



Speech Release

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President and CEO, Boeing Commercial Airplanes
Keynote address to AeroSpace and Defence Industries Association of Europe
Istanbul, Turkey
Friday, October 7, 2011**

“Aerospace Leadership in the 21st Century”

It's a pleasure to be with our industry colleagues and friends here in Europe. I want to thank the AeroSpace and Defence Industries for inviting me, as Chairman of AIA, to your annual meeting. I'd also like to take a moment and acknowledge Domingo (Ureña-Raso)¹ for his leadership of ASD at such an important time in the history of our industry.

I'm glad to return to this historic city, which spans two continents and the cultures of East and West... and to be in Turkey, a staunch ally of the United States and a longtime member of NATO.

A century ago, Americans and Europeans launched our industry, and airplane companies on both sides of the Atlantic competed to outdo one another. Their spirit of ingenuity set the stage for decades to come -- and the speed of innovation was often staggering.

New airplanes were sketched and built in six weeks during the Great War. During World War II, North American Aviation designed and built the prototype of the P-51 for the Royal Air Force in little more than three months. As most of you know, it took us a little longer on the 787.

In my view, aerospace defined the 20th Century.

- It helped win World War II and the Cold War.

¹ Domingo Urena Raso, CEO and Chairman of EADS CASA and 2010-2011 President of ASD

- It brought the world closer together with commercial air travel.
- It changed the way we communicate with commercial satellites.
- And, of course ... it changed forever how we look at the world around us when man first walked on the Moon.

Aerospace can define the 21st century as well.... but only if we dream big... and act bold... If we inspire a new generation of leaders to find solutions to the most daunting problems of our times.

In Istanbul this week, the ASD is discussing the “Collective Challenges” our industry faces. How we address these – together and as leaders of individual companies – will shape our future.

So today, I want to talk about:

- (I) The current state of our industry and the significant challenges we face.
- (II) Opportunities to maintain leadership, strengthen our industry and drive innovation.
- (III) And how a strong partnership between AIA and ASD can advance aerospace and our national and global economies.

I. CURRENT STATE

American and European aerospace companies lead our industry today. But new competitors are reshaping the commercial duopoly between Boeing and Airbus. We see a dynamic and rapidly growing market.

Air traffic generally increases at a rate 1.5 times world GDP, and we expect world GDP to grow at 3 to 4 percent over the next few years. Without discounting economic challenges in the Euro Zone and the US, the future looks good from a macro standpoint.

We forecast that over the next 20 years, there will be a need for 33,500 new commercial airplanes... with a value approaching \$4 trillion. Airbus numbers are close to these. Not surprisingly, new players – including China, Russia, Brazil and Canada – want a slice of this lucrative market.

The question is this: Are we prepared to compete with new ideas and investments or will we let others take the lead?

In Washington and many other capitals, the dialogue today is focused on what to cut – instead of how to grow. At times, I think we've forgotten that aerospace has enabled our greatness – driving our economies, exports, innovation and security.

In the 20th century, aerospace R&D and defense and space procurement led to innovations that protected and connected people around the globe – and fueled opportunities in many other sectors. They include radar, GPS, the internet and digital technologies that transformed health care (e.g. CAT scan and MRI machines). I could go on and on.

Getting our financial houses in order is important, but it can't be the only thing that defines our nations or our future. We need to promote:

- Innovation and competitiveness
- A strong defense industrial base
- A modern infrastructure and
- A level playing field

We need to make aerospace a priority again.

Aerospace in China

That's exactly what China is doing.

They're investing \$30 billion in the C-919, an airplane to compete with the 737 and A320. It may or may not be a good airplane. But China eventually will get it right and win market share in that country and around the world.

They have a new stealth fighter, the J-20 that many saw as a military threat. I saw it as another player in the global defense market. And my guess is, it will be significantly cheaper to buy than anything the Europeans or Americans are selling.

China is one of only three countries to put a man into space. And last week, they launched a module they say is the first step towards a Chinese space station.

Let me contrast that with some troubling trends in the United States and in Europe.

Intellectual Disarmament

At Boeing, half our engineers – the people who design our amazing products and solve our toughest problems – are eligible to retire by 2015. The same is true in other Western aerospace companies. It's contributing to what I call the "intellectual disarmament" of our nations.

Our engineering talent is not a fixed asset. It's made up of people who need challenging new projects. And if they don't have them, they will leave the industry and move on to other things. We can't let that happen.

Just this summer, NASA parked the Space Shuttle. Thousands of highly skilled and experienced engineers lost their jobs and are wondering what they'll do next. With the F-35 in test flight, there are no new manned airplanes or helicopters in development by the U.S. Defense Department... for the first time in a century.

