

**AVIATION SAFETY: FAA'S PROGRESS ON KEY  
SAFETY INITIATIVES**

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**HEARING**

BEFORE THE

**COMMITTEE ON COMMERCE,  
SCIENCE, AND TRANSPORTATION  
UNITED STATES SENATE**

**ONE HUNDRED THIRTEENTH CONGRESS**

**FIRST SESSION**

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**APRIL 16, 2013**  
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Printed for the use of the Committee on Commerce, Science, and Transportation



U.S. GOVERNMENT PUBLISHING OFFICE

94-798 PDF

WASHINGTON : 2015

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

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## **AVIATION SAFETY: FAA'S PROGRESS ON KEY SAFETY INITIATIVES**

**TUESDAY, APRIL 16, 2013**

U.S. SENATE,  
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,  
*Washington, DC.*

The Committee met, pursuant to notice, at 2:30 p.m., in room SR-253, Russell Senate Office Building, Hon. John D. Rockefeller IV, Chairman of the Committee, presiding.

### **OPENING STATEMENT OF HON. JOHN D. ROCKEFELLER IV, U.S. SENATOR FROM WEST VIRGINIA**

The CHAIRMAN. Good afternoon, ladies and gentlemen, this hearing will come to order. And hopefully, there'll be some Senators who arrive, but you've got the two best ones right here.

[Laughter.]

The CHAIRMAN. Let me make my statement.

Americans take the safety of their aviation system for granted. And they should. Given that, all too often, air travel is a difficult experience, safety is the last thing passengers need to worry about. There are certain expectations built into modern air travel. Airline passengers expect their pilot is experienced and rested, that their aircraft has been properly maintained and the air traffic controllers will guide their planes safely through the skies. But, the industry and regulators should never take the safety of the system for granted, nor should we. I know that none of us in this room take it for granted. Everyone here today is deeply committed to aviation safety. That's the job of many of you, and the interest of all of us.

Our strong aviation record did not happen overnight. Everyone involved has worked hard to cultivate a strong safety culture. The FAA, the aircraft manufacturers, and airline employees all hold safety as their number one priority, as do we.

Congress has spent a considerable amount of time in the last few years strengthening the FAA, really battling to strengthen it, financially and substantively. It was not easy, but we got it done. And the aviation system will become even safer because of the FAA Modernization Reform Act, that we did, in fact, pass last year, and the Airline Safety Act, which we did, in fact, pass in 2010.

As you are well aware, our goal was to make certain our aviation system continues to be the safest, most efficient and modern in the world. The FAA has made considerable progress implementing many of the safety initiatives in those bills, and the agency is to be commended for that effort. But, now all of the progress that the FAA has made is at risk.

Sequestration is not our friend, and it's affecting every aspect of the FAA's operations, or perceived operations, as people try to figure out what's going to happen. I also share my colleagues' frustration with the lack of transparency, frankly, on how the agency made this decision, and how it intends to implement budget cuts. A great deal of attention has been placed on the potential closure of 149 air traffic control towers, including four in West Virginia. I've expressed my concerns about the impact of closing those towers, on the airports and the communities, and they've expressed their concern to me, clearly. I know my colleagues share these concerns, and we will likely be discussing that today.

But, again, there is frustration from some of us about the lack of transparency on how the agency made this decision, how it intends to implement, generally, the budget cuts. We need to have a better understanding of the specifics. What I do know is that if we fail to reverse the decrease in FAA's budget, we will not have an aviation system that we need to compete in a global economy. I made that speech last week, and I'll probably make it again today. Why is it that we are so directly destroying our infrastructure and our possibilities of growth and modernization? It's incomprehensible, but there it is.

The hard choices that the FAA has to make to implement the sequester will only be magnified this October, when the next fiscal year begins. I know that the agency will never sacrifice safety, but it will be forced to limit every aspect of the system's operations. The implementation of NextGen will be delayed. That's awful, and dangerous. But, it's going to be delayed. Our aerospace industry will suffer as certification of new technology and equipment is slowed. More towers could be forced to close, and critical safety rulemaking, such as pilot training and qualification standards, will take longer.

One of the reasons I have so aggressively advocated for moving to a digital satellite-based system with the NextGen program is that it will make the system safer. I know that the FAA will never compromise safety. But, the erosion of FAA's budget directly impacts our ability to complete NextGen and other safety initiatives. Something has to give, somewhere. Our problem is, we don't know what that's going to be. It threatens our ability to make the continuous improvement to aviation safety that we have made since the Wright Brothers.

Unlike other transportation systems, we have a comprehensive plan to move our aviation system into the 21st century, but our unwillingness to raise sufficient revenues to pay for it means that we will fall further and further behind. You fight hard like we did last year and the year before, to move ahead. A bill passes, just barely; you get ahead. And then, all of a sudden, we're falling behind. We face difficult budgetary situations. We need to make the necessary investments in our transportation networks. I don't think anybody would dispute that. But, is it happening? No. Is there a possibility of this happening? Maybe. But not likely.

The United States has been the world's aviation leader for over 100 years. We risk that global leadership position if we're unwilling to continue to invest in it. You can't invest in something with goodwill, good wishes. It's called "revenue." It's called "money."

The situation with the lithium battery on the Boeing 787 is a perfect example of where the regulators identified a serious safety problem and acted swiftly to address it. The company and the FAA are evaluating solutions that I hope will soon be proven workable. Although the situation with the Boeing 787 has dominated the news, the FAA is currently working with the aviation community to actively identify and address potential risks before they result in an accident. The agency is working with controllers and pilots to increase reporting of errors so we can learn from our mistakes. We're putting the future safety of the system at risk if we're unwilling to sustain our commitment, if we are in the condition, that we are not willing to sustain our commitment to these critical effects.

Everyone agrees that these are vital programs, that they will directly improve the safety of the system. Do we really want to slow down these initiatives? I'm not willing to settle for the status quo on aviation safety. Maybe we'll have to. It's a terrible situation.

I will seek to maintain the necessary level of funding for the FAA and its critical missions as we continue our efforts to address our broader fiscal issues. I appreciate the budgetary situation is forcing the Federal Government to make difficult choices, but those choices still must be smart, driven by good policy and not damage our long-term economic competitiveness. It's a continued commitment to safety that makes the U.S. aviation system the safest in the world. We've seen that in recent months. Safety has to come above all else. There is no number two. There's only number one. And I'm confident, somehow—for what reason, I can't explain—that this is going to continue.

[The prepared statement of Senator Rockefeller follows:]

PREPARED STATEMENT OF HON. JOHN D. ROCKEFELLER IV,  
U.S. SENATOR FROM WEST VIRGINIA

Americans take the safety of their aviation system for granted. And, they should—given that all too often air travel is a difficult experience, safety is the last thing passengers need to worry about. There are certain expectations built into modern air travel. Airline passengers expect that their pilot is experienced and rested; that their aircraft has been properly maintained; and that air traffic controllers will guide their plane safely through the skies. But, the industry and regulators should never take the safety of the system for granted. I know that none of us in this room do; everyone here today is deeply committed to aviation safety.

Our strong aviation record did not happen overnight. Everyone involved has worked hard to cultivate a strong safety culture. The FAA, aircraft manufacturers, and airline employees all hold safety as their number one priority, as I do. Congress has spent a considerable amount of time in the last few years strengthening the FAA. It wasn't easy, but we got it done. And, the aviation system will become even safer because of the FAA Modernization and Reform Act we passed last year and the Airline Safety Act we passed in 2010.

As you are well-aware, our goal was to make certain our aviation system continues to be the safest, most efficient, and modern in the world. The FAA has made considerable progress implementing many of the safety initiatives in those bills, and the agency is to be commended for their effort. But, now all of the progress the FAA has made is at risk. Sequestration is affecting every aspect of the FAA's operations.

A great deal of attention has been placed on the potential closure of 149 air traffic control towers, including four in West Virginia. I have expressed my concerns about the impact of closing these towers on the airports and the communities that depend on them. I know my colleagues share these concerns and we will likely discuss this issue in detail here today. I also share my colleagues' frustration with the lack of transparency on how the agency made this decision and how it intends to implement the budget cuts. We need to have a better understanding of the specifics. What

I do know is that if we fail to reverse the decrease in the FAA's budget we will not have the aviation system that we need to compete in the global economy.

The hard choices that the FAA has to make to implement the sequester will only be magnified this October when the next fiscal year begins. I know that the agency will never sacrifice safety, but it be forced to limit every aspect of the system's operations. The implementation of Next Gen will be delayed, our aerospace industry will suffer as certification of new technology and equipment is slowed, more towers could be forced to close, and critical safety rulemakings such as pilot training and qualification standards will take longer. One of the reasons I have so aggressively advocated for moving to a digital satellite-based system with the NextGen program is that it will make the system safer.

I know that the FAA will never compromise safety. But, the erosion of FAA's budget directly impacts our ability to complete NextGen and other safety initiatives. It threatens our ability to make the continuous improvement to aviation safety we have made since the Wright Brothers. Unlike other transportation systems, we have a comprehensive plan to move our aviation system into the 21st Century—but our unwillingness to raise sufficient revenues to pay for it means that we will fall further and further behind.

We face difficult budgetary decisions. We need to make the necessary investments in our transportation networks. The United States has been the world's aviation leader for over 100 years—we risk that global leadership position if we are unwilling to continue to invest in it. The situation with the lithium battery on the Boeing 787 is a perfect example of where the regulators identified and acted swiftly to address a serious safety problem. The company and FAA are evaluating solutions that I hope will soon be proven workable.

It is also a perfect example of why the FAA and the industry cannot take safety for granted. With the ever-increasing complexity of aircraft and the air traffic control system, we need to make sure that our safety systems are advancing with the same speed of our technological innovation.

Although the situation with the Boeing 787 has dominated the news, the FAA is currently working with the aviation community to actively identify and address potential risks before they result in an accident. The agency is working with controllers and pilots to increase the reporting of errors, so we can learn from our mistakes. We are putting the future safety of the system at risk if we are unwilling to sustain our commitment to these critical efforts.

Everyone agrees that these are vital programs that will directly improve the safety of the system. Do we really want to slow down these initiatives? I am not willing to settle for the status quo on aviation safety. I will seek to maintain the necessary level of funding for the FAA and its critical missions as we continue our efforts to address our broader fiscal issues.

I appreciate our budgetary situation is forcing every the Federal Government to make difficult choices, but those choices still must be smart, driven by good policy, and not damage our long-term economic competitiveness. It's a continued commitment to safety that makes the U.S. aviation system the safest in the world. We've seen that in recent months—safety has to come above all else. And I am confident that this will continue.

The CHAIRMAN. I call upon my distinguished Ranking Member and good friend, John Thune.

**STATEMENT OF HON. JOHN THUNE,  
U.S. SENATOR FROM SOUTH DAKOTA**

Senator THUNE. Thank you, Mr. Chairman. And thank you for holding this important hearing.

Aviation safety has to be the FAA's top priority, and it's certainly a top priority of this committee. Today's hearing is a good opportunity to review the FAA's progress on a host of aviation safety issues, including mandates from both the Airline Safety and FAA Extension Act of 2010 and the FAA Modernization and Reform Act of 2012.

The first of these laws, enacted in response to the tragic loss of life related to Colgan flight 3407, included several safety reforms for the airline industry. The FAA has made progress in imple-

menting some of these reforms; most notably, the issuance of the flight and duty time rule for airline pilots. However, several initiatives are either behind schedule or otherwise incomplete.

In particular, I hope that Administrator Huerta will be able to give the Committee an update on the pilot qualifications rule-making, as well as a progress report on the agency's effort to develop the pilot records database, as directed by the law. I also look forward to hearing from the Department of Transportation's Office of Inspector General, which has been tracking the FAA's efforts to meet the requirements of the Airline Safety Act.

Most recently, Congress enacted the FAA Modernization and Reform Act of 2012, which included additional provisions to improve safety. Among other things, the law directed the FAA to develop a strategic plan to address runway safety. The Government Accountability Office has found that the rate of runway incursions has trended steadily upwards in recent years, and the National Transportation Safety Board has again placed improving the safety of airport surface operations on its "Most Wanted List." I look forward to hearing from all of our witnesses about ongoing efforts to increase the safety of our runways and what remains to be done.

Of course, we cannot examine aviation safety without discussing the recent incidents involving the Boeing 787 Dreamliner. While the NTSB continues searching for the root cause of the battery failures that led to a grounding of the jets, the FAA has now approved Boeing's proposed certification plan that will, hopefully, address factors that likely contributed to the failures. I understand testing of the design changes have been completed, and FAA is analyzing the results. I'm eager to hear about the current status of the two ongoing efforts, as well as an assessment of what this case says about how the two entities work together.

Finally, much has been made and said in recent months regarding the potential impact of the sequestration spending reductions on aviation. While this is no surprise to many at today's hearing, I'm concerned that, rather than sharpening their pencils and finding budget reductions that inflict as little pain as possible on the traveling public, the administration has threatened to close air traffic control towers, slow down air traffic, and furlough employees.

The President, the Secretary of Transportation, and the Administrator have all issued dire warnings about the possible impacts of the sequester. Now that the cuts are a reality, it is my hope that agency leaders will take a second look at plans to implement budget reductions in a way that minimizes impacts on the traveling public and the economy. Airspace users have paid billions in taxes and fees that support FAA operations, and they deserve better management of services provided.

This issue did not sneak up on anyone. During Administrator Huerta's confirmation process, the FAA failed to provide requested information to Congress and the American public about plans to carry out sequestration. This was true even after the President signed legislation into law last August that I authored, the Sequestration Transparency Act. And along with House Transportation Infrastructure Committee Chairman Schuster, I've sent three letters to the Department of Transportation over the past 6 weeks to

get detailed information about their sequestration plans. Last Thursday, Chairman Rockefeller and I sent a letter, also signed by Aviation Subcommittee Chairwoman Cantwell and Ranking Member Ayotte and our counterparts in the House, urging the FAA to target lower priority spending to avoid contract tower closures. Yet, despite my efforts and those of my colleagues, to get straightforward information on the administration's plan for sequester, here we are with a lack of clarity and very low confidence that the proposed actions—widespread furloughs and tower closures—are the best or only way forward.

A letter from Secretary LaHood, in response to only one of the letters, delivered late last night, leaves much to be desired in our efforts to gain more clarity on the decisions to close contract towers and the safety analysis conducted before administration officials decided to oppose closure of so many air traffic facilities. I hope Administrator Huerta will take today as an opportunity to directly answer questions on this important topic and to work with Committee members on the best way forward to implement the sequester reductions, which amount to only 2.4 percent of overall Federal spending for Fiscal Year 2013.

Again, I want to thank you, Mr. Chairman, for calling this hearing, and I thank all of our witnesses for their part in ensuring the highest level of safety for the traveling public. I look forward to your testimony.

[The prepared statement of Senator Thune follows:]

PREPARED STATEMENT OF HON. JOHN THUNE, U.S. SENATOR FROM SOUTH DAKOTA

Mr. Chairman, thank you for holding this important hearing. Aviation safety has to be the FAA's top priority, and it is certainly a top priority of this Committee.

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I hope Administrator Huerta will take today as an opportunity to directly answer questions on this important topic and work with Committee Members on the best way forward to implement the sequester reductions which amount to only 2.4 percent of overall Federal spending for FY 2013.

Again, I thank the Chairman for calling this hearing, and I thank all of the witnesses for their part in ensuring the highest level of safety for the traveling public. I look forward to your testimony.

The CHAIRMAN. Thank you, Senator Thune.

I would like to call, now, on Senator Cantwell and also on Senator Ayotte, in sequence, because they're both Chairman and Ranking Member of the Aviation Subcommittee, which is so important. Senator Cantwell.

**STATEMENT OF HON. MARIA CANTWELL,  
U.S. SENATOR FROM WASHINGTON**

Senator CANTWELL. Thank you, Mr. Chairman.

Before I get started, I just want to honor the victims of the horrific incident that happened in Boston. And I know that all Washingtonians, my Washingtonians, but all Americans, also stand with our friends in Massachusetts. Our thoughts and prayers go out to the victims of this senseless tragedy, and we honor the first responders, who helped protect the lives of innocent Americans.

And I want to thank you, Secretary Huerta, for the FAA's rapid response in quickly securing Boston's airspace, establishing temporary flight restrictions over the immediate vicinity of the explosion.

Mr. Chairman, thank you for holding this important hearing. And it has just been over a year since we passed the FAA Mod-

ernization Reform Act, and there is a lot to do and talk about when it comes to safety.

I want to thank the witnesses today, especially Administrator Huerta and Chairwoman Hersman, for updating me constantly on the FAA and the NTSB's review of the 787 battery issue. I appreciate the intensity and focus that both of your agencies have provided for the important aviation issues, and I look forward to continuing being updated on this issue.

I also want to thank Mr. Guzzetti for his technical assistance on the medical safety legislation, when you were at NTSB, several years ago, and Mr. Dillingham, for your institutional knowledge on aviation issues. They're very welcome.

While we're here today to talk about key safety initiatives, there is also a lot to talk about when it comes to sequestration and the impacts on safety and operations of over 200 air traffic towers slated for closure. I appreciate my colleague's effort, Senator Moran, to try to restore funding. In my home state, eight towers are on the closure list, and these closures cause major disruptions. For example, at Felts Field, in Spokane, which is an area that serves both air medical services for four states, and also Paine Field, in Everett, which is the hub of a large aerospace manufacturer, these tower closures would have an impact. So, I hope, Mr. Chairman, we can resolve these issues.

Mr. Chairman, prior to your chairmanship, you were the Chairman and Ranking Member of the Aviation Subcommittee for more than a decade. And, during that time period, you left a legacy of achievements on aviation safety. As a testament to the work of this Committee and the work of key agencies and industry players, there have been no major domestic crashes of major airlines in more than a decade. And, in response to the smaller Colgan crash that has been referred to by my colleagues, your Committee held nine hearings, and passed meaningful reform legislation in 2010. Some of that has been implemented, but other parts require final action. For one, the FAA must implement the rules required by your legislation, including pilot qualifications, pilot training, pilot mentoring and professionalism, database issues, and other safety aviation issues, including ensuring that regional carriers meet the same safety standards as major airlines, addressing the air traffic controller fatigue issues, reducing operational errors, and including runway incursions, improving general aviation safety, completing the medical safety rules, integrating unmanned aerial vehicles, and improving the voluntary reporting system. And we also must remember that there are a number of safety initiatives in the NextGen system, so as we move forward on that.

But, last month, the NTSB released its interim factual report on a key issue, the lithium ion battery incident aboard the Boeing 787, at Logan Airport, operated by Japan Airlines. And next week, the NTSB will be holding a symposium on that issue. The FAA has been performing a comprehensive review of the 787's critical systems, focusing on the electrical system. And, since April 8, the FAA has been evaluating Boeing's test results on the modified battery. So, the NTSB ongoing investigation is important, and the interim factual report provides information regarding the incident at Logan

Airport, including descriptions of the damage and components, and planned ongoing investigations.

So, Mr. Chairman, I look forward to receiving these final reports and recommendations by all entities. And, like everyone else, we want these planes to return safely to flight. And yes, there are many people in the State of Washington—over 85,000 people, directly and indirect—thousands of others, indirectly, a part of the supply chain. I can guarantee you, they want to get it right.

The FAA and NTSB are doing their respective jobs on this issue, and I thank them for that, and the many hours that both of the agencies have put forth.

Mr. Chairman, I look forward to working with you on the myriad of these aviation issues over the next several months, but we both know and have talked about this—we want to continue to hold hearings on NextGen oversight, the proposed American Airlines/U.S. Airways merger, competitiveness in the aerospace manufacturing, development of airline strategies to foster industry growth, and maintaining and upgrading our important airport infrastructure. All of these issues are a part of our safety mechanisms, as well.

So, I thank you for holding this important hearing. I look forward to the witnesses' testimony today.

Thank you.

The CHAIRMAN. Thank you, Senator, very much.

Senator Ayotte.

**STATEMENT OF HON. KELLY AYOTTE,  
U.S. SENATOR FROM NEW HAMPSHIRE**

Senator AYOTTE. Thank you, Chairman Rockefeller. And I want to thank you for the opportunity to deliver an opening statement today.

I'm pleased that you decided to hold this hearing, and I want to thank all of our witnesses for being here.

And I would echo the sentiments of my colleague, Senator Cantwell, for the important work that you've done in the light of what's happened in Boston. And certainly, my thoughts and prayers are with all the victims in Boston and all those who, unfortunately, were there for a very positive event that was interrupted by such a horrific tragedy.

I want to begin my remarks, certainly, by expressing my excitement to serve as the Ranking Member on the Aviation Subcommittee, and I certainly look forward to working with Senator Cantwell as we have hearings on the topics that you've raised.

And I look forward to working with you, Senator Cantwell.

In this role, I certainly look forward, also, to working with Ranking Member Thune in making sure that we develop—and as well as the Chairman of the Committee—to develop sound policy prescriptions for many of the important issues that come before this subcommittee.

As everyone in the room understands, there are a number of significant safety issues facing both the industry and the traveling public, including, number one, which has already been mentioned, the impacts of sequestration. I will also be particularly interested to hear from Administrator Huerta on the FAA's response to the

sequester, including its decision to close the airports, that has already been discussed—excuse me—the air traffic control towers, like the one in at Warfield, in my hometown of Nashua, New Hampshire. I am also a cosponsor of legislation that would keep those towers open, the Protect Our Skies Act, but I have to wonder if whether—why we had to bring legislation to do this. And I would very much like to hear what the reasoning was for closing these control towers versus other areas of the budget, and finding savings to address sequestration, particularly the safety impact. I've already heard from those that are on the ground in Nashua, New Hampshire, of the potential impact of—if we were to close that control tower in my hometown.

The other issues that I think are very important for us to talk about today are the simultaneous investigations by the FAA and the NTSB into the Boeing 787 program. And I know we're all interested in learning about the status of these investigations by the NTSB and the FAA, and want to make sure that we understand what the path forward is to make sure that these—the Boeing 787 program can go forward safely. So, I appreciate hearing about that today.

As well as the FAA's implementation of several safety rules, including rules relating to pilot duty and rest and pilot training, while I was not a member of this body during the consideration of the Safety Act of 2010, I've certainly heard a fair amount of input from interested parties about the implementation of this Act. So, I look forward to hearing from the FAA about the implementation and status of its pending rulemakings.

After I was sworn in, just over 2 years ago, the first major piece of legislation on the Senate floor was the FAA reauthorization bill. Looking back, that was an important exercise in this body, in the sense that we thoroughly debated a major piece of legislation, considered amendments on both sides, and ultimately passed a reauthorization bill that was important to the safety of the American public. I hope, over the course of this Congress, with my colleagues, that we will find common ground to advance an aviation agenda that continues to keep our airports and carriers healthy and our airspace and the traveling public safe.

Thank you, Mr. Chairman. I look forward to hearing from our witnesses.

And I want to thank all of you for being here and for what you do for our country.

The CHAIRMAN. Thank you, Senator.

The four witnesses we have are the Honorable Michael Huerta, who's Administrator of something called the Federal Aviation Administration. It's a wonderful job. No stress whatsoever.

[Laughter.]

The CHAIRMAN. The Honorable Deborah Hersman, who is Chairman of the National Transportation Safety Board; Dr. Gerald Dillingham, Director of Civil Aviation Issues, the U.S. Government Accountability Office; and Mr. Jeffrey Guzzetti, Assistant Inspector General, Office of the Inspector General, United States Department of Transportation. I hope that was accurate.

Mr. Administrator, we're going to start with you.

**STATEMENT OF HON. MICHAEL P. HUERTA, ADMINISTRATOR,  
FEDERAL AVIATION ADMINISTRATION**

Mr. HUERTA. Thank you.

The CHAIRMAN. Welcome. Welcome, welcome, welcome.

Mr. HUERTA. Thank you. Good afternoon, Chairman Rockefeller, Ranking Member Thune, members of the Committee. Thank you for the opportunity to be here today to discuss the FAA's progress on key safety initiatives.

As you are aware, this is my first appearance before you as Administrator of the FAA. I appreciate the work of this Committee, and of the full Senate, in moving my confirmation forward. We have a great number of challenges and opportunities ahead, and I look forward to enhancing our productive working relationship.

The FAA's number one priority is safety. It's our mission, and we focus on it 24 hours a day.

First, let me briefly address the Boeing 787. The company has redesigned the internal battery components and conducted extensive testing. This includes limited test flights, without passengers, using the redesigned battery prototype. The FAA is currently reviewing these test reports and analysis to make sure that the 787's new battery system ensures the safety of the aircraft and its passengers.

Turning next to broader safety considerations, while aviation safety encompasses many technical issues, we cannot overlook the role of human beings in aviation, and how they interact with sophisticated technology. In the last few years, Congress has given us much guidance on how to advance aviation safety, and we have accomplished a great deal. The FAA overhauled flight and duty rules to guarantee that airline pilots have the opportunity to get the rest they need to operate safely, and we're increasing the required hours of experience a pilot must have before operating the controls of any airline flight. We're also finalizing a rule that requires more realistic training so that flight crews can better handle rare but serious scenarios.

The best way to enhance safety across the board is to improve the safety culture of an organization. Part of this effort involves self-reporting, by our own employees, on safety issues. We've put programs in place for air traffic controllers and aviation technicians to report a problem or even a mistake they may have made, and not fear retribution. This makes the system even safer.

We're taking many other actions to enhance safety across the board, including promoting safety management systems and sharing more data between industry and the FAA. By analyzing this data, we're able to identify trends and hazards across the airspace system and mitigate issues before something happens.

As you know, we're in a very uncertain and unpredictable fiscal environment. The sequester is requiring the FAA to make significant cuts in services and in investments. These cuts will impact air traffic control, NextGen implementation, and our certification services. We're exercising all options to reduce costs: a hiring freeze, cutting contracts, cutting travel, and other items not related to day-to-day operations.

One of our largest contracts is the Federal Contract Tower Program. We've notified 149 airports across the country that Federal

funding for their air traffic control towers will end in mid-June. These airports have lower activity levels; and, together, these contract towers handle less than 3 percent of the commercial operations nationally, and less than 1 percent of the passengers. Communities still have the option to keep their tower open if they're able to providing the funding, and the FAA stands ready to help them with that transition.

I want to emphasize that, as we undergo the difficult process of implementing the deep cuts required by the sequester, we refuse to sacrifice safety, even if this means less efficient operations. In addition to contract towers, large facilities will also be affected. To reach the figure we need to cut from our payroll, which is our largest operating cost, we have to furlough 47,000 of our employees for up to 11 days between now and September. The furloughs will reduce controller work hours at all airports with FAA towers, but also at radar facilities across the country. Again, safety is our number one concern. We will only allow the amount of air traffic that we can handle safely to takeoff and land. This means that travelers will need to expect delays. Today, we are meeting with air carriers to go over specific operational impacts related to the furloughs, facility by facility.

Furthermore, our aviation safety inspectors will have to focus their attention on the most pressing priorities, and will devote their time to overseeing current activities to ensure continued operational safety of the existing fleet. These activities will take precedence over new projects.

Our overarching principle in making these difficult decisions is to maintain safety and to offer the best air traffic services to the largest number of people, both now and in the future. It's my hope, and the hope of everyone at the Department of Transportation, that our leaders can work together to rally around our Nation's air transportation system and protect the great contribution that civil aviation makes to our economy.

Mr. Chairman, this concludes my prepared remarks, and I will be pleased to answer any questions you may have.

[The prepared statement of Mr. Huerta follows:]

PREPARED STATEMENT OF HON. MICHAEL P. HUERTA, ADMINISTRATOR,  
FEDERAL AVIATION ADMINISTRATION

Chairman Rockefeller, Senator Thune, members of the Committee:

Thank you for the opportunity to speak to you today. This is the first time I am testifying before you as the confirmed Administrator of the Federal Aviation Administration (FAA). I appreciate your support for my candidacy. It is a privilege to hold this position and I welcome the challenges that will come with it. I hope to enjoy a long and effective relationship with you and this Committee.

There are a number of important ongoing aviation safety-related initiatives that I know are of interest to this Committee. We are working hard to meet the future demands of aviation. From transitioning to the Next Generation of Air Transportation System (NextGen) to integrating Unmanned Aircraft Systems (UAS) into the national airspace system (NAS), the goals we are striving to meet are challenging, especially in light of the existing fiscal constraints. But our workforce is dedicated and very aware that achieving these goals are vital to FAA's ability to continue leading the world in aviation safety and innovation.

Just over a year ago, Congress passed and the President signed the Federal Aviation Reauthorization Modernization and Reform Act of 2012 (Reauthorization). As the returning members of this Committee may recall, passage of the bill followed a long odyssey that involved 23 extensions before a comprehensive bill was passed.

During that period, I spoke with Members individually about the impact the short-term extensions were having on our programs. The Airport Improvement Program (AIP) was adversely impacted without the stability of a long-term authorization. Airports across the country delayed the start of important capital projects due to the concern that funding was being authorized in very small amounts because of the short length of the extensions. As a consequence, during extension periods, airports were uncertain about committing to projects of all sizes, ranging from safety improvements to crucial infrastructure preservation to environmental impact mitigation, including sound insulation projects. Another impact to airport projects, as a result of multiple extensions was the inability of engineers, construction contractors, and material and equipment suppliers to place orders and conduct work. Reduced amounts of funding were made available in accordance with the short-term extensions, so committing to long-term investments was problematic. We very much appreciated the passage of a comprehensive authorization that promised important stability and predictability.

### **Sequestration**

Now, just over one year later, the benefits of reauthorization are in jeopardy due to the budget reductions imposed by sequestration. It is essential to the effective management of FAA's programs to have stability and predictability that can be relied upon. Sequestration places us in the position of even greater uncertainty than the days of multiple extensions. Our agency has been working hard to plan for and implement the required cuts in a way that does not materially jeopardize our ability to ensure the highest levels of safety. Seventy percent of FAA's Operations budget is dedicated to employee salaries and benefits, so they will bear a significant portion of the cuts. I can assure you that safety is the FAA's top priority. If sequestration means fewer flights can be safely accommodated in the NAS, then there will be fewer flights.

On April 10, I issued final furlough decision letters to over 47,000 employees. The furloughs generally will be on discontinuous days, approximately one day per bi-weekly pay period, for a maximum of 11 days between April 21 and September 30. We are also planning to eliminate midnight shifts in over 60 towers across the country starting this summer; cease Federal funding at 149 air traffic control towers at airports with fewer than 150,000 flight operations or 10,000 commercial operations per year starting June 15, and reduce preventative maintenance and equipment provisioning and support for all NAS equipment. All of these changes will be finalized as to scope and details through collaborative discussions with our users and our unions.

As a result of employee furloughs and prolonged equipment outages resulting from lower parts inventories and fewer technicians, travelers should expect significant delays. We are aware that these service reductions will adversely affect commercial, corporate, and general aviation operators and the travelling public.

Beyond the impacts to air traffic, aviation safety employees will also experience furloughs that will impact airlines, aviation manufacturers, and individual pilots who need FAA safety approvals and certifications. While the agency will continue to address identified safety risks, slowed aircraft certification and operations approval processes due to furloughs could negatively affect all segments of the aviation industry.

It is unfortunate that many of the positive benefits of the long-term reauthorization are being undermined by sequestration.

### **FY 2014 Budget**

The President released his FY 2014 Budget last week. The FAA's FY 2014 Budget request of \$15.6 billion strikes a balance between maintaining current infrastructure while deploying key NextGen benefits to our stakeholders, upholding our critical safety programs, and modernizing our aviation infrastructure. Our request is \$351 million lower than FY 2012. This 2.2 percent decrease supports the President's effort to reduce the deficit. Approximately half of our funding request is devoted to maintaining and improving the agency's safety programs. This includes the ability to perform safety inspections and carry out rulemaking and certification activities to move NextGen and commercial space initiatives forward.

The budget requests \$9.7 billion to provide the operation, maintenance, and support of our air traffic control and air navigation systems, ensure the safe operation of the airlines and certify new aviation products, ensure the safety of the commercial space transportation industry, and provide overall policy oversight and management. This represents an increase of just 0.6 percent from the FY 2012 enacted level. This includes \$1.2 billion to continue to promote aviation safety by regulating and overseeing the civil aviation industry and continued airworthiness of aircraft,

as well as certification of pilots, mechanics, and others in safety management positions. The \$2.8 billion Facilities & Equipment (F&E) request enables FAA to meet the challenge of both maintaining the capacity and safety of the current national airspace while keeping a comprehensive asset modernization and transformation effort on track. The \$166 million requested for Research, Engineering, and Development (RE&D) supports the continuation of work in both NextGen and other research areas such as environmental research, safety research in areas such as fire research, propulsion and fuel systems, unmanned aircraft, advanced materials research, and weather research. And the \$2.9 billion request for Grants-in-Aid for Airports focuses Federal grant funding on smaller commercial and general aviation airports that do not have access to additional revenue or other outside sources of capital. This is coupled with a proposed increase to Passenger Facility Charges, from the current maximum of \$4.50 to \$8.00, thereby giving commercial service airports greater flexibility to generate their own revenue. Finally, in the Operations, F&E and RE&D requested amounts, we have included \$1.002 billion for the NextGen portfolio, an increase of \$67.2 million, or approximately 7 percent, above the FY 2012 enacted level. This level of program funding enables the FAA to continue to support near-term NextGen commitments in a budget-constrained environment.

### **Boeing 787**

Turning to another matter that has received a great deal of attention, I would like to update you on the status of the review of Boeing 787's lithium batteries. On March 12, FAA approved Boeing's certification plan for the 787 battery system redesign. This was done after a thorough review of the proposed modifications, as well as the company's plan to demonstrate that the modified system will meet FAA requirements. Approval of the certification plan was the first step in the process to evaluate the 787's readiness for return to flight. It required Boeing to conduct extensive testing and analysis to demonstrate compliance with the applicable safety regulations.

The battery system improvements include a redesign of the internal battery components to minimize risk of a short circuit within the battery, better insulation of the cells, and the addition of a new containment and venting system. These added protections are expected to help prevent and contain smoke and fumes in the event that a battery does malfunction.

Boeing flew limited non-passenger test flights of two aircraft that had the prototype versions of the new battery containment system installed. The purpose of the test flights included validation of the aircraft instrumentation for the battery and testing of the battery enclosure, in addition to product improvements for other systems. Boeing completed all required tests and analysis to demonstrate that the new design complies with FAA requirements. The FAA is reviewing the test reports and analysis and will approve the redesign once we are satisfied Boeing has shown the redesigned battery system meets FAA requirements.

Aviation, from its very beginning, has stretched technological boundaries. Technological change in aviation comes in waves. For more than five decades, the FAA has compiled a proven track record of safely introducing new technology and new aircraft. As we continue to do this, I want to make one thing crystal clear. The FAA takes very seriously its responsibility to establish aircraft safety standards and certify new products and technologies.

As you know, we are moving forward with a review of the critical systems of the Boeing 787. When we have a concern, we will analyze it until we are satisfied. I am confident that the FAA has the expertise needed to oversee the Dreamliner's cutting edge technology. We have the ability to establish rigorous safety standards and to make sure that aircraft meet them. The best way to do this is to bring together the best minds and technical experts in aviation to work on understanding how these new systems work and how to establish and meet appropriate safety standards.

We enhance safety by keeping the lines of communication open between industry and government—by fostering the ability and willingness to share information about any challenges we might be facing. We want to create an atmosphere where people feel they can share what they know, all in the pursuit of safety.

We all want the same outcome. We want to harness advances in technology to produce safe aircraft. We will never lose sight of our respective roles, but that does not mean that there is not a seat at the table for bright minds from industry to help inform the best way to navigate the complex technological issues we encounter. It would be short-sighted to overlook anyone's valuable expertise.

### Reauthorization

As noted above, we were very happy when a comprehensive FAA reauthorization was passed last year. Reauthorization required over 200 separate deliverables, nearly half of which were due within the first year of enactment. FAA is on track to meet or has met approximately 80 percent of those action items. We have fully completed about half of the deliverables in the law. Now, as I'm sure you can appreciate, all action items are not created equal. Some are very complex and require a good deal of input from our workforce and industry partners. I believe that meaningful collaboration is the only way to achieve a workable path forward. Doing what we need to do to get the most effective work product is our goal, even if it means that certain deadlines are not met.

### Safety

Safety is FAA's number one mission. Nothing is more important. Our system has never been safer. There has not been a fatal commercial passenger accident in the United States since 2009. I am proud of the hard work that has gone into providing a basis for achieving this level of safety. We need to make aviation safer and smarter through risk based approaches. The only way to prevent accidents before they happen is to accurately identify risk areas and work to mitigate them. That is the reason we are working hard to improve runway safety areas (RSAs) at commercial service airports. Some of the RSA improvements include the installation of the Engineered Materials Arrest System (EMAS). This soft concrete block system has been installed in RSAs at 45 airports in the U.S. These EMAS systems have already stopped eight overrunning aircraft with no fatalities or serious injuries to passengers. Voluntary reporting for both FAA and industry employees, safety management systems (for both FAA and industry) and the creation of the Aviation Safety Whistleblower Investigation Office have also helped to prevent accidents. All of these efforts have been providing the agency with data and information to which we have never before had access. More information results in FAA being able to see trends and take action to mitigate the associated risks. Adjusting the safety culture to ensure employees that they can provide information without fear of reprisal is a cornerstone of our approach to safety.

Prior to Reauthorization, we had been working on the requirements of the Airline Safety and Federal Aviation Administration Extension Act of 2010. That act mandated rulemakings to revamp flight and duty time regulations to better address the issue of pilot fatigue, to increase the required number of hours of flight experience before a pilot can qualify to be a commercial pilot, and to revise pilot training to better simulate challenging conditions so that pilots can better handle serious, but rare situations. We completed the flight and duty time rulemaking just over a year ago, and plan to complete our work on the final pilot qualification rulemaking (the "New Pilot Certification and Qualification Requirements Final Rule") by August 2013 and pilot training (the "Qualification, Service, and Use of Crewmembers and Aircraft Dispatchers Final Rule") by October 2013. Reauthorization has since added a number of rulemaking requirements that we are also pursuing.

With respect to other safety directives in Reauthorization, FAA commissioned an Aviation Rulemaking Committee (ARC) to develop recommendations to improve our aircraft certification process: we delivered our Report to Congress on that effort in August of last year and have begun implementation of the report's recommendations. We also established an ARC consisting of government and industry experts to develop recommendations on improving the consistency of regulatory interpretations. We are in the process of finalizing a report informing Congress of the recommendations presented to the FAA.

Reauthorization also required a number of safety-related reports. We have delivered the report required on runway safety alert systems and the first annual report of the Aviation Safety Whistleblower Investigation Office summarizing the disclosures the office has received and how they were handled. In the upcoming weeks, we expect to issue reports on the National Service Air Carrier Evaluation Program, night vision goggles for helicopter pilots, improved pilot licenses, and limiting access to the cockpits in all cargo aircraft. We are also finalizing a report to Congress on common sources of distraction on the flight deck.

Pursuant to Congressional direction, we have also worked with the Occupational Health and Safety Administration (OSHA) to draft a statement of policy which permits some OSHA standards to be applied to improve workplace safety for aircraft cabin crew. We published a draft policy statement in the *Federal Register* in December of 2012 for comment, and are in the process of reviewing those comments.

Also in accordance with reauthorization, in October of last year, the FAA, in conjunction with the Department of State, issued a cable regarding international drug

and alcohol standards for foreign repair stations. An advanced notice of proposed rulemaking (ANPRM) is currently in executive review.

### **Delivering Technology**

Our goal in the area of delivering technology is to efficiently and sustainably deliver benefits to our stakeholders and society. One of the responsibilities of the Deputy Administrator is to serve as our Chief NextGen Officer, so that is one of many reasons I hope to appoint a Deputy relatively quickly.

