

**Marion C. Blakey  
President and CEO  
Aerospace Industries Association  
“ADS-B as an Economic Engine: How NextGen Can Help  
Address Financial Challenges”  
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*As Prepared for Delivery*

Good morning, it's a pleasure to be here at the NTSB Training Center. This place conjures a lot of different feelings and memories. The last time I was here I was climbing over muddy banks looking at half- finished construction. Even then, it was clear we were building a terrific institution to advance safety.

The establishment of this Center was one of the more important endeavors that came out of a difficult era in our aviation system. The industry needs an establishment devoted to safety where professionals in all modes of transportation can advance their skills and receive training on the latest technologies.

I'm here this morning to talk about one of my favorite topics – Automatic Dependent Surveillance-Broadcast – what I always like to call the foundational backbone of the Next Generation Air Transportation System. But before I get started, I would like to acknowledge Vinny Capezzuto, the head of FAA's ADS-B program. He really is in the catbird's seat and has been doing a terrific job. So, I just wanted to make sure that we give him a big tip of the hat for the great job that he is doing.

Sometimes on a project like this we tend to think of the mountains to climb instead of taking a look over our shoulder to see how far we've come.

I became aware of the benefits of ADS-B while I was still at the NTSB. At the time, runway incursions were increasing and there was a lot of effort devoted to mitigation strategies and recommendations. UPS came in and talked to us about the potential of ADS-B to virtually eliminate

accidents on the surface when cockpit screens would show all planes and vehicles and the runway real time.

Then, I was briefed on the first phase of the Capstone initiative centered in Bethel, Alaska, in a far-flung region known as the Yukon-Kuskokwim Delta. The Capstone program opened my eyes to the huge potential ADS-B technology presents for all phases of flight. Most of you here have probably heard the amazing results – more than 40 percent reduction in accidents, significantly attributable to ADS-B.

By the time I arrived at the FAA, ADS-B had proven its value not only as a safety enhancement technology in remote airspace like Alaska's Y-K Delta, but also as an efficiency tool in more complicated airspace during the UPS demonstration project known as the Ohio River Valley program. At that point, it was clear that this ground-breaking new technology was going to be a focus of my tenure as administrator.

FAA is a 24/7/365 real-time operation so it can be difficult at times to focus on long term transformational projects like replacing radar with digital satellite tracking. Nevertheless, look what's happened – in 2003 Congress passed Vision 100 "The Century of Aviation Act", which established the Joint Planning and Development Office. And by 2004, then-Secretary Mineta officially unveiled NextGen and its Integrated National Plan, rolling out the blueprint for the transformation of the air transportation system. Although the initial implementation stages were still a few years off, people – including me – were already analogizing the transformation to NextGen to changing a tire on a car going 60 miles per hour down the freeway.

But, to be perfectly honest, although air traffic congestion and flight delays were steadily on the rise and JPDO made significant progress in its planning for NextGen, we still weren't able to get top-level attention for the new system. Then, late last year President Bush signed an executive order declaring NextGen a national infrastructure priority and establishing a new office within DOT to monitor its implementation.

More recently, President Obama, Transportation Secretary LaHood and FAA Administrator Randy Babbitt have all not only affirmed NextGen as a national infrastructure priority, but they have also committed the Administration to accelerating NextGen by pushing for tech-ready, off the

shelf procedures and avionics that will bring real benefits well ahead of the previous implementation plan.

And the aviation industry – from the makers of planes to the people and companies who fly them...from foreign air navigation service providers to local airports – all agree that, with adequate resources, we, government and industry, can work together to bring NextGen to implementation in 3 to 5 years instead of the 10 to 15 years that is currently pegged.

This may be a tough challenge, but really...what are we waiting for? ITT and that team of companies will have all 793 ADS-B ground-based transmitters installed by 2013. The Gulf of Mexico is scheduled to be up and running, controlling traffic with ADS-B by the end of the year. The South Florida ADS-B test bed is underway. I've already described two ADS-B projects in Alaska and Louisville. Just think, if a similar program had been in place over the Hudson River – if those aircraft had been equipped with ADS-B – the tragic mid-air collision that took place a few weeks ago possibly could have been avoided.

