TRANSFORMING THE FEDERAL AVIATION ADMINISTRATION: A REVIEW OF THE AIR TRAFFIC ORGANIZATION AND THE JOINT PLANNING AND DEVELOPMENT OFFICE

(109–11)

HEARING

BEFORE THE

SUBCOMMITTEE ON AVIATION

OF THE

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
HOUSE OF REPRESENTATIVES

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TRANSFORMING THE FEDERAL AVIATION ADMINISTRATION: A REVIEW OF THE AIR TRAFFIC ORGANIZATION AND THE JOINT PLANNING AND DEVELOPMENT OFFICE

Thursday, April 14, 2005

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON AVIATION, COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE, WASHINGTON, D.C.

The subcommittee met, pursuant to call, at 10:03 a.m., in Room 2167, Rayburn House Office Building, Hon. John L. Mica [chairman of the subcommittee] Presiding.

Mr. MICA. Good morning. I would like to call this hearing of the House Subcommittee on Aviation to order. Today's hearing is entitled ″Transforming the FAA: A Review of the ATO and JPDO.″

We will have as an order of business today opening statements by members, and then we have two panels of witnesses. So we will proceed. I have an opening statement. Then I will recognize other members good morning and welcome.

This morning's hearing will continue the Aviation Subcommittee's oversight of the Federal Aviation Administration. We will be joined today by a number of distinguished panelists, including Honorable Jeff Shane and the COO of the Air Traffic Organization, Russ Chew.

Since I joined the House of Representatives in 1993 the FAA has had a reputation as being one of the Federal Government's most dysfunctional agencies. Its record in modernizing air traffic control has been the poster child of how to not run a government program. Unfortunately, year after year, the FAA allowed its major modernization programs to falter.

What began in 1983 as a 13-year, $2.5 billion effort has ballooned into a $35 billion enterprise that is still some 10 years away from completing its original mission. FAA's operation of the National Airspace System has essentially remained unchanged since the 1960s. Four and a half decades ago, no one anticipated the growth of regional jets, the emergence of low-cost carriers, the current development of microjets, and the massive restructuring of large network carriers. The system, in its current configuration, is reaching a maximum capacity. I predict that clogged airspace, bad weather systems, and systems outages will, in fact, create massive delays and backups throughout our system this summer, and may, in fact, be routine for the future.

The Agency's past failure to adopt a sensible business approach to both management and operations has kept it out of touch with

the rest of the progress within our aviation industry. While the airlines have been struggling, focusing on cost-cutting and efficiency gains—those are some of the goals of the private sector—the FAA's operating costs have grown dramatically.

If problems of the FAA are not addressed in the not-too-distant future, our air traffic control system could become an ″Amtrak in the sky.″

Air traffic is predicted to triple over the next few decades. If the demand for air transportation continues to outpace the FAA's ability to increase capacity, consumers could lose $30 billion annually by 2025, and that would be due to people and products not reaching their destination within the time periods that we take for granted today.

While most air traffic control modernization programs have been over budget and behind schedule, I must say that FAA should be given credit for achieving the safest air traffic control system in the world, not to mention that our U.S. air traffic accounts for two-thirds of all of the world's aviation traffic.

FAA has made numerous attempts at reform and Congress has, in fact, provided additional resources and unprecedented authority to address some of the unique needs of the Agency.

To the credit of the current FAA leadership under administrator Blakey, FAA's recent record has shown some marked improvement.

Today we will hear about our current organizational efforts that will hopefully give FAA the business-minded focus that it needs for the future.

Over the past few years, Congress created the position of chief operating officer. After we created it, we had to redefine its role and also position compensation. We were pleased to have Russell Chew chosen to be the Agency's first COO after that long process.

The Air Traffic Organization, under Mr. Chew, has been committed to serious reform, including the establishment of specific performance goals, deadlines, and deployment schedules. While others may have had good intentions, there is no question that Mr. Chew is serious about this. He has already eliminated 1,000 FAA executive positions.

I joked with staff; I said, ″And we haven't even missed those folks.″

Today we will hear additional details of his plans.

One of the major challenges confronted by the ATO is how to replace its aging air traffic control facilities and obsolete legacy systems.

According to the FAA's own analysis, two-thirds of its $30 billion worth of assets are behind their useful life. Air traffic control towers average 30 years in age. TRACON facilities average 34 years. Primary en route radar systems average 27 years, and our en route control centers average 40 years and are rated by the General Services Administration as being in poor condition. The FAA will require more than $30 million over the next 10 years just to maintain the current condition of our system.

FAA has indeed a very difficult task ahead of it. We have a limited window of opportunity to transform the FAA today and create a viable FAA for the future.

I look forward to hearing from our witnesses today and their plans, their progress that they are making in instituting reforms we have talked about.

I am pleased now to recognize our Ranking Member, Mr. Costello.

Mr. COSTELLO. Mr. Chairman, I thank you, and I thank you for calling this hearing today. I do have a lengthy opening statement that I would like to submit for the record and make brief comments.

Mr. MICA. Without objection, so ordered.

Mr. COSTELLO. Mr. Chairman, as you noted, commercial aviation is on track to exceed 1 billion passengers by the year 2015. At the same time, much of the FAA's infrastructure has passed its useful life. The GSA rates the average condition of the FAA's en route centers as poor and getting worse each year. You noted that the aviation industry has seen many changes over the years but the FAA's infrastructure has basically remained the same.

The modernization program that started in 1983 and was due to be completed in 1996, we are 20 years past the start of the modernization program and 9 years past the completion date. Thirty billion dollars later, we are told now that it may be 5 to 10 more years before the modernization program is, in fact, completed. So obviously we have a lot of work that the FAA and this Congress needs to do to move forward with the plan.

I was pleased, as you noted, with the JPDO's release of the Next Generation Air Transportation System integrated plan last December. The plan provides, in general terms, a vision for the air traffic system. Unfortunately, the vision of this plan is challenged by the reality of severe budget cuts to the FAA's facility and equipment budget, the primary program for modernizing the National Airspace System.

Just 2 years ago the FAA requested and received from the Congress a $3 billion a year authorization for its F&E program. However, the FAA is now proposing to cut the F&E program well below its authorized level. Also the FAA's latest capital investment plan would freeze F&E spending at roughly $2.4 billion for the next 5 years. The Agency will now spend 53 percent less over the next 4 years to enhance the system.

Mr. Chairman, this subcommittee must demand specifics and ask tough questions about the how the FAA intends to implement the next generation plan. While the plan provides broad concepts, we need to know more about the specific technologies that are expected to transform the system. Additionally, we need to have a serious discussion about cost resources in financing.

While the Congress must provide the resources necessary for the plan to succeed, we must not abandon our efforts to control the cost of the FAA's programs. The IG will testify here today that 11 of the 16 major FAA programs have experienced cumulative cost growth of 5.6 billion. Cost overruns on legacy systems cannot be allowed to crowd out our future. This subcommittee must continue vigorous oversight to ensure that the FAA's scarce resources are used effectively and efficiently as possible.

I am pleased that Mr. Chew is here today and will be testifying before this subcommittee to talk about not only past problems but also what progress is being made.

I look forward to hearing from all of our witnesses about the problems and progress at the ATO. I am glad to see that both the industry and union representatives, including the employees that operate the system, the National Air Traffic Controllers Association, and the Professional Airways System Specialists are here today. The JPDO will clearly need to build a consensus with employees and the industry in order to accomplish its mission.

Mr. Chairman, again, I thank you for calling the hearing today, and I look forward to hearing from our witnesses.

Mr. MICA. I thank the gentleman.

Ms. Kelly.

Mrs. KELLY. Thank you, Mr. Chairman. I thank you for holding this hearing today. I think it is an important one. I don't think there is any question we have to put forth a sustained effort to modernizing our air traffic control system.

The U.S. maintains the safest system in the world, but without comprehensive modernization that title could be in jeopardy. In just 10 years we are looking at losing nearly 75 percent of our air traffic control workforce. In the meantime, we find that some towers are understaffed and our controllers are definitely overworked. On top of this, traffic at all of our airports is increasing daily.

Last year, Kennedy, La Guardia, and Newark, in the New York area, handled 94 million passengers. That is more than the records set before 9/11. Stewart Airport in my district is one of the fastest growing airports in the United States, which only adds to the burden of the New York Terminal Radar Approach Control. Despite the increased traffic, New York struggles to achieve an appropriate staffing level. They are authorized to have 270 controllers, but have to make do right now with only 206. It is the busiest air space in the world and it is operationg without 76 percent of its workforce.

I want you to know the FAA made great strides, and I want to thank you, Mr. Chew, for moving things forward. We want to thank you for your efforts. I look forward to hearing the testimony from all of our witnesses, but I specifically look forward to hearing testimony from COO Chew on how the Agency will deal with this increasingly dangerous problem and what he needs from us to help encourage and to help quickly makeover our national airspace, but especially with regard to these air traffic controllers.

Thank you.

Mr. MICA. Thank you.

Mrs. Tauscher.

Mrs. TAUSCHER. Mr. Chairman, I want to thank you for the opportunity to make a brief statement about the progress of meeting the Nation's air traffic demands. Unless we act now, we could face jeopardy in our international airspace.

I wholeheartedly agree with Secretary Mineta. It is with importance that we address the needs today so that the future of the system remains and we can meet what the American people demand.

It is no secret over the next few years air traffic demand is expected to grow significantly. At the 35 Nation's airports, total operations are expected to increase by more than 25 percent by 2020.

The FAA's Air Traffic Organization and Joint Planning and Development Office face both foreseeable and developing challenges while attempting to redevelop our Nation's Airspace System.

We are facing aging passenger facilities and the need for additional capacity both on the ground and in the air, and the necessity of replacing our air traffic control system are all apparent needs. In fact, the FAA's own analysis found that two-thirds of its $30 billion worth of assets are beyond their useful life.

I believe it is also useful to understand our developing needs, the needs that we anticipate but may not yet be clear or definable. For example, what new demands will the changing business models of the low-cost air carriers and legacy airlines have on our air traffic demands? How will we deal with the need for additional air traffic controllers who will require increased knowledge of newly developed air traffic technologies? Finally, how will the FAA manage to accomplish this Herculean task with a shrinking pool of funding?

I am particularly interested in learning from today's panelists if they believe they can meet all of the demands before them with the administration's budget request. It is unreasonable to assume that the FAA will have the ability to replace over $20 billion in aging infrastructure and meet the new capacity needs of the next two decades if we continue to underfund the Agency's core programs.

Mr. Chairman, as you know, for several years I have questioned the FAA's procurement for modernization of terminal air traffic control facilities.

In light of tightening budget streams which will be described here today, I continue to question why the STARS program is over 4 years behind schedule and nearly 900 million over budget. I believe this procurement practice deserves additional scrutiny, Mr. Chairman, and with your permission and because of time being limited, I ask to be able to submit these questions in writing and allow both Mr. Chew and Inspector General Mead to respond in writing.

Thank you, Mr. Chairman, for the time. I look forward to the panelists' comments today and the opportunity to work with them as they continue to transform the Agency so it can meet the demands of the future. I yield back the balance of my time.

Mr. MICA. I thank the gentlelady.

Mr. Holden.

Mr. HOLDEN. Thank you, Mr. Chairman and Ranking Member Costello, for holding this important hearing today.

I look forward to hearing the testimony from the administration witnesses and the various stakeholders on the progress and challenges facing the FAA's Air Traffic Organization and the Joint Planning and Development Office.

I have a particular area of concern that I will raise with Mr. Chew later in the hearing concerning the FAA's proposal to close 42 air traffic control towers between the hours of midnight and 5 a.m.

The Harrisburg International Airport in my congressional district is one of these 42 towers. It is my understanding the FAA used operations per hour as the sole criteria for choosing these 42 towers for possible closure overnight. Specifically, it added to its list of consideration any tower which averaged four or less oper-

ations per hour during the months of June, July, and August of 2004.

The tower at Harrisburg International Airport averaged 3.7 operations per hour during that time period. Operations per hour cannot be a sole criteria for considering whether or not to shut down an airport's tower overnight. During the hours of midnight to 5 a.m., the Harrisburg tower not only controls its own airspace, but that of the Reading Regional Airport, the Lancaster Airport, and the Capital City Airport in Cumberland County.

The Harrisburg tower monitors the airspace at Three Mile Island and Peach Bottom Nuclear Power Plant for homeland security purposes on a 24-hour basis. Should the Harrisburg tower be shut down from midnight to 5 a.m., the airspace will be monitored by a New York center, a regional control center which is not capable of seeing below 5,000 feet. If a plane with malicious intent is flying below 5,000 feet near one of these nuclear power plants, there will be no one who could see it between midnight and 5 a.m.

Mr. Chairman, I look forward to discussing these points and others concerning the Harrisburg International Airport with Mr. Chew later in the hearing.

I yield back the balance of my time.

Mr. MICA. I thank the gentleman.

Additional opening statements?

If there are no additional opening statements, what we will do is turn to our panel of witnesses.

But before I turn to our panel of witnesses, I have an announcement for this subcommittee and those here in the hearing. Today is the last hearing of one of our senior aviation subcommittee staffers, Adam Tsao. Adam has been with us—well, as long as I think I have been Chairman—and done a wonderful job. He is abandoning us for the Homeland Security Committee, a higher position and higher salary, which I don't blame him for, but we will certainly miss him. Today is his last hearing.

So on behalf of the subcommittee, we want to thank him. I followed him through bachelorhood, through marriage, through one child, and we have one coming in 2 weeks. Well, Adam is going to have a lot of excitement in his life. But maybe we will see him. I am sure we will see him when we have a great addition to the Homeland Security Committee he will be serving. So we want to thank Adam for your service.

Mrs. KELLY. Mr. Chairman.

Mr. MICA. Ms. Kelly.

Mrs. KELLY. I simply want to say congratulations, Adam. Homeland Security's gain is our great loss. It has certainly been a great pleasure to have you here and work with you on the committee. Bon voyage.

Mr. MICA. I am sure all of the others join in wishing Adam success.

Ms. NORTON. Mr. Chairman.