Throughout Title II of the Reauthorization, there is a theme that modernization of the system must be done in collaboration with our industry partners. FAA wholeheartedly agrees with this concept. Imposing technological changes without the input of the users would be a recipe for failure. We continue to engage through our work with Optimization of Airspace and Procedures (OAPM) initiatives, which are being done in close collaboration with industry and stakeholders. OAPM is actively working in nine of the 13 metroplexes identified in Phase 1 of the program. Of these, one of the metroplexes (Houston) is currently in the implementation phase with two additional sites (Washington, D.C., and North Texas) planned to start implementation of the new procedures later this summer, depending on how sequestration impacts this plan. The metroplex initiative optimizes procedures in a geographic area where there are a number of airports, rather than focusing on each airport separately. Through this initiative, we are untangling our busiest airspace and creating more direct routes, cutting fuel, and becoming more environmentally friendly. In the congested airspace in the skies above our busiest metropolitan areas, these new modifications are being put in place in three years, much more quickly than the five to ten years it had taken previously. We are also actively engaged with our industry and government partners in the development of NextGen through the NextGen Advisory Committee (NAC). This group is helping to guide many aspects of our air traffic modernization work. The NAC also works with FAA on developing and tracking performance metrics and advising on the technical challenges of one of the new categorical exclusion provisions included in Reauthorization.

Reauthorization also provides FAA with the ability to consider using operational and financial incentives for commercial and general aviation operators to equip their aircraft with NextGen technology. We are actively engaging aircraft operators and potential private partners to assess interest and receive feedback on equipage incentive programs and how use of this authority could attract additional investment in NextGen technologies and training.

FAA has completed a departure queue management pilot program that was required in the statute in order to continue to advance plans to enhance surface management at airports. Also, in accordance with Reauthorization, we have issued guidance for AIP funding eligibility that supports the importance of sustainability initiatives in the way that airports do business, and we expect to issue further guidance in 2013. We have also initiated a new study on the National Plan of Integrated Airport Systems, which is a long-established process for identifying strategic investments. The new study will ensure we are making the best use of available data in supporting our decisions to advance safety, capacity, efficiency, and sustainability initiatives.

Finally, in February, pursuant to Reauthorization, the FAA requested proposals for interested state and local governments, eligible universities, and other public entities to develop six Unmanned Aircraft Systems (UAS) test sites around the country, which will gather information to help inform research, development, operational and privacy issues. We expect to select the six sites by the end of the year. These sites will conduct critical research that will help determine how best to integrate UAS into the NAS. Once the sites are operational, we expect to learn how UAS operate in different environments and how they impact air traffic operations. I know this Committee is very interested in UAS integration. Use of the six sites will provide us with essential information to facilitate integration of UAS into the NAS and to address outstanding issues, such as privacy. Prior to finalizing the FAA's UAS five-year "Roadmap", the FAA is coordinating the roadmap with other UAS stakeholder agencies and ensuring alignment of that roadmap with the Joint Planning and Development Office's Interagency Comprehensive UAS Plan.

### **Empower and Innovate FAA's Workforce**

In the current fiscal climate, we have to find a way for FAA's employees to work smarter and enhance our productivity. You tasked us to undertake a thorough review of each program, office, and organization within the agency. Our report on FAA Review and Reform highlights 36 initiatives to improve and update processes, eliminate duplication and waste, and make the agency more efficient and effective. The

initiatives identified cover many aspects of our operations and include improvements to cost analysis, governance, acquisition processes, standard operating procedures, and human resources. Of the 36 initiatives, 16 have been implemented and 20 are in progress. In addition, we are actively engaging our employees in the development of recommendations for facilities consolidation and realignment.

At your direction, we are looking closely at improvements to staffing and training for our employees. Four studies are underway looking at frontline manager staffing, technical training and staffing, air traffic controller staffing and air traffic training and scheduling. Due to the requirement to produce the plan by March 31, 2013, the interim workforce plans we submitted last month do not reflect the potential effects of sequestration. The FAA will adjust the actual staffing and hiring forecasts to reflect future funding levels as they become available. Finally, in accordance with Re-authorization, we developed staffing standards and scheduling plans for New York City and Newark air traffic control facilities. We are in the process of considering impacts of sequestration to staffing concerns.

### **Develop and Fund the Efficient FAA of the Future**

FAA must not only meet our day to day responsibilities, we must also look to the future and figure out how to shape the agency to meet the demands and opportunities of the future. As noted earlier, the U.S. aviation system is going through significant, even revolutionary changes. NextGen is a major transformation which will increase our efficiency and safety, reduce delays and reduce fuel consumption. UAS have the potential to change the face of aviation. In the midst of these changes, budget pressures are making us ask hard questions about what the FAA needs to deliver in the coming years to ensure the safety and efficiency of the NAS and how to do it most cost-effectively.

In addition, we will face major changes in our workforce in the coming years. About one third of FAA employees will be eligible to retire starting in 2014. So for us, succession planning remains a crucial aspect of the agency's focus, and we realize that we will begin to lose a vast amount of corporate knowledge in the coming years. To prepare for that, we must impart this knowledge to today's emerging leaders and experts to ensure a successful agency in the 21st century. We need to embrace innovation and to work efficiently.

Efficiencies are not just for the future. Given the economic challenges we are facing, FAA has worked very hard to find cost savings and we have been quite successful. In Fiscal Year 2012, FAA efficiencies and cost cutting resulted in \$81 million in savings.

Prior to sequestration, we have set a target of \$91 million in cost savings for Fiscal Year 2013. We recognize that the status quo is not an option and we will continue to strive to achieve additional efficiencies moving forward.

Finally, we must chart innovative and collaborative ways to engage with all segments of the aviation sector, from airlines to association groups, to general aviation, to unions. We must embrace the opportunity to make long-lasting changes together that ensure a vital and vibrant aviation industry that serves the needs of this Nation.

### **Advance Global Collaboration**

The world is increasingly interdependent, so international collaboration is essential if we want to move forward effectively. FAA needs to continue to work with international partners to improve global aviation safety and sustainability. This effort will require us to improve the harmonization and interoperability of new technology with international aviation standards and procedures to improve safety on a global basis. We need to work to ensure the roadmaps agreed to by the International Civil Aviation Organization (ICAO) to advance communications, navigation, and surveillance improvements for global air navigation are compatible with our NextGen concepts and implementation and our domestic regulatory plan. We are working at ICAO to find practical and collaborative solutions to address aviation's greenhouse gas emissions and are encouraged by the European Union decision to "stop the clock" on application of their emissions trading system on foreign airlines. Our international partnership will require us to develop and begin to implement a strategic plan for technical assistance, training, and other activities to maximize the value of FAA's expertise and United States resources. The FAA is committed to working proactively with countries around the world to create the initiatives and achieve the outcomes we need in the areas of safety, air traffic management, and the environment to foster a safe, efficient and sustainable global aviation sector.

### **Conclusion**

Let me conclude by saying that it is essential to the effective management of FAA's programs to have stability and predictability that can be relied upon. The

many extensions over the last few years took a toll on FAA's work in certain areas. Now we face an even more extreme uncertainty under sequestration. All of us in this room want the same things. We want to get better at what we do, think smarter, improve safety, streamline processes, and remain the agency that can work collaboratively with the world to develop safer and more efficient practices. Sequestration will not stop us from trying to attain these goals, but it will make it much, much harder.

Mr. Chairman, this concludes my statement. I will be happy to take questions at this time.

The CHAIRMAN. Thank you, Mr. Administrator.  
And now, the Chair of NTSB, Deborah Hersman.

**STATEMENT OF HON. DEBORAH A.P. HERSMAN, CHAIRMAN,  
NATIONAL TRANSPORTATION SAFETY BOARD**

Ms. HERSMAN. Good afternoon, Chairman Rockefeller, Ranking Member Thune, and members of the Committee.

I appear before you today during one of the safest periods in the history of U.S. commercial aviation. Since the 2009 Colgan air crash near Buffalo that killed 50 people, some 3 billion passengers have traveled safely on U.S. airlines.

Despite the lack of accidents in U.S. commercial aviation, we cannot be complacent. Today, the NTSB continues to investigate the January 7 Japan Airlines 787 battery fire at Boston's Logan International Airport. In the more than 3 months since that incident, the NTSB has dedicated significant resources to the investigation. Here is what we know:

There were multiple internal short circuits in cell 6 of the battery that initiated a thermal runaway, which progressed to neighboring cells.

On March 7, the NTSB published an interim factual report and released hundreds of pages of investigative material.

Last week, we held a forum to explore the use of lithium ion battery technology across all modes of transportation. We learned that these batteries are everywhere, and that they can be very safe. But, risks must be managed and mitigated.

Next week, we will be holding an investigative hearing to focus on the design and certification of the 787 battery system. We will continue to provide factual updates on the progress of our work.

My full testimony provides more detail on needed safety improvements regarding pilot training, distraction, and airport surface operations, but let me highlight for you this afternoon two areas of civil aviation that have not realized the safety gains of the air carriers, and discuss the use of data, an invaluable safety tool.

The first area: Helicopter Emergency Medical Services, or HEMS. Currently, we are investigating 11 HEMS accidents. Six of those have occurred since December. HEMS operations are high-pressure. Lives are on the line, and decisions about whether to launch, or not, must be made quickly. Conducting a thorough risk assessment, improving training, weather monitoring, and adding additional safety equipment can help ensure the safety of these flights.

A second area of concern is general aviation, which accounts for nearly 1,500 accidents per year, and results in nearly 500 fatalities annually. What is especially tragic is that we see the same types of accidents over and over again, and so many of them are entirely

preventable. Improving the safety of GA is on the NTSB's most-wanted list of transportation safety improvements. As part of our education and outreach to decrease these accidents, the Board met last month to examine chronic problems that we see in general aviation. We've developed five safety alerts to pinpoint hazards and provide practical remedies. These safety alerts have been provided to you with my testimony.

Finally, at the NTSB, we continue to use and encourage the development of new sources of data and information to support our safety analysis. We have seen a very positive trend in collaborative efforts between regulators and the aviation community to generate and share data and information which can improve safety.

But, let me be clear, the absence of accidents does not mean that our work is done. Safely defying gravity thousands of time each day requires constant vigilance.

I look forward to answering your questions.

[The prepared statement of Ms. Hersman follows:]

PREPARED STATEMENT OF HON. DEBORAH A.P. HERSMAN, CHAIRMAN,  
NATIONAL TRANSPORTATION SAFETY BOARD

Good afternoon Chairman Rockefeller, Ranking Member Thune and Members of the Committee. I appear before you today during the safest period of U.S. commercial aviation history. Although significant technological advances, new and important statutory mandates and regulatory changes, and more comprehensive crew training have greatly contributed to aviation safety, it was not that long ago—36 years ago last month—that the world's most deadly aviation accident occurred in Tenerife, Canary Islands, when two jumbo jets collided on the airport runway, killing a total of 583 passengers and crewmembers. Since that disaster, the aviation industry has made steady progress in improving safety and advancing technology quickly. There have been significant technological advances, new and important statutory mandates and regulatory changes, and more comprehensive crew training—all greatly contributing to the current level of aviation safety.

Yet, also at this time the National Transportation Safety Board (NTSB) is investigating a battery incident that led to the grounding of the 787 fleet by the Federal Aviation Administration (FAA). (The FAA has not grounded a fleet since 1979.) Concurrent investigations of two separate, but similar incidents involving 787 batteries are occurring in the United States and Japan—the coordination and sharing of information with our international investigative partners is going well.

Today, I will discuss current aviation safety issues being addressed by the NTSB, including our continuing investigation of the Boeing 787 battery smoke and fire event in Boston, airport surface operations, general aviation safety, helicopter emergency medical service (HEMS) operations, pilot training and distraction, flight and duty time, and the recent Memorandum of Understanding between the NTSB, FAA, and various aviation industry organizations to share deidentified aggregate safety information to help prevent accidents.

**The NTSB's Most Wanted List and Aviation Safety**

The annual Most Wanted List identifies the NTSB's top advocacy priorities for improving transportation safety. The current list identifies the following five aviation safety-related issues:

- Improve Safety of Airport Surface Operations, discussed further below
- Improve General Aviation Safety, also discussed below
- Improve Fire Safety in Transportation
- Preserving the Integrity of Transportation Infrastructure
- Eliminate Distraction in Transportation, also discussed below

For the aviation safety issues identified in its Most Wanted List, the NTSB continues to work with the FAA, manufacturers, operators, labor organizations, airports, and aviation safety organizations to reduce the safety risks to the traveling public, crewmembers, and others. Also, although NTSB data show that it has classified 113 of its Recommendations to the FAA regarding safety issues identified in various NTSB Most Wanted Lists as "Open-Unacceptable Response," the FAA has

made steady progress in reducing the number of its overall open safety recommendations. During calendar year 2012, the FAA reduced by 7.7 percent its total number of NTSB open safety recommendations, and during the first three months of 2013 the FAA has further reduced the number of open safety recommendations by 4.5 percent compared to end of 2012. I am also heartened that Administrator Huerta has made the FAA's reduction in the number of open NTSB safety recommendations a major priority for the agency.

#### **Boeing 787 Battery Fire and Smoke Incident at Boston's Logan International Airport**

On January 7, 2013, a Japan Airlines (JAL) Boeing 787 was parked at the gate at Boston's Logan International Airport after completing a flight from Narita, Japan, when a member of the cleaning crew discovered smoke in the rear of the cabin. At about the same time, a maintenance manager in the cockpit observed the automatic shut down of the auxiliary power unit (APU), which was providing power to the aircraft at the time. A mechanic opened the rear electronic equipment bay, which is only accessible from outside the aircraft, and reported finding heavy smoke in the compartment and flames coming from the front of the APU battery case which housed a lithium ion battery. Airport firefighters were called to the plane and worked to contain the heat generated by the battery for 1 hour and 40 minutes.



Figure 1. Smoke emanating from the aft electronic equipment bay. Source: *Boston Herald*.

As indicated above, fire safety was placed on the NTSB's Most Wanted List of transportation safety improvements in November 2012. For that reason, among others, the NTSB responded to the JAL event by sending investigators to evaluate the aircraft in Boston. About a week later, a similar event occurred while an All Nippon Airways 787 was in flight over Japan. The NTSB is investigating the JAL event and the Japan Transport Safety Board (JTSB) is investigating the ANA event, however both agencies are cooperating and sharing investigative information.

The lithium ion battery is comprised of 8 cells, and the nominal charge of each cell is 3.7 volts. Flight data recorder data show that about 36 seconds before the APU shut down, the voltage began to fluctuate and dropped from a full charge of 32 volts to 28 volts 7 seconds before the shutdown.

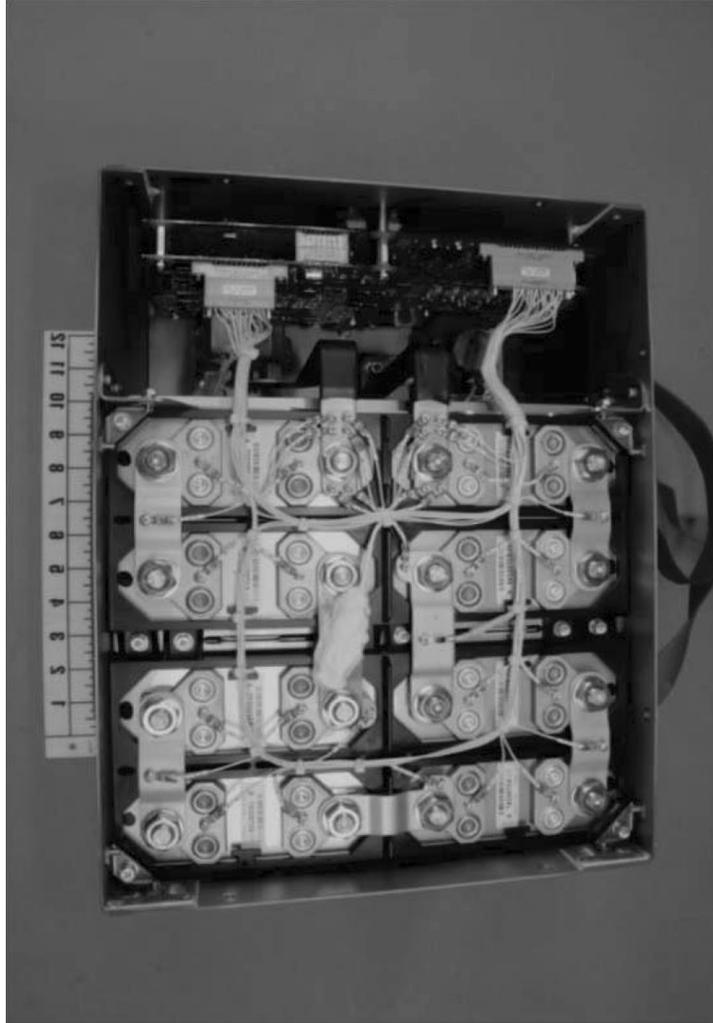


Figure 2. 787 Exemplar battery.

In the JAL event, each of the 8 cells experienced some thermal damage, and investigators believe there were multiple short circuits in battery cell 6 that started a thermal runaway that progressed throughout the battery. The side of the battery where cell 6 is located had the most extensive damage. All 8 cells have vent discs, which rupture when the internal pressure in a cell increases to a predetermined level. Seven of the eight discs ruptured, and the cell with the unopened vent disc lost electrolyte liquid.

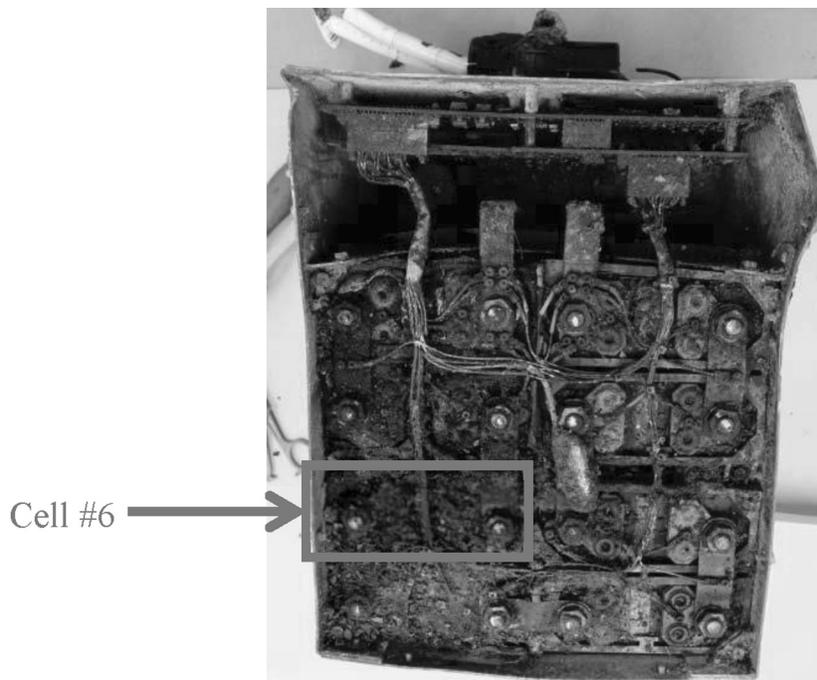


Figure 3. Damaged APU battery highlighting cell 6, the source of the short circuit.

In its notice of proposed Special Conditions for the Boeing 787 airplane issued in 2007, the FAA indicated that large, high capacity, rechargeable lithium ion batteries were a novel or unusual design feature in transport category airplanes. The FAA noted that this type of battery has certain failure, operational, and maintenance characteristics that differ from those of the nickel-cadmium and lead-acid rechargeable batteries approved at that time for installation on large transport category airplanes. As such, the FAA approved the use of these batteries by issuing nine special conditions to provide a level of safety equivalent to existing airworthiness regulations. Boeing performed a series of tests to demonstrate that the battery complied with the conditions and would not pose a higher safety risk. It was determined that the probability of a smoke event was once in every 10 million flight hours. However, as of January 16, 2013, when the FAA issued its airworthiness directive grounding the 787 fleet, the fleet had accumulated less than 52,000 in-service flight hours and had two smoke events involving its lithium ion batteries.

The NTSB continues to devote significant resources to its investigation of the Boston incident. We continue to serve as the accredited representative to the JTSB investigation of the January 15, 787 battery incident in Japan. Recently, NTSB has tested exemplar batteries and cells. Also, investigators travelled to the battery manufacturer to observe the manufacturing process and interview personnel, and staff has met with Thales Avionics Electrical System of France, the company with which Boeing contracted to design and manufacture the 787 electrical power conversion subsystem.

Last week, the NTSB held a public forum on lithium ion batteries in transportation. We learned that lithium ion batteries are becoming more prevalent in the various transportation modes, national defense, and space exploration. Panelists stated that because of their high energy density and light weight, these batteries are natural choices for energy. These benefits, however, also are the source of safety risks. We also heard about manufacturing auditing, robust testing, and monitoring and protection mechanisms to prevent a catastrophic event. Next week, we will hold an investigative hearing on the design, certification, and manufacturing process for the 787 lithium ion battery system. We will continue to provide factual updates as our investigation of the Boeing 787 battery fire incident proceeds.

### Airport Surface Operations

While we have seen a reduction in airborne accidents, surface operations remain problematic, and this is the reason that Airport Surface Operations is on the NTSB's Most Wanted List. Safety of Airport Surface Operations includes runway incursions, runway excursions, runway confusion, and collisions with other aircraft and/or airport vehicles.



Figure 4. Southwest Airlines Flight 1248, Runway excursion and collision during landing at Chicago, Midway International Airport, December 8, 2005.

The NTSB has over 20 open safety recommendations to the FAA addressing airport surface safety, including 6 that we have classified as “Open-Unacceptable Response.” These recommendations are as recent as September 2012 as well as dating back to 2000 and address a myriad of subjects that include ground safety movement systems for flight crews, wing tip clearance safety systems, enhanced wind dissemination information to flight crews, and pre-landing distance assessments.

### General Aviation Safety

As I stated earlier, the U.S. commercial aviation system is experiencing an unprecedented level of safety. General aviation (GA) fatality rates have shown little movement in spite of efforts to improve safety. There have been about 1,500 GA accidents per year for the past decade. Although GA represents about 51 percent of the estimated total flight time of all U.S. civil aviation, it accounted for 97 percent of fatal accidents in 2010.<sup>1</sup> The NTSB determines the probable cause of all 1,500 of these accidents, and one thing we have learned is that unfortunately, the same factors continue to cause most of the accidents.

<sup>1</sup><http://www.ntsb.gov/doclib/reports/2012/ARA1201.pdf>



Figure 5. Sioux Falls, SD general aviation accident, December 9, 2011.

The leading causes of GA accidents are loss of control, engine failure, flying in conditions that are beyond the pilot or aircraft's abilities, and collision with terrain. GA is essentially an airline or maintenance operation of one, which means the entire aviation community must work harder to reach each pilot or mechanic who populates this community to address these issues and ensure this deadly cycle is broken. GA Safety is on the NTSB's Most Wanted List for the second year in a row in order to bring attention to the issue.

Within the last year, the Board has issued a number of safety alerts as a way to reach the GA community to highlight many of these high risk issue areas. For example, to address the risks associated with flight into severe weather, the NTSB issued a safety alert to raise awareness in the GA community about the latency of NEXRAD weather images; that the age of the actual data used to generate the weather images on the display could differ significantly from the age indicated on the display screen. Just last week, we held a Board meeting to discuss GA safety and issued 5 new safety alerts, which are included with my testimony. The NTSB's purpose in issuing these safety alerts is to increase awareness, education, and training for private pilots and aviation maintenance technicians. The alerts are brief information bulletins that pinpoint particular safety hazards and offer practical remedies to address these risks. They will also serve to focus the NTSB's GA outreach efforts during the coming year. The specific alerts are:

- “Reduced Visual References Require Vigilance”
- “Prevent Aerodynamic Stalls at Low Altitude”
- “Is Your Aircraft Talking to you? Listen!”
- “Mechanics: Manage Risks to Ensure Safety”
- “Pilots: Manage Risks to Ensure Safety”

Additionally, over the past several years, the NTSB has conducted several GA safety studies. In 2012, we examined experimental aircraft, which represents about 10 percent of the GA fleet but represent a higher proportion of GA accidents. The NTSB recommended expansion of documentation requirements for initial aircraft airworthiness certification, verification of the completion of Phase I flight testing, improvement of pilots' access to transition training, encouragement of the use of recorded data during flight testing, ensuring that buyers of used experimental aircraft receive necessary operating and performance documentation, and improvement of aircraft identification in registry records. In a study of airbag restraints in GA aircraft, the NTSB concluded that aviation airbags can mitigate occupant injuries in some severe but survivable crashes. In 2010, the NTSB looked at “glass cockpits” in GA, which are the newer electronic displays in some planes. The results of this

study suggest that the introduction of glass cockpits has not yet resulted in a measurable improvement in safety when compared to similar aircraft with conventional instruments. There is a need to ensure pilots have system specific knowledge to safely operate aircraft with glass cockpit avionics and to capture maintenance and operational information to assess the reliability of glass cockpit avionics.

We will continue our efforts to improve the safety record of general aviation and look forward to finding new and innovative ways to communicate this message to more pilots and mechanics.

#### **Helicopter Emergency Medical Service (HEMS)**

Helicopter EMS operations provide an important service to the public by transporting seriously ill patients or donor organs to emergency care facilities. The pressure to safely and quickly conduct these operations in various environmental conditions (for example, inclement weather, at night, and unfamiliar landing sites for helicopter operations) has the potential to create more risk for HEMS than other passenger operations.

The NTSB has issued more than 20 safety recommendations during the past 13 years to the FAA to improve the safety of these operations and conducted a 4-day public hearing on HEMS safety in February 2009. In 2010, the FAA issued a notice of proposed rulemaking (NPRM) to address many of the NTSB's recommendations, such as the carriage of safety related equipment, flight data recorders, operational requirements, better weather monitoring and reporting, development and implementation of safety management systems and flight-risk evaluation programs, including training, and amendments to load manifest requirements for single-engine Part 135 operations.

Section 306(a) of the FAA Modernization and Reform Act of 2012 (Pub. L. 112-95) required the FAA to complete this rulemaking by June 1 of last year. Unfortunately, that rulemaking has stalled.

Last week, on April 9, the NTSB held a Sunshine Act public meeting to discuss the crash of an EMS helicopter on August 26, 2011, near Mosby, Missouri that resulted in the deaths of the pilot, flight nurse, flight paramedic, and the patient. The NTSB determined that the probable causes of this accident were the pilot's failure to confirm that the helicopter had adequate fuel onboard to complete the mission before departing on the mission's first leg, his improper decision to continue the mission and make a second departure after he became aware of a critically low fuel level, and his failure to successfully enter an autorotation when the engine lost power due to fuel exhaustion. Contributing to the accident were (1) the pilot's distracted attention due to personal texting during safety-critical ground and flight operations, (2) his degraded performance due to fatigue, (3) the operator's lack of a policy requiring that an operational control center specialist be notified of abnormal fuel situations, and (4) the lack of practice representative of an actual engine failure at cruise airspeed in the pilot's autorotation training in the accident make and model helicopter.



Figure 6. HEMS accident in Mosby, MO, August 26, 2011.

Currently, the NTSB is investigating 12 HEMS accidents, including 6 that have occurred since December. We see the same problems in our accident investigations and believe that if the following recommendations are incorporated in to HEMS operations, they will be safer.

- Operate under Part 135 rules
- Establish Operations Control Centers (OCC)
- Perform recurrent training and testing of OCC personnel
- Improve HEMS pilot training
- Perform more stringent weather evaluations
- Require flight risk evaluation programs
- Install safety equipment on HEMS helicopters (terrain awareness and warning systems, night vision imaging equipment, autopilots, recorders, radio altimeters, 406 MHz emergency locator transmitter, water safety equipment)
- Receive regular instrument flight training
- Establishment of Safety Management Systems for HEMS operators
- Better airspace infrastructure for low altitude helicopter operations

#### **Pilot Training and Distraction**

The last U.S. commercial aviation accident occurred on February 12, 2009, while Colgan Air flight 3407 crashed on approach to the Buffalo Niagara International Airport in Buffalo, NY. As a result of that accident investigation, the NTSB made pilot training recommendations, some of which Congress included in the Airline Safety and Federal Aviation Administration Extension Act of 2010 (Pub. L. 111–216). The NTSB called for crew training requirements, establishment of mentoring and professionalism programs, and a pilots' records database. In the Colgan Air flight 3407 accident investigation, we found that industry changes—including two-pilot cockpits and the advent of regional carriers—had resulted in opportunities for pilots to upgrade to captain without having accumulated significant experience as a first officer in a Part 121 operation. Without these important opportunities for mentoring and observational learning, which characterize time spent in journeyman pilot positions, it was difficult for a pilot to acquire effective leadership skills to manage a multicrew airplane.

Also as a result of the NTSB's investigation of both Northwest Flight 188 that overflowed their destination of Minneapolis because they were distracted by their laptops and the Colgan Air Flight 3407, we issued a safety recommendation to the FAA to amend the Federal Aviation Regulations to require Part 121, 135, and 91 subpart K operators to incorporate explicit guidance to pilots prohibiting the use of personal portable electronic devices on the flight deck. The Congress mandated that the FAA promulgate a rule which would prohibit the use of personal wireless communications devices and laptop computers by flight crewmembers during all phases of flight in Part 121 operations. The FAA is required by the statute to issue a final rule implementing the prohibition no later than February 2014. I would note that the FAA issued an NPRM for this requirement this past January. The NTSB recently submitted comments to the docket in support of the proposed rule but recommended that the final rule incorporate the broader scope of its February 2010 safety recommendation by expanding the proposed rule to Part 135 and 91 subpart K operators.

#### **Flight and Duty Time**

For more than 20 years, the issue of reducing accidents caused by fatigue was on the NTSB's Most Wanted List of safety improvements. We removed fatigue from our Most Wanted List in November 2012 to acknowledge the new flight and duty time rules enacted by the FAA. For the first time, the new rule recognizes the universal factors that lead to human fatigue such as time of day, length of duty day, workload, whether an individual is acclimated to a new time zone and the likelihood of being able to sleep under different circumstances. However, we remain concerned that the new rule does not apply to cargo pilots. Fatigue is fatigue, whether you transport passengers or pallets; it degrades every aspect of human capability. Another fatigue issue not addressed by the new rules is pilot commuting; a concern identified in the Colgan Air accident.

We have seen the effects of fatigue in too many of our accident investigations. We will continue working toward one level of safety throughout the industry.

#### **Aviation Safety Information Analysis and Sharing (ASIAS) System**

Aviation has experienced great improvements in safety due in part to embracing and understanding data. As I have pointed out in speeches over the past several years, "data saves lives . . . and, in this era of dynamic growth and greater complexity, data is more important than ever." Also, data collection, analysis, and dissemination are important international aviation safety issues. For example, the Safety Information Protection Task Force of the International Civil Aviation Organization (ICAO) has been looking at the various sources of safety information, the diverse requirements of member states regarding public transparency and personal privacy, and the different civil and criminal justice systems. The willingness of the FAA and the aviation industry to share data with the NTSB will have a direct positive effect on aviation safety and is consistent with a provision in the FAA Modernization and Reform Act of 2012 concerning public disclosure of aggregate, de-identified aviation safety information.

As a result of almost two years of discussions, the NTSB and the FAA and industry ASIAS Executive Board Co-Chairs signed a Memorandum of Understanding last November that outlines the procedures, guidelines, and roles and responsibilities for the ASIAS Executive Board to address specific written NTSB requests for ASIAS information.<sup>2</sup> The NTSB will initiate written requests for ASIAS information related to aircraft accidents involving U.S. air carriers that occur in the United States and address safety issues that both the NTSB and the ASIAS board determine are significant. The NTSB will not publicly disclose ASIAS information it receives via the process unless the ASIAS Executive Board agrees. In addition, the MOU requires the NTSB to share with ASIAS its archived air carrier accident and incident flight data recorder information related to a request.

<sup>2</sup>ASIAS began in 2007 and now has 44 airline members and receives voluntary data representing 95 percent of all commercial air carrier operations. It connects 131 data and information sources across the industry and is integrated into the Commercial Aviation Safety Team (CAST) process. CAST is a joint government and industry effort that uses a data-driven strategy to reduce the risk of commercial aviation fatalities. ASIAS uses aggregate, protected data from industry and government voluntary reporting programs, without identifying the source of the data, to proactively determine safety issues, identify safety enhancements, and measure the effectiveness of solutions. ASIAS is managed by an Executive Board and consists of representatives of various FAA offices, the National Aeronautics and Space Administration, U.S. military safety organizations (the latest membership summary shows USAF Safety Center and Naval Air Force Atlantic as government participants), commercial airlines, manufacturers, and labor organizations.

**Closing**

I appreciate the opportunity to appear before you today to discuss aviation safety and I am prepared to answer your questions.

The CHAIRMAN. Thank you very much, Chairwoman Hersman.  
And now, Dr. Gerald Dillingham, Director of Civil Aviation Issues, U.S. Government Accountability Office.

**STATEMENT OF GERALD L. DILLINGHAM, PH.D., DIRECTOR,  
PHYSICAL INFRASTRUCTURE ISSUES, U.S. GOVERNMENT  
ACCOUNTABILITY OFFICE**

Dr. DILLINGHAM. Thank you, Chairman Rockefeller, Ranking Member Thune, and members of the Committee.

First, I would also like to acknowledge that we are in the safest period of the modern aviation era. This outstanding achievement is attributable to the dedicated and skilled men and women at FAA working together with other key stakeholders, including manufacturers, operators, and the oversight of the Congress.

To build on this historic record, FAA is moving toward a greater reliance on proactive risk-based safety approach, with less reliance on a reactive or after-the-accident analysis of events. This afternoon, my statement focuses on the progress and challenges that FAA faces as it makes this shift.

The first is adapting its certification process to an ever-evolving aviation industry. And second is the collection and analysis of data that is critical for proactive risk management.

With regard to FAA certification processes, from our work we've found that, overall, FAA does an excellent job of following its processes. However, FAA must continue to address longstanding concerns, as well as emerging issues, about its certification processes. For example, industry has long expressed concerns about the variation in FAA inspectors' and designees' interpretation of standards of certification and approval decisions. This situation could be exacerbated in the future by factors such as the fiscal constraints on the government spending and the agency's ability to provide in-service training and attract the talent necessary to maintain up-to-date knowledge of industry changes.

For example, as aviation technology evolves, FAA will need new skills and tools to understand new aircraft or equipment during certification. The absence of these skills and tools could lead to delays in certification or misinterpretation of a regulation or a standard.

In addition, while FAA has worked to manage the certification workload with the use of designees, there have been some concern expressed about whether there is adequate oversight of the designees, particularly for the new Organizational Designation Authorities, or ODAs.

With regard to FAA's data collection and analysis for risk-management purposes, our studies have identified a number of areas where FAA's risk-based oversight could be improved. For example, our research has shown that adequate data about runway excursions are not being collected. Runway excursion can be just as dangerous as runway incursions. But, without these data, FAA cannot assess or mitigate the potential risk.

Similarly, the lack of complete data for incidents that occur in the ramp area, general aviation operations, and the inspection of initial pilot training activities limits FAA's oversight and ability to target its scarce resources and to understand the impact of its efforts to mitigate risk in these areas. For example, the rate and number of operational errors appears to have increased considerably in recent years. However, because of multiple changes in reporting policies and processes during that same time period, it makes it very difficult to know the extent to which the apparent increase in operational errors are due to more accurate reporting, an increase in the occurrence of incidents, or both.

In response to our recommendation, congressional mandates, in—on its own volition, FAA has efforts underway, or planned, to address each of the areas that I've identified, as well as others listed in our written statement.

I want to emphasize that these efforts will require sustained attention and oversight to ensure that the agency's ability to comprehensively and accurately assess and manage risk is not impaired.

In closing, Mr. Chairman, I would urge all stakeholders not to become complacent with the extraordinary safety record that has been achieved to date, and continue to do whatever may be necessary to make a safe system even safer.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Dillingham follows:]

#### **Why GAO Did This Study**

Even with nearly 80,000 flights each day within the national airspace system, there has not been a fatal commercial aviation accident in more than 4 years. The U.S. airspace system is arguably one of the safest in the world, with key aviation stakeholders—the FAA, airlines, airports, aircraft manufacturers, and the National Transportation Safety Board (NTSB)—working together to ensure these results.

As the Federal agency responsible for regulating the safety of civil aviation in the United States, FAA is responsible for, among other things: setting aircraft certification standards, collecting fleet and flight activity data, conducting safety oversight of pilot training and general aviation operations, and safely integrating aircraft into the national airspace. As the aviation industry evolves, FAA must remain diligent in its efforts to ensure the continued safety of aviation. In 2010, Congress passed the Airline Safety and Federal Aviation Administration Extension Act, which, in part, called for FAA to better manage safety risks.

This testimony focuses on (1) FAA's aircraft certification process and (2) FAA's use of data to enhance safety and improve aviation oversight. The testimony is based on GAO's previous work and updated with industry reports and information provided by FAA officials.

GAO has previously recommended that FAA address several data quality weaknesses. FAA concurred with most of these recommendations and has taken steps toward addressing some.

#### **Aviation Safety**

FAA EFFORTS HAVE IMPROVED SAFETY, BUT CHALLENGES REMAIN IN KEY AREAS

#### **What GAO Found**

The Federal Aviation Administration (FAA) is responsible for approving the design and airworthiness of new aircraft and equipment before they are introduced into service. FAA approves changes to aircraft and equipment based on evaluation of industry submissions against standards set forth in Federal aviation regulations and related guidance documents. In September 2011, we reported that, overall, FAA did a good job following its certification processes in assessing the composite fuselage and wings of Boeing's 787 against its airworthiness standards. However, the approval process—referred to as certification—presents challenges for FAA in terms of resources and maintaining up-to-date knowledge of industry practices, two issues

that may hinder FAA's efforts to conduct certifications in an efficient and timely manner. FAA is currently assessing its certification process and identifying opportunities to streamline it.

FAA plans to continue analyzing data reactively to understand the causes of accidents and incidents, and to augment this approach through implementation of a safety management system (SMS). SMS is a proactive approach that includes continually monitoring all aspects of aviation operations and collecting and analyzing appropriate data to identify emerging safety problems before they result in death, injury, or significant property damage. FAA has put in place various quality controls for its data; however, GAO has identified a number of areas where FAA does not have comprehensive risk-based data or methods of reporting that capture all incidents. The following are among the key areas GAO identified as needing improved data collection and analysis.

- *Runway and ramp safety.* Additional information about surface incidents could help improve safety in the airport terminal area, as data collection is currently limited to certain types of incidents, notably runway incursions, which involve the incorrect presence of an aircraft, vehicle, or person on a runway and certain airborne incidents, and does not include runway overruns, which occur when an aircraft veers off a runway or incidents in ramp areas, which can involve aircraft and airport vehicles.
- *Airborne operational errors.* FAA's metric for airborne losses of separation—a type of operational error—is too narrow to account for all potential risk.
- *General aviation.* FAA estimates of annual flight hours for the general aviation sector, which includes all forms of aviation except commercial and military, may not be reliable.
- *Pilot training.* FAA does not have a comprehensive system in place to measure its performance in meeting its annual pilot school inspection requirements.

FAA has taken steps to address safety oversight issues and data challenges in many of these areas. For example, FAA is planning to develop a program to collect and analyze data on runway overruns, but it will be several years before FAA has obtained enough information about these incidents to assess risks. Sustained attention to these data collection and analysis issues will be necessary to ensure that FAA can more comprehensively and accurately assess and manage risk.