Even in areas where ADS-B installation is still a few years off, we're already seeing efficiencies that other NextGen capabilities like Required Navigation Procedures ... or ... "R-N-P", and Area Navigation ... or ... "RNAV" will bring. Let me just tick through a few stats. You may be surprised at how quickly the benefits of NextGen are starting to roll in as these new operating procedures are being put in place around the country.

In Atlanta, RNAV Standard Instrument Departures have achieved fuel savings due to reduced departure delays of more than 2.5 minutes per flight. Annual fuel savings are estimated at \$34 million, with cumulative savings of \$105 million from 2006 through 2008.

At Dallas Fort-Worth, NextGen improvements have increased capacity by 11 to 20 operations per hour, with cumulative savings estimated at \$30 million from 2005 through 2008.

Improvements in San Diego are projected to yield fuel and emissions savings of 4.5 gallons and 95 pounds of carbon dioxide per flight, which equates to reduction of nearly 1,800 metric tons of emissions annually.

Imagine what will happen when these benefits are duplicated across the country. Using FAA's economic and employment models, industry experts estimate NextGen will produce \$12.2 billion in economic benefits by 2012 and more than 150,000 jobs. These are real savings – both in terms of fuel efficiency, reduced CO2 emissions and economic benefits not only to the traveling public, but to society at large.

So, what is holding us back? FUNDING. Not an inconsequential barrier when you consider the economy, the state of the airline industry and multiple priorities weighing on the administration and Congress – the economy, multi-trillion dollar deficit, healthcare, war operations in Iraq and Afghanistan ... you name it!

Let's take a look at the funding challenges.

First, FAA has been operating under a series of continuing resolutions and extensions since 2007. In the past ten days, the House and Senate each passed 90-day extensions to FAA's authority to operate. That will be the seventh time in the past two years! Failure to provide the FAA with the stability and financial security of a multi-year authorization is having a significant negative effect as critical NextGen projects are delayed under funding extensions. Make no mistake – the FAA is very much like a business: it produces a product, it provides an invaluable service and it is depended upon by millions every day to be virtually flawless in the delivery of that service. If the FAA weren't a federal entity it would be a Fortune 500 company. And yet, we ask it to perform at the peak of efficiency and safety without the ability to know what projects it can begin or what projects it can complete 90 days from now.

Second, deployment of such a massive project as NextGen requires sustained government commitment. To fully fund FAA and the capital expenditures necessary for NextGen, we believe there needs to be a more significant contribution from the U.S. Treasury's general fund. General taxpayer support is appropriate for our national airspace system because all Americans benefit in one way or another from services FAA provides.

Finally, for years ... going back to when I was at the FAA ... I have been saying that the "long pole in the tent" to the challenge of getting

NextGen implemented in a timely manner is equipping the civil fleet with the avionics necessary to fly in the new system.

We don't know the exact date because the FAA is still working on the rule that will mandate ADS-B avionics, but the implementation plan is pointing to 2020. Many believe that date may move up since the Administration is big on NextGen acceleration and other parts of the world, like Europe, appear to be on a faster track than the U.S. Whether equipage is mandated in 2020, or 2015, however, the fact remains operators are not likely going to be in a financial position to meet the mandate, nor should they have to without Federal assistance. In fact, without substantial incentives or outright grants to help operators handle the multi-billion dollar burden to equip, we are likely to have a sustained period when ADS-B ground stations are up and running, but the other half of the puzzle – the “airborne infrastructure,” if you will – will not be in place. This situation could mean billions of dollars of delayed economic benefits and hundreds of millions of tons of CO2 entering the atmosphere unnecessarily.