Mr. MICA. Ms. Norton.

Ms. NORTON. If you would forgive me, I had not intended on making an opening statement, but since I may not be here throughout the hearing evening, I better. I have to be someplace at 11 o'clock.

Mr. MICA. Thank you. You are recognized.

Ms. NORTON. Thank you, Mr. Chairman.

I just want to put on the record that the Chairman and Ranking Member of this subcommittee and of the full committee and the Chairman and Ranking Member of the Government Reform Committee have both introduced bills that would allow general aviation to be resumed at Reagan National Airport. The Chairman has pressed this matter, including a hearing at the hangar at Reagan National last year. He included in the FAA reauthorization a mandate for a plan to be presented to the Congress for the reopening.

It is quite extraordinary to have the Chairman and Ranking Members of two full committees put forward legislation essentially, overriding the Agency, because there has been no action for 4 years and because you have shut down a substantial amount of commerce and important business in the Nation's Capital.

The impression has been left that either our agencies or our security officials are not able to protect their own Nation's Capital. That is not the view of this Congress, and we don't believe that is, in fact, the case. These bills simply mandate that after enactment, Reagan National will be—of general aviation—be open 6 months thereafter.

In case I am not here, I want to thank the Chairman and the Ranking Member and indicate the seriousness of this matter, when two Chairmen and Ranking Members feel they have to override a Federal agency just to get ordinary business resumed, when the same kind of business goes on everywhere in the United States.

Thank you very much, Mr. Chairman.

Mr. MICA. I thank the gentlelady and associate myself with her remarks.

We are going to move right along with our subcommittee hearing, and we will turn now to our first panel of witnesses. That panel includes Russell Chew, who is the Chief Operating Officer of the Air Traffic Organization of FAA.

We have the Honorable Jeffrey Shane, Under Secretary for Policy of the United States Department of Transportation; Honorable Ken Mead, Inspector General at the Department. We have Dr. Gerald Dillingham, Director of Physical Infrastructure Issues with the Government Accountability Office.

So I would like to welcome our witnesses. I think most of them have been here before and know the routine. If you have lengthy statements or information you would like included in the record, you can do so through the Chair.

TESTIMONY OF RUSSELL G. CHEW, CHIEF OPERATING OFFICER, AIR TRAFFIC ORGANIZATION; HON. JEFFREY N. SHANE, UNDER SECRETARY FOR POLICY, U.S. DEPARTMENT OF TRANSPORTATION; HON. KENNETH MEAD, INSPECTOR GENERAL, U.S. DEPARTMENT OF TRANSPORTATION; AND DR. GERALD L. DILLINGHAM, DIRECTOR, PHYSICAL INFRASTRUCTURE ISSUES, GOVERNMENT ACCOUNTABILITY OFFICE

Mr. MICA. So we will kick off our witnesses with welcoming back Russell Chew and hear from the COO of FAA.

Welcome, and you are recognized.

Mr. CHEW. Is this working? Okay, good.

Chairman Mica, Congressman Costello, Members of the Subcommittee. Thank you for the opportunity to talk about the FAA's Air Traffic Organization. This morning I will discuss our activities and achievements as well as some of the ongoing challenges we face as we continue to restructure the FAA's air traffic services organization.

I know I speak for Administrator Blakey and Secretary Mineta when I say how proud we are to operate and maintain the largest and the safest air transportation system in the world. Our employees safely orchestrate the takeoff, landing, and routing of approximately 50,000 airplanes per day across U.S.-controlled airspace. Last year we achieved the lowest airline fatal accident rate in history.

Mr. Chairman, you and this committee have consistently focused on ways to make the FAA more customer-oriented and efficient by giving us the authority to reform and streamline our activities.

Using this authority, we began one of the largest reorganizations ever undertaken in government. We realigned the ATO workforce into a more customer-focused bottom-line business designed to be more responsive to our customers and more fiscally accountable.

This morning I will touch on some of the highlights of what we have accomplished this past year, but our activities and plans for the future are described in more detail in our first Annual Performance Report for the ATO, which we delivered to you yesterday.

In February, we began removing layers of management, reducing our executive ranks by now 20 percent, and reducing the number of high-paid nonexecutive positions by 9 percent. We also streamlined administrative services by consolidating dispersed work groups under centralized support centers, reducing our overhead in Washington headquarters. There are now 10 operations that support service units that are accountable for achieving specified and measurable results.

Basically, in addition to reducing overhead, we moved everyone in the ATO closer to the customer, those people who use our air traffic system, whether a passenger or a pilot.

Our efforts have started to produce results. Our unit cost is down and our productivity is up. For example, the FAA's average cost of controlling a single instrument flight rule flight fell $17, from $457 a flight to $440 per flight, as compared to 2003.

In addition, we used the competitive sourcing opportunity outlined in the President's management agenda, more commonly referred to as the A-76 process, for the delivery of services now provided by our automated flight service stations. This was the largest public-private competition our government has ever attempted. As a result, we expect to save more than $2.2 billion over the next 10 years.

We also created financial baselines that began a 5-year strategic business planning process that incorporates both operational and financial commitments and is tied to the FAA's flight plan.

By implementing cost accounting, labor distribution reporting and a new financial management system, we have established a basis for an ATO cost control program. This enables us to identify

where costs can be managed and reinvested to meet the strategic initiative described in our business plan.

By integrating our financial and operational perspectives, we can make long-term decisions about budgeting and staffing. Managing our costs enables us to manage our future.

Now, I must acknowledge that along with our successes, we have a number of challenges. As the 11,000 controllers hired after the 1981 strike become eligible to retire, it is imperative that the ATO find a way to meet the demand for controllers without straining the hiring or training pipelines.

We developed the air traffic controller workforce management plan which was delivered to Congress in December. This plan lays out a cost-saving mechanism that will allow the ATO to reduce previous staffing projections by 10 percent over the next 5 years, but full implementation of the plan is underway and will enable us to have the right people in the right places at the right time.

Another challenge we face is upcoming labor negotiations with two of our bargaining units. With our labor costs accounting for almost 80 percent of our total costs, we must reach an equitable agreement that ensures financial solvency and corporate efficiency on all sides.

These challenges make it critical for us to change the business-as-usual operating practices to businesslike practices. As we face our upcoming challenges, we must continue to ensure that the ATO is as streamlined and as efficient as possible in order to justify supporting our essential operating and capital costs as they compete with other important programs for limited fiscal resources.

The ATO must deliver the safest, most efficient. Cost-effective, and well managed services in order to serve our stakeholders and our customers well. I am proud of the work we have done in this last year and even more confident in the direction we are headed.

As we progress in our transformation, we intend to retain our global leadership in delivering air traffic services by providing the greatest value to our customers, to our owners, and to our employees. We look forward to working with you to meet these challenges, and I am really grateful for the opportunity to be in a position to help.

There is hard work ahead of us and tough choices, but I am confident that together we will do what needs to be done.

Mr. Chairman, that concludes my prepared statement.

Mr. MICA. Thank you. We will hold off questions until we have heard statements from all of our witnesses.

We will now recognize Jeff Shane, who is Under Secretary for Policy at U.S. Department of Transportation. Welcome, and you are recognized, sir.

Mr. SHANE. Thank you, Mr. Chairman, I have a longer prepared statement.

Mr. MICA. Without objection, we will put the whole thing in the record.

Mr. SHANE. I thank you for that.

First of all, let me say on behalf of Secretary Mineta and Administrator Blakey and all of us at the Department of Transportation that we join you and other members in taking enormous pleasure in the fact that Russ Chew is one of our colleagues now. He is mak-

ing a tremendous difference. I don't want to dwell on it at this point, but it is just a tremendous boost to everything that the FAA is doing to have him in the COO position.

Mr. Chairman, Ranking Member Costello, I looked over my testimony and was thinking about how best to summarize it in the short time I wanted to take here this morning. As I read it over, it seemed to me it was rather more focused on bureaucracy rather than on the vision of the Next Generation Air Transportation System Initiative.

So what I would like to do, if I might have your permission, is just give you a quick sense of that vision.

There is no doubt that we have to do something dramatic if we are going to accommodate the levels of traffic that we know are coming at us. It is the case that we will have three times the number of operations in the system, by just about every estimate I have seen, by 2025. That means that as we continue to simply modernize the system in the very important ways we are doing now, leading up gradually to 2025, we will not have a system in place that is either intelligent enough or efficient enough or safe enough or secure enough to handle that measure of operations.

Therefore, it was no surprise that the Commission on the Future of the Aerospace Industry in America concluded that we had to do something dramatic. No surprise that the industry felt that we had to do something pretty important. No surprise at all that Secretary Mineta came to the office with a conviction that we had to do something important.

This Next Generation Air Transportation System Initiative is that important initiative. It recognizes that we have to do something special, that we need a new system. The best way I think I can perhaps describe it for you is just every member of the subcommittee, and indeed every Member of Congress, is an expert on the air transportation system. You are frequent users of the system.

I ask you to simply remember the best day you ever flew. You came to the airport, there probably wasn't much traffic there, you didn't spend a lot of time in security. You got through it fairly quickly. You got onto the airplane fairly quickly. The airplane took off on time. It landed on time. You got off on time. You were home. You probably did not spend a single minute talking to your spouse about the experience you had in the air transportation system on that day. That is what we like to achieve for every traveler on every day, even the most crowded days, even with three times the number of operations in the system.

I do not pretend to be a futurist. I do not know what the future system is going to look like. I know a lot of people are predicting microjets, composite jets, personal jets. I don't pretend to have a view of what the system is going to be. I just know that government's sole responsibility at this point in time is to ensure that whatever the market delivers in terms of demand, we have a system in place that can accommodate that demand.

That is what we are striving for with the Next Generation Air Transportation System Initiative. It is different from what we have ever done before by virtue of it being governmentwide. It involves the Department of Transportation, the Department of Defense, the

Department of Commerce, the Department of Homeland Security. It involves NASA. The White House's Office of Science and Technology Policy is playing an important role. It is being operated through a joint program and development office that includes participants from all of those agencies as well as the private sector. There is buy-in throughout the industry and throughout the government that this is an important initiative, that we cannot fail that. That is what is so different from what we have seen before.

The board of directors—and I can use that phrase for this effort—is a senior policy committee that is chaired by Secretary Mineta. I have never seen in a lot of the years that I have spent in government anything to compare with it. You have deputy secretaries and administrators of all of the participating agencies coming to meetings and spending 2 or more hours thinking original thoughts about what the future air transportation system of this country needs.

When they engage at that level, the importance of the initiative is not just at the working level. So that is why we have such engagement throughout the government, throughout these agencies, and particularly at the working level and the JPDO. I think we have created a template for the way government is do going to address large capital-intensive and technology-driven projects in the future. It is something to behold and we are very, very proud of it.

Thank you, Mr. Chairman and I look forward to any questions you might have on some of the specifics.

Mr. MICA. Thank you, Mr. Chew. As I said, we will hold questions until we hear from our other witnesses.

Ken Mead, Inspector General, we will hear from you now. Thank you.

Mr. MEAD. Thank you, Mr. Chairman, Mr. Costello.

I think since its inception the ATO has worked to flatten its organizational structure and align responsibility for acquiring new systems with the organizations that provide the services. That was not the case before. Also, the ATO has showed a willingness to measure itself through better methods. That, too, is an improvement.

But a great deal of the ATO's efforts thus far have focused on ″dealing with the hand they were dealt″, which was growing operating costs, a very high salary base, reduced funding, and a portfolio of systems that were substantially behind schedule and over budget. But the backdrop here is that the heavy lifting lies ahead, because there is an increasing number of passengers and aircraft operations. The ATO has to do all of this in a cost-effective way.

I would like to look forward and highlight eight big next steps that I think should be areas of focus.

First, reducing operational errors. This is where planes come too close in the sky. FAA has made some progress here, but still a good ways to go. The most serious types of operational error are occurring about once every 9 days. They have to come down. A significant concern here is that FAA was relying on a system of self-reporting these errors, and we have some serious reservations about the self-reporting system. One facility reported just two operational errors during the 6-month period from January 2004 following a

whistle-blower complaint. We identified five operational errors in May and June alone.

After instituting appropriate use of playback tools last June, the facility itself recorded 36 operational errors over the next 6 months. Twenty-eight of those were moderate to severe. I am pleased to say that the ATO has recently taken steps here by establishing an audit process at towers and TRACONs. That is a right direction. The key now will be follow-through.

Getting control of major acquisitions. That is item number two.

For fiscal 2006, the ATO is requesting $2.4 billion for its capital account. That request is slightly less than last year's $2.5 billion, but significantly less than fiscal 2004 budget of $2.9 billion. An important point here I would like to make is that the current budget level of $2.4 billion is not sustainable, and the reason for that is fairly straightforward. The current systems have experienced so much cost growth that there is little room for FAA to pay for both the current systems and simultaneously take on new initiatives.

I also want to point out that we recently reviewed 16 of the ATO's major acquisitions; 11 of those projects have experienced cumulative cost growth of about $5.5 billion, which is more than double FAA's 2006 request for its capital account. Delays for those systems have ranged anywhere from 2 years to about 12 years.

I also want to point out here, though, that the bulk of that cost growth happened before the ATO's establishment and is mainly a reflection of the ATO's efforts to re-baseline those projects. A lot of those cost increases were pent up and simply had not been straightforwardly recognized.

Item three, reducing the cost and development risk of ERAM. ERAM is an acronym for basically replacing the brain of the air traffic control system that controls high-altitude air traffic. Current price tag is $2.1 billion. We are already spending more than $240 million a year on the program. Any cost increase is going to have major cost cash-flow implications. In the past, FAA has had problems managing these types of contracting vehicles. I think FAA should look to make these more fixed-price agreements rather than cost reimbursable agreements, which is where the government absorbs most of the risk.

Fourth item, getting control of support service contracts. I would like to say several words on these. Over the past 3 years we have seen an increase in support services contracts involving large contracts. Collectively, they have a value of over $2 billion. We are having problems telling what these contracts are for. They are broadly defined, nominally for information technology services, we found instances where they are used for acquiring services such as timekeeping. There is a lack of centralized control over them, and we are having serious questions about exactly how the contractors' work differs from the work FAA employees do.