PREPARED STATEMENT OF GERALD L. DILLINGHAM, PH.D. DIRECTOR, PHYSICAL  
INFRASTRUCTURE ISSUES, U.S. GOVERNMENT ACCOUNTABILITY OFFICE

Chairman Rockefeller, Ranking Member Thune, and Members of the Committee:

I appreciate the opportunity to testify today on the Federal Aviation Administration's (FAA) efforts to oversee aviation safety. Even with nearly 80,000 flights each day within the national airspace system (NAS), there has not been a fatal commercial aviation accident in more than 4 years, and although hundreds of fatalities continue to occur each year in general aviation,<sup>1</sup> the number of overall general aviation accidents has trended downward. The U.S. airspace system is arguably one of the safest in the world, with key aviation stakeholders—FAA, the airlines and other aircraft operators, airports, aircraft manufacturers, and the National Transportation Safety Board (NTSB)—working together to achieve these results. Nevertheless, we must not become complacent because of the extraordinary safety record that has been achieved to date. Congress, FAA, and other stakeholders must remain diligent in their oversight of aviation safety.

As the Federal agency responsible for regulating the safety of civil aviation in the United States, FAA is responsible for, among other things, setting aircraft certification standards and ensuring that manufacturers and suppliers meet those standards, collecting fleet and flight activity data, conducting safety oversight of pilot training and general aviation operations, and safely integrating aircraft and equipment into the national airspace. With air travel projected to increase over the next 20 years and agencies governmentwide experiencing budget reductions as part of the 2013 sequestration, it will be critical for FAA to apply its limited resources in a manner that will allow it to maintain and enhance the safety of the NAS. In 2010, Congress passed the Airline Safety and Federal Aviation Administration Extension Act (Airline Safety Act),<sup>2</sup> which, in part, called for FAA to better manage safety risks. While FAA and other stakeholders continue to address safety concerns in a

<sup>1</sup> General aviation includes all forms of aviation except scheduled air carriers and military.

<sup>2</sup> Pub. L. No. 111–216, 124 Stat. 2348 (2010).

reactive fashion by analyzing and investigating accidents and incidents, they have also begun to address safety issues in a more proactive fashion—before accidents or incidents occur. This proactive approach involves identifying, analyzing, and managing safety risks that are inherent throughout the system, and is being undertaken by FAA as part of its implementation of safety management systems (SMS). This risk-based oversight approach is becoming the standard throughout the global aviation industry and is recognized by aviation leaders, such as the International Civil Aviation Organization (ICAO), as the next step in the evolution of safety. In addition to SMS, FAA’s certification process attempts to ensure that safety is built into the aircraft and equipment used in the NAS.<sup>3</sup> While the agency has taken steps to improve its oversight approach, challenges remain in key areas.

My statement today highlights two areas that are important to FAA’s safety efforts: the certification process and the collection and analysis of risk-based data as part of SMS. This statement is drawn from a body of work that we have completed from June 2009 to October 2012 regarding FAA’s safety oversight efforts. We have updated this information through a review of FAA documents and interviews with FAA officials. A list of related GAO products is included at the end of this statement, along with footnoted references to these products throughout the statement. The reports and testimonies cited in this statement contain more detailed explanations of the methods used to conduct our work. This body of work was conducted in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

#### **Certification is a Key Component of FAA’s Aviation Safety Oversight**

Among its responsibilities for aviation safety, FAA issues certificates that approve the design and production of new aircraft and equipment before they are introduced into service; these certificates demonstrate that the aircraft and equipment meet FAA’s airworthiness requirements. FAA also grants approvals for such things as changes to air operations and equipment. Certificates indicate that the aircraft, equipment, and new air operators are safe for use or flight in the NAS. While industry stakeholders have expressed concerns about variation in FAA’s interpretation of standards for certification and approval decisions, stakeholders and experts that we interviewed for our 2010 report indicated that serious problems occur infrequently.<sup>4</sup> In addition, in September 2011 we reported that FAA did a good job following its certification processes in assessing the composite fuselage and wings of Boeing’s 787 against its airworthiness standards.<sup>5</sup>

The certification process also provides an example of how FAA is attempting to use a more proactive approach in finding solutions to a potential problem. In the case of flammability regulations that govern transport type aircraft, FAA has primarily developed its regulations on a reactive basis. That is, as accidents and incidents have occurred, their causes have been investigated, and the findings used to develop regulations designed to prevent the future occurrence of similar incidents or accidents. To supplement this oversight method, FAA has proposed a new, threat-based approach for flammability regulations that will base the flammability performance for different parts of the aircraft upon realistic threats that could occur in-flight or in a post-crash environment.

FAA recognizes the value of certification as a safety tool, however the agency faces some significant challenges, including resources and maintaining up-to-date knowledge of industry changes. According to a report from the Aircraft Certification Process Review and Reform Aviation Rulemaking Committee,<sup>6</sup> these certification challenges will become increasingly difficult to overcome, as industry activity is expected to continue growing and government spending for certification resources remains relatively flat. As one means of responding to its certification workload, FAA

<sup>3</sup> FAA issues certificates for new air operators, new aircraft, and aircraft parts and equipment, and approvals, based on the evaluation of aviation industry submissions against standards set forth in Federal aviation regulations and related FAA guidance documents.

<sup>4</sup> See GAO, *Aviation Safety: Certification and Approval Processes Are Generally Viewed as Working Well, but Better Evaluative Information Needed to Improve Efficiency*, GAO-11-14 (Washington, D.C.: October 7, 2010).

<sup>5</sup> See GAO, *Aviation Safety: Status of Action to Oversee the Safety of Composite Airplanes*, GAO-11-849 (Washington, D.C.: September 21, 2011).

<sup>6</sup> “A Report from the Aircraft Certification Process Review and Reform Aviation Rulemaking Committee to the Federal Aviation Administration: Recommendations on the Assessment of the Certification and Approval Process,” May 22, 2012.

relies on designees,<sup>7</sup> however, our prior work has shown that there are concerns that designee oversight is lacking, particularly with the new organizational designation authorities in which companies rather than individuals are granted designee status. There are also concerns that, when faced with certification of new aircraft or equipment, FAA staff have not been able to keep pace with industry changes and, thus, may struggle to understand the aircraft or equipment they are tasked with certifying.<sup>8</sup> SMS implementation within FAA should reduce certification delays and increase available resources to facilitate the introduction of advanced technologies. In response to a provision in the 2012 FAA Reauthorization, FAA is assessing the certification process and identifying opportunities to streamline the process.

### **Better Quality and More Complete Data Could Help FAA Further Improve Safety Oversight**

As we stated above, FAA plans to continue using data reactively to understand the causes of accidents and incidents, and is implementing a proactive approach—called an SMS approach—in which it analyzes data to identify and mitigate risks before they result in accidents. FAA is also overseeing SMS implementation throughout the aviation industry.<sup>9</sup> Safety management systems are intended to continually monitor all aspects of aviation operations and collect appropriate data to identify emerging safety problems before they result in death, injury, or significant property damage. Under SMS, which FAA began implementing in 2005, the agency will analyze the aviation safety data it collects to identify conditions that could lead to aviation accidents or incidents and to address such conditions through changes to FAA's organization, processes, management, and culture. As we reported in September 2012, according to FAA, the overarching goal of SMS is to improve safety by helping ensure that the outcomes of any management or system activity incorporate informed, risk-based decision making. FAA's business lines, such as the Air Traffic Organization and the Aviation Safety Organization, are currently at different stages of SMS implementation and it is likely that full SMS implementation will take many more years.<sup>10</sup>

SMS relies heavily on data analysis and, while FAA has put in place various data quality controls, it continues to experience data challenges including limitations with some of its analyses and limitations to or the absence of data in some areas.<sup>11</sup> Data limitations and the lack of data may inhibit FAA's ability to manage safety risks. For example, we found that some FAA data used in risk assessments may not be complete, meaningful, or available to decision makers. We have also reported that the agency currently does not have comprehensive risk-based data, sophisticated databases to perform queries and model data, methods of reporting that capture all incidents, or a level of coordination that facilitates the comparison of incidents across data systems. Furthermore, technologies aimed at improving reporting have not been fully implemented.<sup>12</sup> As a result, aviation officials managing risk using SMS have limited access to robust FAA incident data. Implementing systems and processes that capture accurate and complete data are critical for FAA to determine the magnitude of safety issues, assess their potential impacts, identify their root causes, and effectively address and mitigate them.

Our recent work on aviation safety and FAA oversight issues has identified a number of specific areas where FAA's risk-based oversight could be improved through improved data collection and analysis, including: runway and ramp safety, airborne operational errors, general aviation, pilot training, unmanned aircraft systems, and commercial space. FAA has taken steps to address safety oversight issues in many of these areas, including making changes to or committing to make changes to its data collection practices in response to our recommendations in most of these

<sup>7</sup> FAA delegates many certification activities to FAA-approved individuals and organizations (called designees) to better leverage its resources. FAA's designees perform more than 90 percent of FAA's certification activities.

<sup>8</sup> GAO-11-849.

<sup>9</sup> FAA is undertaking the transition to SMS in coordination with the international aviation community, working with the ICAO, an agency of the United Nations that promotes the safe and orderly development of international civil aviation worldwide, to adopt applicable global standards for safety management. ICAO requires SMS for the management of safety risk in air operations, maintenance organization, air traffic services, and airports as well as certain flight training operations and for organizations that design or manufacture aircraft within its member states.

<sup>10</sup> See GAO, *Aviation Safety: Additional FAA Efforts Could Enhance Safety Risk Management*, GAO-12-898 (Washington D.C.: September 21, 2012).

<sup>11</sup> On November 8, 2012, FAA signed a memorandum of agreement with NTSB that will allow for greater sharing of safety data between the two organizations.

<sup>12</sup> See GAO, *Aviation Safety: Enhanced Oversight and Improved Availability of Risk-Based Data Could Further Improve Safety*, GAO-12-24 (Washington, D.C.: Oct 5, 2011).

areas. Nonetheless, sustained FAA attention will be necessary to ensure that the agency's ability to comprehensively and accurately assess and manage risk is not impaired.

- *Runway and ramp safety.* Takeoffs, landings, and movement around the surface areas of airports (the terminal area) are critical to the safe and efficient movement of air traffic. In a June 2011 incident at John F. Kennedy International Airport in New York, for example, a jumbo jet carrying 286 passengers and crew almost collided with another jumbo jet, which reportedly missed a turn and failed to stop where it should have to avoid the occupied runway. Safety in the terminal area could be improved by additional information about surface incidents, which is currently limited to certain types of incidents, notably runway incursions and certain airborne incidents, but does not include runway overruns or incidents in ramp areas. Without a process to track and assess these overruns or ramp area incidents, FAA cannot assess trends in those areas and the risks posed to aircraft or passengers in the terminal area. FAA is planning to develop a program to collect and analyze data on runway overruns, something we recommended in 2011, but it will be several years before FAA has obtained sufficient information about these incidents to be able to assess risks.<sup>13</sup> FAA still collects no comprehensive data on ramp area incidents and NTSB does not routinely collect data on ramp accidents unless they result in serious injury or substantial aircraft damage. In 2011, we recommended that FAA extend its oversight to ramp safety and FAA concurred.
- *Airborne operational errors.* Operational errors —also referred to as losses of separation—occur when two aircraft fly closer together than safety standards permit due to an air traffic controller error. We reported that FAA's risk-based process for assessing airborne losses of separation is too narrow to account for all potential risk and changes in how errors are reported affect FAA's ability to identify trends. For example, FAA's current process for analyzing losses of separation assesses only those incidents that occur between two or more radar-tracked aircraft. By excluding incidents such as those that occur between aircraft and terrain or aircraft and protected airspace, FAA is not considering the systemic risks that may be associated with many other airborne incidents. FAA has stated that it is planning to include these incidents in its risk assessment process before the end of 2013, something we recommended in 2011.<sup>14</sup> In addition, FAA's changes to reporting policies affect its ability to accurately determine safety trends. For instance, we reported in October 2011 that the rate and number of reported airborne operational errors in the terminal area increased considerably since 2007.<sup>15</sup> However, multiple changes to reporting policies and processes in 2009 and 2010 make it difficult to know the extent to which the recent increases in reported operational errors are due to more accurate data, an actual increase in the occurrence of incidents, or both.
- *General aviation.* General aviation is characterized by a diverse fleet of aircraft flown for a variety of purposes. In 2010, FAA estimated that there were more than 220,000 aircraft in the active general aviation fleet, comprising more than 90 percent of the U.S. civil aircraft fleet. The number of nonfatal and fatal general aviation accidents decreased from 1999 through 2011; however, more than 200 fatal accidents occurred in each of those years. In October 2012, we reported that general aviation flight activity data limitations impede FAA's ability to assess general aviation safety and thereby target risk mitigation efforts.<sup>16</sup> For example, FAA estimates of annual general aviation flight hours may not be reliable because of methodological and conceptual limitations with the survey upon which flight activity estimates are based. These limitations include survey response rates below 50 percent. Without more comprehensive reporting of general aviation flight activity, such as requiring the reporting of flight hours at certain intervals, FAA lacks assurance that it is basing its policy decisions on an accurate measure of general aviation trends, and NTSB lacks assurance that its calculations of accident and fatality rates accurately represent the state of general aviation safety.

Lack of comprehensive flight hour data is an issue we have also identified in other segments of the aviation industry, including helicopter emergency medical

<sup>13</sup> GAO-12-24.

<sup>14</sup> GAO-12-24.

<sup>15</sup> The terminal area is the area around an airport extending from the airfield or surface to about 10,000 feet vertically and out to about 40 miles in any direction.

<sup>16</sup> See GAO, *General Aviation Safety: Additional FAA Efforts Could Help Identify and Mitigate Safety Risks*, GAO-13-36 (Washington, D.C.: October 4, 2012).

services (HEMS) and air cargo transportation. We recommended in 2007 and 2009 respectively that FAA take action to collect comprehensive and accurate data for HEMS and general aviation operations.<sup>17</sup> In 2011, we confirmed that FAA now annually surveys all helicopter operators and requests, among other things, information on the total flying hours and the percentage of hours that were flown in air ambulance operations. Our recommendations to FAA for air cargo and general aviation data remain unaddressed.

FAA's ability to further reduce the number of fatal general aviation accidents is hindered by a lack of key data on pilots. For instance, we reported in October 2012 that FAA does not maintain certain key information about general aviation pilots, including how many are actively flying each year and whether they participate in recurrent training in addition to FAA's voluntary training program. Without this information, FAA cannot determine the potential effect of the various sources and types of training on pilot behavior, competence, and link this to the likelihood of an accident. The lack of pilot data also makes it difficult to identify the root causes of accidents attributed to pilot error and determine how to mitigate risks. We recommended in 2012 that FAA expand the data available for root cause analyses of general aviation accidents by collecting and maintaining data on each certificated pilot's recurrent training and also that FAA should require the collection of general aviation flight hours.<sup>18</sup> FAA partially concurred with both of these recommendations and stated that it anticipates addressing these and other data collection concerns by September 30, 2014.

- *Pilot training.* There are about 3,400 pilot training organizations in the United States. For the most part, all pilot schools must provide training that includes both classroom and flight training. FAA has an annual inspection program that includes the oversight of pilot schools, pilot examiners, and flight instructors—gatekeepers for the initial pilot training process. Our 2011 analysis of FAA data indicated that FAA completed the large majority of the required inspections for the pilot schools that are certified by FAA, which generally supply most of the pilots that fly for scheduled commercial airlines.<sup>19</sup> However, the extent to which FAA undertakes required inspections for the thousands of remaining pilot training organizations, which may provide training to recreational pilots, is unclear. Our 2011 analysis of FAA inspection data found that, while FAA requires its inspectors to conduct on-site inspections of each of these schools and their pilot examiners at least once per year, the agency does not have a comprehensive system in place to adequately measure its performance in meeting its annual inspection requirements. Without complete data on active pilot schools and pilot examiners, it is difficult to ensure that regulatory compliance and safety standards are being met. In addition, it is unclear whether required inspections for pilot examiners were completed because FAA's data system lacks historical information. One potential implication is the quality of training that recreational pilot candidates receive, which could contribute to the many general aviation accidents in which pilot error is cited as a contributing factor.<sup>20</sup> In 2011, we recommended that FAA develop a comprehensive system to measure performance of pilot school inspections and noted that this recommendation may require modifying or improving existing data systems. In responding to our recommendation, FAA officials said they agreed that improvements in oversight data were needed and indicated that they believe efforts already in existence or under way address our recommendations.
- *Unmanned aircraft systems (UAS).* FAA and the National Aeronautics and Space Administration (NASA) are taking steps to ensure the reliability of both small and large UAS by working on certification standards specific to UAS and undertaking research and development efforts to mitigate obstacles to the safe and routine integration of UAS into the national airspace. Some of these obstacles include vulnerabilities in UAS operation that will require technical solu-

<sup>17</sup> See GAO, *Aviation Safety: Better Data and Targeted FAA Efforts Needed to Identify and Address Safety Issues of Small Air Cargo Carriers*, GAO-09-614 (Washington, D.C.: June 24, 2009); GAO, *Aviation Safety: Improved Data Collection Needed for Effective Oversight of Air Ambulance Industry*, GAO-07-353 (Washington, D.C.: February 21, 2007); and GAO-13-36.

<sup>18</sup> GAO-13-36.

<sup>19</sup> See GAO, *Initial Pilot Training: Better Management Controls Are Needed to Improve FAA Oversight*, GAO-12-117 (Washington, D.C.: November 4, 2011).

<sup>20</sup> According to our 2012 analysis of NTSB data, the pilot was a cause in more than 60 percent of the general aviation accidents from 2008 through 2010.

tions.<sup>21</sup> However, we found that these research and development efforts related to overcoming these obstacles cannot be completed and validated without safety, reliability, and performance standards for UAS operations, which FAA has not developed due to data limitations.<sup>22</sup> Standards for UAS operations are a key step in the process of safely integrating regular UAS operations into the national airspace.<sup>23</sup> Once standards are developed, FAA has indicated that it will begin to use them in UAS regulations; until then, UAS will continue to operate as exceptions to the regulatory framework rather than being governed by it.

- *Commercial space.* FAA also oversees the safety of commercial space launches that can carry cargo and eventually humans into space. FAA is responsible for licensing and monitoring the safety of such launches and of spaceports (sites for launching spacecraft).<sup>24</sup> However, FAA is prohibited by statute from regulating commercial space crew and passenger safety before 2015 except in response to a serious injury or fatality or an event that poses a high risk of causing a serious injury or fatality.<sup>25</sup> FAA has interpreted this limited authority as allowing it to regulate crew safety in certain circumstances and has been proactive in issuing a regulation concerning emergency training for crews and passengers. However, FAA has not identified data that would allow it to monitor the safety of the developing space tourism sector and determine when to regulate human space flight. To allow the agency to be proactive about safety, rather than responding only after a fatality or serious incident occurs, we recommended in 2006 that FAA identify and continually monitor indicators of space tourism industry safety that might trigger the need to regulate crew and passenger safety before 2015 and use it to determine if the regulations should be revised.<sup>26</sup> According to agency officials, FAA is working with its industry advisory group, the Commercial Space Transportation Advisory Committee, to develop guidelines for human spaceflight.

Chairman Rockefeller, Ranking Member Thune, and Members of the Committee, this concludes my written statement. I would be pleased to answer any questions that you may have at this time.

The CHAIRMAN. Thank you very much, Dr. Dillingham.

And now, Mr. Jeffrey Guzzetti, Assistant Inspector General, Office of the Inspector General, United States Department of Transportation.

**STATEMENT OF JEFFREY B. GUZZETTI, ASSISTANT  
INSPECTOR  
GENERAL, OFFICE OF THE INSPECTOR GENERAL,  
U.S. DEPARTMENT OF TRANSPORTATION**

Mr. GUZZETTI. Chairman Rockefeller, Ranking Member Thune, and members of the Committee, thank you for inviting me to testify on FAA's safety oversight efforts.

Like the other witnesses have just indicated, FAA operates the world's safest air transportation system. However, our audit work continues to identify opportunities for FAA to improve safety.

My testimony today is going to focus on three areas: One, the need for improved air traffic safety data collection and use; the

<sup>21</sup>These obstacles include the inability for UAS to sense and avoid other aircraft and airborne objects in a manner similar to manned aircraft and vulnerabilities in the command and control of UAS operations.

<sup>22</sup>See GAO, *Unmanned Aircraft Systems: Measuring Progress and Addressing Potential Privacy Concerns Would Facilitate Integration Into the National Airspace System*, GAO-12-891 (Washington, D.C.: September 14, 2012).

<sup>23</sup>FAA is required to issue a final rule for small UAS by August of 2014 at the latest under the FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, § 332(b) (2012).

<sup>24</sup>The National Aeronautics and Space Administration expects to procure from private launch companies two manned launches per year to the International Space Station from 2017 to 2020. To date, FAA has not licensed any commercial space launches carrying humans.

<sup>25</sup>Sec. 827, Pub. L. No. 112-95.

<sup>26</sup>See GAO, *Commercial Space Launches: FAA Needs Continued Planning and Monitoring to Oversee the Safety of the Emerging Space Tourism Industry*, GAO-07-16 (Washington, D.C.: October 2006).

need to strengthen risk-based oversight; and last, progress and challenges with implementing mandated safety requirements.

First, FAA has recently taken steps to enhance the data collection on air traffic safety risks, including controller and pilot errors that result in separation losses between aircraft. However, better data collection and analysis are needed before the agency can establish an accurate baseline of errors, identify the trends and root causes of those errors, and initiate strategies to prevent those errors. For example, we found that FAA does not analyze all separation losses that are obtained from their automated detection systems. FAA also does not validate the losses that are reported through its nonpunitive self-reporting system, known as ATSAP. Addressing these challenges will become even more critical as FAA integrates unmanned aircraft into the airspace system.

Second, FAA faces challenges to maximize the safety inspector resources that it needs to focus its oversight on the greatest risks. One challenge is for FAA to overhaul its staffing model so that the agency can accurately identify the number of inspectors it needs, and determine where they are needed most. Currently, their model is unreliable, due to a number of shortcomings with the data that it uses.

FAA also needs to ensure that inspectors are trained and equipped with effective tools to perform risk assessments of repair stations. In 2007, FAA implemented an oversight system to target higher-risk repair stations; however, our recent review indicates that inspectors do not always use the risk assessment process.

FAA also needs to ensure strong oversight of its program that delegates to private companies the authority to certify aircraft and components. Under this program, company representatives appoint individuals to perform this certification work on FAA's behalf, without FAA's concurrence. This delegation of authority reduces FAA's oversight role and could diminish the agency's awareness of appointees' qualifications and their performance history.

Finally, FAA has made important progress implementing mandated safety initiatives since the tragic Colgan accident. This includes advancing air carriers' use of voluntary safety programs. For example, as of January 2012, FAA data showed that 70 percent of Part 121 air carriers participated in at least one voluntary safety program, and that figure is rising. However, work remains to implement these programs at the smaller carriers. For example, only 12 percent of the carriers with fewer than 15 aircraft have flight data recording programs that monitor aircraft performance.

FAA also met an important congressional mandate by issuing a rule that imposes stricter rest periods for pilots. However, the new regulation does not address pilot commuting, a potential contributing factor to fatigue, which we recommended FAA thoroughly explore.

FAA has also encountered delays in issuing rules related to pilot qualifications, crew training, and mentoring programs. In addition, the agency must overcome obstacles to establish a pilot records database so that air carriers will have better background information on the pilots that they intend to hire.

Concerns also remain regarding implementation of safety management systems by small carriers, and information sharing between codeshare partners.

In conclusion, we will continue our reviews of FAA programs, and work with the FAA and the Department to ensure intended safety improvements are realized. While FAA has made significant progress in many areas, we remain concerned that serious controller errors, runway incursions, and other incidents are on the rise. To maintain a safe airspace system, FAA must improve its use of safety data, establish effective risk-based approaches for oversight, and fully address congressional mandates.

This concludes my statement. I would be happy to address any questions you or any other members have.

[The prepared statement of Mr. Guzzetti follows:]

PREPARED STATEMENT OF JEFFREY B. GUZZETTI, ASSISTANT INSPECTOR GENERAL FOR AVIATION AND SPECIAL PROGRAMS, U.S. DEPARTMENT OF TRANSPORTATION

Mr. Chairman and Members of the Committee:

Thank you for inviting me to testify on the Federal Aviation Administration's (FAA) progress on safety oversight initiatives. At the outset, let me state unequivocally that FAA operates the world's safest air transportation system. In addition, FAA has a number of initiatives under way to enhance safety in the National Airspace System (NAS). However, new legislated requirements and the need to improve how the Agency collects and uses safety data have created significant challenges for FAA. Our completed and ongoing work has identified opportunities for FAA to improve its safety oversight.

My testimony today will focus on FAA's (1) need for comprehensive data collection and analysis to enhance the safety of air traffic operations; (2) need to strengthen its risk-based oversight approach for repair stations and manufacturers; and (3) progress and challenges with implementing mandated safety requirements.

#### **In Summary**

Through voluntary safety programs such as the Air Traffic Safety Analysis Program (ATSAP), FAA has taken important steps to collect safety data on air traffic operations, including data on controller and pilot errors that create in-flight and ground collision risks. However, to accurately identify all safety incidents, analyze trends in safety risks, and address their root causes, FAA needs to refine its data collection approach by expanding and enhancing the reliability of its key data sources. FAA faces similar challenges with establishing an effective risk-based oversight system for repair stations and aircraft manufacturers. To target its surveillance to the highest-risk areas, FAA needs to better determine the number of inspectors it needs and where to place them, and ensure risk assessments are performed. Finally, despite commendable progress on implementing key elements of the Airline Safety and FAA Extension Act of 2010,<sup>1</sup> FAA continues to be challenged with meeting provisions for improved pilot training, qualification, and screening requirements, as well as advancing safety initiatives at smaller carriers.

#### **A Lack of Integrated Data Collection and Analysis Hinders FAA's Efforts to Enhance Air Traffic Safety**

Over the past several years, FAA has rolled out numerous initiatives to enhance the safety of air traffic control operations, but significant challenges continue to hinder these efforts. A top priority for FAA is to accurately count and identify trends that contribute to operational errors—events where controllers do not maintain safe separation between aircraft. FAA's ATSAP program—a voluntary, non-punitive system through which controllers can report safety incidents—has the potential to enhance safety, but system improvements are needed before the Agency can realize expected benefits. Other priorities that FAA must continue to address are

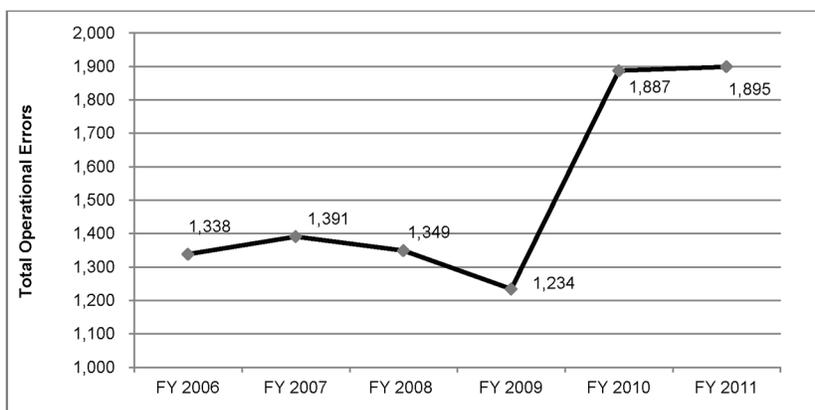
<sup>1</sup> Airline Safety and Federal Aviation Administration Extension Act of 2010, Pub. L. No. 111-216, August 1, 2010.

controller fatigue, runway incursions,<sup>2</sup> and wildlife hazards. Two significant safety-related challenges also remain: (1) FAA's progress in developing a safety data analysis system to proactively identify risk, and (2) introducing Unmanned Aircraft Systems (UAS) into U.S. airspace.

*Data Collection and Analysis Enhancements Are Needed To Identify and Mitigate the Root Causes of Separation Losses*

FAA statistics indicate that reported operational errors<sup>3</sup>—when required separation is lost due to a controller error—rose by 53 percent between Fiscal Years 2009 and 2010 (see figure 1). While total operational errors remained at these levels in 2010 and 2011, the most serious reported errors, those in which a collision was barely avoided, continued to increase, from 37 in Fiscal Year 2009, to 43 in Fiscal Year 2010, and 55 in Fiscal Year 2011. Further, since the beginning of Fiscal Year 2012, both the total and most serious number of reported operational errors appears to have increased.<sup>4</sup>

**Figure 1. Operational Errors for Fiscal Years 2006 Through 2011**



Source: OIG analysis of FAA data.

However, the reason these increases occurred is unknown. According to FAA, the increases are the result, in part, of its increased use of data in the Traffic Analysis and Review Program (TARP)—an automated system for detecting loss of separation incidents at terminal locations. However, as we reported in February 2013,<sup>5</sup> operational errors at the high altitude en route centers—which have had an automated system for detecting loss of separation incidents in place for years—have also increased from 353 in Fiscal Year 2009 to 489 in Fiscal Year 2010, suggesting that the increase in reported errors during this period was linked in part to a rise in actual errors.

In January 2012, FAA issued new policies and procedures for collecting, investigating, and reporting all separation losses. However, their effectiveness is limited by incomplete data and the lack of an accurate baseline on the number of separation

<sup>2</sup>FAA defines a runway incursion as any incident involving an unauthorized aircraft, vehicle, or person on a runway. Runway incursions are classified into three categories: (1) operational errors (when the actions of a controller cause an incident); (2) pilot deviations (when the actions of a pilot cause an incident); and (3) vehicle/pedestrian deviations (when the actions of a vehicle operator or pedestrian cause an incident). Serious runway incursions are those in which a collision was barely avoided.

<sup>3</sup>As of Jan 30, 2012, FAA no longer uses the term “operational errors” but instead tracks losses of separation as “occurrences.” Occurrences might not be an exact replacement for operational errors. Occurrences may include other types of losses of separation besides operational errors.

<sup>4</sup>We have calculated, based on FAA data, that the total number of operational errors may have increased up to 2,509 for Fiscal Year 2012, with the most serious errors increasing up to 275, but we are unable to state this is 100 percent accurate due to limitations in FAA data. Specifically, FAA stopped using the term “operational errors” in 2012.

<sup>5</sup>FAA's *Efforts To Track and Mitigate Air Traffic Losses of Separation Are Limited by Data Collection and Implementation Challenges* (OIG Report No. AV-2013-046), February 27, 2013. OIG reports and testimonies are available on our website at <http://www.oig.dot.gov/>.

losses. At the time of our ATSAP review last year,<sup>6</sup> approximately 50 percent of all ATSAP event reports<sup>7</sup> were classified as “unknown,” meaning they were not included in FAA’s Quality Assurance database when they were reviewed, and therefore may have been excluded.<sup>8</sup> Likewise, as we reported in February, FAA does not analyze and report all separation losses automatically flagged by TARP. Instead, FAA investigates only those losses of separation that are within less than 70 percent of the required separation distance.

*Significant Improvements to ATSAP Are Needed To Achieve Expected Program Benefits*

FAA implemented ATSAP reporting at all air traffic control facilities in October 2010 and continues to make needed improvements to the program. As of December 31, 2012, more than 58,000 reports have been collected through ATSAP. However, FAA’s methods for analyzing the data may not accurately identify root causes and safety trends. For example, causal factors are reported quarterly under ATSAP using general terms such as “actions or plans poorly executed” or “training in progress during event,” which are too broad to identify root causes and develop specific actions to mitigate them.

We identified other weaknesses in the ATSAP program. Improvements in these areas would enhance the Agency’s ability to identify and address risks through ATSAP. For example:

- FAA has not finalized the process to effectively communicate ATSAP data to air traffic facility managers so that safety improvements can be made at the facility level. By December 31, 2013, FAA plans to deploy a nationwide rollout of a pilot program to provide personnel at FAA facilities and offices access to ATSAP data.
- At the time of our review, FAA had not effectively communicated and implemented changes to performance management under ATSAP.
- Event Review Committees (ERC)<sup>9</sup> have accepted reports for ATSAP that do not adhere to ATSAP reporting criteria, and FAA lacks a process to review ERC decisions. For example, ERCs have accepted reports that concern air traffic controller conduct—rather than specific performance issues—such as a controller watching a personal video player while on duty. These types of conduct issues are inappropriate for inclusion in a confidential safety program such as ATSAP, and failure to adhere to the program’s reporting criteria may lead to the incorrect perception that ATSAP is an amnesty program.
- ERCs can refer reports that include conduct issues to FAA’s Professional Standards Program (PSP)<sup>10</sup> for peer counseling. However, the PSP does not require documenting corrective actions for accountability, transparency, and resolution. More importantly, final decisions regarding matters referred to the PSP are made, in many cases, by bargaining unit employees at the facility level rather than FAA management.

*FAA Is Making Changes to Its Scheduling Practices But Continues To Face Challenges in Mitigating Controller Fatigue*

A series of high-profile incidents in early 2011 involving controllers who were sleeping while on duty sparked public concern about controller fatigue and prompted FAA to institute a series of policy changes. These include placing an additional air traffic controller on the midnight shift at certain facilities and mandating a minimum of 9 hours off between evening and day shifts.

<sup>6</sup>Long Term Success of ATSAP Will Require Improvements in Oversight, Accountability, and Transparency (OIG Report No. AV-2012-152), July 19, 2012.

<sup>7</sup>Event reports identify actual or potential losses of separation, including operational errors, or other situations that may degrade air traffic safety.

<sup>8</sup>FAA changed how it categorizes event reports in January 2012. However, the committees that review ATSAP reports still do not contact facilities if they believe an event is unknown to management.

<sup>9</sup>ERCs consist of a member from the Air Traffic Organization, a controller union representative, and a member of FAA’s Air Traffic Safety Oversight Service. ERCs evaluate each report submitted to the program to determine whether it meets the established criteria for inclusion in the database. If so, the ERC accepts the report into ATSAP.

<sup>10</sup>PSP is defined in Article 52 of FAA’s 2009 Collective Bargaining Agreement with the National Air Traffic Controllers Association. It is designed to allow bargaining unit employees to address conduct and/or performance issues of their peers before such issues rise to a level requiring corrective action by the Agency.

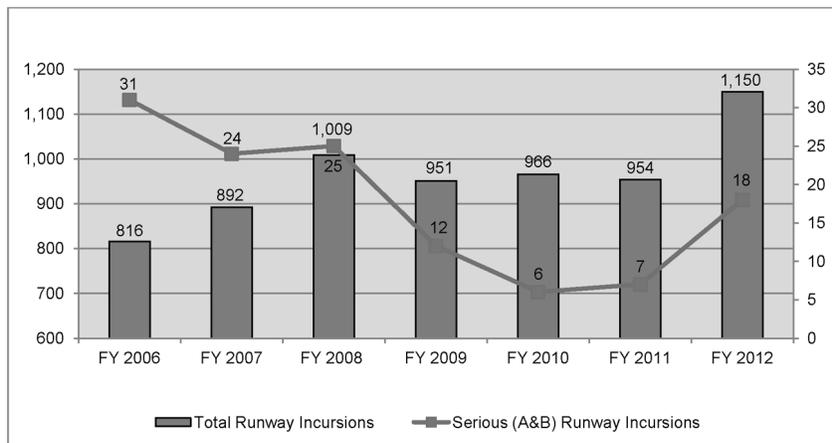
As directed by the FAA Modernization and Reform Act of 2012,<sup>11</sup> we are assessing these new controller scheduling practices with a focus on safety considerations during schedule development, the cost effectiveness of scheduling practices, and the impact of scheduling practices on air traffic controller performance.

*Sustained Focus on Efforts To Reduce Serious Runway Incursions Is Needed*

Reducing runway incursions—potential ground collisions—is a key performance goal for FAA that requires heightened attention at all levels of the Agency. As we noted in our report to this Committee in July 2010,<sup>12</sup> the number of the most serious runway incursions—incidents in which a collision was barely avoided—decreased after runway safety initiatives detailed in FAA’s August 2007 Call to Action plan were implemented.<sup>13</sup> However, between Fiscal Years 2010 and 2012, reported serious runway incursions tripled from 6 in Fiscal Year 2010 to 18 in Fiscal Year 2012.

Additionally, the total number of all runway incursions increased 21 percent between Fiscal Years 2011 and 2012, from 954 to 1,150, and the total number of incidents continues to increase. For the period of October through December 2012, total incursions increased by approximately 20 percent compared to the same period in 2011. (See figure 2.)

**Figure 2. Runway Incursions, Fiscal Year 2006 Through Fiscal Year 2012**



Source: OIG analysis of FAA data.

More concerning is that this increase occurred during a period when total air traffic operations declined by 1 percent (between Fiscal Years 2011 and 2012). As a result of these concerns, we plan to initiate another review of FAA’s Runway Safety Program next month.

Over the past several years, FAA has worked to deploy technology that could help prevent runway incursions. For example, in Fiscal Year 2011, FAA deployed the Airport Surface Detection Equipment-Model X (ASDE-X) system at 35 major airports. ASDE-X enhances runway safety by providing detailed information to air traffic controllers regarding aircraft operations on runways and taxiways. However, while ASDE-X is a step in the right direction, it does not provide alerts directly to pilots, which has been a longstanding recommendation by the National Transportation Safety Board (NTSB). To address this shortcoming, FAA is planning to integrate the use of ASDE-X with two other systems—Runway Status Lights (RWSL) and Automatic Dependent Surveillance-Broadcast (ADS-B)—to provide simultaneous alerts to controllers and pilots of potential ground collisions. Progress in achieving these enhancements will be impacted by a number of issues, such as establishing requirements for technical upgrades, testing to verify system integrity, and determining whether the ASDE-X capabilities will meet FAA’s goals of increasing capacity while

<sup>11</sup> Pub. L. No. 112-95 (2012).

<sup>12</sup> *Review of FAA’s Call to Action Plan for Runway Safety* (OIG Report No. AV-2010-071), July 21, 2010.

<sup>13</sup> Specifically, these incidents declined from 25 reported in Fiscal Year 2008 to 6 reported in Fiscal Year 2010.

improving safety. We have initiated an audit into this area to assess FAA's progress in integrating ASDE-X with other technologies such as RWSL and ADS-B to improve runway safety.

*FAA Must Step Up Its Efforts To Reduce Wildlife Hazards at or Near Airports*

The threat of wildlife hazards to aviation safety was evident in the January 2009 wildlife strike involving U.S. Airways Flight 1549 shortly after takeoff from LaGuardia Airport, which forced the flight crew to land the airplane in the Hudson River. In addition to creating major safety risks, strikes can cause significant downtime and damage to aircraft—estimated to be over 600,000 hours of aircraft downtime and \$625 million in damages annually. Over the past 2 decades, reported wildlife-aircraft strikes have quadrupled from 1,770 in 1990 to 9,463 in 2012.<sup>14</sup>

While FAA's Wildlife Hazard Mitigation Program seeks to reduce wildlife hazards, we recently reported that the Agency cannot fully assess how effective its policies and guidance are at reducing the number and severity of wildlife strikes because reporting wildlife strikes is voluntary.<sup>15</sup> A 2009 study commissioned by FAA concluded that only 39 percent of actual strikes were reported. Consequently, it is unclear whether increases in reported strikes are due to increases in actual strikes or increased reporting. Similarly, it is unclear whether any decreases in strike reports are a result of achieving program goals or a lack of industry reporting.

