative will also open the door for more commercial and private sector opportunities to exploit the potential of space. In the past few months I have seen an understanding develop across the space community that we all need to move in the same direction if this vision is to be realized. Groups such as the Coalition for Space Exploration and the newly-formed Space Exploration Alliance aim to support the exploration initiative in a unified way, which is exactly what we need right now.

Many of us will hear next week in Washington about NASA’s plans to create Centennial Challenges, or a series of prize competitions aimed at seeing what advanced technologies the private sector can

offer to the National Vision for Space Exploration. These competitions provide an opportunity from the start for partnership between NASA and industry – they are asking for your input – and among the various federal agencies that may be involved. I can assure you that we at the FAA are already engaged with NASA in this endeavor.

The recent developments I have described are just the tip of the iceberg when it comes to where we are going. Twenty years from now, I fully expect the commercial activities and opportunities related to space will be far different from those of today.

The number of jobs resulting from commercial space transportation is expected to grow in the future, particularly as some of these new RLV developments come to fruition. In March of this year, *Business Week* magazine named commercial space among the top five innovative industries that could drive a new job boom. It placed commercial space

among telecommunications, biotechnology, nanotechnology, and energy in terms of potential job growth.

All of this means that we must be fully prepared for this future. We must prepare the future workforce and lay the foundation for the business they will be engaged in. FAA is acting as a facilitator of many of the partnerships in the regulatory and policy arena to ensure all players – especially industry – are part of the planning dialog and process.

As commercial travel to, through, and from space becomes more certain, we at the FAA are developing approaches on how we will deal with increased space-related activity in the National Airspace System, or NAS, beyond the ranges. You will hear later this morning from Shelia Helton-Ingram, an analyst on my staff – a former military air traffic controller - who is responsible for our Space and Air Traffic Management System plan. But

let me give you a taste of what we are planning for.

There are currently at least 14 states that are members of the National Coalition of Spaceport States, including Florida, which feature some form of space commerce in their economic development plans for the future. I believe that these state-based efforts contribute to our national readiness, our economic future, and to our industrial base.

Consequently, several years ago we undertook a project with FAA's Air Traffic Services line of business to ensure that the needs of space transportation users would be planned for and accommodated in the modernization of the NAS. Together, we have created two documents that offer a bridge between space and aviation operational requirements. The first document is the Concept of Operations (CONOPS) for commercial space transportation.

This CONOPS describes commercial space transportation operations with an emphasis on the space launch and reentry vehicles as they transition through the NAS. The second is a Space and Air Traffic Management System (SATMS) Program Plan, which lays out the incremental steps needed to accomplish the integration of space operations within the NAS as depicted in the concept of operations.

To accommodate future requirements, FAA's experts in commercial space transportation support the NAS architecture development as it incorporates space concepts and identifies future NAS requirements. To oversee the objective of seamlessly integrating space into the NAS, we have established a SATMS Executive Board that is comprised of senior FAA and DOD managers.

We must also prepare for other safety challenges that will require increased coordination among the agencies. For example, we want to

continue to look at flight safety methods that are non destructive. The Air Force has already broken that ground with industry, but more work needs to be done to ensure the safety and reliability of alternative approaches. Throughout today and tomorrow, you will hear about the other challenges we face in coordinating global aerospace operations, future military space operations, future space transportation systems, space exploration, and space commerce in a seamless, efficient way.

But before we turn to these topics, I'd like you to pause with me for a moment… and envision right here in Florida an intermodal transportation system second to none – a transportation hub where air, land, sea, and space all converge. In this vision, heavy lifters like Cape Canaveral and other federal ranges work as part of a network with non-federal ranges fed by civil, commercial and defense-related needs. Businesses – both

manufacturing and service industries (hotels, restaurants, fuel providers, cleaning, tourist services) – thrive around the spaceport much like today's major airports. Routine missions to low-Earth orbit and beyond occur on an hourly basis – taking advantage of the communications, navigation, and surveillance capabilities our military has to offer and are interwoven with a well-coordinated, real-time space and air traffic control system.

I can hear the announcement now: Now boarding, Experience space launch #102 to Moon Base 3. Final packages for space cargo to Alaska, launch pad C-15. What a day that will be. With the Air Force, FAA, NASA, and industry all working hand-in-hand, this true National Aerospace System will become a reality.

Thank you very much for inviting me to share this time with you. I truly look forward to the day's discussions.