One example: We had an FAA employee who was earning $109,000 at the time of their retirement. They went right from retirement to work for one of these contractors, and the contractor is getting paid $206,000 for what this employee was getting paid 106,000 for before they retired.

The fifth item is addressing the coming wave of controller retirements. I think the FAA has a good plan here but it is missing two

key items. One, numbers by facility. Until you have numbers by facility, you really don't have ″rubber-meets-the-road″ numbers.

Number two, you need cost data. Cost data is not in the current plan. FAA's next report, I believe, will have both facility numbers and budget numbers.

Item number six. This is negotiating a new collective bargaining agreement with the controllers' union.

Airspace redesign is item number seven. These are very important when you lay new runways, you spend all that money for a ground infrastructure, you also have to do airspace redesign. FAA is working on overcoming problems with delays and budget problems with airspace redesign.

Finally, I would like to say just a couple of words about the JPDO. This is the office that is charged with developing a vision for the future. I think looking 25 years ahead, Mr. Chairman, is important, but I think people need to be able to relate to what is going to happen in 5-, 10-, and 15-year benchmarks as well. The big imperatives this year are for the JPDO to determine what level of funding they actually require, how much other agencies are going to contribute, what specific capabilities will be pursued, and when they plan to implement them. Thank you.

Mr. MICA. Thank you. Thank you, Mr. Mead.

Now we will hear from Gerald Dillingham, Director of Physical Infrastructure Issues with GAO.

Welcome, and you are recognized.

Mr. DILLINGHAM. Thank you, Mr. Chairman, Mr. Costello, and members of the subcommittee.

As many of you know, the GAO has been reviewing the status of the ATC modernization program since its inception in 1981. Our annual reports to Congress have generally contained the same conclusions, that major projects are over budget and behind schedule.

We have also identified some systemic causes of these cost and schedule problems, such as the influence of its organizational culture and the lack of key business processes. Because of the size and complexity and history of the program, the GAO included it on its high-risk list in 1995. We continue to include it on our list of high-risk programs today.

My statement today focuses on two questions:

First, what is GAO's assessment of the ATO's efforts to date in addressing some of the challenges associated with the modernization program?

Second, what are some of the key challenges that lie ahead for the ATO, and what are some options for addressing those challenges?

Regarding our assessment of ATO's efforts to date, we think that we could be at the beginning of a new chapter in the history of modernization. As you have heard, the ATO is currently implementing a new approach to modernization. It reflects many of the recommendations that we have made over the years, and includes many of the key practices that have consistently been associated with successful organizational and cultural transformation.

We found that the ATO has taken a number of positive steps to address what we call the legacy cost and schedule problems that have beset the modernization program for the past two decades.

Our current work shows that FAA has made improvements in these overall investment decisions. The fact that it met its acquisition goals for 2004 with over 90 percent of its major acquisitions meeting budget and scheduled targets is a very positive sign.

The ATO has also demonstrated a willingness to cut major acquisitions, even after investing significant resources.

The organization is utilizing FAA's long-awaited cost accounting system to improve its financial management capabilities.

In addition, the ATO has improved its human capital management by linking individual performance criteria to FAA goals, and it has also recognized the fundamental importance of changing the organizational culture and has initiated efforts in this area as well.

From the GAO's perspective, the ATO's key challenges for the future include finding a way to live within its means while increasing the capacity to safely and efficiently accommodate the forecasting increases in traffic. The ATO will also have to repair or replace its aging ATC facilities. A big issue is the hiring and training of thousands of air traffic controllers in the next decade.

Assuming that the JPDO receives its authorized $50 million annually between now and 2010, the ATO will also need to work with the JPDO to ensure that research programs led by the diverse agencies support national goals.

Our research points to a number of options that might be considered to address some of the challenges:

First, the ATO must continue on the path of transformation. Transformation of the Nation's transportation system is directly tied to the Nation's economy, security, and defense.

Second, it must continue to address both the cost and revenue sides of the ledger. On the cost side, the ATO must continue its ongoing efforts and initiatives that are aimed at cost reductions. This would include the ATO's decision to include the impact on the operations budget when evaluating proposed capital projects.

It is important to point out that the information that we have reviewed to date suggest that the cost-saving initiatives that the ATO has identified will not even begin to close the reported gap of about $5 billion over the next 5 years in the operations budget.

For additional potential cost savings, the ATO could evaluate its experience in outsourcing flight service stations and consider outsourcing other ATO services such as oceanic.

Second, we find merit in the proposals such as that represented by Embry-Riddle University that could save millions of dollars annually in the hiring and training of air traffic controllers.

Third, the ATO could evaluate the need for and expense of maintaining existing ground-based NAVAIDS.

On the revenue side, in the short term the ATO must be prepared to live within its existing budget. It may be the case that the Nation's fiscal condition may not allow full funding for all needs. This will mean that some difficult choices will have to be made by the Agency and the Congress.

In that regard, we believe that it is critical that the ATO increase the degree of transparency for the Congress and other stakeholders in how and why decisions are made regarding the modernization program.

For example, the ATO could clarify the trade-offs it is making by supplementing its budget information with information that discusses the impact of the Agency's decisions to prioritize certain programs and reduce funding for others in order to reach budget targets. This kind of information will make transparent how the ATO is managing to live within its budget targets.

Over the longer term, the ATO could choose to pursue a recommendation of the Mineta Commission to develop legislative proposals to allow it to incur debt.

Mr. Chairman, we should recognize that the problems have been a long time in the developing, and they will not disappear overnight. The transformation that is underway will still require sustained attention of FAA management and the committees of the Congress to realize its potential.

Thank you, Mr. Chairman.

Mr. MICA. I thank you and I thank all of our witnesses on the first panel, and we will move right to questions.

Mr. Chew, you have heard it, and Mr. Mead, if you continue to cut facility levels—and I think we have had a proposal by the administration from 2.9 to 2.4. That is not sustainable, I think, was his quote. You just heardMr. Dillingham OF GAO say we are looking at an operations budget shortfall of $5 billion.

How do you respond? How are you going to make this work?

Mr. CHEW. Well, when we talk about investing in the new system and the F&E budget, which is a capital budget to modernize it, I think it's important to understand that sometimes making the wrong investment is worse than making no investment.

Mr. MICA. Making the wrong investment—

Mr. CHEW. Is worse than making no investment. Because you live with the costs for many, many, many years. Because of that we have, ever since we started a reassessment of all of our capital programs, we are actively reviewing them all— and there are hundreds and hundreds—even though we only tend to focus on the very large ones.

We have actually already reduced spending on more than—well, several hundred of those capital programs that really couldn't demonstrate that they could move the dial on safety, capacity, or efficiency.

So focusing on making the right investments is crucial to understanding how to move to what the JPDO will build as a vision.

That period of assessment will take place for the most part for the remainder of this year, after which we will probably have a very detailed plan on what investments should be made and what metrics we will use to ensure that they stay not only on constant schedule, but they will produce the kind of capacity, the kind of safety, and the kind of efficiency that we are all looking for.

Mr. MICA. That brings me to my next question. I guess at the end of last year you all issued this Next Generation Air Transportation System, and in the center there is this sort of general outline of your plan. You list a number of various activities and goals, and then a sort of general timetable. It won't be until the end of the year that you have specifics on all of these. For example, you have got to establish a comprehensive proactive safety management ap-

proach, develop environmental protection that allows sustained aviation growth, and establish an agile air traffic system.

All of these objectives are set out generally for 2005. When will we see the specifics? Can we get something to the subcommittee that would show us before the end of the year, different activities here, or objectives and some type of a better timetable? This is pretty general.

Mr. Shane.

Mr. SHANE. Yes, Mr. Chairman. The intention is to have those specifics by the end of the year in order to be put into the deliberations over the 2007 budget requests of the administration. That is what is driving it right now. I don't want to move into that 2007 cycle without having those specifics, and that is what is driving the current timetable. So you will see greater specificity.

Mr. MICA. Well, general visions and all of that are great, but specific deadlines and objectives are important.

I don't want to take away from what you have done, Mr. Chew. Was I correct in saying you have eliminated 1,000 positions?

Mr. CHEW. That is right. In 2004 we eliminated almost 1,400 positions.

Mr. MICA. Almost 1,400; over 1,000. So it is possible to do at least the same level—maybe even more—with less, if properly directed?

Mr. CHEW. Very definitely. If we were to focus our capital expenses and our investments on improving productivity, we could achieve more productivity. In recognition of that, in our review of our capital programs, our major capital programs, very few if any were actually aimed at productivity improvement.

Now, it is important that any investment we make focus on safety, capacity, and efficiency in terms of productivity and cost savings. That is how everyone operates in the outside world, and it is how we are trying to get the ATO to operate as well.

Mr. MICA. Let me ask you another important question. Do you as COO, or does the FAA have enough authority, and specific authority in regard to your budget and other activities that you plan to undertake, to make the changes necessary to bring FAA's costs under control and also to implement what goals and objectives you have set for the future?

Mr. CHEW. I think the level of authority that we have affects the speed with which we can make change, not necessarily whether we can make change. I think there are things that could help us to go faster. Being from the private sector, I find many of the government processes that are dictated by law to be very, very restrictive in my ability to move forward as well.

Mr. MICA. You know that drives me nuts, too. I come from the private sector. Ii is so frustrating to deal with--anything dealing with government costs more, takes more people, and there is always some bureaucratic obstacle in the course.

I would welcome any suggestions, anything you can give the subcommittee that we might incorporate in any of these processes. The acquisition process drives me crazy, and watching the acquisition—well, development of air traffic control modernization efforts. It took so long to get a request for proposal out. Then, by the time you did that and we had the competition and then we awarded it,

we end up changing the specs, and we have everybody and his mother changing the specs. No vendor accountability. By the time this whole process of development takes place, the private sector has moved ahead and checked technology development. We have spent all this money chasing our tail and have nothing.

Dillingham stole my line—that all the programs are over budget and behind schedule. Anything you can do to give us—to give you the authority to move forward on making these changes we would appreciate both from you, Mr. Shane, or you, Mr. Chew. Okay.

Well, I have got a whole list of questions, but I am going to defer to Mr. Costello. Some we may submit. Maybe we will do another round.

Mr. Costello.

Mr. COSTELLO. Mr. Chairman, thank you.

Mr. Chew, let me follow up on the Chairman's questions and your comment. If I understood you correctly, you indicated that if you had more authority—that the lack of authority—you would be able to make more progress if you had more authority and get things done faster; is that correct?

Mr. CHEW. That is right.

Mr. COSTELLO. Can you be more specific; what authority are you looking for that you currently do not have?

Mr. CHEW. Well, I think if you look at the personnel reform and the acquisition reform that was put in place many years ago, because the ATO had not yet been formed, the treatment of it was aimed at accelerating certain things that held those processes back in the old organization.

When you turn an organization from being input-oriented to output-oriented and performance-oriented, the types of changes that we want actually shift, and those kinds of authorities that you would need would accelerate those areas that you are trying to make change. Some of those areas would include the very mundane things that you might consider are not glamorous, but are as simple as human resources and basic administrative tasks, that government processes require but they are not very streamlined. So by being able to streamline that, we can actually move an organization faster.

In the case of the ATO, when traffic literally changes every 30 to 60 days, our ability to be flexible and move not only our resources, but move our technologies and move our people quickly, are somewhat impeded by the traditional administrative processes that the government requires.

I would be happy to provide more specific information to you, as I was really not prepared to answer these particular questions.

Mr. COSTELLO. I found it interesting that you had brought that up, and I would like to follow up on that and ask you, if you would, to submit specifics to the subcommittee, if you would.

[The information follows:]

The processes in the government are very different than those used in private industry, and we are attempting to model our processes in the ATO to be more like private industry, more business-like. To be successful does not necessarily mean that we need more authority but we do need to do a better job of planning so that the resources we need are in place where and when we need them. We accomplished much in the first year of the ATO and we must continue to streamline administrative and other functions to reduce our overall costs and increase efficiency. The FAA is fortunate to have the significant flexibility that came with Acquisition and Personnel reform. In the financial area, the ATO would benefit by having the Operations account aligned around the ATO structure, as proposed in our budget, versus the current approach for our appropriations that reflects the old organization when our research and air traffic activities were in separate FAA lines of business. This unnecessarily ties our hands and contributes to inefficiency.

Mr. COSTELLO. Another question I had for you and Mr. Shane as well, if I could ask both of you. Maybe Mr. Shane first; and you, Mr. Chew, second.

Dr. Dillingham in his prepared statement recommends that the FAA should give detailed information to the Congress about their budget submission and the impact that the budget will have on the FAA's modernization program. Dr. Dillingham states specifically that the FAA should identify trade-offs.

But if we are going to go forward with the modernization program, as we need and want to move forward with your budget submission, what are the trade-offs in order to accomplish the modernization? What are you going to give up? What are you going to cut?

Mr. Shane, I wonder if you would go first, and then Mr. Chew.

Mr. SHANE. Yes, Congressman. I don't have specifics as to what the trade-off would be right now. I would just note that what you heard emphasized throughout Mr. Chew's presentation and his answers to questions are constant references to metric.

This is something that we really have no press department for in the FAA as far as I can tell. Russ is bringing a measure of quantification to his assessment of what the FAA is doing now and what it will have to do in the future that really is unprecedented. And it is going to facilitate us making those trade-offs, I think, in a very precise way, even in an era of unlimited sources. And none of us should pretend we will not be in that period for a long period to come.

It is going to be possible to maximize the bang we get for every dollar. That is what the ATO is doing. That is why it was the right thing for Congress to do, to create the organization, and again, without overdoing it, why we are so delighted that somebody with Mr. Chew's background, coming from industry in the way he did, is able to quantify this issue in a way we have never seen before.

Mr. COSTELLO. But you would agree that there have to be budget trade-offs within the FAA?