Without full reporting and complete data on wildlife strikes, it is difficult to fully analyze the magnitude of safety issues, the nature of the problems, and the economic cost of wildlife strikes. FAA reported that wildlife strikes are probably one of the most pressing issues facing air traffic in the vicinity of airports and concluded that the lack of good data is one of the biggest challenges that managers at airports face.<sup>16</sup> Accordingly, it is incumbent on FAA to address the gaps in strike data by improving oversight and enforcement of its Wildlife Hazard Mitigation Program requirements. Otherwise, the Agency will not be able to ensure that the \$366 million in increased program spending over the next 20 years will be used effectively to track and analyze trends in wildlife strikes, identify potential new hazards, and mitigate their risk.

*FAA Faces Challenges With Developing a Comprehensive Safety Data Collection and Analysis System for Proactive Identification of Risk*

To help maintain our Nation's aviation safety record and further reduce the number of aviation accidents, FAA has been moving toward a data-driven approach for airline safety oversight. In 2007, FAA implemented the Aviation Safety Information Analysis and Sharing (ASIAS) system, a tool that collects and analyzes data from multiple databases to proactively identify and address risks that may lead to accidents. ASIAS enables authorized users to obtain data from confidential databases—including voluntary safety programs such as the Flight Operational Quality Assurance (FOQA) program and the Aviation Safety Action Program (ASAP)—as well as from publicly available data sources such as NTSB's Accident and Incident Reports database. Although ASIAS was never intended as a surveillance tool, it can still play a role in air carrier risk identification and mitigation. However, access to the confidential ASIAS data for FAA and industry representatives has been limited due to airline proprietary concerns.

In the Airline Safety and FAA Extension Act of 2010, Congress directed our office to assess FAA's ability to establish a comprehensive information repository that can accommodate multiple data sources and be accessible to FAA aviation safety inspectors and analysts who oversee air carriers. Accordingly, we are currently assessing FAA's progress in implementing ASIAS, its process and plan for allowing system access at both field and headquarters levels, and its use of ASIAS data to assist in commercial air carrier risk identification and mitigation. We expect to issue our report later this year.

*Introducing UAS Within U.S. Airspace Presents Significant New Challenges in FAA's Safety Oversight*

FAA predicts there will be roughly 10,000 active UAS in the United States in 5 years, with more than \$89 billion in worldwide UAS spending over the next 10 years. However, FAA has approved these operations only on a limited, case-by-case basis, due in part to the safety risks associated with UAS integration into the NAS.

<sup>14</sup>These totals exclude wildlife strike reports from military operations and foreign or unknown states.

<sup>15</sup>FAA Has Not Effectively Implemented Its Wildlife Hazard Mitigation Program (OIG Report No. AV-2012-170), August 22, 2012.

<sup>16</sup>FAA Safety Briefing, "Accidental Meetings Between Airplanes and Wildlife," November/December 2011.

While the capabilities of unmanned aircraft have significantly improved, they have a limited ability to detect, sense, and avoid other air traffic. Given the growing interest and potential safety issues associated with UAS flights, Congress recently directed the Secretary of Transportation, in the FAA Modernization and Reform Act of 2012, to develop a comprehensive plan for integrating UAS into the NAS no later than September 30, 2015. At the request of the Chairmen and Ranking Members of this Committee and the House Committee on Transportation and Infrastructure, as well as their Aviation Subcommittees, we are currently assessing FAA's progress on integrating UAS into the NAS. We expect to issue a report later this year.

### **Implementing Risk-Based Oversight is Critical to Ensure Safety in the Aviation Industry**

To maximize its safety inspector resources, FAA needs to target its oversight of the aviation industry, including repair stations, air carriers, and manufacturers, to address the greatest risks. However, shifting to risk-based oversight of the aviation industry continues to be a challenge for FAA. FAA deployed a new oversight system for repair stations in 2007, but it lacks the data and full implementation needed to be a true risk-based system. FAA is also increasingly delegating certain functions, such as approving new aircraft designs, to aircraft manufacturers and other private companies but has not fully addressed weaknesses in its delegation program. Further, the Agency has not fully implemented a risk-based tool used to identify which aircraft certification projects represent the highest risk.

#### *FAA Lacks a Reliable Model for Determining How Many Inspectors It Needs*

To effectively oversee a dynamic aviation industry, it is critical that FAA place its approximately 4,300 safety inspectors where they are most needed. A 2006 National Research Council (NRC) study,<sup>17</sup> conducted at the direction of Congress, found that FAA's methodology for allocating aviation safety inspector resources was ineffective. NRC determined this was partially because FAA's method (1) did not predict the consequences of staffing shortfalls (that is, what inspections are not being accomplished due to staffing); (2) failed to account for some important factors affecting inspector workload, such as designee oversight; and (3) relied on expert judgment rather than validated data to reach conclusions. NRC recommended that FAA develop a new approach, and, in response, FAA introduced a new staffing model in October 2009.

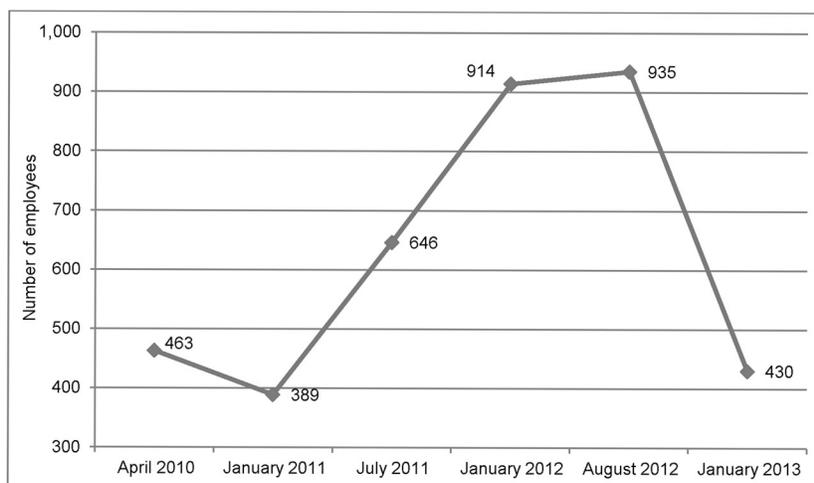
We have evaluated the model as part of an ongoing audit of inspector staffing, as requested by Congress.<sup>18</sup> Thus far, FAA officials are not confident in the accuracy of the model's staffing projections and therefore have not fully relied on the number projected by the model when requesting additional inspectors during the annual budget process. As of January 2013, FAA reported the results of its staffing model six times, with each iteration showing very different nationwide employee shortages (see figure 3).<sup>19</sup>

FAA is working to further refine the model so that it more effectively identifies the number of inspectors needed and where they should be placed to address the greatest safety risks. We expect to issue our report on inspector staffing later this year.

<sup>17</sup>"Staffing Standards for Aviation Safety Inspectors," September 20, 2006.

<sup>18</sup>Congress directed our office to review inspector and analyst staffing issues in Section 205 of the Airline Safety and FAA Extension Act of 2010, Pub. L. No. 111-216, enacted August 1, 2010.

<sup>19</sup>Based on our analysis of FAA data, these fluctuations appear to be caused by a number of underlying issues such as inaccurate and outdated data.

**Figure 3. FAA's Model-Projected Safety Employee Shortfalls**

Source: OIG analysis of FAA data.

#### *Oversight of Repair Stations Remains a Concern*

FAA's oversight of aircraft repair stations has been a longstanding concern. According to FAA, there are nearly 4,800 FAA-certificated repair stations worldwide that perform maintenance for U.S.-registered aircraft. Since 2003, we have recommended that FAA strengthen its oversight of air carriers' contracted maintenance providers by developing a comprehensive, standardized approach to repair station oversight and targeting inspector resources based on risk assessments. In response, FAA implemented a new risk-based system in 2007 to target surveillance efforts to facilities based on risk.

However, our review indicates that the system continues to rely on inspectors completing mandatory inspections rather than inspections based on risk. Additionally, some inspectors do not use the risk assessment process at all; those that do are hindered in their ability to assess risk due in part to limitations in data availability and quality. As a result, FAA has been ineffective at conducting risk-based oversight.

FAA's surveillance at foreign and domestic repair stations also lacks the rigor needed to identify deficiencies and verify they have been addressed. Systemic problems we identified during our 2003 review—such as inadequate mechanic training, outdated tool calibration checks, and inaccurate work order documentation—persist at the repair stations we recently visited. FAA guidance requires inspectors to review these specific areas during repair station inspections, but inspectors overlooked these types of deficiencies. Given U.S. air carriers' continued reliance on repair stations to perform their aircraft maintenance domestically and abroad, it is imperative that FAA improve its risk-based system to provide more rigorous oversight of this industry. We plan to issue our report on FAA's oversight of repair stations later this month.

#### *Ineffective Oversight of Organizations With Designated Authority Weakens FAA's Role in Aircraft Certification*

Through its Organization Designation Authorization (ODA) program, implemented in 2009, FAA delegates to aircraft manufacturers and other private companies the approval of individuals to certify aircraft or components on FAA's behalf. Once FAA approves the company's selection process,<sup>20</sup> ODA company representatives appoint personnel who perform work on FAA's behalf without FAA concurrence, significantly reducing FAA's role in approving these personnel. While FAA maintains some involvement with the selection process during an ODA holder's first 2 years, it is unclear how FAA is involved beyond that timeframe.

<sup>20</sup>If ODAs fail to comply with regulations or fail to pass an FAA audit, FAA can remove them from the program.

FAA has not yet provided its certification offices with clear, written guidance on how to oversee ODAs' personnel appointments. As a result, certification offices are currently left to define FAA's role in tracking these personnel and to determine how companies select them. For example, only three of the five FAA certification offices we visited consulted an FAA database to pre-screen prospective ODA employees' performance histories, and FAA's certification engineers in the field expressed confusion about whether this check would continue beyond an ODA's first 2 years. With less FAA involvement in the selection process, there is the risk that an ODA company could appoint certification responsibilities to individuals whose qualifications are inadequate or who have a history of poor performance. We identified instances of FAA engineers experiencing pushback from ODA companies when trying to take corrective actions against appointed personnel. This has led to individuals with performance problems continuing to perform important certification functions. In response to our June 2011 report,<sup>21</sup> FAA is developing and implementing policies, procedures, guidance, and training to address the deficiencies we identified with the Agency's oversight of ODA.

In September 2007, as another way to leverage limited FAA engineering resources, FAA implemented use of the Risk-Based Resource Targeting (RBRT) system, which is designed to identify higher risk aircraft certification projects. However, RBRT has not effectively measured risk because it relies primarily on subjective input from FAA certification engineers, does not contain detailed data, and has experienced repeated technical difficulties. For example, engineers reported numerous problems with the system, including a tendency to identify projects as low risk regardless of inputs that suggested higher risk factors, such as a company's lack of experience with the design of aircraft to which they have assigned personnel to certify. In response to our June 2011 report, FAA is developing processes to incrementally improve the RBRT system.

#### **FAA Has Made Progress in Implementing Mandated Safety Initiatives, But Significant Challenges Remain**

Since the Airline Safety Act was passed in 2010, FAA has improved pilot rest requirements and made strides in advancing voluntary safety programs. However, challenges remain for enhancing pilot qualification standards and training, establishing mentoring programs, and developing a pilot records database to improve the screening process for pilot applicants.

##### *FAA Met Requirements to Address Pilot Fatigue and Improve Participation in Voluntary Safety Programs*

FAA has made important progress in meeting key elements of the Act, including issuing a final rule on pilot rest requirements and increasing air carrier use of voluntary safety programs. We have some concerns regarding pilot commuting, however, as detailed below.

In January 2012, FAA updated its flight and duty time regulations for Part 121<sup>22</sup> air carrier pilots to better ensure pilots are well rested when they fly. This is a significant achievement for the Agency given that these were the first modifications to the regulations since 1985 and that the proposed rule received over 8,000 comments from the aviation industry, mostly opposing the proposed requirements. Under the new regulations, pilots are required to affirmatively state that they are fit to fly and are prohibited from flying during a scheduled duty period when they report fatigue. Other key changes include requiring a 10-hour minimum rest period prior to duty—a 2-hour increase over the previous rule—and 30 consecutive hours free from duty per week—an increase of 25 percent over the previous requirements.

While these changes could substantially enhance safety, the regulations do not address pilot commuting—a factor that may significantly contribute to fatigue, as many pilots in the industry reside hundreds or even thousands of miles from their duty locations. In September 2011, we recommended that FAA collect and analyze information on pilot domicile and commuting to better target solutions to reduce pilot fatigue.<sup>23</sup> The Agency agreed to complete by February 2013 a “scan of available data” on pilot commuting and determine whether additional data could offer significant safety benefits. However, FAA recently updated its response stating that it had determined that collecting and analyzing data on pilot commuting was not warranted because pilots have an obligation to be fit for duty. Despite this stance, FAA

<sup>21</sup> *FAA Needs To Strengthen Its Risk Assessment and Oversight Approach for Organization Designation Authorization and Risk-Based Resource Targeting Programs* (OIG Report No. AV-2011-136), June 29, 2011.

<sup>22</sup> 14 CFR Part 121, Operating Requirements: Domestic, Flag, and Supplemental Operations.

<sup>23</sup> *FAA and Industry Are Taking Action To Address Pilot Fatigue, but More Information on Pilot Commuting Is Needed* (OIG Report No. AV-2011-176), September 2011.

indicated that our recommendation has now been substantially addressed. The Agency also cited a September 2012 study by its Civil Aerospace Medical Institute regarding flight attendant commuting that found “no significant relationship between commute times and flight attendant performance.” While we are currently evaluating FAA’s response, we remain concerned that the Agency is not adequately addressing pilot commuting.

In addition to its rule on pilot fatigue, FAA has made commendable progress in advancing voluntary safety programs at air carriers, another key component of the Act. For example, as required by the Act, FAA provided Congress with a report<sup>24</sup> on air carrier use of three voluntary safety programs that the Agency oversees. Data gathered through these voluntary programs can be used to identify the trends and patterns that represent safety risks:

- *Aviation Safety Action Program (ASAP)*—A joint FAA/industry program that allows aviation employees to self-report safety violations to air carriers and FAA without fear of reprisal through legal or disciplinary actions.
- *Flight Operational Quality Assurance (FOQA)*—A program for the routine collection and analysis of digital flight data generated during aircraft operations.
- *Advanced Qualification Program (AQP)*—A voluntary alternative to traditional pilot training regulations that replaces programmed hours with proficiency-based training, and incorporates data-driven processes enabling air carriers to refine training based on identified individual needs.

As of January 2012, FAA data showed that 70 percent<sup>25</sup> of Part 121 air carriers participated in at least one voluntary safety program and just under half of those carriers used more than one. The highest concentration of new growth for these air carriers has been with the ASAP and FOQA programs.

However, work remains to implement these programs at smaller carriers. While all carriers with more than 50 aircraft in their fleet have implemented ASAP, only 41 percent of carriers with 15 or fewer aircraft have adopted the system (see table 1). Similarly, just 12 percent of these small carriers have FOQA, and only 7 percent have advanced qualification programs for pilot training.

Table 1.—Air Carrier Voluntary Safety Program Participation

Program	Number of Carriers Participating	Large Carriers (more than 50 aircraft)	Medium Carriers (16 to 50 aircraft)	Small Carriers (15 or fewer aircraft)
ASAP	60 of 88 (68%)	24 of 24 (100%)	19 of 23 (83%)	17 of 41 (41%)
FOQA	38 of 88 (43%)	22 of 24 (92%)	11 of 23 (48%)	5 of 41 (12%)
AQP	19 of 88 (22%)	13 of 24 (54%)	3 of 23 (13%)	3 of 41 (7%)

Source: OIG analysis of FAA data as of January 2012.

#### *Challenges Remain in Meeting Key Pilot-Related Provisions and Ensuring Air Carriers Meet Safety Standards*

Despite the important progress FAA has made in implementing the Act’s requirements, the Agency has encountered delays in issuing key rules impacting pilots—specifically those addressing new screening and qualification enhancements, air carrier training standards, and mentoring and leadership programs. The Agency also faces challenges in establishing a new centralized, electronic pilot records database to provide air carriers with better background information on pilots they intend to hire. Finally, FAA will need to address concerns regarding establishing safety management systems and information sharing and mentoring between code share partners.

*Pilot Qualifications.* FAA is behind schedule in meeting the Act’s requirement to substantially raise airline pilot qualifications. FAA expects to issue a final rule by August 2013—1 year after the Act’s deadline. As mandated by the Act, FAA’s proposed rule (issued in February 2012) would require all Part 121 pilots to hold an

<sup>24</sup> Voluntary Safety Programs, Response to P.L. 111–216, Sec. 213, January 28, 2011.

<sup>25</sup> FAA recently reported that air carrier participation in voluntary safety programs continues to increase.

Airline Transport Pilot (ATP) certificate,<sup>26</sup> which is currently required only for Pilots-in-Command. First Officers would need 1,500 hours of flight time to obtain an ATP certificate—six times the current minimum of 250 hours needed for a commercial pilot's certificate. Although FAA's proposed rule would provide some flexibility in meeting these requirements for pilots with relevant degrees or military flight experience, air carrier representatives remain opposed to the rule because they feel a pilot's quality and type of flying experience should be weighted more heavily than the number of flight hours.

FAA's delayed rulemaking is a particular concern because, under the terms of the Act, the requirement that all pilots possess ATP certificates will automatically take effect if FAA cannot issue a final rule by August 2013. If this happens, air carriers would not be allowed the flexibility provided in FAA's proposed rule. As a result, air carriers may not have adequate time to make necessary adjustments to their pilot training and qualification programs to meet the new requirements by the Act's deadline.

*Crew Training.* FAA is more than 18 months overdue on issuing a final rule revising pilot training requirements, due in part to significant industry opposition to the rule. FAA's current proposed rule (issued in May 2011) is an important safety initiative that will require pilot training programs to incorporate flight simulators and enhance pilots' abilities to work together during emergencies, as well as how to recognize and recover from stalls.

With advancements in pilot training on the horizon, it is important that FAA enhance its oversight practices. For example, under the new rule, carriers will be required to provide remedial training for pilots with performance deficiencies. However, it will be difficult for FAA to gauge the effectiveness of this training unless it corrects weaknesses we reported in December 2011.<sup>27</sup> Specifically, we reported that FAA was not tracking poorly performing pilots due to inadequate guidance for its inspectors on how to gather data on pilot performance. Currently, FAA guidance requires inspectors to compare pilot proficiency checks that they have performed against those conducted by the carriers' check airmen.<sup>28</sup> However, we questioned the viability of this requirement since nearly all pilot proficiency checks are conducted by check airmen, not FAA inspectors. As a result, FAA inspectors may not have sufficient data to make a meaningful comparison.

*Pilot Mentoring.* FAA is also more than 20 months overdue in meeting a mandated timeline to issue a proposed rule requiring air carriers to establish pilot mentoring, leadership, and professional development committees to improve pilot performance. The delay is due in part to setbacks in developing an appropriate balance between the costs and benefits of these programs.

While FAA intends to issue a proposed rule that would reinforce safe flying practices, air carriers are reluctant to allocate resources to implement these new safety programs without a final rule and FAA guidance. As we reported in January 2013,<sup>29</sup> seven of nine carriers we visited did not have formal mentoring programs, and none had professional development programs for their pilots.

*Pilot Records Database.* FAA achieved an early milestone to begin developing the electronic database for pilot screening by October 2010. Additionally, in July 2011, an advisory committee provided FAA with recommendations on the database's design and functionality. However, the Act did not establish a milestone for completion and FAA has yet to make long-term implementation decisions. To achieve the goal of enhancing the screening process of newly hired pilots, FAA must overcome three key challenges:

- First, FAA must determine the level of detail that should be captured from air carrier pilot training records, such as recurrent flight training data. The Act stipulates that comments and evaluations made by check airmen be included in the database; however, industry is highly protective of these data and opposes their inclusion. FAA must also address how to include historical air carrier pilot training records into its new system.
- Second, the Agency will need to develop a strategy to transition to the new database while ensuring air carriers receive all available data in the interim.

<sup>26</sup> An Airline Transport Pilot (ATP) Certificate is the highest level of pilot certification. Pilots certified as ATP are authorized to act as pilot-in-command of an aircraft in commercial airline service. Additional eligibility requirements are contained in 14 CFR 61.153.

<sup>27</sup> *New Approaches Are Needed To Strengthen FAA Oversight of Air Carrier Training Programs and Pilot Performance* (OIG Report No. AV-2012-027), December 20, 2011.

<sup>28</sup> Check airmen are pilots employed by air carriers who evaluate a pilot's proficiency during examinations.

<sup>29</sup> *FAA and Industry Are Advancing the Airline Safety Act, But Challenges Remain to Achieve Its Full Measure* (OIG Report No. AV-2013-037), January 31, 2013.

Since database implementation is years away, we are concerned whether air carriers can currently obtain all relevant information on pilots before they are hired.

- Finally, FAA identified multiple challenges for accessing records from the National Driver Register (NDR)<sup>30</sup> and incorporating them into the database. For example, FAA must decide how to ensure data reliability of pilot records and resolve conflicting data retention policies for the database versus NDR data sources.

*Safety Management Systems.* FAA did not meet an August 2012 deadline for issuing a final rule to require that all Part 121 air carriers implement Safety Management Systems (SMS). SMS, which is currently voluntary, provides air carriers with a comprehensive process for managing safety risks and integrating safety activities into normal, day-to-day operations. Specifically, SMS provides operators with business processes and management tools to examine data from everyday operations, isolate trends that may be precursors to incidents and accidents, and develop and carry out appropriate risk mitigation strategies.

Since 2007, FAA has taken steps to assist air carriers in developing these systems through a pilot program designed to promote voluntary air carrier adoption of SMS and develop implementation strategies. As of January 2013, 95 percent of all Part 121 air carriers (80 of 84) are participating in the pilot program.

When fully implemented across all carriers, SMS has the potential to significantly advance safety. However, there is industry concern that the SMS rule will not be scalable for air carriers of varying size and operations, making it more costly and difficult for smaller carriers to integrate into their operations. In addition, FAA's proposed rule (issued in November 2010) does not address concerns from air carriers and NTSB about public disclosure of SMS-collected data. Most of these concerns focus on whether the data can be used in litigation. NTSB is also concerned that air carrier employees may be discouraged from providing important safety information due to a lack of SMS data protection.

*Code Sharing.* The 2009 Colgan accident raised important questions about code sharing—when a mainline air carrier contracts with a smaller regional carrier to provide flights to its hub airports—including how closely the mainline carriers monitor the operations of their regional counterparts. FAA's 2009 Call to Action plan for airline safety encouraged mainline and regional carriers to collaborate on code share safety programs and mentoring. Yet, FAA does not have procedures to advance the Agency's commitment to ensure an equivalent level of safety between mainline air carriers and their code share partners.

In February 2013, we reported that while FAA sponsors biannual information sharing events across the industry, it has not taken steps to encourage mainline carriers to share safety information and best practices with their code share partners.<sup>31</sup> As a result, some safety programs developed internally between code sharing partners are more robust than others. For example, one major carrier meets with its code share partners on a monthly basis to discuss safety practices, while other carriers we reviewed only met quarterly with their code share partners. Further, because FAA does not review domestic code share arrangements, the Agency has not assessed whether certain aspects of these agreements, such as financial incentives based on performance, could have unintended safety consequences.

## Conclusion

With an increasingly complex air system—one that relies on rapidly evolving technologies, specialized services, and expanding partnerships—maintaining a safe and viable NAS is a challenging mission. While FAA has taken noteworthy action to address safety concerns raised by Congress, our office, NTSB, and others, we have noted that further opportunities remain to mitigate safety risks. These include improving collection and analysis of air traffic safety data, establishing an effective risk-based approach for overseeing repair stations and manufacturers, and fully addressing provisions of the Airline Safety and FAA Extension Act of 2010 and the FAA Modernization and Reform Act of 2012. We will continue our work with FAA and the Department to ensure intended air safety improvements are realized.

This concludes my statement. I would be happy to address any questions from the Chairman or Members of the Committee at this time.

<sup>30</sup>NDR is a central information system that allows States to electronically exchange information on licensed drivers through a computerized network.

<sup>31</sup>*Growth of Code Sharing Warrants Increased Attention* (OIG Report No. AV-2013-045), February 14, 2013.

**EXHIBIT. STATUS OF KEY AIRLINE SAFETY ACT REQUIREMENTS**

Sect.	Initiative	Milestone	Deadline	Milestone Status
202	NTSB Recommendations Report	Report	Annual	Met, On-Target
203	FAA Pilot Records Database	Database Development	10/30/2010	Met
		Report	02/01/2012	Completed Late (02/24/2012)
204	Air Carrier Safety & Pilot Training ARC	ARC Report	07/31/2011	Met
		ARC Report	07/31/2012	Met
205	FAA Inspector Staffing	Start OIG Review	05/01/2011	Met
206	Mentoring, Development, and Leadership	NPRM	08/01/2011	Overdue
		Final Rule	08/01/2013	To Be Determined
207	Crew Pairing and Crew Resource Management	Study	08/01/2011	Completed Late (08/26/2011)
208	NTSB Training Recommendations	ARC Formation	11/29/2010	Met
		NPRM	08/01/2011	Met
		ARC report	11/30/2011	Completed Late (03/07/2012)
		Final Rule	08/01/2013	To Be Determined
209	FAA Rulemaking on Training	ARC Formation	09/30/2010	Completed Late (11/16/2010)
		ARC Report	08/01/2011	Completed Late (09/23/2011)
		Final Rule	10/01/2011	Overdue
210	Code Share Ticket Disclosure	Amend 49 U.S.C. § 41712	N/A	Completed
211	FAA Safety Inspections	Perform one per year	Annual	Met, On-Target
212	Fatigue and Commuting	NPRM	02/01/2011	Met
		Final Rule	08/01/2011	Completed Late (01/04/2012)
		Risk Management Plans	11/01/2010	Met
		Start Study	09/30/2010	Met
		Preliminary Findings	01/30/2011	Met
		Report	06/30/2011	Met
213	Voluntary Safety Programs	Report	01/28/2011	Completed Late (03/16/2011)
214	ASAP and FOQA Implementation	Plans Issued	01/28/2011	Completed Late (04/14/2011)
		Plans Implemented	08/01/2011	FOQA Portion Overdue
215	Safety Management Systems	NPRM	11/01/2010	Met
		Final Rule	08/01/2012	Overdue
216	Screening & Qualifications	NPRM	01/28/2011	Completed Late (02/29/2012)
		Final Rule	08/01/2012	Overdue
		ATP	08/01/2013	To Be Determined
217	ATP Certification	Final Rule	08/01/2013	To Be Determined

Source: OIG analysis of FAA-reported data.

The CHAIRMAN. Thank you very much, sir.

We will proceed to questions, based upon the order of arrival.

And so, the first one, Administrator Huerta, is to you. You've got to cut \$627 million from the FAA budget for the remaining 6 months of this fiscal year. Initial cuts include closing of more than 100 contracted air traffic control towers and the elimination of mid-night shifts at 60 other air traffic towers. The agency will also have to furlough its employees for 11 days, starting April 21. In addition, the FAA recently provided information indicating that they need to make cuts of \$486 million to the operations account, \$142 million from the facilities and equipment account—that's NextGen. NextGen programs are getting cut by about \$3 million, but furloughs will have an even greater impact on that program because hundreds of subject-matter experts, including air traffic controllers, will have to forego their work in this area to return to their core activities, if I'm correct on that.

So, my question to you, sir, is, How will the sequestration cuts and furloughs affect critical safety activity, such as oversight of air-line operations, of the implementation of NextGen, and the certifi-

cation activities of the agency, or any other concerns you may have?

Mr. HUERTA. Mr. Chairman, two principles have guided us as we have looked at the impact of the sequester in the current Fiscal Year. As you pointed out, we have to identify cuts totaling \$637 million in the remaining 6 months of the year. As an operating agency, 70 percent of our operations budget is people, 84 percent of our people are in the field, in the facilities that actually deal with the flying public.

Sequester, as you know, is designed to be a blunt instrument, and we have limited flexibility, in terms of how we can implement it. We have to apply it by program, project, and activity within the various accounts within the FAA's budget.

Our overriding principle is, first and foremost, to maintain the highest levels of safety; and, second, to minimize its impact on the maximum number of passengers. Our approach has been to focus, first, in contractual areas and out-of-pocket expenses. We have had tremendous cost reductions in such things as travel, training, and information technology services. In addition, we're also focusing on how we can look at our contract base to see if there are cuts that we can take that would enable us to maintain the safety of the system while, at the same time, preserving essential people-related services. Nonetheless, we have also been forced to look at reductions in service at facilities that have lower levels of activity.

When we looked at air traffic control towers, what we focused on were towers that had less than 150,000 annual operations and 10,000 commercial operations. I should point out that we have thousands of public-use airports that operate in the country every day in a non-towered capacity, including several thousand public-use airports. It is not unsafe, but the rules of how such a facility operates are different. In order to maintain the highest levels of safety, what you sacrifice is efficiency.

In addition to focusing on these lower-activity facilities that are covered by contracts, we have to look for other cuts. Given the large percentage of our budget that is made up of payroll expenses, the only way we can get to the number we need to cut is to focus on reducing our payroll expense, and that's what brings us to the furlough.

The furlough affects all of our personnel across the FAA, except those that are exempted by statute, which is our Airport Improvement Program. Air traffic controllers, technicians that maintain aviation equipment, and aviation safety inspectors are all subject to the furlough.

The impacts on large facilities will be a reduction of about 10 percent in available hours to operate at those facilities.

The CHAIRMAN. Could you say that again, please, sir?

Mr. HUERTA. A reduction of about 10 percent of available controller hours. That's 1 furlough day pay for every 2-week pay period. Those instructions have been provided to the facilities to build facility schedules, based on availability of controller hours.

We would expect that schedule reductions will result in significant delays in the larger facilities. The actual impact is very specific to the airport in question. It depends on the airport's configuration, how it is staffed, and what its traffic count looks like. But,

you've heard me say, in the past, that large hub airports could expect delays of up to 90 minutes in peak travel periods.

We are faced with a series of bad choices, but the way the sequester law is designed, we have limited flexibility in moving funds between accounts.

You asked about the impacts on NextGen. In order to preserve hours for the core operation we have pulled back individuals that work in collaborative workgroups to plan for the implementations of new technology back to their home facilities. We need them to be available to work traffic and to provide needed safety oversight. What that means is, a lot of the operational testing that we do to implement new technologies is something that gets delayed as a result.

These are all difficult decisions that we need to make, so we are hopeful that we will be able to resolve the sequester as we go into Fiscal Year 2014, or even later this year. We would like to be able to recover some of the lost ground that is the result of sequestration. Aviation, as you know, contributes \$1.3 trillion to our national economy, so we need to do everything that we can to support it.

The CHAIRMAN. But, if things get better, as you say, you're still constrained by a budget previously passed, are you not?

Mr. HUERTA. For Fiscal Year 2013, our budget is effectively the continuing resolution amount, which is the fiscal 2012 level, minus the amount of the sequester. The President has put forward a proposed budget for 2014 that, if adopted, would provide adequate resources to maintain the operations of the FAA and the needed investments in NextGen. But, we have to see how the—

The CHAIRMAN. As they were last year?

Mr. HUERTA. I'm sorry?

The CHAIRMAN. As they were in the last fiscal year?

Mr. HUERTA. Yes.

The CHAIRMAN. OK.

Oh, I'm way over my time. I apologize.

To you, Senator Thune.

Senator THUNE. You're the Chairman. Do you want to keep going?

The CHAIRMAN. No. No.

[Laughter.]

Senator THUNE. OK. All right, thank you, Mr. Chairman.

I'd like to, if I could, get a response to a question having to do with the Colgan 3407 accident that happened 4 years ago. Congress directed the FAA to conduct several rulemakings to improve airline safety; among them was the pilot qualifications rule. The bill we passed required the FAA to issue a rule within 3 years to increase pilot-experience hours to a minimum of 1,500 hours. The law allowed the FAA to give credit toward this minimum-hours requirement to those with relevant academic training. Without the final rule, the 1,500-hour requirement will go into effect without the equivalences included in the law, and that is not what Congress intended.

And my question is, Will the FAA publish a final rule before the August 1, 2013 deadline with such equivalences?

Mr. HUERTA. Yes.

Senator THUNE. Good.

I'd like to follow up on these budget issues and sequestration issues, which I think that the Chairman touched on several levels. But, there have been a number of questions that have been posed, by myself and other members of this committee, requesting more detailed support for FAA's claims on its sequester reductions. And those requests for information have, at best, been answered with what I would characterize as incomplete responses. And so, my question Mr. Administrator, is, how can you expect Congress and the public to trust the soundness of your decisions when you don't offer up concrete details to back up claims regarding the impact of sequestration on the National Airspace System?

Mr. HUERTA. Senator Thune, the sequester law requires that we provide a detailed report. We do intend to provide that report once we've completed our work on the implementation.

However, I will say that, as I indicated in my opening statement and in response to Chairman Rockefeller's question, our focus has been to maintain aviation services and to minimize impact on the maximum number of travelers.

Much has been made about: Can't the FAA reduce its contract expenditures? Well, at the direction of this committee and with the support of industry, we have contracted out a large number of service operations that represent greater partnership with the private sector to carry out the needs of the aviation system. For example, our largest contract, close to \$250 million, is FAA's telecommunications infrastructure system. That is the communication system that allows all air traffic facilities to communicate with one another. That function was previously performed by Federal employees; that's now done by contractors.

Our second largest contract was as a result of the privatization of flight service station activities. These are essential services that give pilots briefings on weather and flight conditions that enable them to have important information before they take a flight.

And our third largest contract area, as I mentioned, is contract towers.

We have achieved savings in areas—36 million dollars, this year, for IT. We've reduced our travel budget by 30 percent. We have completely eliminated training for an air traffic control support during the summer months. That saves us money this year. The decision may create a staffing problem for us in the years ahead. But, we have to figure out how to manage through that.

Even with all of this, because our budget is primarily driven by people, and people providing services, we have no choice but to look at furloughs of our employees.

As we reduce hours of employees that are available to perform essential services, our primary and overriding focus is going to be on safety. And so, in order to maintain the safety of the operation, it will become more inefficient in high-traffic periods. It's just the way the numbers work. We are a very people-heavy organization, and an organization that is focused on providing essential safety-related services to the traveling public. To maintain safety, we have to run a less efficient operation.

Senator THUNE. Well, let me ask you if you would consider, or are you considering, making use of existing reprogramming and

transfer authorities, when it comes to reducing the impacts of sequestration on air traffic control functions?

Mr. HUERTA. Yes. We have an existing authority, as you mentioned, in order to transfer up to 2 percent within a particular type of funding to fund essential services. And we have taken full advantage of that flexibility in order to get our furlough impact on our critical safety functions down to 11 days. And it would be my hope to buy back more of those furlough days as we see how we—how the system plays itself out and how we're able to manage and find savings on a continuous basis. This is not a one-shot deal; we're managing this on a weekly basis. And our efforts are, again, How do we minimize the impact on the maximum number of travelers?

Senator THUNE. What does the FAA plan to do in FY14 when it comes to the proposed contract tower closures this year? For instance, would the FAA continue those closures next year, or utilize the flexibility it has to manage where those budget reductions come from?

Mr. HUERTA. The President's budget, which has been put forward for Fiscal Year 2014, assumes that the sequester has been resolved. If the President's budget is adopted by the Congress, we would have adequate funding for a contract-tower program.

Senator THUNE. How about if that budget is not adopted?

Mr. HUERTA. Then it depends on what the appropriators provide to us.

Senator THUNE. But, you would use that flexibility, in a future year, if the appropriators give you that flexibility.

Mr. HUERTA. If, in a future year, appropriators provided budgetary flexibility, we would have to see how it's allocated, what it looks like and what flexibilities we actually have to move money around. Whatever Congress provides to us, we will work within it.

Senator AYOTTE. My time has expired, Mr. Chairman. Thank you.

The CHAIRMAN. Thank you very much.

Senator Blunt.

**STATEMENT OF HON. ROY BLUNT,  
U.S. SENATOR FROM MISSOURI**

Senator BLUNT. Thank you, Chairman.

Mr. Huerta, you mentioned that you had worked to find enough flexibility so that essential employees would have fewer furloughed days. Is that right?

Mr. HUERTA. Not exactly, sir. What the Sequester Act provides for us, and what our Appropriations Act provides, is funding flexibility to move 2 percent of available appropriations across accounts.

Senator BLUNT. Right.

Mr. HUERTA. In doing that, what we did was balance out accounts within the FAA with the focus on maximizing the availability of air traffic controllers and aviation safety—

Senator BLUNT. So, are there some people at the FAA that will have more furlough days than 11?

Mr. HUERTA. No.

Senator BLUNT. So, there was no priority for essential employees, just a priority for all employees, if you could achieve it.

Mr. HUERTA. Actually, what we were trying to do was get down to 11 for the critical safety-related functions. Without moving money around, the number of days would actually have a higher number.

Senator BLUNT. Right. But, you're telling me nobody is going to be furloughed more than 11 days.

Mr. HUERTA. That is correct.

Senator BLUNT. Right. So, it was all functions, not just—it helped with the critical functions, since your view, at this point—

Mr. HUERTA. Sure.

Senator BLUNT.—is, you treat everybody equally.

Mr. HUERTA. Yes. There is an overriding principle of fairness—

Senator BLUNT. Right.

Mr. HUERTA.—that we have to look at, as well.

Senator BLUNT. Well, now, there's no overriding principle of fairness if it's a bad weather day. You have a list of employees who have to show up, as a priority.

Mr. HUERTA. Sure. And—

Senator BLUNT. There's no overriding principle of fairness that day.

Mr. HUERTA. Let's take a bad weather day. One of the things that we have looked at is, How do we significantly reduce what we spend on overtime? That's a very costly way to staff facilities. What we're preserving overtime for is exactly those sorts of situations—bad weather days.

Senator BLUNT. All right. Well, what I'm going to do is—I've got a piece of legislation that I've offered as an amendment to the CR, and I'll offer it again, which does prioritize the employees—and you have a lot of them—that are essential safety employees. I think President Obama, in April 2011, sent a directive out, "If there's a government shutdown, here are the employees that have to show up." President Clinton did the same thing when there was a government shutdown, in 1995. And you might—I ask—I'm going to ask you just to look at that and see if it's something that you would be able to look at and maybe even be supportive of, because it just essentially does allow some priority for essential employees. My view is that the law will probably stand. And we can not have a sequester if we just appropriate money below that number, or if we appropriate money above the number, then I'd like to see what we could do to make this more workable.

On towers—have you got—had safety reports on the towers that you've closed?

Mr. HUERTA. Yes, we have.

Senator BLUNT. Could I get a copy of those?

Mr. HUERTA. What we've done, in looking at the tower closures is, we have considered whether there are safety impacts—

Senator BLUNT. I'm going to run out of time. Is that a yes or a no? Can I get a copy of those?

Mr. HUERTA. We can provide you a response for the record.

[The information referred to follows:]

The FAA developed a national safety case to determine what needed to be done to convert Towered airports into non-Towered airports and captured those standards into a Safety Risk Management Document (SRMD). That process identified approximately 20 mitigations that would have to be applied at each airport. That airport-

by-airport information was captured as part of the SRMD and could be made available to the Senator.

Senator BLUNT. And, Mr. Dillingham, on towers that affect civil aviation, most of those towers also have a combination of general aviation and commercial. How important is it to have that visual sense of the ground?

Dr. DILLINGHAM. The opinion varies, but—but, the majority of people that we've talked to are very concerned that their tower will be closed, and that we're not—we're not at the point where remote operations are as safe—or appear to be as safe as if you had that vision on the ground. Because the weather can be one way at that airport, but if you're a long ways away and you don't have the appropriate weather equipment, you won't be able to advise the pilot, and it—the situation is reduced, as such.

