

"Second to None - Maintaining U.S. Aerospace Leadership in the 21st Century"

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Thank you, Monty [Belger] for your kind introduction. And to the other members of the head table, Michael Huerta, John Langford – one of AIA's stalwart members, and to all the members of the Aero Club – it's great to be back on the podium today.

Any discussion of U.S. aerospace leadership could rightfully begin with Apollo and Neil Armstrong. But let me focus for starters on another NASA employee who in 1969 also had an out-of-this-world assignment.

Robert Maccormack for most of the 1960s worked at NASA's Ames Research Center. His research challenge? We needed to know how lunar soil was made and moved. After all, that's what Apollo astronauts would be walking on. But could we figure it out by observing meteors striking the Moon?

The Moon has no wind or water to erode rock into soil and move it around. Meteor strikes are the main way that happens – at 6,700 miles an hour, nearly Mach 9. Bob needed to figure out how particles and fluids behave at such speeds.

Now there was a new scientific discipline back then, computational fluid dynamics, answered questions like that. But converting its results to forms scientists and engineers could use introduced big inaccuracies. Fixing them required high-powered computers, and they weren't widely available in the 1960s.

As the Apollo 11 crew was in final training, Bob published his results. He'd figured how to calculate much more accurate conversions without big computers. In the process, he also made computational fluid dynamics –CFD – much easier to use – especially for grad students and the next generation of engineers coming along.

Today, CFD is the mainstay of aerodynamic analysis and design. Every advanced craft flying in the atmosphere or beyond it –airliner, fighter, UAV, space station or satellite – was built using CFD. And, NASA's Bob Maccormack paved the way.

This type of government-funded research has all along complemented the innovation of private companies to build the U.S. aerospace and defense industry that helped win wars and find Osama bin Laden.

Technology, often born in defense or space, makes civil aviation better and safer: from radar, flight computers and composites, to advanced navigation tools, display systems and synthetic vision.

In commercial aviation, we've given the world business models, and technological advances that have made air travel accessible to growing numbers of people of all backgrounds. And this continues to spur economic growth throughout the world.

Which is why I found the President's comments yesterday against business aviation so baffling. In October, Mr. Obama endorsed bonus depreciation as a way to incentivize business investment. On Tuesday, he praised Alcoa workers for making the wings of Air Force One (the biggest corporate jet in America, by the way...PAUSE...) and he said "Almost every airplane in the world has some kind of Alcoa product in it"

Then, the very next day, he says he wants to kill any tax incentive to buy the business jets that have Alcoa products in them. It's baffling and disturbing.

Because today we face stark choices that boil down to one big question: Will we give America a future filled with promise by continuing to invest in U.S. leadership in global aerospace, or will we consign aerospace to the list of great industries that America once led?

Consider some points:

- One half of U.S. aerospace engineers are eligible to retire come 2015. America is simply not producing enough new engineers to replace them—and preserve and build on the base of knowledge and expertise they represent.
- In 2010, for the first time in 100 years, the U.S. has no new manned military aircraft in design. As a result, America risks losing design and development capabilities that will be hard – if not impossible – to restore.
- Next month the U.S. will retire an incredible national capability – NASA's space shuttle. We will lay off more than 3,000 space workers, put the expertise and experience of tens of thousands of space engineers on ice and risk relying on Russia and other nations for human access to the high frontier space.
- Our defense strategy hinges on giving U.S. troops overwhelming battlefield advantages through advanced weaponry. Our nation counts on those contributions, but has no coherent industrial policy to ensure their delivery. Despite that, aerospace and defense continue to deliver..... so far.

Jim Albaugh, president and CEO of Boeing Commercial Airplanes, sums up America's predicament well. He calls it "intellectual disarmament," which – combined with reduced R&D spending – risks surrendering our lead in aerospace, both civil and defense.

Our stark choices center on the crisis of national deficit and debt. Congress intends to reduce both mainly through spending cuts. Now we all recognize the severity of the fiscal crisis and the need for sacrifices to resolve it. The challenge, of course, lies in making wise, well-informed cuts that minimize harm to our future competitiveness and global leadership.