Mr. SHANE. Absolutely. Absolutely. I think, in fairness, one of the big problems the FAA has had, and one of the things that has led to the kind of results that the subcommittee has referred to over and over again is the lack of sufficient predictability in the funding stream. Mitre Corporation did a study a while back that attributed something like 50 percent of the cost overruns to that lack of predictability, that lack of stability in the availability of finances for capital investment and for maintaining the system.

Those are issues that this administration wants to work with the subcommittee on. We need to figure out better ways of providing that predictability, such that the system can be modernized with deliberation in keeping with a strategic plan.

Mr. COSTELLO. Mr. Chew, let me move on to another question before I run out of time here.

You have previously stated that there is a $5 billion gap in operations funding and a $3.2 billion gap in capital funding. And I wonder if you might tell the subcommittee how you and the FAA intend to close those gaps.

Mr. CHEW. The gap is the difference between the funding as it is today, and if we did business as usual, what it would be in 5

years. Of course, we have already started taking action on that gap, everything from trying to manage our premium pay practices, our paid leave practices, looking at the way we manage schedules, and things like that. Also, what would contribute to closing that gap would be the A-76 Flight Service Stations competitive sourcing project.

So all those cost saving things will, in fact, contribute to closing the gap substantially. However, we are still continuing to look, because we—over that 5-year period, we still have not identified everything we would need to do to close that gap, and we have a number of things that we are looking at that will also help that.

Unfortunately, again, we are in a fledgling stage with regard to our implementation of our accounting systems, so running the numbers to see how far out they will close the gap is still in progress.

Mr. COSTELLO. You heard the Inspector General, Mr. Mead, testify that the FAA's current capital budget is not sustainable. Would you agree?

Mr. CHEW. Well, it depends. With technology moving as fast as it is, I think we have to change our thinking a little bit, in that, yes, we have an old air traffic control system. We have, for instance, 40-year-old en route centers, but they have brand new pieces of automation in them. So rather than thinking of the system as one entity, think of the system as something that needs to be in a continuous state of refreshment as time goes on.

As we showed in our first chart, there are 41,000 systems that make up the air traffic control system and they do not all age and expire at the same time. So the amount of capital we will need, and the capital budget forward, will be dependent on what needs to be replaced and when it needs to be replaced.

We are looking very, very hard at that to see whether or not we can further reduce costs even more by potentially spending more capital in the early years instead of less.

Mr. COSTELLO. When will we be at a point where either you or Mr. Shane or others can come before this subcommittee and put a price tag on the Next Generation System?

Mr. SHANE. We can't do it today, that is quite clear. I believe that as we move into that 2007 budget cycle that I referred to earlier, we will have a better handle on what we think the overall costs are going to be and precisely how we plan to budget for it going forward.

One of the real, I think, wins in the way we have structured the Next Generation plan is that we are finding money in the budget. We have pulled together all of these agencies that have been doing aeronautical research forever, but in a way that has not been sufficiently coordinated, and in some cases not coordinated at all with what the FAA has needed. That era has ended, and now every dollar that we are spending on aviation research, whether it is in NOAA on weather, whether it is in NASA, whether it is in the Department of Defense, it is being targeted at what the Next Generation System will look like.

Mr. COSTELLO. But to be specific, when can the subcommittee expect a deployment schedule and cost estimates?

Mr. SHANE. I would think you will see the specificity you are looking for for the first time in the 2007 budget submission.

Mr. COSTELLO. So in the 2007 budget submission we will know at that time the estimated cost and the deployment schedule?

Mr. SHANE. Yes, sir.

Mr. COSTELLO. Thank you.

Thank you, Mr. Chairman.

Mr. MICA. Thank you.

Are there members with questions? Mr. Hayes.

Mr. HAYES. Thank you, Mr. Chairman. A couple of questions for Mr. Chew.

Some people are arguing that the general aviation component of air traffic imposes a significant cost on the system. As you know, general aviation has been banned from Washington Reagan National Airport for several years. While we want to restore the access for general aviation, how much money has the FAA saved while providing air traffic control service in DCA during the 3-1/2-year absence of general aviation?

Mr. CHEW. Actually, I'm not sure I can answer that question.

Mr. HAYES. Sounds like a trick question, doesn't it?

Mr. CHEW. That is a good question, because we have never measured the access to DCA by general aviation in terms of cost. In working with our counterparts in security, the quantification of that has never risen as an issue. I do know that because of this latest activity, there is now some active scrutiny on this particular issue, and I know that there is optimism that things can move forward.

Mr. HAYES. Well, I think the answer is clearly, it hasn't cost anything, and it hasn't saved anything because the system is still up and working.

Those controllers are some of my favorites in the world, and they can obviously handle the traffic. But you see my point?

How is general aviation involved in the modernization and the transformation? Are you consulting with GA, and what specific considerations are being used or given, Mr. Chew, or anyone else who would like to comment?

Mr. CHEW. Well, I can start. We work very closely with those who represent general aviation. The Aircraft Owners and Pilots Association was very supportive, for instance, of the A-76 Flight Service Stations process. I think it was because they have been asking for a long time for more and more support in terms of the services they were getting.

It is interesting that from 2003 to 2004 the number of actual contacts at our Flight Service Stations dropped by 12 percent, yet the activity of many of our other general aviation types of automated services actually increased. So I think where we are headed with that—and we are working very closely with Aircraft Owners and Pilots Association—will yield even better services over time with our general aviation population.

Mr. HAYES. I want to be sure and remind you, although I am sure you know this, that general aviation is GAMA, MBAA, AOPA and others, and I think what you are saying is, people like me have to learn to use that machine and quit calling up on the phone.

It is good to say we are planning for 20 to 25 years out, but are we hearing from the ATO that there is—we are hearing there is an immediate need to invest in new technology and facilities.

How are you keeping the processes properly aligned?

Mr. CHEW. What is interesting about that is the most important part of investing in new facilities or new equipment is that they actually do something positive for the operation, for the controllers who use them and for the customers who interact with them. That was the reason we moved our acquisition unit, which was standalone, into the actual operating service units. So whether it is en route or terminal, the acquisition processes now occur under that service unit.

So that the conversion of an investment in technology results is a change to the operation. That was the reason they would so immediately be able to actually reduce spending on so many programs, because with so many, you were buying something, but it actually didn't change the operation. So that is our primary first step in ensuring that the things on which we do spend, whether new facilities or new equipment, actually result in a better, safer operation.

Mr. HAYES. I am really proud of our air traffic controllers and the job they do. I still continue to be concerned about their numbers and retirements and making sure that we are fully staffed there.

Is that factored into the equation long range, as well as short-term planning?

Mr. CHEW. In fact, our 10-year controller workforce plan was really a hallmark and one of the first plans we put together that included better workforce models.

I actually share your concern a great deal. When I look at the challenge ahead with the number who are retiring, and being able to properly staff our facilities forward and have trained controllers in place, we must not deviate from the need to hire those controllers along that plan.

The plan makes some very key assumptions: that the traffic grows at the rate we think it will grow; that the retirements occur at the rate they will occur; and that the training will happen in a way that is even throughout the year. So you can't just hire everybody in the last month of the year, because the training pipeline can't hold that many all at once. So we must train throughout the year.

That is one of the reasons why stability of funding forward is important, because regardless of whether we are in a continuing resolution or not, I must hire those controllers to make sure I keep that pipeline full.

Mr. HAYES. Thank you, gentlemen.

Thank you, Mr. Chairman.

Mr. MICA. Thank you.

Mr. Holden.

Mr. HOLDEN. Mr. Chew, as I mentioned in my opening remarks, I am concerned about the FAA's proposal to close 42 towers overnight, specifically at Harrisburg International Airport in my district. I mentioned two reasons in my opening statement, the fact that they control the airspace at two nuclear power plants, and

they are also responsible for the air traffic at three other airports, Reading Regional at Lancaster and Capital City. I would just like to give you a few other facts before I ask you a few questions that I think the FAA needs to consider as they are looking at their final decision here.

The Harrisburg tower controls all ground movements on the airport of both aircraft and vehicles. And that is important because HIA is the maintenance facility for Piedmont-Allegheny, and they are constantly testing the engines during the evening.

Harrisburg International Airport has also become a main diversion airport for Philadelphia, Baltimore, Ronald Reagan-National and Dulles Airport, so I think you need to take that into consideration, as well as the fact that the 193rd Air Wing of the Air National Guard is based at HIA. And that is the Special Ops unit for the Air National Guard, and there is no telling when they would be called into service and they would need control help.

And, lastly, in calendar year 2004, 39 lifetime flight operations took place at HIA between the hours of midnight and 5 a.m. So I assume that you are early on in the process, and I am just curious exactly where you are in the process, if you can tell me that.

Mr. CHEW. I would be happy to answer that. Let me just clarify a couple of things.

Everyone, I am sure, knows that when the tower is closed, the airport is not closed. It is a common misunderstanding by many who hear that the tower won't have controllers in it from midnight to 5 a.m.

The second one is, we didn't release the list, and the reason we don't is that four operations per hour is just the starting point. That threshold was set back in the early 1990s as a threshold at which you begin to look at the airports. The reason is, there are more than 5,000 airports in the United States, and only about 10 percent have control towers.

Now, it is important for us to maintain the highest level of safety standards that we do; that we apply a very strict discipline on applying standards of service and standards of safety, and we set thresholds so that we can begin to look at a situation, but there are a lot of other factors. Once any airport drops below that threshold, we look at the type of factors you talk about.

We look at whether the pilots can control the lighting or not. We look at whether the weather services can be provided. We look at who is going to provide the crash fire and rescue services for the airport.

As a pilot for American Airlines, I flew into airports with closed towers from time to time. And under the right conditions, it is perfectly safe. But it is up to us to make sure we evaluate all the special circumstances, such as the ones that you articulate, before we take any action. And, in fact, we will make sure to coordinate, as a standard practice, with the airport operator and local community and the representatives thereof.

Mr. HOLDEN. Okay, so operations per hour are not the only criteria you are looking at. And it is true that the airport would not be closing, but there would be no air coverage under 5,000 feet if we went to New York Central. And that is a concern because of the

nuclear power plants, and I think that, you really need to take a good, hard look at.

Assuming that all 42 of those proposed would be shut down, what would be the savings annually for the FAA?

Mr. CHEW. The savings exceed—of the direct operating costs, the savings would be $6 million a year.

Mr. HOLDEN. And what percentage would that be of your total budget?

Mr. CHEW. About a tenth of 1 percent.

Mr. HOLDEN. A tenth of 1 percent. Well, I know we just had several questions about the need to tighten our belt and so forth, but I think if you would look at the savings of a tenth of a percent and then compare that to security and safety, I think we really need to take a good hard look at it.

And I look forward to working with you as we move forward in this process.

Thank you, Mr. Chairman.

Mr. MICA. Thank you.

Mr. Ehlers.

Mr. EHLERS. Thank you, Mr. Chairman, and thank you for holding this hearing. I think this is one of the most important, if not the most important, issues facing us and the FAA over the next 20 years.

I apologize I wasn't here to hear all the testimony. I had a meeting at the White House and I have two other committee meetings going on. But my lack of attendance is not because of lack of interest or because I do not think it is important. I believe it is extremely important.

I would like to ask what is going on in our shop that is comparable to what Europe is doing today to try to build their new air traffic control system? Are we in touch with that? Are we going to be a participant in that at some point? Are we developing the same technology that they are using or are we working with them jointly to develop technology?

Could you just give me an overview of that issue?

Mr. CHEW. I would be happy to.

We work, as we have historically, very closely with our European air traffic counterparts in many, many ways. We have just recently expanded and signed an agreement with Euro Control, too, from just research to also operational cooperation, as all of these things unfold for Europe.

Europe's Single Sky Program is advised by an industry consultation board, and the FAA holds a seat on that board. We have a counterpart advisory committee called the Air Traffic Management Advisory Committee, and the European Commission holds a seat on our Air Traffic Management Committee, as well. That is to enhance the communication across the ocean, across the Atlantic Ocean, on not only their Single Sky activities, but also their consultation board as advised by their new industry consortium, which are going to be suggesting technologies and operational changes to their system.

We, in fact, are engaged in discussions with the European Commission in considering whether or not it makes a lot of sense for us to coordinate and synchronize our modernization activities with

them, since most of their larger airplanes, in fact, fly to the United States and most of our U.S. carriers fly to Europe. So that is a very, very important focus for us on an international basis.

Mr. SHANE. If I could supplement that, Congressman, because what you have here is the immediate here and now, and I am looking at talking about some of the things we are planning for the more distant future.

Europe is engaged in its own next-generation effort, if you will, which they call SESAME, and we anticipate that we are going to be in a lot of direct communication with Europe as these two efforts move forward in tandem. There is no question, and both of us understand this, of course, that we have to have a global system. Airplanes are flying globally, and they cannot have a proliferation of black boxes in each aircraft and make any sense to the system.

So we will be talking to them as we move forward even in the longer term.

Mr. EHLERS. A related question to that. It seems to me they are proceeding more rapidly and are further ahead on the curve than we are. My concern would be that they develop a system, and we end up basically having to purchase the same thing.

The question is, where do our electronics folks in this country come into this equation?

I am not talking so much about the businesses, but obviously, the manufacturers are going to be involved, you are going to be involved. If, in fact, we are behind the curve and we are going to end up buying their products, we once again do damage to the American aerospace industry when, in fact, we should be leading the curve and trying to help market our products in other countries.

A response to that.

Mr. CHEW. I share exactly your concern. Our goals are not to follow them. Our goal is to maintain the global leadership for the United States.

Mr. EHLERS. What are you doing to accomplish that?

Mr. CHEW. Well, I think the JPDO is one of those first steps to establish the vision in order to maintain the direction for our modernization activities because, to date, without that vision, we could, in fact, fall behind.

Mr. EHLERS. You talk about maintaining your leadership. Are you sure that you are still the leader? I am not at all sure that you are.

Mr. SHANE. As a going-in proposition, I wouldn't accept that we are behind the curve, Congressman. I know there is a concern about it, and we should stay on our toes about that. Europe is proceeding ahead. But I think we are still very much leaders, and everything that we are doing right now is for the purpose of maintaining that leadership; working cooperatively with our friends across the Atlantic, ensuring that we have a coherent system by the time everything emerges, but not following at any point.

