STATEMENT OF DR. GEORGE C. NIELD, ASSOCIATE ADMINISTRATOR FOR COMMERCIAL SPACE TRANSPORTATION OF THE FEDERAL AVIATION ADMINISTRATION, BEFORE THE HOUSE COMMITTEE ON SCIENCE, SUBCOMMITTEE ON SPACE AND AERONAUTICS, ON THE OFFICE OF COMMERCIAL SPACE TRANSPORTATION'S FISCAL YEAR 2013 BUDGET REQUEST, MARCH 20, 2012.

Chairman Palazzo, Ranking Member Costello, and Distinguished Members of the Committee:

Thank you for allowing me the opportunity to meet with you today to update you on the ongoing activities in commercial space transportation by the Federal Aviation Administration (FAA), as well as some of the recent developments in this area.

We are all well aware of the historic change that has taken place in the U.S. space program with the retirement of the Space Shuttle. We watched with mixed emotions as Atlantis lifted off the pad for its final mission on July 8 of last year. That final mission left many wondering about the future of space transportation in this country. While it is certainly true that the launch marked the end of an era, it also represented the beginning of what I am confident will be an exciting future in space for our nation. Today, I would like to give you my perspective on that future and to highlight some of the ways that the FAA and the U.S. commercial space transportation industry are dealing with the challenges that we will be facing in the years ahead.

The FAA Office of Commercial Space Transportation (AST) was established in 1984. Our two-fold mission is to ensure protection of the public, property, and the national security and foreign policy interests of the United States during commercial launch and reentry activities, and to encourage, facilitate, and promote commercial space transportation. To carry out our safety

responsibilities, we develop and issue regulations; grant licenses, permits, and safety approvals; and conduct safety inspections during every licensed or permitted launch.

We are also responsible for licensing the operation of launch and reentry sites or "spaceports," as they are popularly known. Since 1996 we have licensed the operation of the California Spaceport at Vandenberg Air Force Base; Spaceport Florida at Cape Canaveral Air Force Station; the Mid-Atlantic Regional Spaceport at Wallops Flight Facility in Virginia; Mojave Air and Space Port in California; Kodiak Launch Complex on Kodiak Island, Alaska; the Oklahoma Spaceport in Burns Flat, Oklahoma; Spaceport America near Las Cruces, New Mexico; and Cecil Field in Jacksonville, Florida.

I am very proud of the men and women who work in AST and our outstanding safety record. Since 1989, we have licensed 205 commercial launches without any loss of life, serious injuries, or significant property damage to the general public. We conduct safety inspections to ensure licensees and permittees are adhering to regulatory requirements. Inspections include at least one annual inspection at commercial launch site operations and at least one inspection of launch operations at time of flight. In addition to inspections, AST activities in support of Department of Transportation safety goals include granting licenses, experimental permits, and safety approvals, developing and issuing regulations, performing accident investigation and prevention activities, and supporting federal range operations and related aircraft traffic management. Safety inspection is an AST core function that involves the monitoring of all licensed and permitted commercial space transportation activities. These activities include those conducted by the licensee/permittee, its contractors, and subcontractors. All AST safety inspectors are

credentialed and carry their credentials during inspections. These inspectors use approved safety inspection plans, templates, and checklists to conduct and document inspections. A safety inspection encompasses more than flight activities alone. Inspectors also monitor and participate in mission dress rehearsals, safe and arm checks, flight termination system installation and checkout, accident investigation, and other activities related to public safety. The program is built upon a firm foundation comprised of written documentation developed by AST. Inspections are coordinated with other relevant and appropriate Agencies.

Licensing is an AST core function that fulfills statutory mandates and regulatory requirements that are designed to ensure public health and safety, safety of property, and compliance with U.S. foreign policy and national security requirements. Licensing includes policy and payload reviews to ensure that the proposed activity does not adversely affect U.S. foreign policy or national security interests.

Looking forward, one of the most significant impacts of the Shuttle retirement is that currently, the U.S. must rely on other nations to deliver supplies to our astronauts onboard the International Space Station. Over the next several months, two different American companies, SpaceX and Orbital Sciences Corporation, are planning to demonstrate their ability to take on that responsibility. Those missions will be licensed by the FAA, and we are working closely with both companies, and with NASA, to ensure their success.

