

**Statement of
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The Boeing Company
before the
Subcommittee on Science, Technology and Space
Committee on Commerce, Science and Transportation
United States Senate**

Thank you, Mr. Chairman and members of the committee. I am Dennis Dietz, Director of Research & Development for the Boeing Company's Wichita facility. I appreciate the opportunity to share Boeing's perspective on the importance of significantly increasing federal investment in basic aerospace research. I want to express my appreciation to you, Mr. Chairman, for your leadership on these issues. Kansas is center for military, commercial and private aviation. Thousands of employees and their families in Kansas, including Boeing's 13,000 employees, are directly impacted by the challenges we will address today.

On behalf of the Boeing Company, I also acknowledge the tremendous contribution of Chairman Walker and the members of the Commission on the Future of the United States Aerospace Industry. Their comprehensive report highlights the integral role aerospace plays in our economy, our security, our mobility and our values, and concludes that global leadership in aerospace is a national imperative for the 21st century. The challenge ahead of us is to work together to secure global aerospace leadership by implementing the Commission's recommendations. I commend the Committee's initiative, as reflected in today's hearing, to begin the important implementation process. I also commend Senator Allen and Senator Dodd for their strong support of aerospace technology and their recently introduced legislation in this area.

For the remainder of my time, I will address two, interrelated recommendations of the Aerospace Commission. First, the federal government should significantly increase its investment in basic aerospace research, which enhances U.S. national security, enables breakthrough capabilities, and fosters an efficient, secure and safe aerospace transportation system. This is a very high priority for the Boeing Company. Second, I will address the Commission recommendation to effect the transformation of the U.S. air transportation system as a national priority. This must result in reducing door-to-door travel times of our citizens, and implementation of this recommendation is Boeing's highest aerospace research priority.

Aerospace systems protect us from those who would do us harm, and connect us to our loved ones across the country and around the globe. The Aerospace Commission observed that the aerospace industry is a powerful force within the U.S. economy, contributing over 15 percent to our Gross Domestic Product, supporting over 15 million high quality American jobs, while generating the largest trade surplus of any manufacturing sector.

There are a great many challenges affecting aerospace today. These include new national security threats around the globe, cyclical commercial aviation markets, the need for a more secure, efficient, environmentally-friendly and capable aviation system, and safer, lower cost and more reliable access to space—a challenge underscored by the recent Shuttle Columbia tragedy, to name but a few. Government and industry are both doing their best to deal with these issues and to respond to the needs of their stakeholders. Our nation needs to remain a leader in space, and investment is required to take our nation to a new level of safety, affordability and scientific research.

In our free enterprise economy, there is a proper role for government in each of these challenges. The Commission correctly defined government's role as

recognizing the importance of aerospace leadership, creating a supportive policy framework, and increasing federal investment.

For national security, aviation system security, and civil space, the government investment role extends from funding enabling technology to procuring and operating systems. Let me note that The Boeing Company believes providing for the security of the air transportation system is a proper role of government, with resources coming from the general fund rather than the aviation trust fund.

For commercial products, the government role is properly limited to its historical role of supporting break-through, pre-competitive, fundamental research that has a longer time horizon--generally more than three to five years--than industry can support before it is mature enough to be considered for transition to product development.

Government, including NASA, the DoD, FAA and the new Department of Homeland Security, must continue to strengthen its partnerships so that the benefits of aeronautics and space technologies can be leveraged, transferred, and applied swiftly where they are needed to meet our economic and security needs.

Mr. Chairman, the Boeing Company strongly supports the conclusion of the Aerospace Commission that an aggressive initiative by the Federal Government to invest in aerospace leadership would benefit the United States. There are broad public benefits to be derived from federal investment in advanced test facilities, propulsion, fuel systems, and fuel efficiency technologies, advanced materials, advanced structures, safety and security related technologies, environmentally friendly technologies related to noise, emissions and cabins, and technologies related to subsonic and, in the longer term, supersonic flight. I understand the pressures on the overall federal budget in this time of national crisis. Nonetheless, I am disappointed that the FY 2004 NASA request for the Aerospace Technology Enterprise in the

NASA budget continues the trend of declining investment in real terms for the future of America's aerospace leadership.