Mr. EHLERS. Well, I hope you are right. I will be watching that with great interest.

In closing, let me just associate myself with the remarks of my good friend, Mr. Hayes, who is a far, far better pilot than I could ever hope to be. But I am just totally befuddled. We have tried everything possible to get Reagan reopened for general aviation. I

know that those of you sitting at the table play a small part in that decision, but let me once again go on the record and say, I think it is one of the most absurd things we have done, probably equaled only by the absurdity of requiring DCA passengers inbound and outbound to sit in their seats for 30 minutes beforehand.

That is so obviously inane. If, in fact, we need that security measure, then the people departing Dulles should stay in their seats for at least 20 minutes, because in 10 minutes our plane has passed over Dulles. Or, in fact, eastbound Dulles passengers probably should sit in their seats for 40 minutes.

And I have to blame you for part of that. Where do these inane ideas and regulations come from? But particularly keeping the GA out of Reagan Airport is a real disservice not just to the aviation industry, but to the government—because a lot of Members, such as Mr. Hayes, would like to be able to fly their airplanes into Reagan—but also the disservice to people who do fly into Reagan. We are costing them an extra hour, hour and a half of time every time they come in.

It just does not make sense, and I want to add my voice to the comments that Mr. Hayes made.

One thing I have always liked to do in government is to try to have government make sense. I am totally frustrated by this because it makes absolutely no sense, from any perspective, including security. And I just wanted to register my protest once again.

Thank you, Mr. Chairman. Yield back.

Mr. MICA. Thank the gentleman.

Mr. Costello, you had additional questions?

Mr. COSTELLO. I do, Mr. Chairman, just two quick questions. But before I ask the questions, let me say that I agree with my friend from Michigan, and Mr. Hayes as well. That is one of the reasons why Chairman Mica and I, and Mr. Oberstar and Mr. Young have sent a letter to the FAA and introduced legislation saying that it is time to change this crazy policy and begin to let general aviation come back into Reagan.

Quickly, two questions.

Mr. Mead, you heard me ask the question about your testimony about the current budget level for the capital accounts not being sustainable. Last week, Mr. Oberstar and I sent a letter to the FAA expressing our concern that the administration's cuts to the FAA's F&E account, we are concerned that it is going to undermine the transformation of the air traffic control system. And I want to ask you specifically: Do you believe that the FAA can successfully transform the air traffic control system with a $2.4-billion-a-year capital budget?

Mr. MEAD. The direct answer to that question is no. And the reason why is that they have a portfolio of systems that the FAA is now buying.

The cash flow requirements of those come very close to the $2.4 billion mark. So if you are going to start new initiatives, you are going to have to get the money from somewhere, and it isn't there. That is not to say there are not some opportunities for savings at FAA, but you are not going to be able to save your way out of this problem.

Mr. COSTELLO. Mr. Shane, you heard Mr. Mead's opinion, ″You are not going to be able to save your way out of the problem,″ and I wonder if you would like to respond.

Mr. SHANE. I hearken back to my reference to the way in which we are planning for the transformation of the system involving in a much more coherent way all of the agencies of government that do aeronautical research. So while we have, for example, only about $28 million allocated to the JPDO right now—that is $10 million from NASA, $18 million from FAA—if you total up the amount of money being spent on aviation research among all these agencies, you get pretty close to a $1.5 billion that would have been spent anyway. It just would not have been spent in a way that I am now treating as coherent.

When you add that $1.5 billion of research and you focus it in the way we are doing through the JPDO process, you do begin to see real possibilities of transformation, notwithstanding the amount of money that is being made available to the FAA each year.

Mr. COSTELLO. Mr. Chew, the GAO's statement that was submitted to the subcommittee indicates that the funding gaps contribute to the cost schedule and performance problems for eight of your major system acquisitions; and my question is—specifically to you, are the annual budget and appropriations process undermining your modernization efforts, and will it undermine the FAA's efforts to transform the system?

Mr. CHEW. I think I would have to answer this way: I think there are elements of the acquisition process and the appropriations process that make it difficult to sustain constant schedule and performance over time for many of the projects, because the projects, particularly the ones that are multiyear and are very large, and they go on literally for 5, 6, 7, 8, 9 years. Our process of phasing some of those into useful segments will help.

However, were there to be potential changes to the appropriations process or the way monies are allocated multiyear, that could serve to help stabilize the kind of funding and the kind of capital programs that we would need to impose in the system in the years forward.

Mr. COSTELLO. Mr. Chairman, thank you.

Mr. MICA. Thank you. I have additional questions for Mr. Shane and Mr. Chew, which I will submit in writing and ask that we keep the record open for 3 weeks.

Without objection, and Mr. Costello moves, without objection, so ordered.

I want to thank our witnesses for their participation today, thank Mr. Chew and Mr. Shane for their service. You have a pretty daunting task ahead, and you are constrained by some of the resources we provide, so we wish you well.

We hope to get some more specific details on time lines and costs. I think you heard that. It is sort of a unanimous concern from the panel today.

Again, we will excuse this panel. Thank you for being with us and for your responses to our questions.

We will call our second panel of witnesses this morning, which consists of Mr. John Douglass, President and CEO of Aerospace In-

dustries Association; Mr. John Carr, President of the National Air Traffic Controllers Association; and Mr. Thomas Brantley, President of the Professional Airways Systems Specialists.

I think all of you have been before us before, so you know the routine. If you have any lengthy documents or statements you would like to be made part of the record, please request that through the Chair.

TESTIMONY OF JOHN DOUGLASS, PRESIDENT AND CEO, AEROSPACE INDUSTRIES ASSOCIATION; JOHN CARR, PRESIDENT, NATIONAL AIR TRAFFIC CONTROLLERS ASSOCIATION; AND THOMAS BRANTLEY, PRESIDENT, PROFESSIONAL AIRWAYS SYSTEMS SPECIALISTS

Mr. MICA. Welcome again, gentlemen, and let me first recognize Mr. John Douglass, President and CEO of Aerospace Industries, and then we will hear from our other two witnesses.

Mr. Douglass, welcome.

Mr. DOUGLASS. Thank you, Mr. Chairman.

First of all, let me begin by thanking you for your leadership, Mr. Chairman, as we have gotten into this issue, and for calling this important hearing today. I ask that my full statement be included in the record.

Mr. MICA. Without objection, so ordered.

Mr. DOUGLASS. I have several key points that I would like to make that I would summarize from my written statement. My first and most important point is that the successful implementation of the Next Generation Air Transportation System will not be possible without the clear and consistent support of the legislative and executive branches of our government. The complexity and scope of this effort cannot be overstated.

In regards to the legislative branch, I am referring specifically to the men and women who make up this subcommittee. Without your leadership, this project will languish in a manner that will ultimately do harm to our national security and to our economy.

The current U.S. Air transportation system, designed in the 1960s, is rapidly growing obsolete. Today, the system is stretched to its limit. It is clear it cannot handle the dramatic increases in traffic projected for the years ahead. The FAA and industry estimate, for example, a tripling of air passengers by 2025. The impact of this obsolescence is already costly. According to the Air Transport Association, delays due to equipment, runways, volume, and weather cost the airline industry $6.2 billion last year alone, and have been estimated to cost the economy as much as $30 billion a year by the President's Commission on the Future of the Aerospace Industry. It is clear that the time for government action to put a new system in place is now.

My second point, Mr. Chairman, is that the leadership of this committee has gotten us off to a good start on the development of a new ATM system. This committee showed its leadership by requiring the administration to set up a joint planning and development office that can tap into the combined technological resources of the various departments of the Federal Government. This was one of the recommendations of the President's Commission, and you promptly implemented it.

The JPDO, although still in its early stages, clearly shows promise. With the creation of its eight integrated product teams, or IPTs, the organization has established the necessary framework to allow for appropriate technical input into the air transportation development process from across the government. The access to this technology is critical.

Furthermore, with the creation of the Next Generation Air Transportation System Institute, or NGATS, via AIA's affiliate, the National Center for Advanced Technologies, the JPDO has fulfilled an Aerospace Commission recommendation to make industry a partner in shaping the architecture of a modernized, integrated, air traffic management system. This will be critical for making sure that the architecture is one that will last a long time. And it is also going to be critical, Mr. Chairman, to getting industry investment in the system.

These mechanisms will allow the JPDO to develop an adaptable, widely accepted plan that increases the security, safety, and speed of air travel for all Americans. To underscore the need for an adaptable and scalable system, one only has to open their mind to the volume of traditional air traffic the system will have to handle.

And the new system is likely to emerge in the next 20 years. Reuseable space vehicles, unpiloted vehicles of all types, air taxis, advanced vertical lift concepts, new kinds of recreational air vehicles, and who knows what else will enter the system during this period.

My third point addresses the need for a reliable and consistent funding stream for this new program. For the Next Generation Transportation System to materialize, we must have clear direction from this committee, the Congress, and the administration that modernization of our air traffic system is a national priority. In particular, we must ensure that funding for NASA, the Department of Defense, FAA, and the other agencies required for the development and deployment of this new system remains a national priority through what we know will be a number of Congresses and future administrations.

Our European competitors understand these facts and are moving ahead with the idea of deploying their new system ahead of ours and thus becoming a new global standard. Mr. Ehlers, this is the point you were making a few minutes ago.

At the end of March, the Advisory Council for Aeronautics Research in Europe released a revised blueprint for improved management of the European air traffic management system and called for a $221 billion funding for this program over the next 20 years on five highly focused projects. At the same time, NASA funding for aeronautics programs here in the United States is moving in exactly the opposite direction, with proposed cuts of approximately 25 percent of its total aeronautics budget over the next 4 years.

In closing my opening statement, Mr. Chairman, let me return to my first point: leadership. Due to the complexity of this task and the agencies involved, your leadership will be essential. Congress' role is always important. In this venture, it is going to be crucial.

I will be glad to answer any questions, sir, at the appropriate time.

Mr. MICA. Thank you, and we will hold questions. We will try to hear our next two witnesses before we go and vote.

Mr. Carr.

Mr. CARR. Mr. Chairman and members of the subcommittee, thank you for the opportunity to testify today as you review the ATO and the JPDO. I want to concentrate my remarks, if you will, on the ATO, and ask that my complete written statement, as well as the JPDO, be made a part of the record.

Mr. MICA. Your entire statement will be part of the record.

Mr. CARR. Thank you, sir.

The ATO has made major strides in structural change. However, from inside of the ATO organization we have found significant barriers to continued success. We believe there is still an opportunity to correct these fundamental problems before they become institutionalized, and I am very pleased to have the opportunity to share our concerns with you.

The COO for any major organization is responsible for managing the day-to-day operations of that organization. I believe that that is occurring today on the acquisition side of the ATO. However, when it comes to matters relating to personnel, that has not occurred.

For those of us working inside the FAA, it seems that the COO is subordinate to the Human Resource Management staff when it comes to personnel matters. Considering that more than 36,000 FAA employees, or 76 percent of the FAA workforce, is in the ATO, no rational organizational structure would keep Human Resources outside of the new organization.

The current relationship between ATO and Human Resources creates excessive bureaucracy for even the simplest of tasks. The problem is structural, but the solution is not difficult. Congress took direct action in clarifying those lines of authority by making the COO subordinate only to the FAA Administrator. I do not believe it was the intent of the Congress to make the COO subordinate to the Assistant Administrator for Human Resource Management in every matter regarding personnel.

As an example, the current air traffic controllers collective bargaining agreement was signed by FAA Administrator Blakey in December of 2003, and by the Agency's own estimates, currently saves them $40 million. If this agreement is reopened this summer, the chief negotiator will not be anyone from within the COO's chain of command. It will be someone from FAA human relations. Since this collective bargaining agreement deals primarily with technical issues related to the day-to-day operations of our Nation's air traffic control facilities, this persistent confusion in the lines of authority will increase the likelihood that these negotiations will take longer than necessary and lead to an agreement that does not even meet the needs of those charged with administering it.

The biggest challenge, we believe, facing the ATO in the immediate future is addressing the staffing crisis that you have all heard about and spoken about. If the ATO is truly committed to ensuring that the right people are in the right place, it is essential to eliminate regional or service area boundaries that place artificial caps on transfers.

FAA data will tell you that air traffic controllers who transfer to higher-level facilities qualify in half as much time as new hires, particularly in the terminal option. And there is currently a consid-

erable willingness and desire within the existing controller workforce to transfer to fill vacancies at short-staffed facilities, but many of these transfers have been blocked due to artificial bureaucratic barriers.

We have offered the ATO an innovative nationwide bidding process to allow the FAA to identify facilities where their need is greatest and to prioritize those transfers for maximum efficiency nationwide. This proposal does nothing more complicated than centralizing the bidding process to eliminate duplication of work across regional boundaries, while it allows the FAA to better manage their staffing on a national level. To date, neither the FAA nor the ATO has been able to take advantage of this simple idea.

Another key area of inefficiency lies in the administration of training. The FAA has determined that the FAA Academy in Oklahoma City is no longer used as an applicant screening program. As NATCA testified before this committee last year, students who have graduated from FAA-approved Collegiate Training Initiative schools need not attend the FAA Academy for training purposes. There is absolutely no reason for either the FAA or the student to incur the delay and the expense of this additional training.

I have personally visited CTI schools. I visited the University of North Dakota. I visited Embry-Riddle Aeronautical University, and I can tell you unequivocally that we would gratefully accept any of their graduates directly into any of our air traffic control facilities. These schools do a remarkable job. If CTI students are able to bypass academy training, the FAA could substantially revise the cost that they gave you in their workforce plan and reprogram those funds to accelerate facility-specific training. In fact, we believe the Agency could save upwards of $45 million per year by this zero-cost policy decision alone.

NATCA has always been willing to contribute our efforts to solving problems such as these. And while we continue to work within the FAA and the ATO to make the system as efficient as possible, no discussion of the ATO would be complete without addressing the emerging funding debate.

We are very concerned that the current rhetoric is preventing a factual discussion of the issue. I have submitted NATCA's trust fund research with my written testimony, but I want to address a few key points.

