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TESTIMONY BEFORE THE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE'S SUBCOMMITTEE ON AVIATION

THE FUTURE OF AIR TRAFFIC CONTROL MODERNIZATION

Chairman Costello, Congressman Mica, and Members of the Subcommittee:

Thank you for allowing me to testify today before the committee. My name is Christina Frederick-Recascino and I am the Interim Provost and Director of Research at Embry-Riddle Aeronautical University, the world's largest and oldest University solely devoted to aviation education and research. Embry-Riddle Aeronautical University has three campuses: two residential campuses in Daytona Beach, Florida and Prescott, Arizona, and a Worldwide Campus with 130 centers across the globe. We have 6,500 students at our Daytona and Prescott campuses and over 30,000 enrollments at our Worldwide locations. Embry-Riddle trains more pilots than any other college in the country with nearly 40% of the market share in this area. In addition, our aerospace engineering program has been ranked number one in the country for the past 7 years for colleges without a Ph.D. program. Our students, faculty and staff live and breathe aviation.

In the United States, we have been fortunate to enjoy a vibrant air transportation system allowing us to move across the country quickly and easily. However, in recent years problems in the air transportation system, such as flight delays, bumped passengers and lost bags have been steadily increasing. This year all trends indicate that congestion may be at an all-time peak, surpassing even the delays and weather problems experienced during the summer of 2000. Almost daily, we read

newspaper accounts of passengers who were forced to sit on planes for hours at a time while waiting to take-off or deplane. I am sure it would surprise those disgruntled travelers that the cost to the country for providing air traffic management services was 2.4 billion dollars last year and weather forecasts cost taxpayers more than $500 million dollars, all to fund an increasingly congested and faulty system.

It is absolutely necessary that we act immediately and quickly to modernize our air transportation system. The skies are crowded, the quality of the traveling experience according to all evidence is declining, and the American public deserves better. At Embry-Riddle, we are currently testing several solutions that will improve safety and security, and decrease congestion in the national airspace.

One of these solutions is the ADS-B system. Embry-Riddle was one of the early pioneers in the installation and testing of ADS-B. As part of the Small Aircraft Transportation System program begun at NASA, and now as the lead member of the FAA's Center of Excellence in General Aviation Research, Embry-Riddle outfitted its entire fleet of 100 aircraft with ADS-B in 2002 and has provided data to the FAA about increases in safety resulting from this retrofit. Our students and instructors have flown with the ability to see other planes around them. On the ground, our operations center can track every single Embry-Riddle plane. We now like to tell our students, there is no such thing as flying alone – we know where you are all the time. We believe this is a good thing and we have shown that the increased situation awareness provided to pilots and operations center staff resulting from ADS-B implementation has enhanced the safety record of our training fleet. We have experienced a lower number of near mid-air incidents and incursion incidents since our ADS-B installation. With ADS-B installed on our fleet, advanced displays provide information about other so-equipped aircraft. This enhances situation awareness and allows our student pilots to pay greater attention to other planes in the airspace that may not be ADS-B equipped.

At Embry-Riddle, we are training the next generation of pilots, air traffic controllers, meteorologists, aerospace engineers and human factors specialists. We are already providing the curriculum used to teach private pilots how to fly the newest glass cockpit aircraft, equipped with advanced displays and flight management systems. The training standards we developed have been

embraced by the FAA and aircraft companies, such as Cessna, Adam, Mooney, and others. We welcome the opportunity to do the same thing for air traffic controller training.

Embry-Riddle recently has embarked on another ambitious and timely project. We have created a University-public-private partnership called the "Airport of the Future." With our private partners, Lockheed Martin, Transtech, ENSCO, Sensis, Jeppesen, and Mosaic ATM and our public partners, Volusia County, Florida and the Daytona Beach International Airport (DBIA), we have created a cutting-edge national testbed for new air modernization technologies in the 10th busiest airspace in the county at a working commercial airport. In 2006, DBIA served over 526,000 passengers through five commercial airline services with an overall load factor of 85%. In addition, the airport has heavy general aviation traffic with an average of over 200 general aviation aircraft each day performing 708 daily operations.

The "Airport of the Future" is a four-phase project developed in response to the call for air traffic and airspace modernization. Each phase will focus on a different air modernization problem. The first phase of the project examines airspace and airport safety and security, including further testing of ADS-B implementation. Phase two focuses on airport capacity and efficiency issues via testing and integration of surface management technologies. Phase three examines ramp management technologies and point-to-point technology-enhanced arrivals and departures. Phase four tests solutions for all-weather airport operations.

The partners in the "Airport of the Future" project realize that new technologies must be tested prior to implementation. Technological solutions will come from many different companies and all will need to work together to provide the level of performance needed to fix out airspace issues. At the Daytona testbed, all of our private partners have entered into an agreement. They will bring their technologies to Daytona Beach International Airport, where they will be tested and integrated with other company's technologies. Embry-Riddle will collect and analyze data from the integrated systems. We will have the ability to use the data we collect at a real airport, in real airspace situations to enter into a simulation in which human participants in the airspace system, such as controllers, dispatchers and pilots will be able to engage in decision-making activities to test the newest technological solutions to air traffic management, safety and security problems. In addition, the data we collect can be used to provide financial estimates of the cost of these new

technological solutions – estimates that are crucial to the federal government and to every taxpaying citizen in the U.S.

On March 27th and 28th, 2007, we presented to the world, the first demo of our Airport of the Future project. We had over 100 individuals from all over the globe come to hear about the project. Representatives from the FAA, NASA, and even Germany recognized the potential importance of this project to successful airspace and air traffic modernization. In a short period of time, at DBIA we will have technologies installed such as FlightWinds from Lockheed Martin, and a millimeter wave radar based perimeter intrusion detection system from Transtech. We will show that these technologies can be integrated with systems such as a virtual tower from Mosaic ATM, or linked to the GPS mapping systems of Jeppesen. While some of these technologies have been tested singly at other airports, no other project has brought together multiple partners who have agreed to work together at one location for technology testing and integration. This project is unprecedented in both scope and scale. The "Airport of the Future" should be the national testbed for all NextGen technologies. Since our first demonstration, other companies have expressed interest in joining the team. We open up our partnership to other companies and agencies who want to be part of this unique and important vision.

Embry-Riddle's motto is "Leading the World in Aviation/Aerospace Education and Research". In all Embry-Riddle does, we look to the skies and lead the way to a stronger and safer future for aviation. Through our implementation of ADS-B in our own fleet to our development of cutting-edge curriculum for pilots and air traffic controllers, and our partnership in testing and integration of NextGen technologies in the "Airport of the Future", we are leading the way to a bright future for aviation.

We are asking Congress now to partner with us to make the "Airport of the Future" the national testbed for NextGen technologies. Embry-Riddle and its partners in the project estimate the cost of the project to be $50 million dollars over the next 5 years. Our private partners are contributing half of the cost of the project, along with technical support from Embry-Riddle and a facility provided to us at DBIA. We are requesting from Congress $25 million over 5 years to assist us in creating the testbed that will provide solutions for airspace modernization in the United States.

Thank you for your time today. Mr. Chairman this concludes my testimony.