Senator BLUNT. But, I think we also—you're looking to figure out, on commercial aviation, how you can have another tower handling takeoffs and landings in a commercial site that you would—the tower would be closed in. Is that right, Mr. Huerta?

Mr. HUERTA. You would use what's called the TRACON, Terminal Radar Approach Control. There are three levels of facilities: the tower on the airport, the TRACON, which provides approach control, and a center which provides high altitude traffic separation. And the TRACON would control traffic approaching a non-towered airport.

Senator BLUNT. And what you wouldn't have there would be the visual sense of the field. But, with some safe—some standards—and what I want to be sure we do here is, if some of these airports continue to have commercial travel—

Mr. HUERTA. Sure.

Senator BLUNT.—that don't have a tower, I want that to be as safe as it can possibly be, but I don't want us to lead people to believe that it's less safe than it is by saying a tower would be better but we could do it another way.

Mr. HUERTA. We're not doing anything that is not safe, but what it does change is how the airport operates. In general, what it means is that there is greater separation between flights that are operating in a non-towered environment in order to provide a safe operation, but, as I said, it is less efficient.

Senator BLUNT. And my last question would be, You will direct your staff to get the tower safety reports to me and anybody else who has asked for them as quickly as you can?

Mr. HUERTA. We will provide you a response for the record.

Senator BLUNT. OK, thank you.

The CHAIRMAN. You got your yes.

Senator BLUNT. I usually stop at "yes."

The CHAIRMAN. Senator Cantwell.

Senator CANTWELL. Thank you, Mr. Chairman.

Administrator Huerta, I truly appreciate your willingness to become FAA Administrator.

[Laughter.]

Senator CANTWELL. And it would have been enough of a commitment to be FAA Administrator under the implementation of NextGen. That, in and of itself, would have been a herculean task. To take on this task in the midst of sequestration, in addition, is

just another twist and turn. And you have gained a reputation in this town for being a straight shooter. My interactions with you, you've always been very information-rich. And so, I was hoping I could follow on with what some of my colleagues were talking about, at least in this first round, about this tower issue. Because—

Mr. HUERTA. Sure.

Senator CANTWELL.—first of all, the Department of Transportation, with so many protected programs, it seems to me that the FAA is getting a disproportionate share of the impact. Is that an accurate assessment?

Mr. HUERTA. That is correct. The way the sequester law is written, it exempts about three-quarters of the budget of the Department of Transportation; essentially, all the grant programs, which are primarily the Federal Highway Administration, Federal Transit Administration. It also exempts our airport improvement program, which is about \$3.35 billion. Therefore, the impact does fall disproportionately on the operating parts of DOT, and notably the FAA.

Senator CANTWELL. And unlike, you know, some of the floor activity, we had to do more surgical approaches with various aspects of the budget. The Moran amendment, which might have helped in this area, wasn't brought up. So, you've been having to deal with this in a very blunt way. And so, I have a couple of questions about that.

On this tower issue, I think I've mentioned both to you—and I did in my statement, earlier—about both Paine Field, in the middle of a big commercial aviation manufacturer, and Felts Field, in Spokane, which is in the same proximity of the Spokane Airport, and Fairchild Air Force Base. So, they may have gotten beat out by some California cities in suing the Federal Government over proposed closures, but they are going to be close behind or join that case, because they feel very strongly about this. You and I have had a chance to talk about this issue as it relates to your analysis. But, I have a question: prior to the agency's decision, and then revoking it and then saying it'll be implemented in June, was it the FAA's intention to remove the equipment from these towers?

Mr. HUERTA. No. We're working through all of those decisions on a case-by-case basis. In some instances, local airports and sponsors have asked if they could retain equipment. In some instances, there is an interrelationship between, for example, communications equipment in the tower and how it relates to the communication equipment at the airport. So, we're working through those with individual airport sponsors.

Senator CANTWELL. Well, wouldn't that be very devastating, to have this equipment removed? Because then if either the sequester issue was resolved or a community response was activated, how would you deal with this loss of equipment? So, I think we need a clear answer—

Mr. HUERTA. Sure.

Senator CANTWELL.—about equipment, as well. We hope the answer is that the equipment stays.

Mr. HUERTA. For the most part, the equipment stays. But, there are certain limited circumstances where we might come to a different conclusion, and we can talk about those specific facilities.

Senator CANTWELL. Well, I think, as my colleagues have mentioned, this is a very important issue. When a community of a significant size says they're going to sue over this issue, I take it very seriously.

And I hope that, Mr. Chairman, we can resolve this issue, either on the floor or some instance, because I think—while the public understands tightening of the belt, I don't know that they understand that the FAA, within the Department of Transportation, is taking a very direct hit on this. And I think that it has various communities in my State concerned about it.

Mr. Guzzetti mentioned that part of the safety culture and regime that we have to establish is implementing the mandates of Congress. And so, obviously, we did, in a major piece of safety legislation, ask for various rules on qualification of pilots and training and mentoring and database issues and, you know, a whole sort of other things. Mr. Dillingham mentioned this issue of runway incursions and getting the right data.

So, is the sequestration going to impact us getting those rules?

Mr. HUERTA. Well, the rules have different schedules. I was already asked about the issue of pilot qualifications, and I said that we would make the August deadline, and we will.

Another rule that is an extremely high priority for us is the rule related to crewmember training. You'll recall, at my confirmation hearing last year, I committed to completing that rule by October of this year. We are on track, and we will complete that rule by October of this year.

Senator CANTWELL. Will the sequestration affect any of the rule-making?

Mr. HUERTA. In other rulemakings, I would expect to see delays. But it depends on the availability of hours I have for people in the rulemaking office and across the agency to do the needed work in a timely fashion. If I have fewer hours available to me, it does affect the full scope of everything the FAA does.

Senator CANTWELL. Well, as Mr. Guzzetti said, it's important to get these mandates fulfilled.

So, anyway, Mr. Chairman, I think we need to keep looking at this issue. I know my time is expired, but it's important to understand what isn't going to get done during sequestration as these important rules that we mandated—we want to see them implemented.

I didn't even mention the cargo, you know, issue. You know, we've implemented rules, but people who are flying in our skies want to know that those who are flying cargo planes also meet the same kind of standards as other pilots for fatigue and operation.

So, thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much, Senator Cantwell.

Senator Ayotte.

Senator AYOTTE. Thank you, Mr. Chairman.

Administrator Huerta, I wanted to ask you again, also—I know you've been asked about the tower closure issue, but there's something that I'm trying—I'm struggling with, in terms of your criteria

of which towers were closed. And let me give you an example, in my own state:

Warfield, in Nashua, New Hampshire, that tower was slated for closure; now it has been extended to June.

Mr. HUERTA. Correct.

Senator AYOTTE. We also have an airport, in Lebanon, New Hampshire, that has a contract tower—is operated in a contract tower. And it is my understanding that Lebanon has less traffic operations than Nashua. Can you explain to me why one, and not the other, and what—how you distinguish between certain towers, why one was closed and why was—why one wasn't?

I will also add, just as a sort of overlay to all this, Lebanon happens to be an airport that receives about 2.3 million in essential air subsidies every year, despite being only 67 or—76 miles, so about an hour and 10 minutes away from our much more—larger airport, the Manchester Regional—Boston Regional Airport, in Manchester, New Hampshire. And so, can you help me understand, What's the distinction? Why close Nashua's tower? I certainly don't want you to close Lebanon's, too, but it seems a little arbitrary to me.

Mr. HUERTA. We have two categories of contract towers. We have the Federal Contract Tower Program and then we have the Federal Cost Share Contract Tower Program. If Lebanon is in the Federal Cost Share Contract Tower Program, they have funding that extends through the Fiscal Year, and we would need to make a decision at that point. I will need to get back to you as to whether Lebanon falls into that category.

[The information referred to follows:]

The Nashua, NH FAA Contract Tower (FCT) was identified for defunding since it did not have 150K total operations or 10K commercial operations in FY2012. The Lebanon, NH FCT was not considered since it had more than 10K commercial operations in FY2012. DOD/DHS identified no impacts associated with the defunding of this FCT. Neither of these FCTs are part of the Cost Share program.

Mr. HUERTA. With respect to Nashua, though, like all the other 148 contract towers, it was a tower that fell below the 150,000 annual operations and 10,000 commercial operations.

Senator AYOTTE. Do you have operations that fall below the standard that you just identified that are not contract towers, but actually run the—controlling is done by FAA employees?

Mr. HUERTA. We do.

Senator AYOTTE. So, in fact, I think, the initial list proposed for closure would have had about 238 towers, under that standard. Is that right?

Mr. HUERTA. That would be correct.

Senator AYOTTE. So, why was the decision made to close all the contracting towers, versus the towers that had the FAA employees that perhaps could have gone on to do other work?

Mr. HUERTA. It's a question of timing. We would treat all towers having similar operations the same way. The contract towers enable us to achieve savings because of the contractual nature in the current fiscal year. It takes longer to close an FAA-staffed tower.

Senator AYOTTE. How much does it cost to run—do the—in terms of the FAA-employed tower versus the contract tower, what is more expensive, in terms of operations?

Mr. HUERTA. I think, in general, they are comparable, but they depend on how the facility is specifically staffed. Every tower is staffed with positions up—set up differently.

Senator AYOTTE. OK. I would ask, for the record, for a more detailed analysis of what the—

Mr. HUERTA. Sure.

Senator AYOTTE.—cost differential is between those.

[The information referred to follows:]

The DOT Inspector General stated in a November 2012 Report (AV-2013-009) that the average contract tower costs about \$1.5 million less to operate than a comparable FAA tower.

Senator AYOTTE. And is—was Essential Air Services exempted from the sequestration?

Mr. HUERTA. We don't administer Essential Air Services at the FAA.

Senator AYOTTE. So, DOT administers it?

Mr. HUERTA. DOT administers it. It's in the FAA's budget, but it's administered by the Department.

Senator AYOTTE. So, you don't know whether or not that was exempt from sequestration?

Mr. HUERTA. I do not.

Senator AYOTTE. OK. I would appreciate an answer to that, because there is over—of course, as I understand it, in looking how much is in Essential Air Services, that's a pretty substantial amount of funding on an annual basis, particularly when we're looking at—in fact, we're \$218 million on the books, to serve 117 communities for Essential Air Services, and yet we're looking for \$45 million to \$50 million to keep the contract towers open, isn't that right?

Mr. HUERTA. Yes.

Senator AYOTTE. OK. Appreciate your getting back to me on that. And also, the answer on why Lebanon versus—

Mr. HUERTA. Sure.

Senator AYOTTE.—Nashua, and the cost differential.

Do you expect that we'll have to pay damages in the suits—the lawsuits from these communities?

Mr. HUERTA. I can't really comment on the outcome of pending litigation.

Senator AYOTTE. And if, hypothetically, we were to pay damages for breach of contract under these communities, it could potentially cost us more than the closures, depending on the level of the damages.

Mr. HUERTA. As I said, I can't really comment on pending litigation.

Senator AYOTTE. OK. Well, I appreciate your being here today, and I look forward to the follow-up answers.

And thank you all for being here.

The CHAIRMAN. Thank you, Senator.

Senator Nelson.

**STATEMENT OF HON. BILL NELSON,  
U.S. SENATOR FROM FLORIDA**

Senator NELSON. We, of course, are trying to get results, Mr. Administrator. Would you consider cost-sharing with the local governments on these contract towers?

Mr. HUERTA. Senator Nelson, about 50 communities have made proposals to pick up the costs associated with the Contract Tower Program. In discussions with those communities, we're willing to look at whatever proposal a community wants to make.

Senator NELSON. But, your problem is one of dollars.

Mr. HUERTA. My problem is one of dollars. In the—

Senator NELSON. Just don't have the dollars.

Mr. HUERTA.—current fiscal environment, I have to find the same amount of savings.

Senator NELSON. So, the proposals that you have in front of you on cost sharing, you have not rejected.

Mr. HUERTA. The proposals that have been made, for the most part, are to pick up the cost of the operating tower, as opposed to a cost-share scenario. The local communities have asked if we would be willing to negotiate an orderly transition so that there wouldn't be a gap in service. They asked if they could somehow put together a proposal that would enable them to secure local funding, would we arrange a handoff that would ensure no interruption in air traffic control services? Those discussions had a lot to do with our decision to delay closure until June 15 to allow ample opportunity for communities to consider options such as those.

Senator NELSON. By you delaying until June, are you still going to be able to save the money that you have to under the sequester?

Mr. HUERTA. It does reduce our savings by about \$8 million.

Senator NELSON. As you well know, there are airports and then there are airports. And some of these airports come from a wealthy community with a fairly sizable tax base, and then others do not. Is that something that you would consider with regard to cost sharing?

Mr. HUERTA. We will consider what a community puts forward, but it comes back to the question of the total number of savings that I need to achieve. I think that the other thing we have to consider is treating communities equitably as we look at the full scope of impacts resulting from sequester.

Senator NELSON. Well, you don't give me a lot to report back to my 14 airports. They are very grateful, by the way, that some of them that were going to be closed in April are not going to be closed until June. And so, we'll continue to work on this. And unfortunately, I think most of us think that this sequester's not going to go away until the new fiscal year, so we are facing a problem—as we would say in Florida, “a problema.”

Madam Chairman, I want to ask you—you've got a pilot study going on, at the Orlando Airport, on runway status lights so that if, suddenly, an airplane gets onto an active runway that also has an inbound flight, that the lights change color. It's to alert the inbound aircraft. Has this proved to be a useful tool for pilots?

Ms. HERSMAN. The NTSB has made runway safety and surface operations a priority. It's on our most-wanted list. But, the specific study you have mentioned is being handled by the FAA. We do

think runway status lights can help prevent runway incursions. And I'll defer to the Administrator to address it.

Senator NELSON. OK. Well, while you're still talking, let me just ask you, Since you're the head of safety, what do you think about the closure of the contract towers?

Ms. HERSMAN. The FAA is faced with many difficult decisions, as all of us are, as our budgets are impacted. The NTSB has not looked at the safety of towered versus non-towered airports, specifically.

But, the reason we enjoy such a good safety record in aviation is because of the redundancies, the multiple layers of safety. One of the things that we do know is, when you eliminate those layers, you can introduce risk into the environment. We have investigated accidents that occurred with commercial service at non-towered airports. There are safety benefits in the aviation system, and those redundancies are important.

Senator NELSON. Runway status lights?

Mr. HUERTA. Senator Nelson, yes, runway status lights do show great promise. We have a number of studies around the country. It is a difficult program to implement, because they have to be carefully sequenced with construction programs at the airport. As the Chairman mentioned, runway incursions are an area of high priority, not just for the NTSB, but also for the FAA. We have a number of technologies that we're testing. They do show great promise for reducing runway incursions.

The CHAIRMAN. Senator Pryor.

**STATEMENT OF HON. MARK PRYOR,  
U.S. SENATOR FROM ARKANSAS**

Senator PRYOR. Thank you, Mr. Chairman. And thank you for your leadership and concern about these issues.

I want to thank our panel for being here today. I know that you've been asked quite a bit about the contract tower program, but let me follow up just a couple of questions there.

What—and if this has been asked already, I apologize, Mr. Huerta—but, what communication is the FAA currently having with the contract towers selected for closing? Are you talking to them at all?

Mr. HUERTA. We've had a lot of discussions when we made the initial announcement, and we've had individual discussions with specific communities about how they would like to move forward. A number of communities—around 50 or so—have spoken with us very directly about our willingness to work with them on a handoff of responsibility for funding. That is something that we've been taking quite seriously, because if a community does want to step up and cover the cost of funding their tower, we very much want to work with them in that regard.

Senator PRYOR. OK. But, have you talked to all the communities that have been impacted?

Mr. HUERTA. Well, we've had a number of conference calls with the association that represents all the contract towers, and we have provided regular communication to all the communities.

Senator PRYOR. All right. Let me ask about your criteria and the things you consider when you do this. We have one example in Ar-

kansas, Texarkana, Arkansas, which straddles the line between Texas and Arkansas. And that airport has a limited line of sight. And did you all take that into consideration when you made the decision about how important the tower is to that particular airport?

Mr. HUERTA. In addition to the criteria mentioned, such as the number of operations, number of commercial operations, how they serve or benefit an adjacent hub airport, how they might relate in serving broader interstate objectives, we are looking at the facility itself. How it actually operates within the framework of overall day-to-day operations.

It is important to point out that every one of these towers, except one, is closed for a significant portion of every day. So, they have existing rules of how to operate in a non-towered capacity. Therefore, when they convert to 24-hour non-towered operations, they simply revert to those established rules.

Yes, it does have impacts on efficiency, as I've talked about, but there are close to 5,000 public-use airports in the country that operate every day in a non-towered capacity. The important thing is making sure that you have the procedures in place to operate in a safe fashion.

Senator PRYOR. OK. Well, you mentioned one of the factors you considered was whether they have commercial flights, et cetera.

Mr. HUERTA. Sure.

Senator PRYOR. This particular airport, in Texarkana, also handles 5,000 military transits a year. You didn't mention the military in your statement. And this runway 04 has the only ILS back-course approach within range of several military training bases. So, did you take military usage of the Texarkana Airport into account?

Mr. HUERTA. We consulted with the Defense Department, and we did accept every one of the priority contract towers that they felt needed to be kept open.

Senator PRYOR. OK. We have a similar situation at the Fayetteville, Arkansas, Airport. The Little Rock Air Force Base is, I don't know, 150 or so nautical miles from there, and the Little Rock Air Force Base is a C-130 training base. They like to land in Fayetteville, because it's a little more urban; it's in a hillier, mountainous environment, and it does have a shorter runway. So, did you consult with the Air Force before you made that decision, on Fayetteville?

Mr. HUERTA. We consulted with the Air Force to identify their priority towers, nationwide, and we accepted every one that they identified.

Senator PRYOR. OK. Have you shared the criteria that you've used with the airports? And the reason I ask is because the City of Fayetteville has told me that they've been unable to get your criteria that you used. And, in fact, they've indicated that you really haven't shared much information with them at all.

Mr. HUERTA. 150,000 flight operations, 10,000 commercial operations, that's the first cut; below that threshold. Second, do they serve a function that supports a large hub airport. Third, are there national security or national defense considerations that we determined, in consultation with the Department of Defense and the Department of Homeland Security, should be considered. One thing

that we did not consider is impact on a local community. We did look at impacts that exist far beyond a local community.

Senator PRYOR. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much, Senator.

And now, Senator McCaskill—

**STATEMENT OF HON. CLAIRE McCASKILL,  
U.S. SENATOR FROM MISSOURI**

Senator MCCASKILL. Thank you very much, Mr. Chairman. And—

The CHAIRMAN.—who has returned—

Senator MCCASKILL. Beg your pardon?

The CHAIRMAN.—from a conversation, giving advice to the White House. Am I right? I'm impressed.

Senator MCCASKILL. No. I was not—

The CHAIRMAN. No?

Senator MCCASKILL.—giving advice to the White House. I was—

The CHAIRMAN. I thought you—

Senator MCCASKILL. I was yelling at someone.

[Laughter.]

The CHAIRMAN. OK. Well, that's the same thing.

[Laughter.]

Senator MCCASKILL. And I came back to yell at poor Mr. Huerta, now.

[Laughter.]

Senator MCCASKILL. I just got warmed up.

First, thank you all for being here. I appreciate it very much.

I have a thing about rules in the government, and that is, they only work if they're respected. And if the rationale for a rule is specious or arbitrary, it not only is frustrating for people who are impacted by the rule, it undermines every other rule that is promulgated by the government.

Which brings me to the rule on personal electronic devices on airplanes. It appears to me to not be grounded in any kind of data or evidence whatsoever. And so, I would first ask you, Mr. Huerta—I have searched, I have asked, I have interviewed many, many experts. My staff has. Is there some scientific data that is hiding from my staff that would indicate a Kindle being on during takeoff could have any possibility whatsoever of interfering with the electronics of an airplane?

Mr. HUERTA. The question has more to do with—first of all, let me back up.

This is a matter that is of great personal interest to me. One of the things that I have asked our staff for, through an aviation rule-making committee, is to look into the nature of these rules. Are there things that we could do to change them in the future?

The rules that currently govern the use of portable electronic devices have been around, as you mentioned, for a very long time. The current rulemaking framework is set up such that any airline can conduct tests to determine that there is no interference. If that is determined, then they would be free to adopt a program for portable electronic—

Senator MCCASKILL. And I'm—

Mr. HUERTA.—devices.

Senator MCCASKILL.—aware of all that. It's, as you know, very impractical, for each individual airline to take on the cost of testing each individual instrument and making some certification to you on each individual interest—instrument by each individual airline.

Let me ask it this way. Is the rule supposed to apply to general aviation?

Mr. HUERTA. That's a good question. The rule, as it's currently designed, focuses on commercial aviation. I don't know. I'll have to get back to you with that.

[The information referred to follows:]

Regulations for PED use apply to general aviation (see part 14 CFR §91.21) with one major difference. In general aviation, the operator of the aircraft (who is also the pilot) can allow PED use if the pilot has determined that it will not interfere with the communication and navigation systems on the aircraft. For all other operations, the airline (part 119 certificate holder, termed "the operator") must make this determination. In general aviation, the pilot is concerned with the individual aircraft. Responsibility for the control of PED use as well as any impact the PED may have is placed on the pilot. In an airline, the air carrier must take responsibility because the public is placing its trust in the airline to ensure passenger safety during flight.

Senator MCCASKILL. Well, I will tell you that it is not followed in general aviation. People are not told to turn off their electronic devices. Because everyone who flies those airplanes knows that they're not a risk.

Let me tell you this story. This happened many, many times as I was on a lot of airplanes, the last 2 years. A woman who clearly was flying for the first time. We were going out to the runway, and almost tearfully, she grabbed the flight attendant as she went by and said, "Oh, my God, I have left my cell phone on, and it's in the overhead." She was very upset. And the flight attendant, of course, said what I've heard flight attendants say a million times, "Don't worry about it. Stay seated and in your seatbelt." Right? So, she knew that phone was on, up in the overhead, and we were taking off. She was crying in her seat, because she was sure she was going to bring down that airplane.

And, as you well know, there are dozens of people that inadvertently leave their phones on during takeoff and landing, or leave on something else during takeoff and landing. The pilots are using iPads right now. These electromagnetic signals do not stack. There's not any difference, scientifically, between one iPad in the cockpit and 400 in the airplane. And your people are still telling us that, even if the ARC makes a rule recommendation, that they're still going to recommend "not during takeoff and landing," even if it's just for a few minutes.

In your rule, you actually say that it's about distraction and missing significant safety announcements and personal injury. I've never had a flight attendant say, "Put down your copy of 'War and Peace,'" which would be a much bigger personal injury and just as much of a distraction as reading 'War and Peace' on a Kindle, except a Kindle would be a lot safer.

So, this is a great example of a rule that really is arbitrary, at this point, and I am anxious for someone to document to me why there is any reason that the flying public should be made to be feel insecure about someone next to them who hasn't turned it off

quickly enough. I don't think you realize the tension that's on an airplane around this. I mean, the flight attendants get tense. The people who don't turn them off—somebody sitting next to you, they haven't turned them off, they get worried; they think they're going to crash.

I just feel really strongly that this is a great example of a rule that needs to go away. And so, I would ask you if there is scientific data that is going to support continuing this rule in any way beyond the ARC's recommendation, which I understand is going to come in July. And, by the way, I would like you to make that process open. They're closed now. There's no reason. Their consideration should not be closed; they should be open. If we're not going to be able to have a new rule by Christmas, I would really like something in writing from you on the record as to what the problem would be around that.

Mr. HUERTA. Certainly. As you said, the ARC will complete its rule during the summer. The reason that we convened the rule-making committee was to look at precisely the question that you're talking about. The ARC is made up of all of the interests, not just those that are in support, but also those that have operational concerns about how any changes would be implemented. And I'm very much looking forward to the findings, and we will act on them.

[The information referred to follows:]

The Portable Electronic Device Aviation Rulemaking Committee (PED ARC), which was convened to review current policies and procedures, is completing its review and will submit its recommendations to the FAA by July 31, 2013.

The major impediment to allowing unlimited use of PEDs in flight by December 2013, if this is an ARC recommendation, is that all existing technical guidance for demonstrating acceptable use of portable electronic devices in flight (*i.e.*, non-interference with key systems) requires aircraft operators to perform aircraft tests and evaluations. This guidance, prepared by technical committees of experts from aircraft manufacturers, airlines, and avionics manufacturers, requires detailed airplane tests and evaluations to ensure safety of the operation. Most airlines, with a number of different airplane models in their fleets, would have difficulty completing these tests and evaluations to allow unlimited use of PEDs for the entire flight, including take-off and landing, by December 2013. We would expect ARC recommendations for streamlined testing and analysis of critical aircraft systems that can be done by the airline, to allow expanded use of PEDs.

Senator MCCASKILL. And when you look into the GA question that I asked, if you would also look into whether or not there is an announcement made on Air Force One that all devices must be turned off.

Mr. HUERTA. Certainly.

[The information referred to follows:]

Air Force One is owned and operated by the Department of Defense (DOD). DOD has authority to approve its own operations.

Senator MCCASKILL. Because if it's safe enough for the President of the United States, it's safe enough for the flying public.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator McCaskill, I don't care what the White House said to you or you said to them. This has been a treasured 5 minutes.

[Laughter.]

Senator MCCASKILL. He's a good guy. He's working hard, but I want that rule changed.

The CHAIRMAN. You—more than any human being on the face of the Earth, you want this rule changed.

[Laughter.]

The CHAIRMAN. And I think she may have a point. I don't know anything about it, but I'd like to ask Chairwoman Hersman:

We're terrific at putting in rules and regulations and just leaving them, because they're sort of the safe thing to do when you start out. I have heard the same thing, that pilots are using iPhones, or whatever—iPads—in the aviation cockpit. I've heard people who argue, exactly like she does, and I sort of return to my, "Oh, no, this is what we do in aviation." And Senator McCaskill is sort of moving me on this subject. And I think it's good that she is, because it drastically affects so many people.

Now, you could say, "Well, what if everybody was using it? Would that make a difference?" And I don't know the answer to that. But, I think it's a fair question.

Excuse me, Senator Coats, I interrupted your turn.

I think it's a fair question. I think she deserves an answer.

And, Chairwoman Hersman, I think, to the extent that you have views on this, I'd like to know what they are. Because if it sounds like a safety rule—I don't need to know now, because I've interrupted Senator Coats—but, we do have a practice of making rules and regulations, and sort of sticking by them. No matter if the technology or the facts, or human nature, whatever it is, takes us to quite another place. I think it's a fair question to raise, would have tremendous significance to an awful lot of people. And if there is any danger in it, I don't think she would want to touch it—Senator McCaskill—any more than I would. But, if it allows people to get a lot more work done or a lot more accomplished in their own trip, then I think it's worth taking a look.

Let me just ask you—and, again, I apologize to the good Senator—is there a way to find out, conclusively, if it interferes with flight? The process, the carrying out of flight? Does that exist?

Either one.

Ms. HERSMAN. In our accident or incident investigations, we have never identified a personal electronic device in the cabin affecting the safety of flight. But, we have identified situations where the cockpit crew have been distracted by their devices. In fact, we just had a—

The CHAIRMAN. Well, that's like distracting the pilot.

Ms. HERSMAN.—helicopter EMS accident, where we had a texting helicopter pilot.

The CHAIRMAN. Yes.

Ms. HERSMAN. We have identified portable electronic devices, in the cockpit, being a distraction, but have not identified safety issues with their use in the cabin.

The CHAIRMAN. But, there's a huge difference there, because the pilot's flying an airplane.

Mr. HUERTA. He's flying the plane.

Ms. HERSMAN. Absolutely.

The CHAIRMAN. Senator—

Ms. HERSMAN. Absolutely.

The CHAIRMAN. OK.

Well, I'd like to pursue it, but I can't, because Senator Coats is a very dear friend of mine, and he has a chance to be heard.

**STATEMENT OF HON. DAN COATS,  
U.S. SENATOR FROM INDIANA**

Senator COATS. Well, thank you, Mr. Chairman.

I'd be—this is an interesting topic, and I'd be willing to yield some of my time if you want to consume more.

But, I am—I'm anxious to hear what the results of the study are, because I have—you know, we now have to carry two electronic devices, one for official use and one for personal use. And several times, I've found my—one of them in my briefcase, still turned on, when I'm on an airplane. I had—I didn't break into tears, but I was a little concerned that maybe I was interfering with somebody's communications.

It's comforting to hear that there are no incidences of interference from the passengers, but—whether it's us texting when we drive or pilots texting while they're flying, that is a concern. Now I've got to worry, not only about the person in front of me shutting off their device, and me shutting off my device, I have to worry about the pilot shutting off his device. So, hopefully you can get us that answer, sooner rather than later.

I want to ask you a question, Administrator Huerta. First of all, let me commend the FAA, the way you handled the process in reconsidering the exemption for cargo carriers for pilot flight time, duty, and rest regulations. I guess—it's my understanding there was some errors that may have been made in developing the cost-benefit justification, but the FAA did do the right thing, and did its due diligence to make sure that it got it right. So, I think we commend you for that, taking that action.

But, along those lines, as you know, the pilot training regulations passed in the 2010 legislation—and some executive orders were issued by the President—both President Clinton and President Obama—clarifying that the agency specifically must adopt a regulation—I'm quoting now—"only upon a reasoned determination that its benefits justify the costs."

So, my question is this. Has FAA conducted that study on increased pilot training and experience requirements? And, if so, what did you learn?

Mr. HUERTA. That is still an ongoing rulemaking. Part of the work that we do, with every rule, is the development of a cost-benefit analysis. That is work that we've had underway for a while.

It is our expectation—and I've committed to this—that we will complete that rule by October of this year, and make it available for everyone to see at that time.

Senator COATS. OK, thank you.

Talk to me a little bit about the relationship, in hiring pilots, between flight hours and proficiency. Is there flexibility there? I mean, it a—just a hard line, in terms of, "You're going to fly this kind of plane, you've got to have this many hours, no matter how proficient you might have been in the testing, in the procedures, in the knowledge, et cetera"?

Mr. HUERTA. That is also the subject of an ongoing rulemaking. Congress called upon us to develop a new pilot qualification rule

by August of this year. The provisions of law under which that rule is developed become self-executing on August 1. Unless we promulgate a rule, then 1,500 hours becomes the required number of flight hours of experience that a pilot has to have to pilot a commercial aircraft.

Now, the rule that we are currently looking at considers things such as military experience, that can count toward meeting of the hours requirement. And that rule will be completed before August 1.

Senator COATS. And would you concede, though, that it's possible that—two candidates; one could have 1,500 hours and really not be proficient, and another could have 1,200 hours and be very proficient. How do you adjust for that kind of thing, particularly at a time when some people are saying we may have shortage in hiring qualified pilots?

Mr. HUERTA. That is certainly a possibility, but becoming a pilot requires more than just experience. That's where the training becomes important, that's where the rules that we've promulgated relating to flight duty and rest become important. How does—all—how does an individual conduct themselves in all aspects of carrying out their job, to ensure that they're proficient and are maintaining the highest levels of safety?

Senator COATS. But, the 1,500 is a bottom—minimal requirement, regardless—

Mr. HUERTA. It's—

Senator COATS.—of how that person has performed in every other category.

Mr. HUERTA. As the law was passed by Congress, unless we complete our rulemaking and that rulemaking provides for things that can serve as credit against the 1,500 hours, then, on August 1, 1,500 hours becomes self-executing.

Senator COATS. I see. So, that's possible, that your rulemaking would allow some flexibility for that.

Mr. HUERTA. That is correct.

Senator COATS. Thank you.

Time's expired, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Coats.

Senator Thune has a question.

Senator THUNE. Thank you, Mr. Chairman.

And I want to wrap up here, pretty quickly, but first want to drill down on a couple of these budget questions.

I also want to say to the Senator from Missouri's proposal, that I will lend bipartisan support to her request that we revisit this issue of banning the use of hand-held devices on airplanes.

And, at a minimum, I was telling you, Mr. Chairman, that, in my part of the country, we de-ice a lot, and, when the door closes, even if you're going to the de-icing pad, they tell you that you have to shut these devices down. And it just seems like that these "rules for rules' sake" sometimes really go beyond what's even practical, let alone safe.

So, let me, if I might, just ask the question. Mr. Administrator, I mentioned, earlier in a question about the transfer authority that you have, allowing for 2 percent transfers between activities. That does not require advance permission—

Mr. HUERTA. That's correct.

Senator THUNE.—correct? OK. So, in the rest of this year, fiscal 2013 and FY-2014, would you utilize that 2 percent transfer authority to protect airspace users from furloughs and tower closures?

Mr. HUERTA. That doesn't provide for enough resources to protect us from furloughs and tower closures.

Senator THUNE. In addition to that 2 percent transfer authority, would you request permission to reprogram funding to protect airspace users from tower closures and furloughs, as soon as possible? That's also something that you can ask for.

Mr. HUERTA. We can ask the Appropriations Committee for reprogramming authority. That also would not get us there completely.

Senator THUNE. OK. You have, in your budget within the operations account \$179 million for travel, \$134 million for supplies, and \$541 million for consultants. And I guess my question is, since those two things don't get you there, are these areas in which you would be willing to find some savings to offset the sequester cuts so that the towers don't have to close?

Mr. HUERTA. We've reduced travel by 30 percent by eliminating all but operational travel. For example, a radar technician needing to travel to a site to repair a radar that might go out, or travel associated with an aviation inspector needing to inspect a manufacturer of avionics or some other aviation equipment would be the type of travel that is permitted.

The \$500 million that you talk about with respect to consultant contracts, that is a budgetary category that takes account of everything which is a non-construction contract. The largest single contract in that category is the services contract that I previously mentioned, which is FAA's telecommunications infrastructure, the communication network that a private company provides for use at all the FAA facilities. That accounts for about half of the amount.

The next largest contract is for the services for flight service stations. Those are services that are provided to pilots.

The third largest contract is for the contract towers that have generated so much concern. Of the amount you mentioned, that is actually what you would call "traditional consultant services," is around \$20 million. And yes, we have gotten rid of the vast majority of that.

Senator THUNE. Well, as you know, there's a bill up here that's got substantial bipartisan support—I think, 29 bipartisan cosponsors on that particular issue. And it seems, to me at least, when you look at the FAA budget, and you break it down, and you look at the personnel accounts, which is about 70 percent, you still have about 30 percent of your budget that is in these other categories. And I certainly would hope that you would give careful scrutiny and scrub those areas of the budget to see what might be done to prevent something from happening that many people up here certainly are concerned about, as well as people all across the country.

So, thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Senator Cantwell.

Senator CANTWELL. Thank you, Mr. Chairman.

And, Administrator Huerta, could we add to this list, too, What is the impact on NextGen implementation from sequestration? If you have a general idea, you can tell me now—if you want to get back to us—but, what will the impact on that be?

Mr. HUERTA. I'll provide you a general sense of what we're seeing this year, and then, for the record, provide a more detailed response.

[The information referred to follows:]

President Obama has proposed a workable solution to our Nation's budget challenge and the FAA's 2014 budget request of \$15.6 billion is part of that. This budget request supports our critical safety programs, modernizes our aviation infrastructure, and strikes a balance between maintaining current infrastructure while deploying key NextGen programs to support the growth and changes in aviation. It does all this at funding levels that are \$351 million lower than FY 2012. This is a 2.2 percent decrease, which is part of the President's effort to reduce the deficit.

If the President's Budget is not adopted, FAA will have to consider all of the severe cost-saving measures debated this year, including employee furloughs, which in turn could have an impact on the development and implementation of NextGen. In addition, given the limited number of days employees can be furloughed, reductions in force will also be considered for all segments of FAA's workforce.

Mr. HUERTA. Within the current year, the principal impact we will see is related to the need to bring operational personnel back to their home facilities to work on day-to-day operations. What that means is that we're pulling individuals off of what we call collaborative workgroups. These are workgroups that we set up with FAA employees to work with contractors and to work with our engineering and planning staffs that are deploying NextGen. Their job is to actually work through the details of how is the system going to handle live traffic.

This is an extremely important aspect of what we do. In the past, the agency hadn't done as much of this. That has gotten the FAA into trouble on large programs. For example, a few years ago, there was a program called DRAM, which is the modernization of our en route platform. Once we adopted these collaborative workgroups, we found that we had a much more seamless transition to new technology. So, the need to pull back resources and personnel from these activities will delay the implementation of some of these new technologies.

Senator CANTWELL. Aren't—

Mr. HUERTA. We're viewing that—

Senator CANTWELL. Aren't there some competitiveness issues with us getting NextGen implemented?

Mr. HUERTA. Well, where it affects us right now is in our program called the Optimization of Airspace Procedures. That's the deployment of performance-based navigation that has the ability to reduce fuel burn, reduce costs, reduce emissions and noise impacts in local communities. We have a number of these procedures around the country. You have probably one of the best known up there in Seattle, an initiative called Greener Skies.

It does slow down the deployment of those procedures, for two reasons. One is, we don't have the people that can work through the operational details so that we're able to deploy them between now and the end of the fiscal year. The second reason that developing and maintaining procedures, in and of itself, is an expendi-

ture: it involves paying for contractors, for design, for publication and training.

Senator CANTWELL. So, I'd love to get more details—

Mr. HUERTA. Sure.

Senator CANTWELL.—I mean, a written response, so that we could share that with our colleagues, about what the impact on that is.

I'd like to turn—so, what is the—what are the mechanisms the FAA is going to use to resolve the adverse conditions on the 787 issue? And how will you—I mean, is that something the Secretary does as an official final decision, or how do you decide about ETOP issues, all of that? Could you give us some idea?

Mr. HUERTA. Sure. What Boeing presented to us last month was a certification plan. The certification plan had several components to it, but it essentially resulted in a redesign of the battery systems within the airplane, and a containment system to provide another layer of safety. We asked for certain thresholds to be met, in order to maintain the highest levels of safety. Once the certification plan was approved by us last month, Boeing embarked on a series of tests that we required, about 20 distinct tests, to prove that the system would operate as designed.

Boeing has completed the testing, and has provided a very extensive set of documents to the FAA. Those documents are currently under review. That review will result in us making a final determination as to whether the aircraft can return to flight.

Coincident with that review was a review where we went back and looked at our original determination relating to ETOPS flight. The question there is, when the airplane was grounded, it was certified for ETOPS of 180 minutes. So, the question for us was, Would we return it to service at that level? That review is a concurrent review that is ongoing. When we make our final determination with respect to return to flight, we will also address that question.

Senator CANTWELL. So, is this something the Secretary decides, or the FAA decides, or—

Mr. HUERTA. This is a determination and a recommendation that's made by all technical experts. It was my decision to ground the fleet, and I would be the one making the recommendation, going forward.

Senator CANTWELL. I see my time is expired, Mr. Chairman.

The CHAIRMAN. Actually, so is mine.

Senator CANTWELL. Oh.

The CHAIRMAN. The—I've got a cybersecurity thing that I have to be at. And what you can do, Senator Cantwell, is to close out this hearing and continue your line of questioning, because they can't move.

[Laughter.]

The CHAIRMAN. Would you like to do that?

Senator CANTWELL. I—

Mr. HUERTA. That's fine.

The CHAIRMAN. I think you would.

[Laughter.]

Senator CANTWELL. Well, there are many issues, Mr. Chairman, that we could continue to go over, but—I've asked my questions for

today, but—I don't know whether the Ranking Member wants to stay. And I'm happy to stay, if that's the—

The CHAIRMAN. Oh, my schedule just changed.

Senator CANTWELL.—if that's—

The CHAIRMAN. So, you go right ahead.