First, it is true the trust fund revenue did experience a temporary and quite predictable period of decline from 2000 to 2003. However, we saw those revenues rebound in 2004. It serves no useful purpose to cloud the issue by discussing trust fund balances in decline or policy choices or framing the issue in terms of revenue per flight.

To be perfectly honest with you, the cost of providing air traffic control service does not fluctuate on a per-flight basis. Costs are relatively constant until you reach the point of sector saturation, when you must open additional sectors or personnel are needed to expand capacity.

Projected growth in trust fund revenues currently outpaces the projected growth in operations costs. These are not our numbers, they come from the FAA, they come from the Inspector General, and they come from the GAO. Trust fund revenues are increasing

and growth is projected to continue. These are the facts. If we are to discuss changes to tax structures or how revenues are distributed, it is essential that we consider substantive data and not the rhetoric that continues to distract us from this important policy discussion.

We have grave concerns with the headlong rush into changing decades-old funding mechanisms. We believe the safety of our skies is a sacred public trust, and it is the role of our elected officials to protect that trust.

I have heard it said that our current funding system is the worst funding system in the world, with the possible exception of every other funding system in use. That, by the way, has also been said about our current system of government.

In transforming the FAA, this committee has created a sound statutory framework and a sound financial vehicle. We applaud your efforts to continue to maintain vigilant oversight, to promote the transformation needed and to continue to provide the American people with the air traffic control system that leads the world.

That concludes my statement, and I will be happy to answer any questions you may have.

Mr. MICA. Thank you.

We will try to hear now from Thomas Brantley.

Mr. BRANTLEY. Thank you. Mr. Chairman, Congressman Costello, and members of the subcommittee, thank you for inviting us to testify today on the ATO and the JPDO.

The ATO was designed to bring a cost and performance management approach to the FAA. PASS strongly supports efforts aimed at increasing the FAA's focus on efficiency and effectiveness, and we believe that this must not be done at the expense of safety. When contemplating changes of this magnitude, the FAA should build on its strengths and look at sweeping changes where it is weakest.

For the ATO to be successful, the Agency must hire enough technical employees to safely maintain and certify the national air space system. The Agency is currently over 400 below the minimum technical employee staffing level of 6,100, which the FAA agreed was the absolute minimum.

Because of inadequate staffing, these employees are being forced to work longer hours and accumulate more overtime. Instead of hiring additional employees, however, the FAA is turning away from a maintenance and certification program, that has been in place for 30 years and has been a key element in maintaining the safest and most reliable air transportation system in the world.

The new concept is to move away from a proactive maintenance philosophy towards a reactive one. Among the major consequences will be more unplanned outages and longer recovery times when equipment fails.

Several years ago, the FAA attempted this approach under the corporate maintenance philosophy in Alaska, with less than favorable results. Under CMP, as with the new ATO concept, maintenance was eliminated, certification intervals were extended and staffing was reduced. The eventual rise in operational problems resulted in an increase in work beyond the capacity of the few re-

maining technicians. In PASS's view, if implemented nationally, the results will be the same as what occurred in Alaska.

In addition, PASS believes that the future of the ATO is directly tied to adequate training of the technical workforce. Both the FAA and the Congress agreed that the most efficient method for training of FAA employees was to employ a decentralized model rather than the centralized training method that involves sending employees to Oklahoma City. Unfortunately, the FAA has since decided to return to the inefficient centralized approach.

A focus on decentralized and on-the-job training would not only reduce the impact on operations caused by requiring employees to be away from facilities, but it would also save on the costs associated with a centralized training model, such as travel, per diem, and overtime. PASS believes the Agency can restructure and improve efficiency if it focuses on providing the services needed by users of the NAS.

Among the FAA's greatest strengths are its safety record and the availability of services to customers. Combine this reputation for safety and service with a skilled and dedicated workforce, and you have the United States aviation system, the safest system in the world.

PASS is interested in working closely with the FAA to realize a successful future for the Agency that is more cost effective and capable, while continuing to provide the highest level of safety and service to the American flying public.

Thank you for allowing me to present our views, and I would be happy to answer any questions.

Mr. MICA. Thank you. We have had a chance to hear all three witnesses from this panel. I want to thank you for your testimony.

We are not going to ask you questions, because I have just been handed a note that we have three votes, and some parliamentary antics coming up, that will probably take about an hour. So what we are going to do is the same thing as we offered with the last panel, which is to submit questions in writing. We are leaving the record open, and your responses will be made a part of the record.

So there being no further business before this subcommittee, we thank you again for participating. This hearing is adjourned.

[Whereupon, at 11:53 a.m., the subcommittee was adjourned.]

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PROFESSIONAL AIRWAYS SYSTEMS SPECIALISTS

1150 17th Street, NW, Suite 702, Washington, D.C. 20036
Telephone: (202) 293-PASS Fax: (202) 293-7727

STATEMENT OF THOMAS BRANTLEY
PRESIDENT
PROFESSIONAL AIRWAYS SYSTEMS SPECIALISTS (PASS)
AFL-CIO

BEFORE THE HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE – SUBCOMMITTEE ON AVIATION

ON TRANSFORMING THE FEDERAL AVIATION ADMINISTRATION: A REVIEW OF THE AIR TRAFFIC ORGANIZATION (ATO) AND THE JOINT PROGRAM DEVELOPMENT OFFICE (JPDO)

APRIL 7, 2005

Chairman Mica, Congressman Costello and Members of the Subcommittee:

Thank you for inviting us to testify today on the Federal Aviation Administration's Air Traffic Organization (ATO). Professional Airways Systems Specialists (PASS) provides exclusive representation for more than 12,000 of the FAA's systems specialists, flight inspection pilots, procedures development specialists, aviation safety inspectors and safety support staff. Our members install, maintain, troubleshoot and certify this country's National Airspace System (NAS); they inspect, provide oversight through surveillance and enforce aviation regulations throughout the commercial and general aviation industries; and they flight check ground-based systems, develop approach and departure procedures and perform quality analyses of aviation systems.

Created in 2000 by an Executive Order, the ATO combines the FAA's Research and Acquisitions, Air Traffic Services and Free Flight offices into one performance-based organization.[1] Transition to the ATO began in November 2003 when the agency established 10 service units, each with a vice president who reports directly to the chief operating officer. PASS represents more than 7,000 systems specialists, technicians and support staff, primarily within the Technical Operations unit of the ATO. Our members are an essential part of the complex network of people and equipment that ensure the safety and efficiency of the NAS and PASS looks forward to working with the FAA in making the ATO a great success.

According to the FAA, the ATO "was designed to bring a cost and performance management approach to the FAA."[2] PASS strongly supports efforts aimed at increasing the FAA's focus on efficiency and effectiveness. PASS also supports the ATO's goal of operating in a more "businesslike" manner. While we agree that the agency needs to operate in a more efficient fashion, PASS believes that this must not be done at the expense of safety. We appreciate the opportunity to discuss ATO development and assess recent changes made as the FAA modifies the ATO structure and function.

Organizational Structure

In 2000, Congress enacted legislation establishing the Air Traffic Services Subcommittee and created the position of chief operating officer to oversee the ATO.[3] The chief operating officer (COO) is responsible for maintaining the day-to-day operations of the ATO. However, it is troubling that the authority of the COO is subject to the FAA's Human Resources department. What PASS has seen is a division between the efforts of the chief operating officer and those of the Human Resources staff. Decisions made by the operational line of business are subject to approval by Human Resources staff. There is no logical reason for this and it seriously hinders the ability of Russ Chew, or any future COO, to effect meaningful change within the ATO.

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[1] President Bill Clinton. "Executive Order 13180—Air Traffic Performance-Based Organization." *Federal Register* 65, no. 238 (December 11, 2000).
[2] Federal Aviation Administration. February 2, 2005. *Air Traffic Organization Technical Operations Services Service Area Design*: 2.
[3] *Wendell H. Ford Aviation Investment and Reform Act for the 21st Century*, 106th Congress, 2d session. H.R. 1000 (January 24, 2000): 56.

This is a problem that falls squarely on the shoulders of the FAA administrator. The choice to have the COO subordinate to the Human Resources staff is internal to the agency at the administrator level. As long as the FAA chooses to allow its Human Resources staff to oversee and dictate management decisions by ATO officials, the ability of the ATO to change the organization and its culture is severely restricted.

In the past year, the FAA has made changes to the organizational structure of the Technical Operations Services unit of the ATO. In October 2004, Technical Operations realigned nine regional Airway Facilities (AF) divisions and NAS Implementation Centers into three service areas, each managed by a director who reports to the vice president of Technical Operations. PASS is in full support of consolidating redundant functions or services such as those performed in regional offices; however, to date, the changes being made are cosmetic and do not appreciably change the way Technical Operations conducts business.

PASS strongly believes the FAA should continue to consolidate regional functions as well as any other functions duplicated elsewhere. PASS also believes the agency should align organizational boundaries around work locations rather than regional boundaries. PASS does have concerns with other changes the agency is planning to make to its organizational structure. Plans being developed for Technical Operations call for an increase in the number of supervisory and management positions and a decrease in services that directly affect customer service and safety margins. Among the major consequences will be more unplanned outages and longer recover time when equipment fails. The new Technical Operations structure will increase the number and cost of management levels beyond those currently in place, while field technical staffing numbers continue to fall. If the agency truly wants to improve efficiency and streamline operations, it needs to build the organization from the bottom up rather than from the top down.

PASS believes the agency can restructure and achieve improved efficiency if it focuses on providing the services needed by users of the NAS rather than looking for ways to operate without the resources necessary to provide those services. The agency must begin to request sufficient funding if it is to achieve its goal of improved efficiency while maintaining a high level of safety.

Staffing

In order for the ATO to be successful, the agency must hire additional technical employees (systems specialists, electronics technicians and computer specialists). The FAA is currently over 400 below its minimum staffing level of 6,100, which, in January 2000 as part of its new collective bargaining agreement with PASS, it agreed was the absolute minimum number of technical employees necessary to safely maintain and certify the radar, navigation and communications equipment that make up the air traffic control system. Starting in 2003, staffing fell below this critical threshold and the downward trend has continued to date. As of February 2005, there were only 5,690 technical employees—the lowest number on record. PASS believes that the agency must adhere to its own standard and immediately hire enough technical employees to satisfy the 6,100 minimum in order to keep the NAS operating safely and efficiently.

Despite legal rulings ordering the FAA to increase staffing to at least 6,100, the FAA has continued to refuse to comply with the staffing agreement. On February 7, 2005, PASS was forced to file an unfair labor practice charge against the FAA for noncompliance. PASS also learned that attrition in safety-sensitive positions in 2004 was 40 percent higher than average, worsening the already critical staffing crisis.

As a result of inadequate staffing, FAA employees are being forced to work longer hours and accumulate more overtime. The agency claims that it is intent on cutting spending; yet, in FY 2003, overtime costs totaled $18.4 million, an increase of 50 percent from the 2000 figure. The numbers for 2004 indicate a similar pattern, exceeding even the 2003 amount. In its FY 2006 budget request, the FAA asked for $5.4 million to hire and train 258 field maintenance technicians. This amount is less than the increase in maintenance technician overtime since 2000. The cost of hiring additional specialists would be more than offset by reduced overtime costs.

Furthermore, inadequate staffing intensifies many of the problems already plaguing the agency. The low staffing numbers make it increasingly difficult for employees to conduct or receive training, which threatens their ability to perform their jobs in the most efficient and effective manner possible. The staffing situation also has had a negative effect on employee morale—employees are overworked, pressured for quick turnarounds, and often forced to cancel leave or come to work when sick in order to make up for the lack of staffing. Additionally, when employees are willing to transfer to locations where critical staffing shortages exist, they are denied, even if the move is at no cost to the agency. Since staffing is low everywhere, allowing anyone to move creates additional staffing problems.

In PASS's view, the understaffing issue must be corrected immediately. Although the ATO might look good on paper, the goals of the organization cannot be achieved until it has sufficient staff. PASS believes the agency must ask for the funding necessary to hire the technical staff needed to efficiently and safely maintain the NAS.

Maintenance and Certification

The core function of FAA systems specialists is to maintain and certify systems and equipment within the NAS. According to FAA Order 6000.15D – General Maintenance Handbook for National Airspace System (NAS) Facilities, "certification is the quality control method used to ensure NAS facilities are providing their advertised service." The current certification program sets a maximum time interval between certifications and certification parameters must then be checked by credentialed individuals to ensure the system or equipment is still providing the advertised service.

As part of the ATO initiative, the agency is turning away from a maintenance and certification program that has been in place for 30 years and has been a key element in maintaining the safest and most reliable air transportation system in the world. The agency is proposing to move to a Reliability Centered Maintenance (RCM) method where periodic maintenance and certification of NAS systems and equipment will be significantly reduced. Inadequate staffing has left the FAA without enough people to uphold its time-tested maintenance and certification program. Instead of hiring additional employees, the FAA is changing its maintenance approach, claiming

a move towards efficiency; in reality, PASS believes this change will place aviation safety at risk and is merely an attempt to mitigate the impacts of inadequate staffing.

Under the ATO plan, specific guidelines to determine if certification is required will be replaced with guidelines to determine if it will be "cost effective" to certify the system. In other words, the RCM concept is a move away from a proactive maintenance philosophy towards a reactive one. Imagine not performing "preventive maintenance" on your car, such as checking the oil, brakes, or tires, and only addressing issues when an accident occurs because the brakes failed or you are stranded when a worn tire finally bursts. Now imagine not performing similar preventive maintenance when the safety of the flying public is at stake.

Rather than conduct preventive maintenance checks of equipment, the FAA will wait until the equipment fails. Planned system down time will be replaced by unplanned system down time, which is longer and more disruptive. If certification parameters are only checked after a hard failure, most intermittent or soft problems will not be found. This new philosophy not only poses a serious threat to the safety of the flying public, but is also a blatant waste of agency time and resources.