What will it take to equip our civil fleet and implement NextGen five or ten years ahead of schedule? First, I think we have to change the way we look at aircraft equipage. It is just as much a part of our national airspace system infrastructure as airports, runways and satellites. And taxpayer dollars were used to help build our current air traffic control system. When you think of equipage as air traffic control technology on board aircraft and the huge economic and environmental benefits that will accrue once that technology is in place, government-supported installation makes a lot of sense.

Second, now is the time to make these improvements. Traffic and delays are below 2000 levels. We are in a lull traffic-wise. Not exactly like working on the Wilson Bridge in the middle of the night, but you get the idea. There will be less overall disruption to the schedule. And, by equipping now, we'll save money by taking old, outdated radar systems off-line.

Finally, shame on us for not putting stimulus money into NextGen acceleration – equipage and infrastructure. And I do mean shame on us, the aviation industry. We were late to the debate about where to put funds in the Recovery Act. We didn't do a very good job explaining that NextGen and its benefits are “shovel ready”. But, it's not too late. The Administration gets it and Congress is coming around. This is the 21<sup>st</sup> Century. If, when we

talk about recapitalizing our nation's transportation infrastructure, our national air traffic control system isn't part of the discussion, then we're not really in the 21<sup>st</sup> Century.

If we're going to reduce the time it takes to implement NextGen, the obvious solution is to provide equipage incentives for operators to shrink the gap and reap the benefits of NextGen as soon as possible. Something like an infrastructure bank will accelerate NextGen's benefits without putting too much of a burden on our system's operators.

The good news is that Congress and the administration are starting to think along those lines. The President recommended and the House adopted language in its transportation appropriations bill to establish an infrastructure bank.

We're making up for lost time by talking to Congress and the administration to make sure they know that industry is integral to the transformation of our airspace system from 1960s radar to NextGen and we've made great headway educating policy makers and legislators to the amazing economic ripple effect a strong civil aviation industry has on our GDP. Every dollar invested in aviation brings roughly five in direct and imputed economic activity. Once fully implemented NextGen's delay reductions alone will save the U.S. economy tens of billions of dollars annually.

I'd like to close by spending a few minutes talking about the environmental challenge aviation faces. This is timely as you know. Last week the UN Secretary General's Summit on Climate Change was in New York, and of course, the world will be focused on Copenhagen in December, when the UN Framework Convention on Climate Change meets.

As the world prepares for Copenhagen, the aviation industry has been trying to make sure that guidance regarding civil aviation global emissions remains the responsibility of the International Civil Aviation Organization – the UN organization responsible for international aviation standards since 1948. The international nature of civil aviation demands that we create common standards and avoid a patchwork of conflicting requirements which has already begun in Europe.

Heading into Copenhagen, the aviation industry is united on goals for emission reductions. These include:

1. Improving carbon efficiency with a 1.5 percent average annual improvement in fuel efficiency to 2020;
2. Stabilizing emissions with carbon-neutral growth from 2020;
3. Emissions reductions with a 50 percent absolute cut in emissions by 2050 compared to 2005.

Here in the U.S., implementation of NextGen is one very important key to realizing those goals. According to the FAA, full implementation of NextGen could reduce greenhouse emissions by as much as 12 percent by 2025 – a carbon dioxide reduction equivalent to removing 2.2 million cars from the roads for one year.

So, in closing, the challenge is clear and the way forward is plain. We have the technologies, and we can garner the resources if we have the political will.

The United States has been a leader in developing aviation technologies for more than 70 years starting in the 1940s when we pioneered instrument landing systems and pressurized airliners. Think back on other U.S.-developed technological advances and there is a good lesson there.

TCAS has virtually eliminated mid-air collisions wherever it has been installed, and CFIT is almost a thing of the past with EGWPS. We wouldn't dream of being without them yet these innovations seemed so hard at the time and took so long.

Yes, NextGen is on a larger scale, but nevertheless, a huge amount is at stake and if we throw the conviction and efforts of the entire aviation community behind it, I am sure that we'll get it done and at the same time retain our global leadership position in aviation.

Thank you very much – you've been a great audience and I'd be happy to take a few questions.