Defense Secretary Gates has observed that "the simplest and most politically expedient approach" in such circumstances is to meet budget targets by "taking a percentage off the top of everything." That approach after the Vietnam War, he said, led to the U.S. having a "hollow Army" by 1980 and left this nation at the turn of this century with an inventory of aging and worn down military equipment.

We simply can't afford to take that approach again.

We are certain the aerospace and defense industry – which is second to none in the world -- represents a smart investment for this nation. Civil aviation alone contributes to more than 5.5 percent of U.S. GDP. In addition to building products that keep the world's economy moving, keep our families safe at home and keep our troops secure and successful abroad, the aerospace and defense industry is the single largest contributor to the U.S. trade balance. Last year, our surplus of exports over imports added \$53 billion to that balance.

To advance well-informed decisions in the budget debates – which clearly will stretch well into our future – the Aerospace Industries Association and our members are launching a campaign to explain the critical role of aerospace and defense in the welfare and the future of our nation. Reflecting that role, our campaign is called Second to None. That's America, "Second to None!"

We will be using media, op-eds and one-on-one meetings with members of Congress here in Washington and in their districts back home. A website – to be launched shortly – will be the go-to place for information and updates.

We think this and more is critical because the aerospace and defense industry is a perishable national asset. Consider this: once renowned for its aerospace and defense manufacturing, the UK now buys its fighters, helicopters and military and commercial transports from us and Europe and struggles to rebuild that base.

The Second to None campaign will focus on specific steps to preserve our aerospace and defense industrial base and maintain U.S. aerospace leadership in the 21st century. I hope a number of you will join us in it.

So from a policy standpoint, how do we tackle our challenge to keep America on top? I'll offer four steps for your consideration now.

- Fully fund NextGen.
- Preserve procurement and R&D for the Defense Department and for NASA.
- Exploit our breakthroughs in aircraft, integrate unmanned aerial systems in civil airspace and let's export them!
- Press forward with the President's goal of doubling our exports, and that means export-control reform.

First, NextGen. It may seem foolhardy to call for full funding in this budget environment. But when you compare the constraints of our current ATC system with the benefits of NextGen and how quickly we can realize them, I think it's clear that NextGen is a smart investment.

Just recently, American Airlines worked out with the FAA a tailored approach to Miami International for flights from London Heathrow. The Center uplinks the approach two hours prior to landing. The Boeing 777 crew flies a constant descent at idle thrust. Projected savings: 1,000 to 2,000 pounds of fuel, reduced emissions. Plus greater safety. Wow! But just one of many examples.

Look -- commercial aviation is back on track today to grow at a steady annual average of 5 percent a year. The reality is our current ATC system can't handle that growth.

If this sounds familiar, it should. Many have sounded this warning. I did so right here before the Aero Club back in 2007, in my last speech as FAA administrator. I said then that we

had a solution – NextGen – but that to succeed it needed a few things, including a steady stream of funding and a strong commitment from government and industry.

The progress we've made in NextGen since 2007 – and we've made quite a bit – came despite expiration of FAA reauthorization that same year. Having spent time at the FAA, I can tell you the stop-and-start effect of 20 reauthorization extensions is no way to run a program that should be setting ATC standards for the rest of the world.

And, we as an industry have failed to commit as we should have to NextGen. We've differed on its benefits and the means of paying for it, particularly the onboard equipment that aircraft will need to use it. Now NextGen, like every other federal program, faces the knife.

The President's 2012 Budget Request proposed funding NextGen at \$1.24 billion – an increase of \$100 million from the proposed budget for this year. That's the funding level Congress should approve.

I said I had four steps: the second is preserving funding for the Defense Department and for NASA.

Despite its significant effort toward becoming more efficient, the Defense Department is being asked to do more. Americans are rightfully proud of our 1.5 million men and women in uniform. We also can be confident that the weapons they use are the best in the world and give them the unparalleled battlefield advantage that has been key to U.S. defense strategy since World War Two.

As outgoing Secretary Gates indicated, our advantage can erode quickly when we stop making sustained investments at a sufficient level.

AIA in May completed a report on defense investment, which we have shared with Congress and the administration. It concluded that -- with our military's worldwide mission and our strategy of advantage through technology – procurement and R&D spending should be maintained at \$200 billion, or roughly 35percent of the DOD budget — about the level it is today.