In addition, the agency's plan will worsen the current problem of maintaining the proficiency of its technical workforce. In the past, sustaining technical proficiency was essentially assured when the specialist used the appropriate skills and knowledge on a frequent basis while performing preventive maintenance. As the agency has implemented new systems into the NAS, it has greatly decreased the amount of preventive maintenance performed on those systems when compared to the equipment being replaced. Yet, systems specialists must still be proficient with the operating systems and software being used on the new systems so they can readily diagnose and correct system failures. Decreasing periodic maintenance will only increase the length of time it takes to restore failed systems, resulting in longer outages and increased cost to users, and will further reduce the proficiency of the FAA's technical workforce.

Several years ago, the FAA attempted these concepts under a different name. The agency's test of its Corporate Maintenance Philosophy (CMP) in Alaska had less than favorable results. Under this philosophy, as with the RCM concept, maintenance was eliminated and system certification intervals were lengthened. This did lead to initial cost savings, but only because staffing was reduced. However, the eventual increase in operational problems within the NAS resulted in an increase in work beyond the capacity of the few remaining technicians. Four years later, the region is still recovering although the program has been terminated. In PASS's view, if implemented at the national level, there is no reason to believe that the results will be any different from what occurred in Alaska.

The FAA refers to RCM as an "event-based" concept. A more apt description would be a "fix-on-fail" method. The United States has the safest aviation system in the world—the FAA should not tamper with that system in an attempt to cut corners related to vital functions such as maintenance and certification. As the FAA is working on this proposal, PASS recommends that the committee act expeditiously to conduct a thorough review of the FAA proposed changes to the maintenance and certification program. We believe the FAA should provide the committee with the specific effects that such changes would have in relation to NAS safety and efficiency,

unplanned outages, recovery time when equipment fails and the agency's ability to maintain a proficient workforce. Since these proposed changes have the potential to significantly affect public safety, PASS recommends that no changes be made to the current program for NAS maintenance and certification of systems, subsystems and services until the committee has an opportunity to complete its oversight responsibility.

Labor Distribution Reporting

One of the tools the agency is using to track costs and activities is a financial software program called Labor Distribution Reporting (LDR). As developed and deployed by the agency, however, LDR is not capable of accurately accounting for an employee's time spent performing work on the NAS. Furthermore, countless problems with the cumbersome program do nothing to help the agency increase efficiency.

In 1996, Congress mandated that the FAA implement a cost accounting system as part of a "fee for service" initiative. As part of that mandate, the FAA was directed to break down labor costs according to project or activity.[4] Instead of buying readily available off-the-shelf software to accomplish this labor tracking, the FAA chose to use LDR, its own financial software program that was originally developed to track the activities of air traffic controllers. As such, the program had to be modified significantly even to make it useable by other FAA employees.

Users are directed to enter codes that corresponded with their work into the LDR program. According to the FAA, once compiled, this data will be used to assess and measure the cost efficiency and effectiveness of the agency's management of services, programs, projects, special initiatives and assets. Unfortunately, LDR does not accurately reflect the work FAA employees perform, and consequently, cannot be used to measure or improve FAA efficiency and effectiveness.

In addition to being a labor-intensive process, the specific problems associated with LDR are rampant. The sheer number of codes makes it nearly impossible to determine the code that appropriately reflects the work performed. When there is a code to describe the work, there are often several codes that could apply, and employees have not received any training for deciphering the differences. More often, however, the agency has chosen generic descriptions for large segments of the work and there are no codes that describe the specific types of work specialists and support staff perform. In relation to systems specialists who work on a variety of NAS systems, the lack of NAS system-specific codes makes it impossible to reflect their work time accurately. Insufficient standardization between different facilities exacerbates the problems. Furthermore, employees encounter persistent difficulties when attempting to enter overtime into the program. As discussed previously, overtime has increased greatly in the past few years. If overtime is not being accurately recorded, as well as the several other types of work for which there are no codes, the program cannot provide an accurate report of costs.

While PASS agrees that the agency needs to develop a vehicle for accurately reflecting the time and costs associated with working on the NAS, the current LDR system is obviously not that vehicle. PASS recommends that the FAA conduct a full and complete reevaluation of the system.

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[4] *Federal Aviation Reauthorization Act of 1996*, 104th Congress, 2d session, H.R. 3539 (January 3, 1996): 36.

Modernization

A large responsibility of the ATO is in the area of acquisitions. As stated earlier, the FAA's Research and Acquisitions office was absorbed into the ATO in an effort to increase efficiency and communication within the organization. Unfortunately, we are hearing from many people in the field that there is a serious lack of communication between the different program offices, resulting in what PASS members view as a tremendous waste of time and resources.

Until the FAA began to transition to the ATO, PASS was involved in many of the agency's modernization programs. Over the last two years, however, the FAA has systematically eliminated PASS participation in all but a few programs. As Congress has seen over the years, involving the employees who use and operate the systems in development of those systems greatly improves the ultimate product and inevitably saves the agency money. PASS believes the agency must reconsider its approach to modernization and once again involve the employees who will ultimately play a large part in any modernization effort.

In addition, the FAA could save time and money in the area of software acquisition. Several years ago, the FAA realized that custom-made proprietary system hardware acquisition was unreasonably expensive for the agency and left the FAA helpless with regard to logistical support, modifications and upgrades. Accordingly, the agency moved towards purchasing commercial off-the-shelf (COTS) hardware for new automation systems. However, at the same time, the agency moved into a pattern of purchasing sole source proprietary software to run these automation systems. Quite simply, the FAA decided to purchase software in exactly the same way it decided not to purchase hardware. This decision was made without considering that the same problems associated with the hardware would logically be associated with the software, resulting in the agency essentially being held hostage to the sole source owner of the software code for any changes, system expansion or improvements, just as it was in the past for hardware.

While the development of major software may be beyond the capability of the agency, the maintenance and modification of it is not. This is something the agency could easily do in house, and does quite efficiently where it is allowed the opportunity. As it stands now, the sole source proprietary owner gains years of noncompetitive profits at the taxpayers' expense, and, should the agency decide to seek a different provider in the future, it will have to pay again for development of the software. In order to save the agency and the taxpayers money, PASS recommends that the agency be prohibited from procuring any sole source or proprietary software unless full rights to the code are included.

Technical Training

A key factor in the agency's move to a performance-based organization was to incorporate NAS modernization with NAS operations, thereby eliminating the traditional disconnects that led to previous large-scale failures in major acquisitions. Having lived through those failures and currently living with the results, PASS fully supports merging these two organizations under one umbrella.

When looking at NAS modernization, PASS believes that it is about more than hardware and software. If the systems and equipment are upgraded while the employees who operate and maintain those systems are held to the current philosophy and methodology for providing training, modernization will ultimately fail. PASS believes that the success of the ATO is directly tied to adequate training of the technical workforce. In the 2000 Air Traffic Services Training Plan, the FAA stated that extended absences from the workplace required under the centralized training model, which involved sending employees to the FAA Academy in Oklahoma City to receive training, were "costly, in not only travel and per diem dollars, but also in overtime costs." The FAA continued by stating that training needed to be "delivered more efficiently, with reduced impact on daily operations." PASS wholeheartedly agrees with these statements.

Unfortunately, the FAA has not made the delivery of efficient technical training a priority and has now suddenly decided to return to the inefficient centralized approach. Today's staffing numbers simply do not allow for a centralized approach to training, which requires specialists to be away from their home facilities for weeks, even months, at a time.

Another type of training, on-the-job training, is a critical element of technical training, the purpose of which is to provide both technical knowledge and familiarity to specialists in their own operational environment. This ensures that specialists are familiar with local nuances in procedure, facility layout, communication and power infrastructure, and other site- and system-specific details. Under the agency's plan, on-the-job training will be effectively eliminated, wasting both time and money. For example, in many facilities, new hires are now being sent to Oklahoma City on travel and per diem for training that formerly was done on site. In other words, what used to be performed on the job and with no expense to the agency other than the employee's salary is now a hefty additional expense that takes employees out of the working environment. Plus, on-the-job training often has to be repeated back at the facility when the specific field setup is different from the Academy setting.

There are numerous examples where technicians who are not trained on certain systems are forced to call another technician to the site in order to remedy a problem, resulting in increased delays. This manner of operations is simply inefficient. FAA employees require training in order to protect and maintain the NAS; yet, the FAA insists on making this training difficult to obtain by mandating it be done in only one centralized location. Furthermore, the ATO specifies no direct cost saving from moving to this approach. In fact, at a briefing for PASS, agency managers stated that the concept was based on the managers' "perceptions" that it would be more efficient for the agency.

Congress has already recognized the shortcomings of this centralized approach. In fact, in 2004, the FAA was directed by the Congress to "shift its technical training focus to a de-centralized model, in fiscal year 2005." Congress agreed that the de-centralized approach would "provide the most effective use of resources available with the least impact to NAS operations."[5] By doing so the agency would not only reduce the impact on operations caused by sending employees to

[5] U.S. House of Representatives, Committee on Appropriations, *Departments of Transportation and Treasury and Independent Agencies Appropriations Bill, 2005*, 108th Congress, 2d session, September 8, 2004, H. Rept. 108-671, 17.

Oklahoma City, it would also save on the cost of training that goes along with a centralized model, such as travel, per diem and overtime. PASS encourages the committee to review the agency's approach to technical training and provide needed oversight to the agency.

Conclusion

PASS supports the goal of improving efficiency and effectiveness within the ATO. We believe, however, that the FAA needs to reexamine strategies within the plan in order to realize any measurable improvements. PASS is interested in working closely with the FAA to realize a successful future for the agency that is economically efficient while continuing to provide the highest level of service and safety to the American flying public.

Statement of John S. Carr
President, National Air Traffic Controllers Association
Before the Committee on Transportation and Infrastructure
Subcommittee on Aviation
United States House of Representatives
April 14, 2005

Transforming the Federal Aviation Administration: a Review of the Air Traffic Organization and the Joint Planning Development Office

Mr. Chairman, members of the Subcommittee, thank you for the opportunity to testify today as you review the Air Traffic Organization and the Joint Planning Development Office. This committee has shown a keen and welcomed interest in the organizational transformation of the Federal Aviation Administration as we continually work to meet the needs of our nation's air transportation infrastructure. To that end, you have been instrumental in that change by crafting well thought out and forward looking legislation formalizing the Air Traffic Organization and creating the Joint Planning Development Office.

As everyone in this room is aware, the FAA has somewhat of a checkered past when it comes to major acquisitions and personnel systems. We have seen multiple reports about FAA overspending on and under delivery of modernization projects from AAS to STARS, and I am no stranger to bringing attention to the staffing issues we are experiencing across the country. But if we are to bring real progress and reform to our aviation policy, it is imperative we move beyond the old paradigms. I would like to commend the members of this committee for your willingness to exercise the oversight role provided by your jurisdiction.

Our aviation system is a national treasure, an asset belonging to the American people and I would like to praise you, their elected representatives, for the outstanding job you continue to do to ensure their interests are protected. When it comes to the operations of the FAA, this has at times been a Herculean task. The committee has facilitated progress by the FAA in the development of the ATO and JPDO, but more needs to be done.

I stand behind the statements that I made a year ago when NATCA issued its first press release on the ATO, which can still be found on my website:

> *John Carr today warmly greeted the unveiling of the Federal Aviation Administration's new Air Traffic Organization with open arms, calling the initiative "bold and smart" and the architect, FAA Chief Operating Officer Russ Chew, "innovative and thoughtful."*

While many in the industry reacted with caution, NATCA embraced the opportunity presented by the transformation into the ATO. Our commitment went far beyond words as my organization invested tremendous amounts of time and resources into making the ATO successful, and continues to work toward the vision laid out by Congress.

The ATO has made major strides in structural change. However, from the inside of the organization we have found significant barriers to implementation for which there is still a chance to remove these before they become institutionalized. I am pleased to have the opportunity to share these concerns with the committee.

Chief Operating Officer (COO)

The Chief Operating Officer for any organization is responsible for managing the day-to-day operations. For all of us that were here through FAA reform, AIR 21 and Vision 100, it is clear this COO was expected to do exactly that. NATCA believes that is occurring on the acquisition side. However, when it comes to matters related to managing personnel this has not occurred. In fact, for those of us working inside the FAA, it seems the COO is subordinate to the staff in the Human Resource Management Department when it comes to personnel matters. Considering that more than 36,000 FAA employees (76% of total FAA workforce) are in the Air Traffic Organization, no rational organizational structure would keep the human resource functions outside of ATO.

The current relationship between ATO and HR creates excessive bureaucracy for even the simplest of tasks. We have already seen this division introduce considerable inefficiency into fairly straightforward processes. A fundamental disconnect between the stated goals and initiatives of the COO and those of the human resource staff exists. NATCA has tried through numerous avenues to resolve these frequently competing values. We have worked to serve as a bridge between these two FAA lines of business but it has proven to be a considerable challenge. As a labor union, NATCA places tremendous value in the work done by human resources professionals. We believe this is an essential function and should be under the direction of the COO.

While this problem is structural, the solution is not difficult. The existing statutory framework already provides the administrator with the latitude to eliminate this barrier to ATO efficiency. Section 106(r) of Title 49 provides this flexibility. Congress took direct action in clarifying the lines of authority by making the COO subordinate to the FAA Administrator and NATCA believes that structure is appropriate. However, we do not believe it was the intent of Congress to make the COO subordinate to the Assistant Administrator for Human Resource Management in every matter regarding personnel.

Nowhere are these problems more evident than in the ongoing contract negotiations for FAA staff specialists. The FAA has dragged the negotiations out for more than two years, refusing to meet for months and has been unable to effectively bargain as a result of the blurred lines of authority. The air traffic controllers, traffic management and NOTAM specialists are currently covered by the collective bargaining agreement signed by Administrator Blakey in December of 2003. We have been advised that if the agreement is reopened, the chief negotiator will be a member of the human resource staff and not within the COO's chain of command. Since the vast majority of the collective bargaining agreement deals with technical issues and work rules related to the day-to-day operations of our nation's air traffic facilities, the persistent confusion in the lines of authority increases the likelihood that negotiations will not only take longer than necessary but may also lead to an agreement that does not meet the needs of those charged with administering it.