Senator CANTWELL. And continue and ask questions, Mr. Chairman? Or—

The CHAIRMAN. Probably not. I mean, I—you don't want to get me started on general aviation, do you? But, you go ahead.

Senator CANTWELL. OK.

Well, the only other question I had was for Mr. Dillingham about the process for—with composites. We were very involved with composite manufacturing and getting the FAA Center of Excellence established, which was a program to help collaboration between research institutions, the FAA, and manufacturers identify issues. And I think you did a report, on that certification process, in which you think that that worked well. Is that—

Dr. DILLINGHAM. Yes, that's what—

Senator CANTWELL.—the model for what we should be doing? Is that what—

Dr. DILLINGHAM. We looked in depth at the certification of the composite aspect of the Dreamliner 787. And, in all cases, we found that FAA did an excellent job. It could be a model for, you know, future situations, such as Attlee does. Clearly, composites are going to be an ever-increasing part of aviation manufacture, as it has been for decades now; it will continue to grow.

Senator CANTWELL. And, Mr. Secretary, in all the balancing of these issues—NextGen, the towers, sequestrations, battery issues, all of that—how do you prioritize these rulemakings that Mr. Guzzetti was talking about being so essential? Do you prioritize them in a ranking?

Mr. Chairman, having oversight of the Coast Guard Committee for a while, and then being challenged with the implementation of the—what was then called Deepwater Acquisition program, we got to a point where so many members had so many interests in these various priorities—and I could go into this issue of the helicopter and medical issue.

But, do you prioritize these rulemakings within the agency so that we can give members some idea of their prioritization?

Mr. HUERTA. We go through a regular process of identifying what the deadlines are for rulemakings, given available resources. Every rulemaking requires a level of technical expertise associated with developing and ultimately promulgating and implementing a rule. Those actions rely on staff that are available or contractors that are available to perform the needed cost-benefit analysis that Senator Coats asked about. It's marrying the technical expertise that we have with the timetables that have been developed, the complexity of the rule, and then evaluates the benefit that the rule will enable us to achieve as a result of its implementation. That's a regular process that we do go through.

Senator CANTWELL. Well, it would be, I think, nice for the larger aviation community to have a sense of the prioritization of those rules. I mean, I'm sure some of it can be simultaneously, but—

Mr. HUERTA. Sure.

Senator CANTWELL.—in the context of people being able to weigh in on that prioritization, so we just have a little more definition about what's coming next, and when. And I know—

Mr. HUERTA. Sure.

Senator CANTWELL.—that you commented today, which was great, on the actual pilot rules that had to be implemented, and their timeframe. But, since we just went through this entire list of things that you're responsible for in a shrinking budget, I think part of our challenge is to communicate what—exactly what that means from a timeframe to our constituents. So—

Mr. HUERTA. Sure.

Senator CANTWELL.—I would appreciate that.  
[The information referred to follows:]

### FAA Priority Rules for 2013

1. *Pilot Certification and Qualification Requirements (Final Rule)*—This rule amends the eligibility and qualification requirement for pilots engaged in Part 121 air carrier operations and modifies requirements for an airline transport pilot certificate (ATP). Addresses requirements of PL 111–216, the Airline Safety and Federal Aviation Administration Extension Act of 2010, which also has a self-enacting provision requiring ATP that will go into effect August 2, 2013.
2. *Air Ambulance and Commercial Helicopter Operations (Final Rule)*—The rule addresses 13 NTSB recommendations and the causes of over 150 helicopter air ambulance and commercial helicopter accidents that occurred between 1991 and 2010 in which over 250 people died. Addresses requirements of FAA Reauthorization.
3. *Safety Management Systems (SMS) for Part 121 Certificate Holders (Final Rule)*—This rule would require 14 CFR Part 121 certificate holders to establish a safety management system. It responds to requirements of PL 111–216, The Airline Safety and Federal Aviation Administration Extension Act of 2010. *Qualifications, Service and Use of Crewmembers and Aircraft Dispatchers—N&O (Final Rule)* – This rule will amend training programs by requiring training in areas that are critical to safety. Addresses requirements of L 111–216, The Airline Safety and Federal Aviation Administration Extension Act of 2010.
4. *Small UAS (NPRM)*—The notice proposes specific rules for the operation of Small Unmanned Aircraft Systems (sUAS) in the National Airspace System (NAS). Currently, public and civil aircraft (commercial and for hire only) operations must be approved on a case-by-case basis to operate in the NAS. Addresses requirements of FAA reauthorization.
5. *Drug and Alcohol Testing for Foreign Repair Stations (ANPRM)*—This proposed rule would require controlled substance testing of some employees working in foreign repair stations. Addresses requirements of FAA reauthorization.
6. *Supercooled Large Droplet Icing Conditions (Final Rule)*—This action addresses safety concerns about the adequacy of icing certification standards. It would address two NTSB safety recommendations.
7. *Airport SMS (SNPRM)*—This proposal would require certain certificate holders under 14 CFR part 139 to establish a safety management system (SMS) for its entire airfield environment (movement and non-movement areas) to improve safety at airports hosting air carrier operations.
8. *Flight Simulation Training Device Qualifications and Standards (NPRM)*—This proposal would modify the flight simulation training device qualifications requirements to improve evaluation and testing methods for extended envelope training tasks. This rulemaking will support the training tasks required in the training rulemaking.

Senator CANTWELL. Mr. Chairman, thank you very much.

The CHAIRMAN. All right.

I'm going to defer on general aviation, although I did, in the briefing, read their statistics, as compared to legacy aviation, and I was stunned by the difference with respect to safety deaths, the rest of it.

This was an important hearing. I don't think that we totally connected, the way I would have liked.

And, Mr. Administrator, I think we really do want to find out—I'm pretty sure I speak for Senator Thune on this—that—what sequestration actually does. And what we got was a series of things, as opposed to a prioritized laundry list of sacrifices, which, in the end—I mean, in other words, we could—I come out of this hearing with the feeling we can do it, we can make it, somehow. And I'm not sure if I'm coming out with the right feeling, if sequestration sticks around. And—but, I don't say that to elicit a response; I simply say that to—it's difficult, on a subject like this, to make it resonate, and particularly when it affects so many people, potentially, and it's such a large problem.

But, anyway, we've worked at it, and grinding away is part of the deal in the U.S. Congress. And we have done that. And I thank all of you very much.

And this hearing is adjourned.

[Whereupon, at 4:30 p.m., the hearing was adjourned.]



## A P P E N D I X

PREPARED STATEMENT OF HON. FRANK R. LAUTENBERG,  
U.S. SENATOR FROM NEW JERSEY

Mr. Chairman, the past few years have been the safest in history for America's aviation system. Although industry fatality rates are at all-time lows, the Federal Aviation Administration (FAA) has recently had to address several high profile safety incidents, reminding us that we must remain vigilant and never let safety take a back seat.

One major threat to aviation safety is sequestration. Because of the sequester's cuts, the FAA will furlough air traffic controllers and limit hours or close down service at some towers, including at Newark Liberty, Atlantic City, and Trenton-Mercer Airports in New Jersey. These furloughs and closings will harm local communities, affect working families, and strain a system that already suffers from too many delays.

The FAA predicts that due to budget cuts, passengers at major airports—such as Newark Liberty—could experience delays of up to 90 minutes during peak hours. I opposed the bill that created sequestration because I was concerned about these types of damaging consequences. And we are now seeing them in every program. Whether from cuts to Head Start, medical research, or our aviation system, sequestration is bad for Americans.

While the FAA works to cope with sequestration's cuts, the agency must also continue its critical safety missions without interruption. For example, understanding and fixing the lithium ion batteries on Boeing 787s must be a top priority. We must continue to be thorough in this investigation and analysis to ensure that this risk is eliminated, and that in the future we catch these kinds of problems before the planes are in the skies.

And we must also act quickly to implement all of the recommendations from the "Airline Safety Act" that Congress passed in response to the Colgan Air crash four years ago. The FAA has made significant progress in implementing the new law. However, more work needs to be done to complete all safety requirements and ensure the traveling public knows pilots are always well-trained and well-rested. Tragically, the Colgan crash showed us these are matters of life and death, and we must take further action to improve the safety of our aviation system. We simply can't afford to ignore the lessons from past accidents and crashes.

Mr. Chairman, thank you for calling this hearing on an issue that affects all Americans. And I thank our witnesses for testifying about how we can continue to ensure the safety of our aviation system as we cope with the impacts of sequestration.

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PREPARED STATEMENT OF HON. AMY KLOBUCHAR, U.S. SENATOR FROM MINNESOTA

Mr. Chairman, thank you for holding this important hearing focusing on the safety of our air transportation system.

I held a hearing in the Judiciary Antitrust Subcommittee reviewing the announced merger between U.S. Airlines and American last month. As the commercial aviation industry continues to change, safety and the protection of passengers is essential.

Safety in our skies and on our tarmacs is necessary to the flow of commerce and to keep the public safe. In fact, 2012's safety performance was the best in history for commercial aviation.

However, we have some serious issues in front of us and more can still be done to improve the safety on the ground and in our airspace for commercial as well as general aviation.

With sequestration many agencies are making decisions on where to cut, and the FAA is no different. While the FAA has been clear that the agency will make cer-

tain the aviation system continues to operate safely, I am concerned about the long-term impacts of these cuts.

I have some concerns regarding the FAA's progress on safety rulings and decision to close air traffic control towers. I appreciate the opportunity to talk to you, Administrator Huerta, as well as all of the investigators and overseers about maintaining safe operations from the manufacturing process, on the runway and at airports, as well as in the air.

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PREPARED STATEMENT OF HON. CHARLES E. SCHUMER,  
U.S. SENATOR FROM NEW YORK

I would like to thank Chairman Rockefeller and Ranking Member Thune for holding this important hearing on the Federal Aviation Administration's (FAA) progress on safety initiatives. I have worked tirelessly with my colleagues on the Commerce Committee and the Families of Flight 3407 to ensure that the important reforms the Congress mandated in the Airline Safety and FAA Extension Act (PL 111-216) are implemented in a timely fashion. Unfortunately, critical rulemakings required by this legislation have missed a series of deadlines over the past three years. Despite these shortcomings, I was recently encouraged to receive a letter from FAA Administrator Huerta that committed the agency to completing their work on the Pilot Qualifications and Flight Crew Member training rules by August and October of this year, respectively.

However, according to the U.S. Department of Transportation's (DOT) April 2013 Significant Rulemakings report, the FAA was delayed by nearly thirty days in the submission of the Pilot Qualifications rule to the DOT for review. While this delay concerns me and the many stakeholders involved in this issue, I remain optimistic that the DOT and Office of Management and Budget (OMB) will review, clear, and publish this rule by the July 26 deadline outlined in the report. I implore the Administrator and his counterparts at DOT and OMB to make a steadfast commitment to this schedule.

In addition, the Flight Crew Member training rule is expected to be sent to DOT for review by June 3, 2013. I urge the Administrator to assure the Committee that this deadline will also be met in a timely fashion. When it comes to aviation safety and making sure the mistakes made on Flight 3407 can never be allowed to happen again, these rules are the cornerstones of achieving that reform. Therefore, the flying public can ill afford any deviation from these deadlines.

Thank you to Administrator Huerta for his testimony today and I again thank the Chair and Ranking Member for their leadership on this important issue.

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COUNTY OF ANOKA  
OFFICE OF COUNTY BOARD OF COMMISSIONERS  
*Anoka, MN, April 12, 2013*

Hon. JOHN D. ROCKEFELLER IV,  
U.S. Senate,  
Committee on Commerce, Science, and Transportation,  
Washington, DC.

Chairman Rockefeller:

I am writing on behalf of the Anoka County Board of Commissioners to request that this letter be submitted for the record in your upcoming hearing titled, "Aviation Safety: FAA's Progress on Key Safety Initiatives." It is our sincere hope that you will take the opportunity afforded by this hearing to discuss with FAA Administrator Michael Huerta the negative impact of the planned air traffic control tower closures on not only local communities like ours, but also on the national interest.

In a March 5, 2013 letter, the Federal Aviation Administration (FAA) advised affected contractors and facilities that the administration expects to cease funding air traffic control services on a vast majority of the contract air traffic control towers throughout the United States. This cessation of funding is necessary for the FAA to implement the budget sequestration. The tower at the Anoka County-Blaine Airport (ANE) is one of 149 towers expected to be closed.

The Anoka County-Blaine Airport (ANE) is one of six reliever airports in the Minneapolis-St. Paul metropolitan area and is a reliever airport for Minneapolis-St. Paul International Airport (MSP). ANE is the only large reliever airport in the north metro area and its closing would be devastating not only to the economic vitality of the northern portions of the Minneapolis-St. Paul metropolitan area, but also on the national economy. The congestion and flight delays that would likely in-

crease at MSP as a result of the loss of a viable alternative airport would adversely affect the commercial airline industry nationwide.

In addition to the detrimental effects of the cuts on the commercial airline industry, closing the tower at ANE would hurt some of Minnesota's largest companies, including several Fortune 500 companies, like Medtronic and Cargill, and the vendors that serve them. As these large companies operate nationwide and worldwide, reduced or more costly access to necessary transportation facilities would not only affect local and state economies, but also the national economy.

On a purely local level, the Anoka County-Blaine Airport has a significant economic impact. The most recent study of the reliever airports in the Minneapolis-St. Paul metropolitan area was completed by the Wilder Foundation in 2005. It reported that nearly 110,000 operations occurred at the Anoka County-Blaine Airport in 2004. Also, there were 12 businesses leasing land and reporting income in excess of \$5 million in non-revenue receipts. It was estimated in that study that 41,000 visitors arrived in the metro area via ANE and 350 jobs were dependent on airport operations. The total economic impact of ANE in 2004 was estimated at just over \$35 million annually.

Since the study was completed there have been significant improvements to the airport. Anoka County invested nearly \$20 million in runway expansions, an Instrument Landing System, lighting improvements and necessary taxiways and ramp areas. A new Fixed Based Operation has been constructed by our private partner, Key Air of Minnesota, who also invested millions of dollars in a new facility on the northwest quadrant of the airport. This business has brought many new jobs to the area and the operator reported more than \$7 million in revenue to the Metropolitan Airports Commission in 2012.

In addition to the negative economic impact of the tower closures, the closures also have significant implications for aviation safety. I have attached a photograph of the Anoka County-Blaine Airport and would like to note the following points. ANE airfield has two runways that are approximately at 90 degrees to each other. They are about the same length: one is 5,000 feet; the other is 4,800 feet in length. These two runways intersect near their midpoint (see photograph). There is an instrument landing system available on the East-West runway, which means most jet traffic will land and take off in an east-west direction using the instrument landing system. Prop aircraft, however, normally take off into the wind and often will choose to use the North-South runway. While there are procedures in place that each pilot must follow, operating without a control tower to manage the flow is an accident waiting to happen.

In addition, most airports have a sight line from the ends of each runway to the others. At ANE, as you can see from the photo, this is not the case. From Runway 36-18 you cannot see either end of Runway 9-27, and of course either end of Runway 9-27 cannot see the beginning of Runway 36-18. Also it is doubtful that there is an open line of sight between Runways 18-36 and 2-79 for most of the year, compounding this issue. Consequently, a jet landing on Runway 2-79 or 9-27 as the case may be, depending on the direction of approach, would not be seen by a plane attempting to take off from Runway 18-36. The situation could arise where a crash would occur at the intersection of these two runways.

As a final point, we would like to note that it does not appear that FAA exercised good judgment in determining which airports should remain towered and at which airports the towers should close. Of the 251 contract towers nationwide, ANE ranks number 46 from an operations perspective at just under 80,000 operations in 2012. There are 75 towers scheduled to remain open that have fewer operations than ANE and 34 of those scheduled to remain open have less than half as many operations as ANE. Of the 149 towers slated to close, only 21 had more operations in 2012 than ANE.

This distressing news comes at a time when we should be adding jobs and strengthening our economy; not taking jobs away and weakening our position for future growth. Consequently, we request that Congress reallocate the sequestered cuts to ensure that the tower at ANE and many other towers throughout the reliever airport system throughout the country remain operational. Please act immediately to help us keep the Anoka County-Blaine Airport operating at its peak efficiency.

Thank you for your consideration.

Sincerely,

RHONDA SIVARAJAH,  
*Chair,*  
Anoka County Board of Commissioners.

Attachment: Photograph

Copies To:

The Honorable John Thune, Ranking Member  
U.S. Committee on Commerce, Science, and Transportation  
560 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Amy Klobuchar  
302 Hart Senate Office Building  
Washington, D.C. 20024

The Honorable Al Franken  
309 Hart Senate Office Building  
Washington, D.C. 20024

The Honorable Michelle Bachman  
2417 Rayburn House Office Building  
Washington, D.C. 20515

The Honorable Erik Paulsen  
127 Cannon House Office Building  
Washington, D.C. 20003

Gary Schmidt  
Director of Reliever Airports, Metropolitan Airports Commission

DOUGLAS COUNTY COLORADO—OFFICE OF THE COUNTY COMMISSIONERS  
*April 12, 2013, Castle Rock, CO*

Hon. JOHN D. ROCKEFELLER IV,  
U.S. Senate Committee on Commerce, Science, and Transportation,  
Washington, DC.

Dear Chairman Rockefeller,

I am writing on behalf of the Douglas County Board of Commissioners to request that this letter be submitted for the record in your upcoming hearing titled, "Aviation Safety: FAA's Progress on Key Safety Initiatives." We hope that you will take the opportunity afforded by this hearing to seek clarification from FAA Administrator Michael Huerta on the planned elimination of overnight shifts at certain air traffic control towers, and to share with Administrator Huerta the negative impact of this plan.

On February 22, FAA released a list of 72 air traffic control towers at which they would eliminate overnight shifts in response to budget cuts imposed by the sequester. Included on that list was Centennial Airport (APA) in Arapahoe County, Colorado.

Since releasing the list in February, FAA has not made available any details on the planned cuts. Airports on the list still do not know when the cuts will take effect, or even if FAA still plans to move forward with the cuts in light of the recent legal action taken against the administration regarding its plan to outright close 149 control towers. Clarification on this matter would be extremely helpful so that all involved parties can develop a plan to mitigate the damage done by the elimination of the overnight shift at APA.

Eliminating the night shift at Centennial Airport would have a significant impact on both the local and national economies. APA is the second busiest general aviation airport and the 35th busiest U.S. airport, producing over \$800 million of economic output per year and supporting over 10,000 jobs. The airport is also one of the few self-sustaining general aviation airports in the country. One source of revenue for

APA comes from international flights, 40 of which land at the airport at night in an average year. With the loss of nighttime customs services as a result of these cuts, APA would be unable to accommodate those flights, costing fixed-base operators at the airport between \$800,000 and \$1.3 million in annual sales. The loss of revenue from just this one source alone outweighs the cost savings from eliminating the nighttime shift.

In addition to the direct impact of airport activities on the economy, APA is the only reliever airport for Denver International Airport (DEN) that has a staffed nighttime control tower. Most airlines will not land at an airport without a control tower, meaning planes would have to be diverted out of the state of Colorado in the event of a problem at DEN. Additionally, if flights that would ordinarily land at APA have to land at DEN as a result of the unmanned control tower, congestion and flight delays at DEN could very well increase, creating an adverse economic impact on airline operations across the country.

Not only will the elimination of nighttime shifts have a negative impact on the economy, it will also create a number of safety concerns. Because of Centennial Airport's proximity to Denver International Airport, flights taking off from APA sometimes inadvertently enter DEN's Class B airspace without contacting the proper air traffic staff at DEN. Today, when air traffic controllers at the APA tower observe a plane approaching Class B airspace, they radio a warning to the pilot to watch his altitude.

Absent those warnings, planes from APA will likely enter DEN airspace fairly regularly, threatening the safety of those planes and the numerous commercial flights taking off and landing at DEN.

APA also serves as a significant hub for air ambulance companies and state, local, and Federal law enforcement agencies. Such aircraft are necessarily on-call 24/7, and rely on the assistance of air traffic controllers to direct traffic flow during stressful emergency missions. The loss of such assistance poses a safety risk not only to first responders, but also to those people that they are rushing to help.

It is for these reasons that we strongly urge FAA to reconsider its decision to eliminate the overnight shift at Centennial Airport. And while we believe that Centennial Airport has a particularly strong case, many other airports included on FAA's list have numerous compelling reasons why they should continue to be fully funded as well. The Douglas County Board of Commissioners respectfully requests that Congress and FAA take any and all necessary steps to avoid these economically harmful and dangerous cuts.

Sincerely,

JACK HILBERT,  
*Douglas County Commissioner,*  
Board of Douglas County Commissioners.

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DOUGLAS COUNTY BUSINESS ALLIANCE  
*Castle Rock, CO, April 12, 2013*

Hon. JOHN D. ROCKEFELLER IV,  
U.S. Senate Committee on Commerce, Science, and Transportation,  
Washington, DC.

Dear Chairman Rockefeller,

I am writing on behalf of the Douglas County Business Alliance to request that this letter be submitted for the record in your upcoming hearing titled, "Aviation Safety: FAA's Progress on Key Safety Initiatives." We hope that you will take the opportunity afforded by this hearing to seek clarification from FAA Administrator Michael Huerta on the planned elimination of overnight shifts at certain air traffic control towers, and to share with Administrator Huerta the negative impact of this plan.

On February 22, FAA released a list of 72 air traffic control towers at which they would eliminate overnight shifts in response to budget cuts imposed by the sequester. Included on that list was Centennial Airport (APA) in Arapahoe County, Colorado.

Since releasing the list in February, FAA has not made available any details on the planned cuts. Airports on the list still do not know when the cuts will take effect, or even if FAA still plans to move forward with the cuts in light of the recent legal action taken against the administration regarding its plan to outright close 149 control towers. Clarification on this matter would be extremely helpful so that all involved parties can develop a plan to mitigate the damage done by the elimination of the overnight shift at APA.

Eliminating the night shift at Centennial Airport would have a significant impact on both the local and national economies. APA is the second busiest general aviation airport and the 35th busiest U.S. airport, producing over \$800 million of economic output per year and supporting over 10,000 jobs. The airport is also one of the few self-sustaining general aviation airports in the country. One source of revenue for APA comes from international flights, 40 of which land at the airport at night in an average year. With the loss of nighttime customs services as a result of these cuts, APA would be unable to accommodate those flights, costing fixed-base operators at the airport between \$800,000 and \$1.3 million in annual sales. The loss of revenue from just this one source alone outweighs the cost savings from eliminating the nighttime shift.

In addition to the direct impact of airport activities on the economy, APA is the only reliever airport for Denver International Airport (DEN) that has a staffed nighttime control tower. Most airlines will not land at an airport without a control tower, meaning planes would have to be diverted out of the state of Colorado in the event of a problem at DEN. Additionally, if flights that would ordinarily land at APA have to land at DEN as a result of the unmanned control tower, congestion and flight delays at DEN could very well increase, creating an adverse economic impact on airline operations across the country.

Not only will the elimination of nighttime shifts have a negative impact on the economy, it will also create a number of safety concerns. Because of Centennial Airport's proximity to Denver International Airport, flights taking off from APA sometimes inadvertently enter DEN's Class B airspace without contacting the proper air traffic staff at DEN. Today, when air traffic controllers at the APA tower observe a plane approaching Class B airspace, they radio a warning to the pilot to watch his altitude. Absent those warnings, planes from APA will likely enter DEN airspace fairly regularly, threatening the safety of those planes and the numerous commercial flights taking off and landing at DEN.

APA also serves as a significant hub for air ambulance companies and state, local, and Federal law enforcement agencies. Such aircraft are necessarily on-call 24/7, and rely on the assistance of air traffic controllers to direct traffic flow during stressful emergency missions. The loss of such assistance poses a safety risk not only to first responders, but also to those people that they are rushing to help.

It is for these reasons that we strongly urge FAA to reconsider its decision to eliminate the overnight shift at Centennial Airport. And while we believe that Centennial Airport has a particularly strong case, many other airports included on FAA's list have numerous compelling reasons why they should continue to be fully funded as well. The Douglas County Business Alliance respectfully requests that Congress and FAA take any and all necessary steps to avoid these economically harmful and dangerous cuts.

Sincerely,

MARY MARCHUN,  
Douglas County Business Alliance.

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DOUGLAS COUNTY, COLORADO—OFFICE OF THE COUNTY COMMISSIONERS  
*Castle Rock, CO, April 15, 2013*

Hon. JOHN D. ROCKEFELLER IV,  
U.S. Senate Committee on Commerce, Science, and Transportation,  
Washington, DC.

Dear Chairman Rockefeller:

As Chair of the National Association of Counties Airports Subcommittee, I lend my support to Douglas County's efforts to express its concerns about the proposed FAA cuts to air traffic control tower shifts across the country, as outlined in the attached letter.

And, from a national level position, I also ask that you speak against these cuts. On a national level, we have the same concerns that this will significantly impact the safety of our citizens and will result in more adverse economic impacts in the areas targeted. Surely, cuts can be found that will not be as far reaching as this.

Thank you for your consideration of this request.

Sincerely,

JACK A. HILBERT,  
*Chair,*  
National Association of Counties Airports Subcommittee.

DENVER SOUTH ECONOMIC DEVELOPMENT PARTNERSHIP  
*Englewood, CO, April 15, 2013*

Hon. JOHN D. ROCKEFELLER IV,  
 U.S. Senate Committee on Commerce, Science, and Transportation,  
 Washington, DC.

Dear Chairman Rockefeller,

The Denver South Economic Development Partnership is an organization of government and business leaders committed to the economic vitality and sustainability of the South Metro Denver region. I am writing today, on behalf of this community, to request that this letter be submitted for the record in your upcoming hearing, "Aviation Safety: FAA's Progress on Key Safety Initiatives." We hope that you will take this opportunity to seek clarification from FAA Administrator Michael Huerta on the planned elimination of overnight shifts at certain air traffic control towers, and to share with Administrator Huerta the negative impact of this plan.

On February 22, FAA released a list of 72 air traffic control towers at which they would eliminate overnight shifts in response to budget cuts imposed by the sequester. Included on that list was Centennial Airport (APA) in Arapahoe County, Colorado.

Since releasing the list in February, FAA has not made available any details on the planned cuts. Airports on the list do not know when the cuts will take effect, or even if FAA still plans to move forward. Clarification on this matter would be extremely helpful so that all involved parties can develop a plan to mitigate the loss of the overnight shift at APA.

Eliminating the night shift at Centennial Airport would have a significant economic impact. APA is the second busiest general aviation airport and the 35th busiest U.S. airport, producing over \$800 million of economic output per year and supporting over 10,000 jobs.

APA serves many international flights, 40 of which land at the airport at night in an average year. Without nighttime customs services, as a result of these cuts, APA would be unable to accommodate those flights, costing fixed-base operators at the airport between \$800,000 and \$1.3 million in annual sales. The loss of revenue from just this one source alone outweighs the cost savings from eliminating the nighttime shift.

In addition to the direct impact of airport activities on the economy, APA is the only reliever airport for Denver International Airport (DEN) that has a staffed nighttime control tower. Most airlines will not land at an airport without a control tower, meaning planes would have to be diverted out of the state of Colorado in the event of a problem at DEN.

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It is for these reasons that we respectfully request FAA to reconsider its decision to eliminate the overnight shift at Centennial Airport.

Sincerely,

MIKE FITZGERALD,  
*President & CEO,*

Denver South Economic Development Partnership.

TOWN OF PARKER COLORADO  
*Parker, CO, April 15, 2013*

Hon. JOHN D. ROCKEFELLER IV,  
 U.S. Senate Committee on Commerce, Science, and Transportation,  
 Washington, DC.

Dear Chairman Rockefeller,

I am writing on behalf of the Town of Parker Town Council to request that this letter be submitted for the record in your upcoming hearing titled, "Aviation Safety: FAA's Progress on Key Safety Initiatives." We hope that you will take the opportunity afforded by this hearing to seek clarification from FAA Administrator Michael Huerta on the planned elimination of overnight shifts at certain air traffic control towers, and to share with Administrator Huerta the negative impact of this plan.

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Respectfully,

MIKE WAID,  
*Mayor,*  
Town of Parker.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BARBARA BOXER TO  
HON. MICHAEL P. HUERTA

**Regarding the Potential Need for Secondary Barriers to Protect the Flight Deck**

*Question 1.* The fortified flight deck door was mandated on commercial aircraft in the aftermath of the attacks on September 2001. What actions have been taken to address the residual risks of a flight deck breach when the fortified flight deck door is opened in flight?

Answer. FAA regulations (14 CFR 121.584) require that the cabin be secure before the flight deck door can be opened during flight. The FAA requires that each air carrier document its door transition procedures for compliance with the regulation in its Flight Operations Manual (FOM), which it is required to submit to the FAA for approval. The FAA's principal operations inspector (POI) for the carrier signs the FOM, which is the air carrier's "binding contract" with the FAA on how it will comply with all applicable regulations.

*Question 2.* A number of years ago, the FAA endorsed the concept of installed secondary flight deck barriers on aircraft to ICAO and in 2011 facilitated the publication of guidance on their design and performance. Has the FAA encouraged the airlines to use this guidance and install these devices? If not, does the FAA have plans to encourage the airlines to do so?

Answer. The FAA worked with RTCA Committee 221, chaired by Boeing and United Airlines and comprised of air carrier, manufacturer, and labor representatives, to evaluate the viability of effective secondary barriers. The group sponsored extensive testing of possible procedures and equipment at the Federal Air Marshal Training Center in Atlantic City, describing its findings in a report (DO-329) that included suggested best practices for use by flight and cabin crewmembers. This document is available to operators for use in developing Flight Operations Manual (FOM) procedures, as well as to FAA inspectors who must review and sign the carrier's FOM. The FAA encourages all operators to use these findings in developing procedures.

**Safety Rules Related to Pilot Training**

*Question 3.* Administrator Huerta, I am very concerned about potential delays on important safety regulations that the FAA is working to finalize regarding pilot qualifications and training. Will your agency complete these critical safety rules on time?

Answer.

- The FAA issued the Pilot Certification and Qualification Requirements for Air Carrier Operations notice of proposed rulemaking on February 29, 2012, to address the provisions in Public Law (P.L.) 111-216, the Airline Safety and Federal Aviation Administration Extension Act of 2010, that would require all pilots in Part 121 operations have an airline transport pilot certificate. The final rule is in the Executive Branch review process; FAA anticipates the rule will be published by July 31, 2013.
- The FAA issued a Supplemental Notice for Proposed Rulemaking for Qualification, Service and Use of Crewmembers and Aircraft Dispatchers May 20, 2011. The comment period ended on September 19, 2011.
- The FAA expects to publish the final rule in October 2013.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARIA CANTWELL TO  
HON. MICHAEL P. HUERTA

**Impacts of Sequester and the President's FY 2014 Proposed Budget**

*Question 1.* Administrator Huerta, if the President's FY 2014 budget for the FAA is not adopted, should the public expect to see the furloughing of FAA staff, closure of some contract and federally staffed control towers, the overnight closure of certain air traffic control towers, etc. starting October 1, 2013?

Since agencies are limited in the numbers of days they can furlough staff during a fiscal year, if the President's budget is not adopted will the FAA have to consider the possibility of having to reduce-in force some of its safety personnel?

*Question 1a.* If it appears that the FAA may have to revisit the potential closure of air traffic control towers this fall, during the intervening time, will it conduct an airport-by-airport assessment of the safety impacts of closing individual towers? Similarly, has or will the FAA undertake any studies into how overnight closure of

nearly 150 air traffic control towers will impact safety or efficiency within the broader aviation system?

*Question 1b.* Are there safety-related elements of NextGen that are getting delayed as a result of sequestration?

Answer. The Reducing Flight Delays Act of 2013 (P.L. 113–9) provided FAA with the budget flexibility needed to end employee furloughs across the agency and keep 149 low-activity contract towers originally slated for closure in June open for the remainder of Fiscal Year 2013. This legislation, however, is not a complete solution to sequestration for FAA, much less for the rest of the Federal Government. The transfer authority allows us to forestall some of the most acute impacts of sequestration to the flying public. Nonetheless, we remain obligated to slash \$637 million from the FAA's budget by the end of the fiscal year. That means that other cost saving measures we have implemented (a hiring freeze; contract reductions; suspension of bonuses and awards; and reduced spending on overtime, training, travel, supplies, and information technology) will continue.

Without additional Congressional action, on October 1 the FAA will again face the prospect of reductions to aviation services to achieve the long-term funding reductions called for in the Budget Control Act. That is why the FY 2014 President's Budget replaces the across the board spending cuts required by sequestration with a balanced approach to solving our Nation's budgetary challenges.

If the President's Budget is not adopted, FAA will have to consider all of the severe cost-saving measures debated this year, including employee furloughs, closure of low activity air traffic control facilities, and reductions to overnight staffing at some control towers. In addition, given the limited number of days employees can be furloughed, reductions in force will also be considered for all segments of FAA's workforce.

The FAA conducted a safety study of the potential impact of closing 149 towers. That study identified that approximately 70 towers were likely to remain open as a result of local funding and that additional evaluation was required at a few facilities to determine the impact of their closure on the controlling FAA facility and to mitigate any identified impacts. Efficiency impacts were considered out of scope from a safety point of view and clearly anticipated as a result of withdrawing funds and the potential absence of air traffic control services. We would conduct the same type of safety assessment if we consider closing facilities in the future.

Safety will not be compromised by sequestration. NextGen funding for the Aviation Safety Information Analysis and Sharing program, which provides data for NextGen, has not been impacted.

#### **Rulemaking on Pilot Qualifications**

*Question 2.* Administrator Huerta, this committee helped pass significant safety legislation after the crash of Colgan Air Flight 3407 aimed at improving the level of safety for our Nation's regional airlines.

The pilot qualifications rule and the pilot training rule are long overdue. It was a topic of discussion at your confirmation hearing.

If the FAA doesn't issue a final rule before August 1, 2013, the default is that all pilots, including the first officer, will be required to have 1,500 hours of flight experience in order to receive the Air Transport Pilot (ATP) certificate that is required to fly commercial aircraft.

The FAA sent the proposed final rule to Secretary LaHood's Office on March 19, 2013. When does the Secretary's office have to send the final rule OMB to meet the August 1, 2013 deadline?

Answer. OST passed the rule to the Office of Management and Budget (OMB) on April 30, 2013.

*Question 2a.* Bottom line is this: will the FAA issue its final rule on pilot qualifications before August 1, 2013 and what happens if the FAA is late?

Answer. The FAA expects the Pilot Certification and Qualification Requirements for Air Carrier Operations final rule will be published by July 31, 2013. If the rule is not published before August 2, 2013, the self-enacting provision of P.L. 111–216, the Airline Safety and Federal Aviation Administration Extension Act of 2010, that requires all pilots in Part 121 operations have an airline transport pilot (ATP) certificate, including the associated flight experience of 1,500 hours, will go into effect.

*Question 2b.* If the co-pilot experience requirement ends up being 1,500 hours, do you expect there to be a pilot shortage as I have heard some airlines argue?

Answer. The FAA specifically sought input in the Pilot Certification and Qualification Requirements for Air Carrier Operations notice of proposal rulemaking on the effect the ATP requirement would have on pilot supply. In the NPRM, the FAA took advantage of the relieving option within P.L. 11–216, which would permit some

pilots to obtain the ATP certificate with less than 1,500 hours. The FAA determined this proposal may address some of the pilot supply concerns expressed by some carriers.

*Question 2c.* What preparations is the agency making to implement either the default rule or the new pilot qualifications rule?

Answer. The FAA expects to publish the Pilot Certification and Qualification Requirements for Air Carrier Operations final rule before August 2, 2013. The final rule is in external executive review. In addition to drafting the final rule, the FAA has prepared new and updated existing guidance material associated with the final rule.

### **One Level of Safety Across Major Airlines and Regional Air Carriers**

*Question 3.* Administrator Huerta, for years the FAA has spoken of “one level of safety” across all airlines, from the large major air carriers to their small regional code-share partners.

It has been over four years since the Colgan airlines crash and I am still not convinced that in practice all regional carriers operate at the same levels of safety as the major airlines do.

When you define “one level of safety” does it mean the *exact same* level of safety or an *equivalent* level of safety that regional carriers can convince the agency of? Doesn't the flexibility of allowing an *equivalent* level of safety defeat the idea behind “one”?

Answer. FAA does not make a distinction between “major” and “regional” carriers, as all Part 121 air carriers are required to meet the same standards of 14 CFR Part 121. Each carrier holds its own air carrier certificate, is required to meet the same regulatory standards, and is overseen by the FAA under the same system of oversight. The FAA believes that all carriers operating in accordance with the regulations meet an appropriate level of safety.

*Question 3a.* Do you believe that mainline air carriers are finding ways to ensure that their regional code-share partners implement the most effective safety practices?

Answer. In its audit “Growth of Domestic Airline Code Sharing Warrants Increased Attention”, the DOT OIG recommended the FAA publish best practices for the sharing of safety information between Part 121 air carriers in a code share relationship. In our response to the OIG, we noted the recommendation would be addressed through the implementation of a Safety Management System (SMS). An SMS is a comprehensive, process-oriented approach to managing safety throughout an organization that includes: an organization-wide safety policy; formal methods for identifying hazards, controlling, and continually assessing risk; and promotion of a safety culture. SMS stresses not only compliance with technical standards but increased emphasis on the overall safety performance of the organization. SMS's proactive emphasis on hazard identification and mitigation, and on communication of safety issues, would provide certificate holders robust tools to improve safety. The OIG agreed the implementation of SMS would meet the intent of its recommendation. The FAA expects to publish the final rule requiring carriers to implement SMS in October 2013.

*Question 3b.* In February 2013, the USDOT IG issued a report that recommended that the FAA take a closer look at the code-sharing agreements between major airlines and their regional partners. The IG expressed concern about the potential impact that contractual obligations, such as those for on-time performance, may have on the safety of a mainline air carrier's code-share partner. Does the FAA examine code-sharing agreements to see whether contractual obligations may put greater pressure on regional carriers to take risks?

Answer. The FAA recognizes that financial conditions may adversely impact safety and for that reason, the FAA has a process and guidance for inspectors on the enhancement of surveillance when an air carrier experiences labor unrest, financial distress or changes in the air carrier's operations (such as adopting a new code-share agreement). To support this process, the FAA asks air carriers to provide to their FAA Certificate Management Offices (CMO) their contract performance metrics, to include any penalties for failure to meet those metrics. This information will be used by the CMO in the development of surveillance programs or to modify existing surveillance programs to address any risk created by the metrics. However, the FAA will also issue a request by Aug 1, 2013 to air carriers not experiencing the difficulties outlined above, to provide current contract metrics. We will also request future metric changes or new contract metrics be provided as they arise. The FAA will use this information in development of FY14 surveillance programs. Any

changes to that information will be reviewed for potential modifications to an air carrier's existing surveillance program.

#### **Status of the Pilot Records Database**

*Question 4.* Administrator Huerta, the USDOT IG's January 2013 report on Airline Safety Act implementation discusses the delays associated with the creation of a pilot records database.

If you recall, Colgan Air was not aware of a number of failed check rides by each of the crew members on Flight 3407 when they were hired. The Committee looked to address this by requiring the creation of an electronic pilot training record database in the Airline Safety Act.

The report raised concerns about the FAA's implementation of this database regarding the timeline for completion and also for what information needs to be included—*such as the importance of requiring written comments when a pilot fails a check ride.*

Administrator Huerta, can you address the IG's concerns, both in regards to a timeline for implementing this database, as well as making sure the information it contains is as comprehensive as possible?