Now when it comes to NASA, we at AIA – like you -- were disappointed at the president's fiscal 2012 budget proposal, which underfunded NASA by nearly \$800 million below the authorized level of \$19.4 billion agreed upon just last fall.

But given the current fiscal environment, the president's proposal does give NASA at least the minimum required for its important programs. The Congress should fund a 2012 NASA budget of \$18.7 billion. That funding should reflect the budget priorities outlined in the NASA Authorization Act of 2010.

There is a great deal of uncertainty over the direction NASA will take—most specifically on the new heavy-lift space launch system. The long-delayed fiscal 2011 continuing resolution, the current budget crisis and the impending gap in America's ability to launch space crews—after decades of ever increasing capability—are taking their toll on the space industrial base and our skilled space workforce—they're already beginning to dissipate.

Fifty years after Alan Shepard became America's first man in space, two generations of Americans have never known a time when we were not engaged in human space flight. But that is a legacy, not an entitlement. Without continued investment, this could become the last generation of Americans to be members of a spacefaring society.

The third step I outlined concerns unmanned aerial systems, which clearly promise to be game-changers in this century. We need to integrate regular operations of them into the U.S. national airspace and ensure our manufacturers can compete for UAS sales abroad.

UASs have proved their prowess on the battlefield. The Defense Department's tactical UAS inventory has grown from 50 just 10 years ago to more than 7,000 today. As operations in Iraq draw down and UASs return home, the military will need a lot more airspace for training. That will require a more sophisticated solution than carving out and closing off chunks of airspace for training flights.

And their potential civil applications?

Just recently, when disaster relief officials needed answers on the damage to the tsunami-ravaged nuclear plant in Japan, they were able to fly a UAS over it. Pictures and video revealed details of the damage, while pilots were spared exposure to radiation.

Firefighting, studying crop usage and soil conditions are just a couple of other applications of UAS.

Now, we're working with the FAA and industry partners on the many issues involved in safely integrating UASs into civil airspace.

But largely unaddressed are the rules that block the export of American UASs.

Take, for instance, the Missile Technology Control Regime, a multilateral agreement that for 20 years has helped deter the spread of weapons of mass destruction. Over those two decades, UAS technology has evolved greatly and produced a number of systems that pose no threat for delivering WMDs. But the U.S. interpretation of the regime's policies is biased quite heavily against transfer or export of UAS technology. Denial is almost presumed.

We can't afford to have the emergent UAS industry fall prey to the same shortsighted export restrictions that all but killed the U.S. commercial satellite industry.

That brings me to my final point -- we're a global industry and to keep our U.S. leadership front and center, we've got to export more! It's critical to the business plans of most companies represented here. And that means the export control system -- which is central to that growth -- must be reformed.

With the economy recovering slowly, now is exactly the time to stop hamstringing U.S. exporters. Aerospace exports had a banner year in 2007; the U.S. shipped \$60.6 billion more in civil and defense aerospace products than we imported. But the numbers have dropped each year since. Last year, we produced an aerospace trade surplus of \$51.2 billion.

But hamstringing U.S. exporters is just what the current rules and policies do.

Those convoluted rules keep many small- and medium-sized companies from exporting. They fear criminal liability if they fail to adequately decipher those rules. A frequent question we hear from our members is, "Why is it easier to import than it is to export?" A fair question in light of the administration's goal to double exports in five years.

We're very supportive of that goal. We are working through the President's Export Council toward it. We applaud the administration's progress on identifying commercial, dual-use technologies to remove from the U.S. Munitions List and look forward to working with Congress

and the Administration toward comprehensive export-control reform as well as reauthorizing U.S. Export-Import Bank, a vital tool for increasing aerospace exports.

Globalization has benefited the world, but we've seen the benefits here at home many times over in our communities across the nation.

Remember Bob Maccormack? His CFD method made the export of advanced aircraft possible and promoted development of aircraft by other nations, increasing demand for aerospace components made throughout America.

The graduate students of the 1970s and 80s who studied and benefitted from his breakthrough are today's leaders of aerospace and defense. He helped them see and achieve a great future, and they have continued his legacy.

I'm confident that we too can continue that legacy and offer young Americans of today a great future. All of us at AIA look forward to working with you to help Congress make the best decisions in the months ahead, to sustain American aerospace leadership and keep us Second to None.

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