While it may well be several years before we see U.S. rockets carrying people all the way to orbit, there is plenty of work going on right now that is aimed at ending our reliance on foreign

interests to transport crewmembers to and from the International Space Station. American companies are eager to show that they can do the job as part of the Commercial Crew Development Program. The FAA is working directly with these companies, and with NASA, to ensure public safety during those launches, when they take place. Over the next few years, we expect to see several abort tests being conducted, followed by uncrewed demonstration launches of the vehicles being designed for the commercial crew mission.

The FAA is also actively engaged in collaborative planning for suborbital operations. As part of the Flight Opportunities Program, NASA recently awarded contracts to seven different companies six of which are developing reusable launch vehicles that are capable of carrying various science or technology payloads on suborbital missions. Once the program gets underway, NASA hopes to be able to conduct those missions, under FAA licenses, as often as once per week, depending on payload demand for flights and flight opportunities program and funding level.

Space tourism represents another important segment of the industry. Several companies are currently designing, developing, and testing vehicles that will be capable of carrying people up to the edge of space, with maximum altitudes in excess of 100 kilometers. Based on market studies, we expect to see this type of activity result in a billion dollar industry within the next 10 years.

States and local agencies are also continuing to approach our office with proposals for the development of commercial spaceports, with tenants ranging from NASA, to the military, to

private industry. These groups recognize the potential for jobs and economic development that could result from growth in our nation's aerospace activities.

The President's FY 2013 budget request for FAA AST is $16.7 million and provides for 73 full-time employees (FTEs). Our FY 2013 request represents an increase of $429,000 over the FY 2012 enacted budget. The request includes $15.7 million for core business operations. It also includes $1 million for industry-based research and development and science, technology, engineering, and mathematics (STEM) education through the Center of Excellence for Commercial Space Transportation. The Center of Excellence was established to encourage the teaming of resources and capabilities from academia, industry, and government to focus on research areas of primary interest to the FAA and to the U.S. commercial space transportation industry.

AST is currently administering 14 active launch and reentry licenses for launches of Pegasus, Taurus (now called Antares), Atlas V, Delta IV, Delta II and Falcon 9. There are currently eight active licenses for launch site operations and two license amendments submitted for significant launch site license modifications. Based on industry launch manifests and planned flight test programs, AST forecasts a significant increase in launch and reentry operations in 2013. This forecasted increase reflects a higher flight rate by experienced launch operators under multi-launch operator's licenses from existing spaceports and launch sites, and new launch licenses and permits for newly-developed launch systems and proposed commercial spaceports. AST is already performing initial safety analyses for some of the new launch systems planned to be operational in 2013.

The greater activity levels in the commercial space transportation industry will result in significant increases in the corresponding number of licenses evaluated and issued, environmental assessments, safety analyses, and safety inspections for our office. To meet these increased workload demands, AST is planning to employ several additional flight safety and operations experts. This will allow us to double the number of our staff assigned to operational safety oversight functions in our field offices at Cape Canaveral in Florida; in Houston, Texas; Mojave and Vandenberg AFB, California; and Wallops Flight Facility in Virginia. It will also allow us to increase the number of simultaneous safety analyses we can perform.

We will also be collaborating within the FAA to ensure commercial space transportation requirements and operating characteristics are effectively captured within the evolving NextGen system requirements and that commercial spaceflight operations (both orbital and suborbital) are safely integrated with the National Airspace System (NAS).

AST's FY 2013 request also provides for focused operations to address the emergence of commercial human spaceflight and related technological and infrastructure needs. Operational safety oversight of human spaceflight will require developing technical expertise in several new areas including environmental control, life support, and crew survivability. To date, AST's launch safety oversight experience and authority has been primarily focused on uncrewed launches of satellites into orbit using expendable launch vehicles. Regulatory standards governing human spaceflight will evolve as the industry matures so that regulations neither stifle. technology development nor exposed crew or spaceflight participants to avoidable risks. In accordance with the new FAA reauthorization language, the FAA will continue to work with

industry to explore these areas, but will refrain from proposing regulations to protect persons on board during the learning period until October 1, 2015.

The FAA stands ready to support our national interest in the future of commercial space transportation. Space exploration is a great American story. Our history in space has been dynamic, often innovative, sometimes tragic, but always courageous and ultimately triumphant. And with your help and leadership, that great American story will not only continue to unfold in our favor; but it will also create new jobs, produce new technologies, and expand our reach into the deep unknown of the universe. Again, I am honored by this opportunity to come before you today, and I am happy to answer any questions you may have.