Answer. Our timeline for implementation of the Pilot Records Database (PRD) requirement is dependent on completing rulemaking to require use of PRD by appropriate operators and the development of an information technology (IT) capability to support the database. We are planning for a final rule by the end of FY15. For the IT database required to support a PRD, assuming no major changes to our functional requirements are needed as a result of rulemaking and available funding for system development and fielding, we expect to begin deployment of the PRD in mid FY17.

PL 111–216 requires the FAA to capture certain training records and pilot evaluator (“check airman”) comments maintained by the air carrier. The FAA is continuing to evaluate methods of complying with Congressional intent in a manner that is cost beneficial and does not create any undue burdens on the airline industry.

#### **Voluntary Safety Actions and Calls-to-Action**

*Question 5.* Administrator Huerta, your predecessor Administrator Babbitt had a voluntary call-to-action for pilots after the Colgan Air crash and a voluntary call-to-action for air traffic controllers after a number of incidents of unprofessional behavior. Do you think these two voluntary calls-to-action were fully successful, partially successful, or not successful, and why?

Answer. We believe our Call to Action for the use of voluntary safety actions has been successful. We convened an aviation rulemaking committee (ARC) on flight and duty time limitations. Its work led to a change in flight duty time and rest regulations. We verified that all Part 121 air carriers had methods to identify and better train poor-performing pilots. We saw a substantial increase in participation in both the Aviation Safety Action Program (ASAP) and Flight Operations Quality Assurance (FOQA) program. Additionally, all of the major pilot labor organizations agreed to develop guidelines on discipline in the flight deck, professionalism in the pilot workforce and best practices for mentoring.

We accelerated implementation of a Professional Standards program for air traffic controllers modeled on the successful program in the airlines which is now fully implemented;

We conducted studies on air traffic controller and technician fatigue and made changes to scheduling practices and established Fatigue Risk Management System, and asked an Independent Review Panel (IRP) to review the selection, assignment, and training of air traffic controllers. The Panel produced a report outlining 49 recommendations to the agency. We accepted the report in its entirety and are working to implement all 49 recommendations.

#### **Air Medical Safety**

*Question 6.* Several years ago I worked with both Chairwoman Hersman and Mr. Guzzetti on legislation to improve the safety of Helicopter Emergency Medical Services (HEMS). My legislation built on several NTSB recommendations.

It took a year with several fatal air medical service accidents for the FAA to initiate a rulemaking in 2010. The FAA Modernization and Reform bill included a large section piece of my Air Medical Safety Improvement and instructed the FAA to complete its rulemaking.

Regrettably, there have been several air medical crashes over the past year. Last week, the NTSB met to determine the probable cause of an August 2011 HEMS crash. One of the safety issues identified is the need for HEMS pilots to receive

flight training in a simulator to train in skills that are too risky to perform in a helicopter.

Administrator Huerta, what is the status of the final rule on the air medical service standards and when will the final rule to be issued?

Answer. The Air Ambulance and Commercial Helicopter Operations (Final Rule) addresses 13 NTSB recommendations and the causes of over 150 helicopter air ambulance and commercial helicopter accidents that occurred between 1991 and 2010 in which over 250 people died. It addresses the requirements of the FAA Reauthorization. The final rule is in executive review and we anticipate it will be issued in August 2013.

### **Certification Process and Global Supply Chains**

*Question 7.* Administrator Huerta, transport aircraft manufacturers, business jet manufacturers, and general aviation manufacturers increasingly design and produce their new products in multiple countries. As you know, the supply chains for these new aircraft are also increasingly global in nature. It presents a number of challenges to regulators. There are a series of bilateral treaties in place which helps to the extent that specific instances and situations have been identified and addressed. As treaties are products of their time, new issues arise that were not envisioned and lead to open questions.

What, if any, are the differences between how the FAA oversees manufacturing facilities and how its European counterpart, EASA, oversees manufacturing facilities?

Answer. The FAA and EASA oversight processes are similar. Both oversee manufacturing and quality systems and yield the same results. The FAA focuses more oversight at the product level to ensure product/article conformance to approved design. EASA applies more of a systems approach; it issues and oversees its Production Organisation Approvals (POAs) based on an organizational production system.

*Question 7a.* Administrator Huerta, the EASA–FAA bilateral for Technical Implementation Procedures for Airworthiness and Environmental Certification, section 1.1.6 states that projects involving a separate country of design and country of manufacture are an open question as to regulatory jurisdiction, and shall be settled through working arrangements by EASA, FAA, and the applicants. When did this topic first come up? Why was an agreement not reached during negotiations regarding these types of situations?

Answer. A scenario where the State of Design (SoD) is different from the State of Manufacture (SoM) can have many unique aspects influenced by industry business arrangements and corresponding regulator oversight standards. Bilateral agreements facilitate oversight of such arrangements and require that appropriate working procedures are established to document the roles and responsibilities of each authority, acting as either SoD or SoM. Having the flexibility to customize a working arrangement to the particular situation is preferred, since all possible scenarios cannot be envisioned when establishing the bilateral agreement.

The issue of splitting SoD and SoM oversight responsibilities has been addressed during the evolution of the FAA/EASA Bilateral Aviation Safety Agreement (BASA) and its predecessor agreements. We do not have a specific date to cite when EASA and FAA resolved to address the SoD/SoM issues through working arrangements.

*Question 7b.* In the case of the new Airbus facility in Mobile, has the FAA started discussions with EASA and Airbus as to which regulatory regime will be responsible for certifying the production facility and the aircraft produced at said facility?

What type of certifications will be required for Airbus to assemble at Mobile? Is it a production certificate?

Answer. Production and design certification will be handled by EASA and the Mobile final assembly line (FAL) will function as an extension of the EASA Production Organization Approval (POA). No FAA certifications will be required for the facility in Mobile. The FAA may be asked to assist Airbus with oversight of the facility under the auspices of the FAA/EASA bilateral aviation safety agreement, although the FAA has not yet received any such request.

*Question 7c.* Will an airworthiness certificate be required for every airplane produced?

Answer. For aircraft destined for American operators, the airplane will be “exported” from the EASA system to the FAA system, and an airworthiness certificate will be issued by FAA. In cases where the final airplane is destined for another country, a standard airworthiness certificate will be issued by the destination country.

*Question 7d.* It is my understanding that Airbus intends for EASA, not the FAA, to certify its future manufacturing facility at Mobile? If true, is the FAA considering

giving up its jurisdiction to a foreign regulator in the case of Mobile? And if so, can you explain why?

Answer. Airbus intends to apply to EASA for an extension of its EASA-issued Production Organization Approval (POA), thereby remaining under EASA's jurisdiction. The facility in Mobile will act as an extension of the existing Airbus POA and, as such, State of Manufacture responsibilities lie with EASA as the technical agent for France, the State of Design.

*Question 7e.* Assuming that the FAA retains its responsibility to oversee production at Mobile, what organization within the aircraft certification office (AIR) would be responsible for conducting that oversight? What impact would this have on resources in the AIR office?

Answer. The FAA has not received any request from EASA to assist with oversight. If the FAA is requested to assist with oversight of the Mobile facility, then the geographic manufacturing inspection office would be responsible (under the FAA's Central Region Small Airplane Directorate).

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RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. AMY KLOBUCHAR TO  
HON. MICHAEL P. HUERTA

*Question 1.* I am committed to investing in our Nation's infrastructure and making sure we have the safest airports at all our airports, large and small. That is why I have cosponsored the Protect Our Skies Act led by Senators Moran and Blumenthal that would keep our air traffic control towers open. There are four air traffic control towers slated for closure in Minnesota. Two towers are FAA operated at Flying Cloud, Eden Prairie while the two towers at Janes Field in Anoka County and St. Cloud Regional are contract towers. Anoka County has written a letter about why their tower is important to the community and I request that it be submitted for the record.

Administrator Huerta—What do fewer towers mean for aviation safety and the economies of local communities? What about those towers at airports acting as relievers for large airports like Minneapolis/St. Paul? How is the FAA engaging with communities who are desperately working to keep their towers and operations open?

Answer. The Reducing Flight Delays Act of 2013 (P.L. 113–9) provided FAA with the budget flexibility needed to end employee furloughs across the agency and keep 149 low-activity contract towers originally slated for closure in June open for the remainder of Fiscal Year 2013. This legislation, however, is not a complete solution to sequestration for FAA, much less for the rest of the Federal Government. The transfer authority allows us to forestall some of the most acute impacts of sequestration to the flying public. Nonetheless, we remain obligated to slash \$637 million from the FAA's budget by the end of the fiscal year. That means that other cost saving measures we have implemented (a hiring freeze; contract reductions; and reduced spending on overtime, training, travel, supplies, and information technology) will continue.

The FAA conducted a safety study of the potential impact of closing 149 towers. That study identified that approximately 70 towers were likely to remain open as a result of local funding and that additional evaluation was required at a few facilities to determine the impact of their closure on the controlling FAA facility and to mitigate any identified impacts. Efficiency and local economic impacts were considered out of scope from a safety point of view and are clearly anticipated as a result of withdrawing funds and the potential absence of air traffic control services.

Prior to the enactment of P.L. 113–9, the FAA worked closely with communities to enable non-Federal tower operations to continue by assisting with arrangements to transfer equipment and other maintenance and logistics support to local authorities.

*Question 2.* Administrator Huerta—Transitioning our air traffic system to NextGen technologies will provide numerous benefits to our aviation system increased capacity, fewer delays, greater fuel efficiency, and reduced emissions. Additionally, NextGen systems allow for increased safety for passengers and aircraft of all types. Implementation of NextGen technologies, including approach and departure technologies known as RNAV, are of interest to airport communities like the Minneapolis/St. Paul metro area. While the goal is to make our airports safer it is also important for the FAA and airport officials to talk to the public about impacts, including environmental impacts.

Can you talk about the FAA's role when it comes to public outreach and the way the FAA involves stakeholders including operators and communities? Does this include sharing information about any environmental analysis conducted to establish

changes in procedures? Will you commit to working with the communities surrounding airports, such as the Twin Cities metro area?

Answer. The FAA engages in a multi-dimensional process for such activities; these dimensions can be better described as being formal and informal processes.

Formally, FAA is in full compliance with the National Environmental Policy Act (NEPA) and other national and local laws and directives that require public notification and engagement regarding the notification of activities or initiatives and the impacts from such activities or initiatives through either the Rulemaking processes or other directed-venues like public-notice announcements. Another formal venue is our collaborative teams formed by our technical staff and specialists, local aviation stakeholders including local airport personnel, and National Airspace System (NAS) users. These diverse groups come together to design and implement new procedures utilizing new technologies that make up our NextGen program's portfolio. Examples include the on-going Optimization of Airspace and Procedures in the Metroplex (OAPM) as well as our 3rd Party Vendor procedures design projects.

The FAA continues to engage these stakeholders so they will provide us with valuable input, gain confidence in our path forward and make the necessary financial investments for NextGen to succeed. The FAA has a long history of working closely with a broad cross section of industry partners either directly or through RTCA (a group that facilitates expert advice to the agency on technical issues) to build consensus and incorporate important recommendations in our NextGen planning.

One example of our partnerships for NextGen is the Greener Skies initiative in Seattle, Washington, where we are partnering with Alaska Airlines, the Port of Seattle and the Boeing Company. We have created new NextGen, satellite-based approaches for all airlines flying into Seattle-Tacoma International Airport (SeaTac). These flight tracks are shorter, more fuel efficient and environmentally-friendly.

Informally, the FAA provides information to the public through our public websites like <http://www.faa.gov/nextgen/>. Here, descriptions and current statuses of many of our NextGen programs are made available, including the NextGen Implementation Plan (NGIP). This plan is the FAA's primary outreach document for keeping the aviation community, Congress, the flying public and other stakeholders informed about NextGen, along with public media news articles and interviews. This public outreach is not only conducted by our national leadership but also by our regional and local field personnel within the communities where they work and live. For example, at the kick-off event of every OAPM Study team, public outreach is conducted through the local media, who are invited to participate in the kick-off event. The FAA participates in these activities at the highest levels and engage in an open and frank Q & A session about NextGen with the local media. Local interest groups, communities, and the general public have the opportunity to also express their views and join in the discussion through the regular and official venues already established in their areas for matters related to aviation and through their elected officials.

Also, we have an on-going initiative in collaboration with some major airports for an interactive display designed to educate passengers about the scope and benefits of NextGen. The Dallas/Fort Worth (DFW) International Airport interactive kiosk located at Terminal C, Gate 17, is designed to educate the public about NextGen and the benefits it will create. The NextGen interactive kiosk was jointly developed by the FAA and DFW Airport.

More specifically, in reference to Minneapolis, the FAA has worked closely with the Metropolitan Airports Commission (MAC) and their citizens-based Noise Oversight Committee (NOC) on the design and implementation of NextGen Performance-Based Navigation (PBN) arrival and departure procedures. The FAA continues to partner with the MAC and NOC, relying on their extensive experience with communities around Minneapolis-St Paul International Airport (MSP) on effective ways to solicit and address the community's issues related to environmental and operational matters. These efforts will continue as we move forward in delivering the benefits of NextGen to MSP and the entire Minneapolis metropolitan area.

Lastly, the FAA has joined with industry stakeholders and community representatives through the Airport Cooperative Research Program (ACRP), led by the Transportation Research Board (TRB), to develop a template on "best practices" for engaging and informing the aviation community/public on the impacts and benefits of the various elements of NextGen technologies.

Our on-going commitment to work with the NextGen stakeholders and the communities surrounding airports is represented by the expansive and inclusive formal and informal process described in this response. In the FAA, we all are part of the communities that we serve, where we work and live, and feel that our efforts will bring about positive and lasting benefits for all.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. ROY BLUNT TO  
HON. MICHAEL P. HUERTA

*Question 1.* Mr. Huerta, you've warned air travelers about the potential for significant delays due to air traffic reductions necessitated by air traffic controller furloughs. Can you explain why 30-to 40-percent reductions in air traffic at certain airports may occur given that the agency's sequestration cut is 10 percent, and the agency's controller workforce has grown by approximately 600 controllers—from 14,537 in 2007 to 15,041 today—while airline operations have dropped by 12 percent during this same period?

Answer. While traffic is down overall, there are some markets where traffic has increased. The National Airspace System is truly a system of interdependent operations and seemingly small reductions of available controllers can significantly affect the operations at a particular airport or facility. In addition, we face staffing challenges at some of our major facilities and that was compounded by the furlough. Each facility operates differently and may have differing impacts depending on the specific traffic conditions at that airport. Commonly, a small reduction in available certified controllers prevents an individual facility from staffing an operational position which, in turn, reduces efficiency.

There were no good options for achieving the savings required by sequester. We stopped all hiring and promotions and reduced spending to include contracts, training, travel, information technology, and all other categories, but that left us significantly short of the savings target. The only option remaining was to furlough all employees so we targeted eleven furlough days beginning April 21 through the end of the year, which would have resulted in one furlough day per pay period. We allocated furlough days equally across the whole system. From an operational standpoint, that resulted in a reduction of 10 percent of the available hours that an employee was available to work.

*Question 2.* You and I have spoken multiple times previously, most recently last November, about the status of the solicitation for the new FAA training facility. Given that the FAA is currently conducting training activities at a temporary facility, can you tell me what the current timeline is and when you expect a decision to be announced?

Answer. We anticipate awarding a contract for FAA training services in the second or third quarter of Fiscal Year 2014.

*Question 3.* On April 1, I asked the head of the Air Traffic Control Tower Program at the FAA for the safety mitigation studies that the FAA has completed for the five contract towers currently operating in Missouri, of which four are slated to be closed. I know Senator Thune previously made a similar request for the studies for all domestic contract towers to be made available to him as well. When can I expect those?

Answer. The FAA developed a national safety case to determine what needed to be done to convert Towered airports into non-Towered airports and captured those standards into a Safety Risk Management Document (SRMD). That process identified approximately 20 mitigations that would have to be applied at each airport. That airport-by-airport information was captured as part of the SRMD.

*Question 4.* I understand that the safety studies conducted by the FAA regarding the effects of closing these towers on airport operations were preliminary in nature and that the FAA is currently undertaking in-depth safety mitigation studies of all of these towers. Why were the contracts for these towers revoked before the official, complete safety studies were completed? Where is the FAA in the process of completing these in-depth studies?

Answer. Safety analyses were performed, consistent with the Safety Management System used by the Air Traffic Organization (ATO). It is important to recognize that changes to the National Airspace System (NAS), such as defunding the contract towers, require several steps in the safety review process before any change is actually made. A decision to move forward with a change does not, by itself, impose any change in the NAS, but it does trigger a further assessment of the safety issues and risks associated with implementing the change and an analysis of the necessary risk mitigation steps. Changes to the NAS are not actually made without an approved implementation plan that properly manages any safety risks. This is the process that was followed with the decision to defund contract towers.

The FAA developed a national safety case to determine what needed to be done to convert Towered airports into non-Towered airports and captured those standards into a Safety Risk Management Document (SRMD). That process identified approximately 20 mitigations that would have to be applied at each airport. That airport-by-airport information was captured as part of the SRMD.

*Question 5.* As a bi-product of pushing back the closing dates for the Contract Towers at airports, the FAA has had to find new off-sets to comply with the sequester. Where did the FAA cut commensurate spending to comply with the sequester?

Answer. With the enactment of P.L. 133–9 (Reducing Flight Delays Act of 2013), the FAA was allowed to transfer \$253 million from accounts previously exempted from sequestration. This infusion of funds allowed the agency to cancel a scheduled 11 day furlough for all employees and keep the 149 low activity contract towers originally slated for closure in June open for the remainder of Fiscal Year 2013.

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RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. KELLY AYOTTE TO  
HON. MICHAEL P. HUERTA

*Question 1.* In the hearing, I asked you to clarify the FAA’s decision to close the contract tower in Nashua, New Hampshire, and to keep open the contract tower in Lebanon, New Hampshire. Since both towers are non-cost share, contract towers and since Lebanon has less traffic than Nashua, explain the FAA’s decision to close the tower at Nashua and to keep open the tower at Lebanon. What is the distinction?

Answer. The Nashua, NH FAA Contract Tower (FCT) was identified for defunding since it did not have 150K total operations or 10K commercial operations in FY 2012. The Lebanon, NH FCT was not considered since it had more than 10K commercial operations in FY 2012.

*Question 2.* Is the Essential Air Service (EAS) program subject to sequestration? If so, has any portion of EAS been cut pursuant to sequestration? How much?

Answer. The EAS program is subject to a sequester of approximately 5 percent, however, the funding mechanisms in place for the program provide the Department with sufficient authority to cover the Fiscal Year 2013 requirements. For this reason, we do not believe, at this time, that EAS will experience a shortfall due to sequestration.

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RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. BARBARA BOXER TO  
HON. DEBORAH A.P. HERSMAN

*Question.* The NTSB has investigated several crashes of planes that were operating under contracts with Federal agencies, including the Department of Defense and the U.S. Forest Service (for firefighting). What recommendations has the NTSB made to improve the clarity, consistency and effectiveness of aircraft that are under contract for public use? What steps should the FAA and/or other agencies be taking to prevent future tragedies?

Answer. The NTSB has been on record for years calling for clear lines of oversight and regulation for these special operations to ensure the safety of the operators and the public. In 2011, the NTSB held a forum to discuss public aircraft, their use and oversight.

Many of the FAA regulations do not apply to aircraft operating under public aircraft operations. However, several government agencies contract with private companies for services as public aircraft, but require FAA certification as part of the contract. In the FAA’s current guidance, any aircraft or airman certified by the FAA is subject to the FAA’s normal surveillance activities regardless of whether operating under civil or public operations.

In a recent investigation of an accident involving a Department of Defense (DOD) contractor, the flight operations were governed by the military requirements when it operated as specified in its contract, but in the same contract, was also required to use aircraft with a valid FAA airworthiness certificate. The operator met the requirements of the contract with an FAA Special Airworthiness Certificate—Experimental. FAA regulations governing Experimental certificates state:

*“Experimental certificates are issued for the following purposes: (a) Research and development. Testing new aircraft design concepts, new aircraft equipment, new aircraft installations, new aircraft operating techniques, or new uses for aircraft. (b) Showing compliance with regulations. Conducting flight tests and other operations to show compliance with the airworthiness regulations including flights to show compliance for issuance of type and supplemental type certificates, flights to substantiate major design changes, and flights to show compliance with the function and reliability requirements of the regulations. (c) Crew training. Training of the applicant’s flight crews. (d) Exhibition. Exhibiting the aircraft’s flight capabilities, performance, or unusual characteristics at air shows, motion picture, television, and similar pro-*

*ductions, and the maintenance of exhibition flight proficiency, including (for persons exhibiting aircraft) flying to and from such air shows and productions.*  
 (e) *Air racing. Participating in air races, including (for such participants) practicing for such air races and flying to and from racing events.*  
 (f) *Market surveys. Use of aircraft for purposes of conducting market surveys, sales demonstrations, and customer crew training only as provided in §21.195.”*

These regulations also prohibit the use of an aircraft with an experimental certificate to carry persons or property “for compensation or hire.” Therefore, flights under the provisions of the contract were conducted as public aircraft operations.

The NTSB has recommended that the FAA:

Take appropriate actions to clarify FAA authority over public aircraft, as well as identify and document where such oversight responsibilities reside in the absence of FAA authority. (A-10-150)

Also, the NTSB has asked the FAA to:

Develop and implement a surveillance program specifically for 14 CFR Part 135 operators with aircraft that can operate both as public aircraft and as civil aircraft to maintain continual oversight ensuring compliance with 14 CFR Part 135 requirements. (A-10-149)

We believe if these recommendations are implemented and if the FAA exercises its current oversight authority, public aircraft operations will be safer.

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RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BILL NELSON TO  
 HON. DEBORAH A.P. HERSMAN

*Question 1.* In the last five years, how many aviation accidents have occurred at or around airports with air traffic controllers and at airport without air traffic controllers on duty (non-towered airports)?

Answer. According to the Bureau of Transportation Statistics, in 2011 (latest available information) there were over 19,000 civil-use airports in the United States. Of that number, approximately 510 have at least part-time air traffic control (ATC) towers. In the data the NTSB does collect about aviation accidents, we do not track the number of accidents occurring at towered airports versus non-towered airports. The causes of many of our accidents are operational and mechanical and we continue to see these types of accidents. For this reason, we have Improve General Aviation Safety on our Most Wanted List: <http://www.nts.gov/safety/mwl.html>. Also, most recently, we issued six Safety Alerts to the general aviation community—pilots and mechanics—in hopes preventing those accidents we see too often.

*Question 2.* Based on the aviation accidents that the National Transportation Safety Board has investigated during your chairmanship, do you think non-towered airports pose an elevated risk for incidents?

Answer. We have no evidence that there is a higher rate of accidents and incidents at non-towered airports. However, the aviation system is complex with multiple layers of safety, and control towers are another layer of safety in the system.

*Question 3.* Does the NTSB consider the air traffic control tower status during investigations, whether as a contributing factor to the cause or the efficiency and quality of the response?

Answer. When investigating any accident or incident where air traffic control services are involved, we always evaluate the role of ATC in both its primary role of traffic separation and its support role of improving safety by providing other weather and advisory services to pilots. We note both positive and negative aspects, and document any areas that are exemplary or need improvement.

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RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. MARIA CANTWELL TO  
 HON. DEBORAH A.P. HERSMAN

**General Aviation Safety**

*Question.* Chairwoman Hersman, in your testimony you said that general aviation fatality rates have shown little movement in recent years despite of efforts to improve safety.

You cite several leading causes that continue to cause most of the accidents. These are loss of control, engine failure, flying in conditions that are beyond the pilot or aircraft’s abilities and collision with terrain. What can be done beyond the improved safety alerts?

Answer. General aviation (GA) is a recreational activity that relies on the pilot community to make good decisions before, during, and after flight. Over the past 10 years, the accident rate for GA has averaged 6.7 accidents per 100,000 flight hours, which in 2012 equated to 1,470 accidents. Because of this stubborn average, in June 2011, the National Transportation Safety Board (NTSB) added Improve General Aviation Safety to its Most Wanted List (MWL), and we renewed our commitment to this issue by also including it on our 2013 MWL. We believe that our focus on the topic has increased awareness of the safety issues related to being a pilot or mechanic in GA.

Additionally, in June 2012, the NTSB conducted a 2-day forum, “General Aviation Safety: Climbing to the Next Level,” that focused on key safety issues such as pilot training and performance; pilot access to and use of weather-related information; and aircraft design, maintenance, and certification. Panelists included representatives from industry, government, academia, and professional associations. The forum was well attended and received considerable media coverage. In addition, throughout the year, staff educated general aviation pilots through briefings and seminars.

To increase educational efforts, the NTSB will be producing videos for our website to accompany and enhance the GA safety alerts. We will also distribute them to type clubs and flight schools.

In early April, we met with various Federal agencies, academia, and appropriate organizations to determine what additional information NTSB staff can collect during accident investigations that would assist in the development of safety improvements by not just the NTSB but outside entities as well. Finally, we plan to work with outside organizations such as the Aircraft Owners and Pilots Association and Embry-Riddle Aeronautical University as they develop training aids for general aviation pilots.

We welcome the opportunity to work with policymakers, like you, to find additional ways to sharpen the focus on improving GA safety—an area in which we see the same accidents over and over. Through education, I believe we can make a positive difference in the rate and number of accidents and fatalities in recreational flying.

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RESPONSE TO WRITTEN QUESTIONS PROVIDED BY HON. FRANK R. LAUTENBERG TO  
HON. DEBORAH A.P. HERSMAN

*Question 1.* During the FAA’s initial certification of the 787 aircraft, Boeing claimed that its batteries would emit smoke less than once in every 10 million hours of flight. However, the 787 fleet experienced two batteries emitting smoke in less than just 100,000 hours of flight.

Given the disparity between the predicted smoke events and the actual events, did the FAA certification process work as intended to mitigate the risk of equipment malfunction?

Answer. The ongoing NTSB investigation is examining the certification process for the lithium ion battery used in the 787. The certification process acknowledges that equipment malfunctions can occur and, as a result, requires the development of a design safety assessment for all equipment on the aircraft to understand and mitigate the risks of equipment malfunction. As part of the safety assessment process, the manufacturer takes steps to identify foreseeable failures and analyze their safety effect on the passengers, crew, and aircraft. Evaluating this information as part of the design certification process allows the Federal Aviation Administration (FAA) to ensure that the manufacturer incorporates sufficient design features, warning indications, and/or flight crew procedures to effectively mitigate the risks such failures pose to the aircraft and those on board. Correspondingly, the design safety assessment is a critical step in the certification process.

As part of the certification process of the 787–8 Electrical Power System, Boeing performed a design safety assessment of the main and auxiliary power unit (APU) lithium-ion battery to determine the potential hazards that battery failures could introduce to the airplane and its occupants and to demonstrate that the risk associated with these failures was sufficiently mitigated. Boeing anticipated that the combined group of failures that could result in battery venting with smoke could occur less than once in every 10 million flight hours. However, within about 58,000 flight hours, the 787–8 fleet experienced two (one main and one APU) battery failures that resulted in smoke emission from the battery. Based on testimony provided at the National Transportation Safety Board’s (NTSB) April 2013 investigative hearing on Boeing 787 battery design and certification, the testing and analysis performed as part of the certification process did not accurately predict how often a single cell would vent, resulting in the emission of smoke and electrolyte, or that the venting

of a single cell could propagate to the other seven cells inside the battery case, causing the release of smoke and electrolyte from the battery.

Although the probability of this battery failure condition was not accurately assessed as part of the certification process, neither the Japan Airlines battery fire incident at Boston Logan International Airport, Boston, Massachusetts, or the All Nippon Airways battery smoke incident at Takamatsu, Japan, resulted in injury to the passengers or crew or significant damage to the airplane. In the Japan Airlines battery fire incident, smoke entered the cabin of the airplane after the airplane's only electrical power source, the APU, shut down in response to the battery failure, as it was designed to do. This event was after all passengers and crew had disembarked the plane. The cleaning personnel on the airplane at the time the smoke began to enter the cabin quickly exited without harm.

According to information released by the Japan Transport Safety Board regarding the circumstances of the All Nippon Airways battery smoke incident, passengers reported odor but not smoke in the main cabin during the incident flight. The airplane did not lose electrical power during the incident, thereby allowing the ventilation system in the forward electrical equipment bay to function as designed to exhaust smoke released from the battery outside the airplane.

Although the impact of the battery smoke emissions in these incidents was minimal, given the importance of probability analyses to the accuracy of design safety assessments used in the FAA's certification process, the NTSB believes that the underlying factors driving the inaccuracy of the failure predictions must be identified to ensure that safety risks in future certification programs are accurately defined and understood.

*Question 2.* What steps should be taken to improve the FAA certification process to prevent this type of incident from happening again?

*Answer.* As part of its investigation, the NTSB is examining a number of factors affecting the accuracy of Boeing's probability assessment for a battery venting with smoke. The NTSB investigation is also examining the methods, data, and expertise used in the certification process to determine that the battery met all applicable FAA safety requirements, in particular the nine Special Conditions defined by the FAA in 25-359-SC, which are attached.

Based on its findings to date, the NTSB believes that examination of these factors is the first step needed to support the development of useful improvements to the FAA certification process. The NTSB will look for vulnerabilities in the underlying processes used to evaluate and approve airplane systems and equipment certified under Special Conditions, as well as potential implementation shortcomings that may be unique to the 787 APU and main lithium-ion battery system certification program. The NTSB will make safety recommendations, as warranted, aimed at preventing similar incidents or accidents in the future, and I will share these recommendations with you when they are issued.

## ATTACHMENT



57842 Federal Register / Vol. 72, No. 196 / Thursday, October 11, 2007 / Rules and Regulations

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Part 25**

[Docket No. NM375 Special Conditions No. 25-359-SC]

**Special Conditions: Boeing Model 787-8 Airplane; Lithium Ion Battery Installation****AGENCY:** Federal Aviation Administration (FAA), DOT.**ACTION:** Final special conditions.

**SUMMARY:** These special conditions are issued for the Boeing Model 787-8 airplane. This airplane will have novel or unusual design features when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. The Boeing Model 787-8 airplanes will use high capacity lithium ion battery technology in on-board systems. For these design features, the applicable airworthiness regulations do not contain adequate or appropriate safety standards. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing standards. Additional special conditions will be issued for other novel or unusual design features of the Boeing Model 787-8 airplanes.

**DATES:** *Effective Date:* November 13, 2007.

**FOR FURTHER INFORMATION CONTACT:** Nazih Khaouly, FAA, Airplane and Flight Crew Interface, ANM-111, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-2432; facsimile (425) 227-1149.

**SUPPLEMENTARY INFORMATION:****Background**

On March 28, 2003, Boeing applied for an FAA type certificate for its new Boeing Model 787-8 passenger airplane. The Boeing Model 787-8 airplane will be an all-new, two-engine jet transport airplane with a two-aisle cabin. The maximum takeoff weight will be 476,000 pounds, with a maximum passenger count of 381 passengers.

**Type Certification Basis**

Under provisions of 14 Code of Federal Regulations (CFR) 21.17, Boeing must show that Boeing Model 787-8 airplanes (hereafter referred to as "the 787") meet the applicable provisions of 14 CFR part 25, as amended by

Amendments 25-1 through 25-117, except §§ 25.809(a) and 25.812, which will remain at Amendment 25-115. If the Administrator finds that the applicable airworthiness regulations do not contain adequate or appropriate safety standards for the 787 because of a novel or unusual design feature, special conditions are prescribed under provisions of 14 CFR 21.16.

In addition to the applicable airworthiness regulations and special conditions, the 787 must comply with the fuel vent and exhaust emission requirements of 14 CFR part 34 and the noise certification requirements of 14 CFR part 36. The FAA must also issue a finding of regulatory adequacy pursuant to section 611 of Public Law 92-574, the "Noise Control Act of 1972."

The FAA issues special conditions, as defined in 14 CFR 11.19, under § 11.38, and they become part of the type certification basis under § 21.17(a)(2).

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same or similar novel or unusual design feature, the special conditions would also apply to the other model under § 21.101.

**Novel or Unusual Design Features**

The 787 will incorporate a number of novel or unusual design features. Because of rapid improvements in airplane technology, the applicable airworthiness regulations do not contain adequate or appropriate safety standards for these design features. These special conditions for the 787 contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

The 787 design includes planned use of lithium ion batteries for the following applications:

- Main and Auxiliary Power Unit (APU) Battery/Battery Charger System.
- Flight Control Electronics.
- Emergency Lighting System.
- Recorder Independent Power Supply.

Large, high capacity, rechargeable lithium ion batteries are a novel or unusual design feature in transport category airplanes. This type of battery has certain failure, operational, and maintenance characteristics that differ significantly from those of the nickel-cadmium and lead-acid rechargeable batteries currently approved for installation on large transport category airplanes. The FAA issues these special

conditions to require that (1) all characteristics of the lithium ion battery and its installation that could affect safe operation of the 787 are addressed, and (2) appropriate maintenance requirements are established to ensure the availability of electrical power from the batteries when needed.

**Background**

The current regulations governing installation of batteries in large transport category airplanes were derived from Civil Air Regulations (CAR) part 4b.625(d) as part of the re-codification of CAR 4b that established 14 CFR part 25 in February, 1965. The new battery requirements, 14 CFR 25.1353(c)(1) through (c)(4), basically reworded the CAR requirements.

Increased use of nickel-cadmium batteries in small airplanes resulted in increased incidents of battery fires and failures. This led to additional rulemaking affecting large transport category airplanes as well as small airplanes. On September 1, 1977, and March 1, 1978, respectively, the FAA issued 14 CFR 25.1353(c)(5) and (c)(6), governing nickel-cadmium battery installations on large transport category airplanes.

The proposed use of lithium ion batteries for the emergency lighting system on the 787 has prompted the FAA to review the adequacy of these existing regulations. Our review indicates that existing regulations do not adequately address several failure, operational, and maintenance characteristics of lithium ion batteries that could affect the safety and reliability of the 787's lithium ion battery installations.

At present, there is limited experience with use of rechargeable lithium ion batteries in applications involving commercial aviation. However, other users of this technology, ranging from wireless telephone manufacturing to the electric vehicle industry, have noted safety problems with lithium ion batteries. These problems include overcharging, over-discharging, and flammability of cell components.

**1. Overcharging**

In general, lithium ion batteries are significantly more susceptible to internal failures that can result in self-sustaining increases in temperature and pressure (thermal runaway) than their nickel-cadmium or lead-acid counterparts. This is especially true for overcharging, which causes heating and destabilization of the components of the cell, leading to formation (by plating) of highly unstable metallic lithium. The metallic lithium can ignite, resulting in

a self-sustaining fire or explosion. Finally, the severity of thermal runaway from overcharging increases with increasing battery capacity, because of the higher amount of electrolytes in large batteries.

#### 2. Over-Discharging

Discharge of some types of lithium ion batteries beyond a certain voltage (typically 2.4 volts) can cause corrosion of the electrodes of the cell, resulting in loss of battery capacity that cannot be reversed by recharging. This loss of capacity may not be detected by the simple voltage measurements commonly available to flightcrews as a means of checking battery status. This is a problem shared with nickel-cadmium batteries.

#### 3. Flammability of Cell Components

Unlike nickel-cadmium and lead-acid batteries, some types of lithium ion batteries use liquid electrolytes that are flammable. The electrolytes can serve as a source of fuel for an external fire, if there is a breach of the battery container.

These problems experienced by users of lithium ion batteries raise concern about use of these batteries in commercial aviation. The intent of these special conditions is to establish appropriate airworthiness standards for lithium ion battery installations in the 787 and to ensure, as required by 14 CFR 25.601, that these battery installations are not hazardous or unreliable. To address these concerns, these special conditions adopt the following requirements:

- Those sections of 14 CFR 25.1353 that are applicable to lithium ion batteries.
  - The flammable fluid fire protection requirements of 14 CFR 25.863. In the past, this rule was not applied to batteries of transport category airplanes, since the electrolytes used in lead-acid and nickel-cadmium batteries are not flammable.
  - New requirements to address the hazards of overcharging and over-discharging that are unique to lithium ion batteries.
  - New maintenance requirements to ensure that batteries used as spares are maintained in an appropriate state of charge.
- These special conditions are similar to special conditions adopted for the Airbus A380 (71 FR 74755; December 13, 2006).

#### Discussion of Comments

Notice of Proposed Special Conditions No. 25-07-10-SC for the 787 was published in the **Federal**

**Register** on April 30, 2007 (72 FR 21162). We received comments from the Air Line Pilots Association, International, which are discussed below.

The Air Line Pilots Association (ALPA) conditionally supports the FAA's proposal for special conditions for lithium ion batteries on the 787 aircraft, but "strongly maintains that there need to be adequate protections and procedures in place to ensure that concerns regarding lithium ion batteries are fully addressed and protected against." Appended to the ALPA comments was a copy of FAA report DOT/FAA/AR-06/38, September 2006, Flammability Assessment of Bulk-Packed, Rechargeable Lithium-Ion Cells in Transport Category Aircraft. With the knowledge of the safety hazards described in the appended report and by others, ALPA requested that the FAA consider the specific concerns discussed below.

- *ALPA Comment re Special Condition (3)*: The commenter requested that paragraph 3 of the special conditions be revised to ensure that the certification design of the 787 prevents explosive or toxic gases emitted by a lithium ion battery from entering the cabin. The commenter also requested that the FAA ensure that flightcrew procedures and training are adequate to protect both passengers and crew, if explosive or toxic gases do enter the cabin.

*FAA Response*: 14 CFR 25.857 prohibits hazardous quantities of smoke, flames, or extinguishing agents from cargo compartments from entering any compartment occupied by the crew or passengers. Paragraph (3) of these special conditions specifies that

No explosive or toxic gases emitted by any lithium ion battery in normal operation, or as the result of any failure of the battery charging system, monitoring system, or battery installation not shown to be extremely remote, may accumulate in hazardous quantities within the airplane. The special conditions require that any explosive or toxic gases emitted by a lithium ion battery be limited to less than hazardous quantities everywhere above and beyond the training that crews receive today. We made no change to these special conditions as a result of this comment.

- *ALPA Comment re Special Condition (4)*: The commenter stated, "We are very concerned with a fire erupting in flight, and being able to rapidly extinguish it. The Special Conditions should require that there be a means provided to apply extinguishing agents by the flight (cabin)

crew instead of promoting it as an option in managing the threat posed by the use of lithium-ion batteries. ALPA maintains that the petitioner must provide means for extinguishing fires that occur vs. listing it as an option in § 25.863.

ALPA clarified this comment in the following communication, sent by e-mail on August 10, 2007.

The intent of our comments submitted to the Docket for question [Special Condition] Number 4 (see below) is to assure that the FAA includes language or makes it clear in the Special Conditions directing the OEM or a potential STC applicant that a fire from these devices, in any situation, is unacceptable. ALPA requests the FAA reiterate that preventing a fire and not reacting to one, if one occurs, is critical. The last sentence of our comments in this Question [Special Condition] refers to the potential for an "equivalent level of safety" being introduced or referenced in the document that would negate the prevention of a fire. ALPA finds this "option" unacceptable.

*(4) Installations of lithium ion batteries must meet the requirements of 14 CFR 25.863(a) through (d)*.

The proposal states that the certification requirements of § 25.283 [§ 25.863] must be complied with; however, the FAA report (FAA report DOT/FAA/AR-06/38, September 2006) indicates that a relatively small fire source is sufficient to heat the lithium-ion cell above the temperature required to activate the pressure release mechanism in the cell. This causes the cell to forcefully vent its electrolyte through the relief ports near the positive terminal. The electrolyte is highly flammable and easily ignites when exposed to an open flame or hot surface. Fully charged cells released small white sparks along with the electrolyte.