Reductions in R&D expenditures across the EU are a concern the industry and the European Defence Agency (EDA) have repeatedly raised. Thomas Enders, speaking as president of Germany's aerospace trade group, warned in April that military budget cuts and restructuring will lead to a "permanent loss of technological competence and highly qualified jobs." I agree with Tom.

And, having worked on the defense and space sides of our industry, I believe that cutting government-funded R&D will limit our ability to drive both innovation and economic growth.

This isn't just about dollars and cents. It's about mobilizing people around a bold mission... about setting ambitious and inspirational goals... and then providing what's necessary to meet them.

I know that's a tough message to raise at a time of economic hardship and budget cuts on both sides of the Atlantic. But without clear direction and investments in this industry, we risk losing the experience and intellectual capital it's taken us half a century to build.

Strong industrial base

In the next panel, you're going to discuss security and defense in the context of global threats and "shrinking budgets". I believe the question our countries must answer is pretty fundamental: Is a strong aerospace and defense industrial base strategic to the security of our nations?

I'm not sure how our Administration or Congress would answer this question. We'll find out in the months ahead as the 2012 budget unfolds.

I believe we need a strong defense industrial base and strategy to preserve our capability and leadership. A strong industrial base is not a given. It's a result of the right policies, investments and priorities.

To be a viable defense contractor and an integrator of very complex systems, you have to understand how to do R&D. You have to take R&D into detailed design. You have to transition detailed design into production. You have to run your production systems, and you have to have a very healthy supply chain.

What we're seeing in the U.S., with no new starts in the Department of Defense, is we are losing our ability to do development and losing our capability to transition design into manufacturing.

I know that's a problem the UK has also wrestled with. Just last week, BAE announced that it will stop production in a century-old factory where the Buccaneer, Hawk trainer and Harrier jump jet were built. In the short term, 900 jobs will be lost.²

I think it's fair to say that we are jeopardizing a continuum of capability in our industry. Once that's gone, it will be difficult to rebuild. That was one of the problems Boeing had on the 787 program. We had not done a new development program since the 777, and we paid the price as a result.

I worry that we will wake up some morning and ask for a capability... only to find that no company has those skills anymore.

² Among other sources: <http://www.bloomberg.com/news/2011-09-27/bae-brough-warton-samplesbury-sites-to-bear-brunt-of-job-losses.html>

Bright Spots

There are bright spots, however.

Last week, the US Air Force launched a small satellite – called "TacSat-4"³ – that helps our men and women in uniform communicate with hand-held radios in rugged terrain. Its development was a collaboration that included the military, U.S. aerospace companies (including Boeing), and two universities.

In Germany, the aviation and aerospace industry invests 17 percent⁴ of its revenue in Research and Development. It is one of that country's most important drivers for innovation.

In Turkey, the economy is expanding and there are new buildings, new highways – and a vibrant aerospace industry.

Ten Turkish companies in six cities contribute directly to Boeing's commercial and defense programs. Pegasus and Sun Express are expanding their fleets and modernizing their operations. And Turkish Airlines – a customer of Boeing and Airbus – was voted "Best Airline in Europe"⁵ in a survey of 19 million passengers.

These investments will help fuel future growth. They demonstrate that investing in aerospace is investing in the future.

II. OPPORTUNITIES

There are bold projects we can tackle today that will have a lasting impact on our business and our planet.

There's no question that we must reduce our industry's environmental footprint and our dependence on fossil fuels.

³ www.nrl.navy.mil/media/news-releases/141-11r/

⁴ Research Report 2010, German Federal Government, p. 144, http://www.bmbf.de/pub/bufi_2010.pdf

⁵ Skytrax award, June 22, 2011. http://www.worldairlineawards.com/Awards_2011/europe.htm

Commercial airplanes account for 2 percent of today's man-made global carbon emissions. But air traffic will more than double in the coming decades – and our industry needs to take steps now to reduce its impact.

That is why we have set targets for carbon-neutral growth by 2020 and a significant reduction in CO2 emissions by 2050.⁶

This focus is validated every day when I talk to our airline customers. They worry about three things:

- Profitability
- Fuel efficiency
- Their environmental footprint.

All are closely related because fuel comprises 35 to 40 percent of an airline's operating costs.

Airplane technologies

At Boeing, 75 percent of our research and development spending is targeted to improve environmental performance, both fuel burn and noise.

We're committed to make each generation of airplanes even better by:

- Improving aerodynamics
- Using lightweight materials like composites
- And more efficient engines

Over the past 50 years, we've reduced fuel consumption and greenhouse-gas emissions from our products by more than 70 percent. Many members of ASD and AIA have made similar progress and have set aggressive goals for the future.