A key step in maturing and proving advanced aeronautical technology is to incorporate it into scaled, prototype flight demonstrators. Demonstrators are particularly valuable in that they provide a test bed to mature technologies that, in turn, maximize the potential for deploying technological advances to serve the nation's pressing aviation needs. High priority demonstrators, for example, are needed for technologies that greatly (1) improve overall performance efficiency and, thereby, reduce travel time and air transportation's impact on the environment; (2) enhance access and mobility to stimulate economic growth; and (3) improve our economic security by decreasing our dependency on fossil fuels through the development of alternative fuel systems such as hydrogen. By focusing on a range of technologies that can be applied to demonstrators, a more significant and timely return on investment is achieved.

Turning to a related key finding of the President's Commission on the Future of the United States Aerospace Industry, productivity growth and our gross domestic product are directly related to an efficient and growing air transportation system. As I noted at the beginning, implementation of this finding is Boeing's highest priority for federal research investment.

Aviation system delays are projected to increase, creating a severe drag on economic growth in coming years. U.S. aviation system delays in 2000, as measured by the FAA, resulted in a \$9.4 billion loss in U.S. economic activity.

The decline in air travel and system delays following 9-11 is temporary. Forecasters agree that growth in demand for air transportation ultimately will return to much higher historic levels, and will outpace available and currently planned capacity.

The U.S. economy will suffer without adequate government action to improve the air transportation system. Aviation is highly dependent on an airport and airspace infrastructure financed primarily by system users and controlled and regulated by the government. This infrastructure does not meet future efficiency, capacity, or security requirements.

The Commission concluded that the FAA's Operational Evolution Plan (OEP) is a necessary starting point, but insufficient for enhancing the U.S. air transportation system and maintaining global aviation leadership. The one billion dollar annual investment in the OEP will not produce sufficient capacity to meet long-term demand, nor will it take full advantage of technologies that can enhance the security of the overall aviation system. According to a DRI-WEFA study, if all projects envisioned by the OEP were completed on schedule, airspace delays in 2012 would be greater than in 2000, and the economic cost of delays between 2000 and 2012 would be an estimated \$157 billion.

The Boeing Company strongly supports the recommendation of the Aerospace Commission for a national program office led by the Department of Transportation with multi-agency participation. The goal of this initiative is to define and develop a new air traffic management system to meet our long-term aviation security, safety, efficiency and capacity needs.

A national air traffic management initiative should build upon current air traffic management and infrastructure initiatives, including the OEP, use a requirements driven systems approach, develop a highly integrated, secure "network centric" architecture to enhance common situational awareness for all valid system users, and ensure seamless global operations. New and clearly identified funding for this initiative is needed. In light of current economic crisis and declining aviation trust fund revenues, the initiative should leverage investments and capabilities from non-traditional sources such as NASA, DOD, TSA, and DOT.

While I have not focused on space today, NASA aerospace research also contributes to safer, more reliable and lower cost access to space. President Bush told a mourning nation that our journey into space will continue despite the tragic events of February 1st. Fundamental technology challenges remain in the space flight arena, including lighter weight, lower cost airframes, propulsion, and health management systems. The FY 2004 NASA Aerospace budget proposals to address these needs should be supported, and necessarily will receive more emphasis when we better understand the causes of the catastrophic loss of Space Shuttle Columbia.

Mr. Chairman, the investment of public funds demands public benefit in return. I will close by citing some of the public benefits of federal investment in aerospace research. They include improving the quality of life for our citizens by drastically reducing the level of noise due to aircraft operations; reducing the congestion of the air transportation system; reducing the rate at which fossil fuels are consumed and greenhouse gases and other harmful gases and particulates are added to the atmosphere by aircraft; allowing for more rapid, cost-effective development of safer, lower cost, more efficient aerospace, automotive and energy producing products; enabling low-cost, safe, and low-emission propulsion systems; improving performance for operators, and in turn reducing costs to the flying public; reducing the aircraft accident rate by 50% over the next ten years; increasing the mobility of our population that, in turn, stimulates economic growth; and advancing flight, and with it, aerospace leadership.

Finally, Mr. Chairman, I congratulate the Congress for its willingness to consider the recommendations of the Aerospace Commission. I respectfully suggest that the Congress engage as a full partner in their implementation. This partnership will require a long-term view of the Nation's investment in aerospace technology and the return on that investment to the American taxpayer. Past investments have surely improved the lives of all Americans. In a year in which we celebrate the 100th Anniversary of Flight and mourn the

loss of the Shuttle Columbia astronauts, we can pay no greater tribute to America's aerospace pioneers than by securing America's economic and physical security with another century of aerospace leadership.

Thank you, Mr. Chairman. I look forward to responding to your questions and questions from other members of the Committee.