*FAA Response*: The FAA shares the commenter's concern over a fire erupting in flight. The regulations and the rigid requirements defined in these special conditions are intended to prevent lithium battery fires on board the aircraft. We have made no change as a result of this comment.

- *ALPA Comment re Special Condition (7)*: The commenter suggested that the special conditions address means to ensure that the lithium ion batteries do not overheat or overcharge in the event of failure or malfunction of the automatic disconnect function, when a means of disconnecting the batteries from the charging source is not available.

*FAA Response*: The FAA agrees with the commenter. Special Condition (7) requires means to prevent overheating or overcharging of lithium ion batteries in the event of failure or malfunction of the automatic disconnect function. The issue of failure modes of the lithium ion batteries is covered by Special Conditions (1), (2), and (6). We made no change as a result of this comment.

• *ALPA Comment re Special Condition (8):* Finally, ALPA commented on monitoring and warning features that will indicate when the state-of-charge of the batteries has fallen below levels considered acceptable for dispatch of the airplane. The commenter suggested that the special conditions address the location of the warning indication; whether it is displayed to the captain, the crew, or both; and the training to be incorporated in the crew training programs.

*FAA Response:* Flight deck warning indicators associated with the state-of-charge of the lithium ion battery and appropriate training of the crew will be addressed during certification as part of the flight deck evaluation. As required by § 25.1309(c), this evaluation will ensure that the warning indication is effective and appropriate for the hazard. We made no change as a result of this comment.

These special conditions are issued as proposed.

#### Applicability

As discussed above, these special conditions are applicable to the 787. Should Boeing apply at a later date for a change to the type certificate to include another model on the same type certificate incorporating the same novel or unusual design features, these special conditions would apply to that model as well.

#### Conclusion

This action affects only certain novel or unusual design features of the 787. It is not a rule of general applicability.

#### List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

#### The Special Conditions

■ Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for the Boeing Model 787-8 airplane.

In lieu of the requirements of 14 CFR 25.1353(c)(1) through (c)(4), the following special conditions apply. Lithium ion batteries on the Boeing Model 787-8 airplane must be designed and installed as follows:

(1) Safe cell temperatures and pressures must be maintained during any foreseeable charging or discharging condition and during any failure of the

charging or battery monitoring system not shown to be extremely remote. The lithium ion battery installation must preclude explosion in the event of those failures.

(2) Design of the lithium ion batteries must preclude the occurrence of self-sustaining, uncontrolled increases in temperature or pressure.

(3) No explosive or toxic gases emitted by any lithium ion battery in normal operation, or as the result of any failure of the battery charging system, monitoring system, or battery installation not shown to be extremely remote, may accumulate in hazardous quantities within the airplane.

(4) Installations of lithium ion batteries must meet the requirements of 14 CFR 25.863(a) through (d).

(5) No corrosive fluids or gases that may escape from any lithium ion battery may damage surrounding structure or any adjacent systems, equipment, or electrical wiring of the airplane in such a way as to cause a major or more severe failure condition, in accordance with 14 CFR 25.1309(b) and applicable regulatory guidance.

(6) Each lithium ion battery installation must have provisions to prevent any hazardous effect on structure or essential systems caused by the maximum amount of heat the battery can generate during a short circuit of the battery or of its individual cells.

(7) Lithium ion battery installations must have a system to control the charging rate of the battery automatically, so as to prevent battery overheating or overcharging, and,

(i) A battery temperature sensing and over-temperature warning system with a means for automatically disconnecting the battery from its charging source in the event of an over-temperature condition, or,

(ii) A battery failure sensing and warning system with a means for automatically disconnecting the battery from its charging source in the event of battery failure.

(8) Any lithium ion battery installation whose function is required for safe operation of the airplane must incorporate a monitoring and warning feature that will provide an indication to the appropriate flight crewmembers whenever the state-of-charge of the batteries has fallen below levels considered acceptable for dispatch of the airplane.

(9) The Instructions for Continued Airworthiness required by 14 CFR 25.1529 must contain maintenance requirements for measurements of battery capacity at appropriate intervals to ensure that batteries whose function

is required for safe operation of the airplane will perform their intended function as long as the battery is installed in the airplane. The Instructions for Continued

Airworthiness must also contain procedures for the maintenance of lithium ion batteries in spares storage to prevent the replacement of batteries whose function is required for safe operation of the airplane with batteries that have experienced degraded charge retention ability or other damage due to prolonged storage at a low state of charge.

**Note:** These special conditions are not intended to replace 14 CFR 25.1353(c) in the certification basis of the Boeing 787-8 airplane. These special conditions apply only to lithium ion batteries and their installations. The requirements of 14 CFR 25.1353(c) remain in effect for batteries and battery installations of the Boeing 787-8 airplane that do not use lithium ion batteries.

Issued in Renton, Washington, on September 28, 2007.

**Ali Bahrami,**

*Manager, Transport Airplane Directorate, Aircraft Certification Service.*

[FR Doc. E7-19980 Filed 10-10-07; 8:45 am]  
BILLING CODE 4910-13-P

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 25

[Docket No. NM366 Special Conditions No. 25-348-SC]

#### Special Conditions: Boeing Model 787-8 Airplane; Composite Wing and Fuel Tank Structure—Fire Protection Requirements

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final special conditions.

**SUMMARY:** These special conditions are issued for the Boeing Model 787-8 airplane. This airplane will have novel or unusual design features when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. These novel or unusual design features are associated with composite materials chosen for the construction of the fuel tank skin and structure. For these design features, the applicable airworthiness regulations do not contain adequate or appropriate safety standards for wing and fuel tank structure with respect to postcrash fire safety. These special conditions contain the additional safety standards that the Administrator considers necessary to

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. DAN COATS TO  
HON. DEBORAH A.P. HERSMAN

*Question 1.* Chairman Hersman: Watching the 787 investigation from the outside, it seems there are four distinct investigations going on, at the JTSB, the NTSB, the FAA, and Boeing. Since there hasn't been an accident, who has cognizance and authority over the outcome of these investigations?

Answer. Senator Coats, the National Transportation Safety Board (NTSB) is responsible for the investigation of the January 7 JAL battery fire that occurred at Boston's Logan International airport. Fire on board an aircraft is a safety of flight issue, and as such, the NTSB is reviewing the certification and testing of the battery, the manufacturing process used for the battery, and other issues relevant to the battery fire. The NTSB issued an interim factual report on March 7, containing initial factual information about the battery examination. We hope to complete our final report in the next 6 months and issue recommendations to keep this type of fire on board an aircraft from happening again.

In accordance with international agreements, the JTSB is conducting an investigation in to the January 16 ANA battery event. The FAA is conducting separate certification reviews, and Boeing is leading its own independent review. They are the best entities to respond to questions about their on-going reviews and investigations. I can tell you, however, that the JTSB, FAA, and Boeing are all parties to our limited battery fire investigation, and the parties are working together to provide factual information related to the January 7 fire, and their participation will result in a more complete final report.

*Question 2.* Chairman Hersman: As you know Congress passed legislation in 2010 that enacted regulations making it tougher to become an airline pilot. Specifically, the bill required the FAA to draft and enact a number of regulations with regards to the experience a pilot must have before they can be hired to engage in airline (Part 121) flying. At the core of the proposed regulations is that all airline pilots—captains and first officers—must have an Airline Transport Pilot Certificate by August of 2013. The ATP certificate comes with a new eligibility requirement of between 750 and 1,500 hours of total flight time (the “1,500 hour rule”), with 750 hours applying to military pilots and 1,500 hours applying to most civilian pilots. For civilian-trained pilots, this represents about a 700-hour increase over current airline hiring minimums. I'm not an expert in this area, but I imagine that given a choice an airline will hire pilots who show proficiency, rather than a specific number of hours.

By forcing airlines to look for such high hours, do you reduce the pool of candidates to such a degree that it has an unintended, negative safety consequence?

Answer. The NTSB has focused our recommendations on crew proficiency on specific procedures and training, needed regulations, and needed guidance to crews and operators rather than flight hour minimums. For greater insight on these issues, I have attached NTSB comments to the recent NPRM the FAA issued on the topic.

*Question 2a.* How would you characterize the impact this potential rule has on the pool of qualified applicants available to commercial airlines?

Answer. It would be difficult to determine the impact of this potential rule on the pool of qualified applicants. The NTSB has consistently advocated that qualification as an airline flight crewmember should be based on knowledge, skills, professionalism, and proficiency.

*Question 3.* Chairman Hersman: In your written testimony you stated “industry changes—including two pilot cockpits and the advent of regional carriers had resulted in opportunities for pilots to upgrade to captain without having accumulated significant experience as a first officer in a Part 121 operation.”

In your tenure as Chairman, what correlation have you seen between low hours and accidents at regional and mainline carriers?

Answer. In several of our investigations, the NTSB has seen airline pilots with various levels of flight hours who make mistakes. As a result, the NTSB has issued recommendations that we believe will improve the knowledge, skills, professionalism, and proficiency of flight crew.

*Question 3a.* Can you please share with us the specific accidents at Part 121 carriers that occurred as a result of pilots upgrading to captain without accumulating experience in Part 121 operations?

Answer. Unfortunately, we have not yet conducted a more in depth search of all our aviation investigations in which pilot training was a leading or contributing factor.

*Question 4.* Chairman Hersman: As you may know Purdue University's College of Technology has a very highly regarded flight training program. Universities like

Purdue are producing competent pilots, who are flying in Part 121 environments, who will have about 400–500 hours upon graduation. How will these pilots bridge the gap between their current training and the hour expectations of the anticipated rule?

Answer. The NTSB believes that a combination of focused academic training and structured flight training can benefit aspiring pilots. The FAA's recent NPRM does not address how to define, conduct oversight of, and apply this academic credit. We believe these issues must be addressed to fully evaluate how academic class time can be treated as training.

*Question 4a.* Has any thought been given to pilots who entered flight training assured that they would be eligible for hire upon graduation, who will now have to go and spend years outside of the structured training environment?

Answer. As stated previously, the NTSB believes that appropriate knowledge, skills, professionalism, and proficiency are attributes a new pilot should have.

*Question 4b.* Is there a danger that they will lose some of their knowledge and training during this period of time?

Answer. Programs should increase and enhance pilots' knowledge, skills, proficiency, and professionalism.

*Question 4c.* There is, already, an enormous cost burden on future pilots. Will this rule put the cost of training out of reach for aspiring pilots?

Answer. The NTSB does not conduct cost-benefit analysis, but through our investigations, awareness of industry training technology, standards, and initiatives, we know that flight training devices and simulators, if used appropriately, may decrease the cost of training and provide a structured training environment for the development of airmanship skills, honing procedures, and learning how to address abnormalities and emergencies.

In addition, during a May 2010, forum on pilot professionalism in aviation, ab initio training, which allows prospective pilots selected by an airline to participate in training ranging from basic ground to flight training to develop the pilot's line qualifications, was discussed. Ab initio is practiced in other countries. This approach to training lessens the cost to the pilot and exposes them to the airlines culture and the multi-crew concept from the very beginning of their career.

Last, we know of accredited university gateway programs that provide pilots with a career path through mentoring and training from the university level to the airlines. Although we have not conducted analyses of the costs of these approaches, or the cost of additional hours of experience, we believe there exist innovative and technically competent ways to address this issue at the industry level.

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NATIONAL TRANSPORTATION SAFETY BOARD  
Washington, DC, April 30, 2012

Office of the Chairman,  
Docket Operations, M-30,  
U.S. Department of Transportation,  
Washington, DC.

Attention: Rules Docket No. FAA-2010-0100

Dear Sir or Madam:

The National Transportation Safety Board (NTSB) has reviewed the Federal Aviation Administration's (FAA) notice of proposed rulemaking (NPRM) titled "Pilot Certification and Qualification Requirements for Air Carrier Operations," which was published at 77 *Federal Register* (FR) 12374 on February 29, 2012. The notice proposes to create new certification requirements for pilots in air carrier operations, including requiring that first officers in 14 *Code of Federal Regulations* (CFR) Part 121 operations hold an airline transport pilot (ATP) certificate and type rating for the aircraft to be flown; allowing pilots with an aviation degree or military pilot experience but fewer than 1,500 hours total time as a pilot to obtain an ATP certificate with restricted privileges; and requiring at least 1,000 flight hours in air carrier operations to serve as pilot-in command (PIC) in Part 121 air carrier operations. The notice also proposes to modify the requirements for obtaining an ATP certificate with an airplane category multiengine class rating or type rating to require 50 hours of multiengine flight experience and completion of a new FAA-approved ATP certificate training program that would include academic training and training in a flight simulation training device. According to the NPRM, these changes would help to ensure that pilots entering an air carrier environment have the training and

aeronautical experience necessary to adapt to a complex, multicrew environment in a variety of operating conditions.<sup>1</sup>

The NPRM cites the 2009 Colgan Air accident near Buffalo, New York, as an event that focused public, congressional, and industry attention on flight crew experience requirements and training for conducting Part 121 air carrier operations. In February 2010, the FAA published an advance notice of proposed rulemaking (ANPRM), titled “New Pilot Certification Requirements for Air Carrier Operations” (75 FR 6164, February 8, 2010) that sought input on current Part 121 eligibility, training, and qualification requirements for seconds-in-command (SICs).<sup>2</sup> The current NPRM is based on comments in response to the ANPRM, input received from an aviation rulemaking committee established in July 2010, and statutory requirements for modifying ATP certification outlined in the Airline Safety and Federal Aviation Administration Extension Act of 2010 (Public Law 111–216).

Adding to that foundation, the NPRM states that the FAA conducted a study of 61 NTSB investigation reports from Fiscal Year (FY) 2001 through FY 2010 (31 Part 121 accidents and 30 Part 135 air carrier accidents, with 107 fatalities, 28 serious injuries, and 44 minor injuries). The study showed that the accidents examined involved pilot deficiencies in aircraft handling, including stall and upset recognition and recovery, high altitude training, active pilot monitoring skills, effective crew resource management (CRM), stabilized approaches, operations in icing conditions, and hypoxia training. The NPRM asserts that the changes to air carrier pilot qualification would address, in part, 21 NTSB safety recommendations in the following areas:

Safety Issue	Recommendations
Training flight crews to respond to sudden, unusual, or unexpected aircraft upsets	A-96-120, A-04-62, A-07-3, and A-09-113
Developing and conducting stall recovery training and providing stickpusher familiarization training for pilots of stickpusher-equipped aircraft	A-1 0-22 and -23
Training in high altitude operations	A-07-1 and -2
Training and guidance for rudder use in transport-category aircraft	A-02-2
Airport situational awareness	A-07-44
Stabilized approach concept	A-01-69 and A-08-18
Landing performance calculations	A-07-59 and A-08-41
CRM training	A-03-52
Pilot monitoring duties	A-10-10
Requirements for flight crewmember academic training regarding leadership and professionalism	A-1 0-15
Training in icing conditions	A-07-14
Hypoxia awareness training	A-00-110
Training in landing and taking off in crosswinds with gusts	A-10-110 and -111

The NTSB is generally supportive of the proposed rule as it relates to many of the issues previously identified in our safety recommendations. Specific comments on several areas of the NPRM follow.

<sup>1</sup>According to the NPRM, the PIC requirements would affect pilots operating under Part 121, as well as those operating under Part 135 and Part 91, subpart K. In addition, the proposed ATP certification training program would affect certificate holders under Parts 121, 135, 141, or 142 if they offer the program.

<sup>2</sup>On April 8, 2010, the NTSB submitted comments on the ANPRM; citing the increasing complexity of the operating environment and the airplanes that are flown today, the NTSB indicated general support for the proposed changes in requirements for eligibility, training, and qualifications for air carrier pilots operating under Part 121. The NTSB’s comments also identified the need to ensure these changes would apply to all revenue air carrier operations, including those conducted under Part 135. Finally, the NTSB acknowledged that the FAA must provide the personnel required to support oversight of the changes discussed in the ANPRM.

### Academic Credit To Reduce Flight Experience Requirements

Although the NTSB has not made recommendations for flight hour minimums for air carrier pilots (instead focusing its recommendations on specific procedures and training, needed regulations, and needed guidance to crews and operators), we stated in our comments on the ANPRM that:

Ensuring a high level of knowledge, skills, and professionalism for flight crewmembers is essential, but total flight hours or an airline transport pilot certificate does not necessarily equate to the level of knowledge, skills, and professionalism required for consistently safe flight operations.

The comments went on to state that, “the NTSB recognizes the value of academic training for air carrier pilots, but the NTSB also believes that academic training is not a substitute for practical experience.”

An important tenet in the recent NPRM is the concept that, “in certain circumstances, the combination of focused academic training and structured flight training can substitute for actual flight experience” (p. 12379). The NTSB concurs with the FAA’s acknowledgement that there may be multiple pathways to becoming a qualified air carrier pilot. However, there remain unresolved issues for how academic credit should be applied, including student performance within an accredited academic program and the type of degree conferred. These issues are not addressed in the NPRM and require more evaluation before this proposal is implemented. It is essential that the content and rigor involved in academic training be clearly defined and, most importantly, appropriate resources allocated to conduct evaluation and oversight of these alternative methods of qualification.

### ATP Certification Training Program

The NPRM discusses the establishment of an FAA-approved ATP certificate training program for a multiengine class ATP or type rating. The proposed training program outlined under section 61.154 would include 24 hours of classroom training and 16 hours of simulator training (8 in a full flight simulator of at least Level C standards) and is intended to provide pilots with the core knowledge and understanding in areas critical to operating high performance aircraft in a complex and high altitude environment. The training would be provided by an authorized training provider and would be required to be completed before a pilot would be eligible to take the ATP knowledge test. Issued as part of the NPRM, draft Advisory Circular (AC) 61-ATP, “Airline Transport Pilot Certification Training Program for Airplane Category Multiengine Class Rating or Type Rating,” contains an outline of the curriculum topics and objectives for both the classroom and simulator training making up this training program. The AC is intended for use by training providers when developing the program and by the FAA when reviewing and approving the programs.

Many of the topics contained in the draft AC address issues from NTSB safety recommendations; in fact, the FAA notes that most of the 21 recommendations cited in the NPRM are addressed, in part, by the proposed amendments and advisory material. Although the NTSB concurs with the FAA’s assessment that, in most cases, the topics addressed will serve to partially satisfy the action requested in existing recommendations, the amount of specificity provided in the proposed rule and AC does not allow a comprehensive review of the degree to which the FAA’s proposed actions would satisfy the intent of the NTSB’s recommendations. In some instances, neither document provides evidence that a recommendation topic is addressed.<sup>3</sup>

The NTSB notes that recent safety recommendations in this area have focused on attempts to improve crew response to in-flight emergencies, including task prioritization and training.<sup>4</sup> While AC 61-ATP does include a classroom training ob-

<sup>3</sup>Many of the recommendations cited in the NPRM contain explicit requirements for procedural change or apply more broadly to other operational areas in the industry. For example, although Safety Recommendation A-07-44 identifies the need for specific callouts to be used during ground operations when entering a runway before takeoff, the training outlined in the NPRM and AC only specifies that situational awareness on the ground be covered as a topic area. In addition, Safety Recommendation A-08-18 identifies the need for specific action regarding go-around callouts, but neither the NPRM nor the AC contains any clearly identifiable reference to go-arounds. Finally, Safety Recommendation A-10-23 identifies the need for stickpusher familiarization training for pilots of stickpusher-equipped aircraft, but neither the NPRM nor the AC specifically outlines stickpusher familiarization.

<sup>4</sup>For example, Safety Recommendation A-09-22 asks the FAA to “require principal operations inspectors to review their operators’ pilot guidance and training on task allocation and workload management during emergency situations to verify that they state that, to the extent practicable, the pilot running the checklists should not engage in additional nonessential operational

jective named “differences between emergency and non-normal checklist procedures and checklists,” the guidance on emergency procedures should be made more explicit to incorporate the issues identified in these NTSB recommendations. CRM is another topic relevant to previous NTSB recommendations and outlined in AC 61–ATP. However, the list of proposed topics in the AC does not explicitly refer to the importance of first officer assertiveness, which is an issue addressed in Safety Recommendation A–11–39.<sup>5</sup> This recommendation is not cited in the NPRM, but the NTSB believes that it is within the scope of the draft advisory material and suggests amending the AC to include information consistent with Safety Recommendation A–11–39 to help support this important aspect of CRM.

The NTSB is encouraged that the NPRM proposes to centralize the process for approving ATP certification training programs. Specifically, the NPRM states that only authorized training providers can administer the training required under section 61.154. These providers can be certificate holders providing training and operating under Parts 141, 142, 121, or 135, and each provider must receive approval of their ATP certification training program by the FAA Air Transportation Division (AFS–200). The NTSB notes that, theoretically, centralization should help to ensure standardization of these programs, but suggests that additional guidance documentation with more specific and robust detail about the content of the proposed training is necessary to provide a solid foundation on which the FAA can evaluate the program content (and to assist training providers to develop courses likely to receive FAA approval). For example, additional detail, such as cross-referencing material from draft AC 120–STALL, would be appropriate in the discussion of stall training in AC 61–ATP. In addition, the FAA will need to provide the appropriate oversight resources to these programs—not only in their initial approval but also to conduct ongoing oversight to demonstrate that the content delivered is consistent with the approved program. The rigor with which these programs are implemented and overseen will determine their ultimate influence on improving safety in air carrier operations.

#### **Pilot-in-Command Requirements for Air Carrier Operations**

The NPRM proposes primarily experience-based requirements for new PICs in air carrier operations. However, the NTSB has previously issued safety recommendations addressing the need for a specific leadership training course for upgrading captains.<sup>6</sup> Although the NPRM cites Safety Recommendation A–10–15<sup>7</sup> and describes it as applicable to leadership and professionalism training, it addresses only the latter topic. The NPRM does not mention Safety Recommendations A–10–13 and –14, which were issued with –15, but the NTSB believes that a leadership training course for upgrading captains is within the scope of the proposed rulemaking and that section 121.436 should be amended to include a specific requirement for such a course.

In addition to the requirements already outlined in section 121.434, the NTSB has recommended that Part 135 pilots who need a type rating for the aircraft they fly

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tasks, such as radio communications.” Safety Recommendations A–09–24 and –25, respectively, ask the FAA to “establish best practices for conducting both single and multiple emergency and abnormal situations training” and “. . . require that these best practices be incorporated into all operators’ approved training programs.”

<sup>5</sup>Safety Recommendation A–11–39 asks the FAA to “require that role-playing or simulator-based exercises that teach first officers to assertively voice their concerns and that teach captains to develop a leadership style that supports first officer assertiveness be included as part of the already required crew resource management training for 14 *Code of Federal Regulations* Part 121, 135, and 91 subpart K pilots.”

<sup>6</sup>Safety Recommendation A–10–13 asks the FAA to “issue an advisory circular with guidance on leadership training for upgrading captains at 14 *Code of Federal Regulations* Part 121, 135, and 91K operators, including methods and techniques for effective leadership; professional standards of conduct; strategies for briefing and debriefing; reinforcement and correction skills; and other knowledge, skills, and abilities that are critical for air carrier operations.” Safety Recommendation A–10–14 asks the FAA to, “require all 14 *Code of Federal Regulations* Part 121, 135, and 91K operators to provide a specific course on leadership training to their upgrading captains that is consistent with the advisory circular requested in Safety Recommendation A–10–13.”

<sup>7</sup>Safety Recommendation A–10–15 asks the FAA to “develop, and distribute to all pilots, multimedia guidance materials on professionalism in aircraft operations that contain standards of performance for professionalism; best practices for sterile cockpit adherence; techniques for assessing and correcting pilot deviations; examples and scenarios; and a detailed review of accidents involving breakdowns in sterile cockpit and other procedures, including this accident. Obtain the input of operators and air carrier and general aviation pilot groups in the development and distribution of these guidance materials.”

be required to have a minimum level of initial operating experience.<sup>8</sup> Given the applicability of the NPRM to Part 135 pilots who are engaged in air carrier operations, the NTSB believes it would be appropriate to incorporate similar experience requirements for these pilots as exist for Part 121 pilots.

The NTSB supports the use of simulators in training environments and notes that the training program outlined in the NPRM specifies that training on topics such as low energy states/stalls and upset recovery techniques will be conducted in a Level C or higher full-flight simulator. Simulators, regardless of their fidelity, are dependent on their physical limits of motion, as well as the efficacy of the available computer programs (which are often limited in issues of upset training because of the lack of flight test data at the extreme areas of the flight envelope). Simulators are not always adequate in portraying upsets and stalls and may inadvertently introduce negative training. Consistent with Safety Recommendation A-04-62,<sup>9</sup> the FAA should allow flexibility in determining what level of simulation or automation is appropriate for specific training.

### Summary Observations

This NPRM addresses many training issues applicable to becoming an air carrier pilot, including some critical issues demonstrated in recent accident history to be responsible for accidents. The NTSB is encouraged that its recommendations were considered in the development of this proposed rule, especially as the issue areas relate to the core content to be provided to new entrant pilots through the ATP certification training program. However, the intent of our recommendations in this area is for all pilots to receive training in these topics. Therefore, it is important that air carriers provide equally robust training in these topic areas for their current air carrier pilots on a recurrent basis.

The NTSB appreciates the opportunity to comment on this NPRM.

Sincerely,

DEBORAH A.P. HERSMAN,  
Chairman.

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### RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARIA CANTWELL TO GERALD L. DILLINGHAM, PH.D.

*Question 1.* In September 2011, the GAO released a report entitled “Status of FAA’s Actions to Oversee the Safety of Composite Airplanes”. Did the GAO find that FAA followed its certification process in assessing the Boeing 787 airplane’s composite fuselage and wings against applicable FAA airworthiness standards?

*Answer.* GAO found that FAA followed its certification process in assessing the Boeing 787 airplane’s composite fuselage and wings against applicable FAA airworthiness standards.<sup>1</sup> FAA applied five special conditions when it found that its airworthiness standards were not adequate to ensure that the composite structures would comply with existing safety levels. These special conditions, which relate to novel features of the airplane’s composite fuselage and wings, require Boeing to take additional steps to demonstrate the 787’s structures meet current performance standards.

FAA evaluated technical issues related to the composite feature, identified regulatory standards that may not be adequate, consulted with technical and scientific experts, and documented Boeing’s position. FAA documented its evaluation of the airplane’s design issues and gaps in the regulatory standards. We also found sufficient evidence that in developing each of the special conditions, FAA involved technical specialists and, in some cases, relied on research done at its technical research center. In addition, we found that, consistent with FAA policy, FAA adequately doc-

<sup>8</sup>Specifically, Safety Recommendation A-10-57 asks the FAA to “require that pilots who fly in 14 *Code of Federal Regulations* (CFR) Part 135 operations in aircraft that require a type rating gain a minimum level of initial operating experience, similar to that specified in 14 CFR 121.434, taking into consideration the unique characteristics of Part 135 operations.” Safety Recommendation A-10-58 asks the FAA to “require that pilots who fly in 14 *Code of Federal Regulations* (CFR) Part 135 operations in an aircraft that requires a type rating gain a minimum level of flight time in that aircraft type, similar to that described in 14 CFR 121.434, taking into consideration the unique characteristics of Part 135 operations, to obtain consolidation of knowledge and skills.”

<sup>9</sup>Safety Recommendation A-04-62 asks the FAA to “. . . evaluate issues concerning the level of automation appropriate to teaching upset training and develop and disseminate guidance that will promote standardization and minimize the danger of inappropriate simulator training.”

<sup>1</sup>GAO, *Aviation Safety: Status of FAA’s Actions to Oversee the Safety of Composite Airplanes*, GAO-11-849 (Washington, D.C.: September 21, 2011).

umented the implications of the composite features on safety, why the existing airworthiness standards were not adequate, and how the special conditions would enable the 787 airplane to meet the current level of safety.

*Question 2.* FAA applied five special conditions when it found that its existing airworthiness standards were not adequate to ensure that the composite structures would comply with existing safety levels. Did the GAO find that the FAA followed its processes which included monitoring Boeing's compliance with these special conditions?

*Answer.* On the basis of our review of FAA's documentation and discussion with FAA officials about its activities in developing the five special conditions, we found that FAA followed the special conditions process.<sup>2</sup> Specifically, we found that FAA followed its process by documenting the technical issues related to the design of the composite fuselage and wings, determining the special conditions and equivalent level of safety finding, obtaining public comments on draft special conditions, and monitoring Boeing's compliance with those conditions.

We found that FAA tracked the status of the deliverables Boeing provided in order to determine that the manufacturer complied with the special conditions and was demonstrating that it could meet safety levels. We found that FAA tracked the dates each deliverable was received and approved. For most deliverables, FAA staff, rather than a designee, was responsible for approving the deliverable, especially for more significant tests and documents. Although FAA designees were the responsible officials for witnessing the certification tests, Boeing representatives invited FAA staff to observe the tests as well, and FAA staff attended many of them. Boeing tested full-scale structures, such as a portion of the wing span, the horizontal stabilizer, and the fuselage. Some of these tests were conducted to simulate how certain composite structures would perform in a crash. One such test, which FAA technical staff monitored, involved vertically dropping a section of a composite fuselage from a height and at a rate that FAA required. The test validated the analytical model used to assess the behavior of the 787 fuselage for all the design conditions required under the special conditions.

The scope of our review was limited to the special conditions applied to the design of the 787 composite airplane's wings and fuselage. We focused on the special conditions and equivalent safety level finding because we were interested in determining whether FAA followed its process for developing them and the information was publicly available. We did not conduct a comprehensive review of all of the airworthiness standards that affect the composite fuselage or wings nor did we make an assessment of whether FAA should have created special conditions for the composite features in addition to those identified by FAA. We did not review the formulation, testing, or certification of any other special conditions, nor did we evaluate the inspection process for the production of aircraft post-certification.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. DAN COATS TO  
GERALD L. DILLINGHAM, PH.D.

*Question.* Dr. Dillingham, you have a strong research-based background in the area of pilot training metrics. Based on your previous research, do you think that a pilot shortage would play out unevenly across the country, impacting smaller and more remote communities the hardest?

*Answer.* Our previous research in this area, from 2011, highlighted various industry concerns about a potential pilot shortage but found the existing evidence mixed as to whether a shortage was occurring or might occur in the future. Further, our research did not explicitly address how or whether a potential pilot shortage might differently impact various markets across the country.

Nonetheless, we reported in 2011 that regional airlines told us they were expecting legislative changes to pilot requirements and rest rules to impact their ability to hire qualified entry-level pilots. In particular, the new rules will require pilots to have adequate rest between shifts, and have more flying hours before they can become qualified to work as commercial pilots, thus increasing the cost and time it takes for people to enter this occupation. Labor economics literature suggests that, if an employer cannot find adequate labor at the wage and working conditions it is offering, the employer can change those conditions to attract more workers. At this time, it is unknown whether regional airlines serving smaller and more remote communities will respond to any difficulties finding appropriately trained pilots—if those problems develop—by offering higher pay, or assistance with training costs

<sup>2</sup> FAA also developed five means of compliance issues papers that described how Boeing would demonstrate compliance of the 787's composite fuselage and wings with regulatory standards.

in order to attract their desired workforce. Such activities will raise costs for these carriers, who are then likely to pass some or most of those costs on to passengers in the form of higher fares. It follows then, that because higher fares will likely lead to some curtailment in demand, any developing shortage of pilots may be somewhat mitigated by a reduction in the level of aviation service. Whether that dynamic would play out differently across different sized communities is unknown at this time.

Looked at more broadly however, many factors, beyond the availability of pilots, affect the services that airlines choose to provide. For example, high and volatile fuel prices, lack of demand resulting from difficult economic conditions, changes in fleet composition, among other factors can all affect whether airlines choose to serve various communities. These factors may play a more important role in how services to these markets are impacted than the possible impacts of a potential pilot shortage.

We have work currently underway to revisit these issues in light of continued industry concerns and reports about a pilot shortage, and the impending implementation of pilot rest rules and new pilot requirements.

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RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARIA CANTWELL TO  
JEFFREY B. GUZZETTI

### **Challenges to FAA Finalizing Rulemaking Required Under the Airline Safety Act**

*Question 1.* Mr. Guzzetti, the IG's January 2013 status report on the implementation of the Airline Safety Act says, "FAA faces significant challenges to fully implement the Act, such as meeting timelines for rulemaking efforts while balancing competing interests of stakeholders involved with controversial safety measures."

For example, FAA is experiencing lengthy delays and considerable industry opposition in issuing and finalizing rules that will enhance pilot qualification standards, revise crew training requirements, and establish mentoring and professionalism programs."

What can the FAA do to overcome these hurdles and issue final rules for pilot qualification standards, crew training requirements, and mentoring and professionalism programs that reflect the intent of the authorizing legislation?

Answer. It is important for FAA to do all they can to expedite these rulemaking efforts.

The success of FAA's efforts to issue final rules on pilot qualification standards, crew training requirements, and mentoring and professionalism depends on the Agency's ability to work with air carriers, industry associations, and other agencies to resolve their concerns, if possible, in a timely manner.

However, we note that rulemaking activities are complex, require extensive public notification and comment periods, and can encounter significant industry opposition. For example, FAA encountered significant industry pushback due to the increase in flight hours the Act mandates for pilots. Similarly, industry is concerned that the proposed crew training rule imposes overly prescriptive training hours rather than basing pilot training on skills most needed to safely perform flight operations. Finally, FAA has encountered a lengthy delay in issuing a proposed rule establishing mentoring and leadership programs, due in part to challenges in developing the appropriate balance between the costs and benefits of these programs.

To overcome these challenges, FAA will need to work with the various stakeholders to address these issues without losing the intent of the legislation.

### **Code-Sharing Between Mainline and Regional Carriers**

*Question 2.* Mr. Guzzetti, do you believe that mainline air carriers are finding ways to ensure that their regional code-share partners implement the most effective safety practices?

Answer. We found that mainline carriers have begun implementing safety information sharing practices with their code-sharing partners. However, the amount, type, and frequency of shared information vary greatly.

We are concerned that FAA has not provided guidance to the industry on how to implement safety information-sharing programs or outlined its expectations for sharing best practices on code share partnerships. In our recent audit report regarding FAA's role in domestic airline code sharing, we issued a recommendation to FAA to provide this guidance.

FAA responded to our recommendation by stating that it intends to require each Part 121 air carrier to implement a safety management system (SMS). SMS is a comprehensive, process-oriented approach to managing safety that includes an orga-

nization-wide safety policy; formal methods for identifying hazards, controlling, and continually assessing risk; and promotion of a safety culture. FAA believes that a tailored SMS program within each airline will be an effective method for safety information sharing. FAA projects that the SMS rule will be issued this September, but it is uncertain when it will be fully implemented. Notwithstanding the expected benefits of SMS, we believe that continued FAA oversight is needed to ensure main-line carriers are working with their regional partners and implementing the most effective safety practices.

*Question 3.* In your February 14th report on code-sharing, you recommended that the Office of the Secretary and the FAA takes a closer look at the code-sharing agreements between major airlines and their regional partners for the potential impact that requirements for contractual obligation such as on-time performance may have on safety.

Can you explain the concerns that your office may have, and what your investigation uncovered in terms of DOT and FAA having awareness of what actually is written into these code share agreements?

Answer. We found that DOT's Office of the Secretary (OST) and FAA do not review most domestic code share agreements. Therefore, DOT and FAA have a limited awareness of what is contained in these agreements, despite the fact that the increased use of code share agreements between U.S. air carriers has changed the aviation landscape.

OST is required to assess potential economic impacts on competition for domestic code share agreements *only* between two *major* carriers. However, because just 20 percent of active Part 121 carriers are considered "major," the number of agreements that OST is required to review is limited. OST does not voluntarily review other "non-major" agreements because it believes that agreements between major carriers are the only ones with the potential to adversely impact the market. However, the addition or cancellation of code share agreements between major carriers and non-major carriers may affect competition and consumer access in smaller markets. For example, after its merger with Northwest Airlines, Delta Air Lines announced that it was suspending its Delta Connection service to 24 smaller markets as the carrier sought to adjust service to these markets. As we noted in our February 2013 report, OST may be missing competitive and economic impacts on smaller markets.

FAA—the safety regulator—is not required by law to review any domestic code share agreements and does not voluntarily do so. FAA considers domestic code share agreements to be purely financial arrangements and relies on its oversight of individual carriers to ensure the safe operation of passenger flights. Even so, in its 2009 *Call to Action on Aviation Safety and Pilot Training*, the FAA committed to work with DOT "to develop the authority to review agreements between air carriers and their regional partners." Despite this commitment, FAA did not pursue this effort. Our work shows that FAA can and should take a more active role. Specifically, we found that FAA does not review performance metrics contained in code share agreements to ensure they do not have an adverse impact on safety. These metrics, such as incentives for on time performance, may have unintended safety implications. As a result, FAA must take a more active role in reviewing these agreements.

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RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. FRANK R. LAUTENBERG TO  
JEFFREY B. GUZZETTI

*Question.* Following the Colgan Air crash outside Buffalo, New York, Congress required the FAA to increase pilot qualifications so that first officers have a minimum of 1,500 hours of flight time. The final rule on pilot qualifications is substantially overdue. What impacts will there be on pilots, and passengers, if the FAA does not complete the rule quickly?

Answer. Without FAA's final rule, air carrier pilots will have to meet the more stringent qualification requirements of the Act that will automatically take effect on August 1, 2013. This means that air carriers will have to remove any pilot from their duties if they do not hold a valid Airline Transport Pilot (ATP) certificate; which requires a minimum of 1,500 hours of flight time. We do not know, and neither does FAA, how many pilots this would affect, or the impact on flight cancellations. Our recent audit report regarding FAA's progress on the Act addresses this, and cites our recommendation that FAA determine how many pilots do not meet the heightened qualification standards required by the Act, and assess the data for the potential impact on FAA and air carrier operations.

Through a rulemaking, FAA has the opportunity to provide flexibility on the pilot flight hour and advanced certificate prerequisites. For example, the proposed rule

enables FAA to allow pilots with a 4-year aviation degree or military flight experience to obtain the new, restricted ATP for Co-Pilots/Second-In-Command as an alternative to the 1,500 hour requirement.

FAA's delayed rulemaking is a particular concern because air carriers may not have adequate time to make necessary adjustments to their pilot training and qualification programs to meet the new requirements by the Act's deadline. As we have stated, the impact on passengers is uncertain, and is an important watch item for this Committee.

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RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. AMY KLOBUCHAR TO  
JEFFREY B. GUZZETTI

*Question.* I am committed to investing in our Nation's infrastructure and making sure we have the safest airports at all our airports, large and small. That is why I have cosponsored the Protect Our Skies Act led by Senators Moran and Blumenthal that would keep our air traffic control towers open. There are four air traffic control towers slated for closure in Minnesota. Two towers are FAA operated at Flying Cloud, Eden Prairie while the two towers at Janes Field in Anoka County and St. Cloud Regional are contract towers. Anoka County has written a letter about why their tower is important to the community and I request that it be submitted for the record. Can you talk about the need for more air traffic controllers to address fatigue and improve safety?

*Answer.* Air traffic controllers are an important component to the safe operation of air traffic in the air and on the ground. As such, ensuring a well-rested, alert controller workforce is critical to the safe and efficient operation of the National Airspace System (NAS).

FAA currently has more than 15,000 controllers to guide pilots through the NAS. In response to a number of incidents of sleeping or unresponsive controllers in 2011, FAA has taken action to mitigate the impact of fatigue on controllers by revising its scheduling policies. For example, the Agency increased the minimum rest periods between shifts and increased the number of controllers assigned to midnight shifts.

At this time, FAA is still determining how many controllers it needs. We believe it is critical that FAA establish proper staffing levels for each of its air traffic control facilities to ensure it has the appropriate number of controllers at the appropriate location.