Just two weeks ago, we wrote a new chapter in the history of aviation when we delivered the 787 Dreamliner to our launch customer, ANA. It fundamentally changes the way airplanes are built and the way people travel.

⁶ International Air Transport Association (IATA), <http://www.iata.org/pressroom/pr/pages/2011-09-27-01.aspx>

That airplane represents the best of Boeing – as well as the accomplishments of our global partners, including many in this room – Rolls-Royce, Thales, GKN, Dassault Systems, Latécoère, Messier-Dowty and Alenia – and many more.

The 787 is 20 percent more fuel efficient than the plane it will replace – and more fuel efficient per passenger/seat/mile than the average car.

This is:

- Good for our customers
- Good for passengers
- Good for the environment
- And it's the right thing to do.

But we can do more.

Air Traffic Management

I talked earlier about remarkable things our industry has done in my lifetime that have made us great, from putting a man on the moon to inventing GPS:

Let's harness our imagination and intellect to advance a project that will have a meaningful impact in this century: to build a modern space-based Air Traffic Management System.

The technology exists and the payback will be enormous. It will:

- Create jobs
- Stimulate the economy
- Improve the environment
- Promote energy independence
- Increase airline profitability
- And have a lasting legacy

American and European companies are working to replace 1950s era ground- and radar-based systems. In the United States, that project is called NextGen, and here in Europe, of course, it's SESAR.

If we deploy NextGen, it will transform air travel -- just as the interstate highway system transformed ground transportation by allowing aircraft to fly more precise routes and make more efficient ascents and descents.

Boeing spent billions on the 787 to make one airplane type 20 percent more efficient than the airplane it replaced. Integrated, space-based ATM systems would cut up to 12 percent⁷ from all airplanes flying today. The savings in fuel consumption would pay for this system in just a few years.

We need a sense of urgency to get this done – with funding, commitments and firm timetables. As I said – the technology exists. We need leadership to make it happen.

Biofuels

We also need to leverage our resources to accelerate progress on one of our industry's most exciting frontiers: Sustainable aviation biofuels.

We're getting there. This summer, a leading international standards group gave its approval for commercial airlines to blend aviation biofuel up to 50% with conventional jet fuel. This is a huge step forward, because it reduces fossil-fuel consumption without any changes to airplanes or engines.

The Sustainable Aviation Fuel Users Group, which includes Boeing, Airbus, Embraer and many European airline partners, is working with scientists, industry and government stakeholders around the world to develop and commercialize these new fuels.

With even more research, development and investment, we will move closer to the day when most of our jet fuel is made from plants.

⁷ International Air Transport Association (IATA). <http://www.iata.org/pressroom/pr/Pages/2007-02-13-02.aspx>

II. ASD AND AIA PARTNERSHIP

Meanwhile, AIA and ASD must continue to work together to stimulate new business and eliminate barriers that slow our industry's growth.

Aerospace is a global industry, with airplanes crossing international borders every day. And regulations that are consistent across boundaries will enhance competitiveness and grow the market for aerospace products.

We've got to play by the same rules on emissions regulation, aircraft subsidies and export financing

As I've said, we recognize that pollution and climate change are serious issues that require credible actions. We believe that the best approach to reduce emissions is a coordinated global approach under the auspices of ICAO (International Civil Aviation Organization).

We also need a level playing field on aircraft subsidies so what matters most in any competition is the best product, not the biggest subsidy. The WTO's final ruling on the U.S. case found that subsidies to Airbus distorted the market and put America's aerospace industry at a competitive disadvantage.

I know it's hard to find agreement when we talk about WTO in the context of the duopoly between Boeing and Airbus. But, as I said earlier, the duopoly is over and we need to think about a future with new commercial players.

Export financing, too, is critical to the health of our industry, especially during financial market disruptions. Keeping export credit agencies in Europe and the U.S. balanced impacts not only aircraft manufacturers, but also our airline customers.

A balanced approach to regulation expands opportunities for companies... and for our customers, who get the very best of industry, no matter where a company is located.

CONCLUSION

Our companies are a vital link between the past and the future. Airplanes built in America and Europe were the “arsenal of democracy” that equipped us to win the World Wars and the Cold War. Aerospace brought our world closer together -- and continues to expand our knowledge of the universe.

We're still:

- Captivated by the magic of flight
- Still driven by the desire to be the best
- Still compelled to take risks and explore new frontiers

We are the stewards of a proud legacy. Just as Bill Boeing and other aviation pioneers in America and Europe did a century ago, we want to secure the future of our industry.

Thank you again for inviting me to speak with you today. I look forward to your questions.

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