Joint Planning and Development Office (JPDO)

The Joint Planning and Development Office represents a bold and innovative step toward maximizing infrastructure investment between government agencies. This planning presents tremendous opportunity if managed correctly, however, it can easily drift into old familiar patterns if it is not carefully nurtured and progress is not monitored. This year funding for JPDO activities tripled, and it is incumbent on all of us to ensure this resource is not squandered. NATCA has filled the FAA's request for a full time liaison to the JPDO, who serves as a member of both the Agile Air Traffic System and Enterprise Architecture Product Teams. While this liaison monitors the activities of other Integrated Product Teams, scheduling does not permit him to serve as a full time member on other relevant teams.

NATCA's representative has provided considerable input into the teams' activities, but finds that the work of the teams frequently wanders into areas of day-to-day management of the FAA rather than remaining focused on work related to the Next Generation Air Transportation System as directed by statute. These distractions can dramatically reduce the productivity of the teams. NATCA believes significant issues within the JPDO's jurisdiction merit attention at this time.

- Aircraft – Aviation is changing with the introduction of the Airbus 380, micro-jets and Unmanned Aerial Systems (formerly UAV'S). The change in fleet mix will

significantly alter the traffic patterns in both en route and terminal airspace. We expect to see continued increases in the use of satellite airports. By utilizing unused surface capacity, the existing network of airports can withstand substantial growth. However, the existing airspace structures including airways, arrival and departure routes, and sectorization may need substantial revision to meet the demands of this changing aircraft mix.

- Flexible Airspace – The JPDO is discussing this issue. NATCA has expressed concern that the work fails to consider the necessary training and licensing required when transferring airspace. Just as a pilot must be qualified in specific aircraft types, a controller must qualify on each position and sector for which he or she is responsible in order to ensure safety. We recognize the work in this area is in its infancy, however NATCA will continue to stress that proper training is required to maintain the safety of the system. Proposals to routinize procedures for the purpose of decreasing training time reduce both system flexibility and system capacity. We recommend a comprehensive evaluation of such proposals that considers the trade-offs. It is possible the areas in which the FAA may identify cost savings could result in dramatic cost increases for the system users.

- Navigation Aids – The current VOR network has served our national aviation system well. However, the limitations on service range results in costly ground based infrastructure and the radio signal based technology limits the airway structure. Other technologies, like LORAN, can provide adequate redundancy

and backup a space based system like GPS at a much lower cost than sustaining the existing VOR network.

- Aircraft Separation – Currently the JPDO is examining issues of delegated separation that have been studied, examined, and proposed for decades. Considerable work already exists in this area and NATCA believes the JPDO could focus efforts in more innovative areas related to separation standards. Specifically, we would like to see the JPDO consider existing technologies that are underutilized as a result of outdated policies and procedures. This is most evident in the area of surveillance and separation standards. As we have seen technological advances in narrowband radar, tracker fusion logic and alternative surveillance sources, like ADS, the application of standards has not changed. Many of the rules regarding the application of various procedures are limited by the type of surveillance source. There is more existing flexibility in air traffic control than five miles and a thousand feet, however those flexibilities have yet to consider advances in surveillance technology. The JPDO should facilitate the exploitation of existing capabilities by ensuring the necessary safety research is directed in this area.

Air Traffic Organization (ATO)

The ATO had an ambitious plan at the beginning of the year to reduce layers of management and flatten the organization. NATCA enthusiastically embraced this plan

and worked to align our processes to facilitate progress. I am pleased to report that our early acceptance and participation in the realignment allowed the ATO to stand up the regional structure earlier than originally forecast. The FAA has made some progress in this area but while many of the FAA stovepipes have been eliminated on paper, the cultural barriers are persistent.

The division of service areas by option: terminal and en route, has introduced new barriers and bureaucracies. In areas like simple personnel transfers, local negotiations or grievance meetings, the FAA will bring in representatives from as many as three regional offices to address a single issue. The ATO organization fails to vest appropriate trust in individual representatives to manage the Agency's interests across service areas. Not only does this process squander the productivity of the personnel involved, it also causes the Agency to incur unnecessary travel costs.

The biggest challenge facing the ATO in the immediate future is addressing the staffing crisis. We agree with the Administrator's statement that we need to have the right people in the right place at the right time and that total training time should be reduced. NATCA has offered specific suggestions to facilitate those goals. If the ATO is to truly commit to ensuring the right people are in the right place then it is essential to eliminate regional or service area boundaries that place artificial caps on transfers. FAA data shows that certified professional controllers transferring to higher level facilities qualify in half as much time as new hires, particularly in the terminal option. Additionally, new hires

placed at towers at major airports and TRACONs have the lowest success rate in the system.

In 2003, when Administrator Blakey decided to extend the current collective bargaining agreement, NATCA not only concurred, but also agreed to several cost saving initiatives that the FAA valued at approximately $40 million. We are pleased to assist the Agency in identifying cost saving ideas and we believe considerable cost savings can be found in the area of training without compromising the quality of the training program. For example, the FAA has determined, as reported in the Air Traffic Controller Workforce Plan, that the FAA Academy in Oklahoma City is no longer used as a candidate-screening tool. As NATCA testified before this committee last year, students who have graduated from FAA approved Collegiate Training Initiative Schools need not attend the Academy for training purposes. We asserted then that the value of the Academy was in the screening process. Since the FAA has determined that it is no longer used for that purpose, there is no reason for either the FAA or the student to incur the delay and expense of academy training.

If CTI students were able to bypass academy training the FAA could substantially revise the costs associated with the Workforce Plan and reprogram funds to accelerate facility specific training. With respect to facility specific training, there is considerable waste within the contractor training functions. For example, at Southern California TRACON controllers have observed contractor staff that includes one supervisor, two administrative assistants, one person responsible for computer-based instruction, eight

instructors and four remote pilots. If the facility were processing several classes of trainees a year, this might be a defensible level of support contractors. All of this contractor support provides only a few weeks of training to a handful of controllers.

NATCA is aware of considerable willingness and desire within the controller workforce to transfer into vacancies at short staffed facilities but artificial bureaucratic barriers have blocked many of those transfers, most of which require no Permanent Change of Station funding. NATCA has also proffered an innovative nationwide bidding procedure to streamline the bidding process by allowing the FAA to identify the facilities with the most need, and prioritize the bidding and transfer process for maximum system efficiency. This method does not limit FAA management's ability to set the criteria or make the selection, it simply centralizes the bidding process to eliminate duplication of work while allowing the FAA to better manage its staffing at a national level.

As we work to staff the system to meet the current demands and Secretary Mineta's challenge of tripling air capacity over the next two decades, we need a plan for growth not constriction. Too often the solutions offered for cost savings involve reducing the levels of available service. We are hearing those ideas proposed now, such as eliminating existing infrastructure at a time when we are seeing strains on the system at a level as high as the delay plagued summers of 1999 through 2001. Just this week we saw the release of a report showing airline customer satisfaction at record lows.

Before 9/11 there was industry consensus that the U.S. needed to expand its aviation infrastructure to meet the demands of our nation's air travelers. The mission of the Department is to serve the United States by ensuring a fast, safe, efficient, accessible and convenient transportation system that meets our vital national interests and enhances the quality of life of the American people, today and into the future. NATCA believes in that mission and we are proud of the role we play in meeting it.

Unfortunately, some current proposals are inconsistent with that mission. Reducing system capacity, eliminating infrastructure, reducing service hours and recommending a BRAC-style commission, seem aimed at addressing excess infrastructure. Yet the most pressing difficulties we confront today relate to insufficient infrastructure, including runways, taxiways and gates. None of the aforementioned proposals would remedy these pressing problems.

NATCA is proud of the work we have done to assist in the progress made by the ATO. Organizational transformation is a difficult task and we have worked to assist the COO in making the transition as seamless as possible. However, now at the one-year point, it is clear the ATO is encountering barriers unrelated to NATCA. While we will continue to do everything within our power to facilitate the continued transformation, we believe this committee should continue to provide a high level of attention and focus on the evolving processes.

NATCA has always been willing to contribute our efforts to solving problems. While we continue to work within the FAA and ATO to make the system as efficient as possible, no discussion of the ATO would be complete without addressing the emerging funding debate. NATCA's interest is ensuring the system has adequate funding to meet the demands placed upon it. We are concerned that the current rhetoric is preventing a factual discussion of the issue. I have attached NATCA's Trust Fund research to my written testimony, but I would like to address some key points.

First, while the Trust Fund revenue experienced a temporary and predictable period of decline from 2000 through 2003, we saw revenues rebound in 2004. Some will attempt to cloud the issue by talking about trust fund balances that may decline as a result of certain policy choices or framing the issue as revenue per flight. The costs of providing air traffic control do not fluctuate on a per flight basis. Costs are relatively constant until the point of sector saturation when additional sectors and personnel are needed to expand the system capacity.

Projected growth in Trust Fund revenue outpaces the projected growth in operations costs. Trust fund revenues are increasing and growth is projected to continue. These are facts. If we are to discuss changes to the tax structure or how that revenue is distributed, it is essential that we consider the substantive data and not the rhetoric that continues to distract from a legitimate policy discussion.

It is no secret that some believe user fees would remove the congressional oversight committees and elected officials from the decision making process. NATCA has grave concerns with this approach. We believe that the safety of our skies is a sacred public trust and it is the role of our elected officials to protect that trust. In transforming the FAA, this committee has created a sound statutory framework and continued oversight to promote the transformation needed to continue to provide the American people with the air traffic control system that leads the world.

STATEMENT OF RUSS CHEW, CHIEF OPERATING OFFICER, AIR TRAFFIC ORGANIZATION, FEDERAL AVIATION ADMINISTRATION, BEFORE THE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE, SUBCOMMITEE ON AVIATION, ON TRANSFORMING THE FAA: A REVIEW OF THE ATO

APRIL 14, 2005.

Chairman Mica, Congressman Costello, Members of the Subcommittee:

Thank you for this opportunity to talk about the Federal Aviation Administration's (FAA) Air Traffic Organization (ATO). This morning I will discuss the ATO's activities and achievements as well as the ongoing challenges we face as we continue our work to restructure the FAA's air traffic services.

I know I speak for Administrator Blakey and Secretary Mineta when I say we are proud to operate and maintain the largest and safest air traffic system in the world. Our employees safely orchestrate the takeoff, landing and routing of approximately 50,000 aircraft a day across U.S. controlled airspace. It is worth noting that last year commercial aviation achieved a remarkable safety record: the lowest airline fatal accident rate in the history of aviation. Both industry and government can take credit for the hard work that went into attaining this milestone and ensuring that the traveling public has the safest air transportation system possible.

Mr. Chairman, you and this Committee have focused on ways to make FAA more customer-oriented and efficient by providing us with the statutory authority to reform and streamline our activities. Last year, we began one of the largest reorganizations ever undertaken in government. The 36,000 member ATO workforce was realigned to become a more customer-focused, bottom-line business designed to respond to the needs of our customers and stakeholders and to improve our fiscal accountability. Just over a year ago, in February 2004, we began removing layers of management, reducing our executive ranks by 20 percent and reducing the number of high paid

non-executive positions by 9 percent. We also began streamlining administrative services and reducing overhead by consolidating work under one service unit rather than having it spread throughout the organization as it was prior to the ATO. Reducing overhead in the first year was primarily focused in Washington. We will continue to reduce overhead as we expand our efforts in the field.

There are now 10 operations and support service units that are accountable for achieving specified, measurable results. Basically, as I testified to you last year, we moved everyone in the ATO closer to the customer; those people using the system whether as a passenger or pilot. These changes are already resulting in positive trends and tangible accomplishments. Our unit cost is down and our productivity is up. For example, the FAA's average cost of controlling a single Instrument Flight Rule (IFR) flight fell $17 from $457 to $440 per flight as compared to 2003. In addition, we used the competitive sourcing opportunity outlined in the President's Management Agenda, more commonly referred to as the A-76 process, for the delivery of services now provided by our Automated Flight Service Stations. This was the largest public/private competition our government has ever attempted. As a result, we expect to save more than $2.2 billion over the next ten years.

As the year continued, we created financial baselines, ensuring that each of our individual service units would have cost accounting and labor distribution reports. We began a five-year strategic business planning process that incorporates both operational and financial commitments and is tied to the FAA's Flight Plan. Working with our employees and industry partners, we assessed the value of our core functions and activities in 2004 and will use that assessment to guide our investments in programs and services. By implementing the cost accounting and labor distribution reports I mentioned as well s a new financial management system, we have established a basis for an ATO cost-control program that identifies where costs can be managed

and reinvested to meet the strategic initiatives described in our 2005 business plan. This new approach to financial management will help us develop analytic tools to make management decisions based on sound business principles. Managing our costs enables us to manage our future. We must have the tools and the plans in place to accomplish this.

When it comes to the ATO's goals for a safe and reliable air traffic system, we must succeed. Much of the nation's economy depends on a safe, secure and reliable air transportation system. The ATO has set ambitious goals for increasing capacity in the system. Arrival and departure capacity at the 35 Operational Evolution Plan (OEP) airports has steadily increased since 2001. In fact, we set out to increase the number of daily arrivals at those top airports by 780 flights over last year's average but actually increased the daily arrival capacity by more than 1,035 arrivals per day.

Another significant accomplishment that is a tremendous boost to capacity occurred earlier this year when we implemented a procedure known as Reduced Vertical Separation Minimums (RVSM), which essentially doubles capacity at high altitudes. The procedure permits controllers to reduce minimum vertical separation at altitudes between 29,000 and 41,000 feet for aircraft that are equipped with dual altimeter systems and autopilots. Not only does this double the capacity options for controllers and pilots, but the higher altitude routes are more fuel efficient, so it is estimated that RVSM will save airlines over $5 billion through 2016, an estimate that may prove to be conservative if fuel prices remain high.

Finally, we must make sure we are using the best technology to maintain a safe and efficient air traffic system. Jeff Shane's testimony addresses our next generation system, but one example of what we are doing today is the Wide Area Augmentation System called WAAS. WAAS is a

precise navigation system that provides the accuracy and reliability necessary for pilots to rely on the Global Positioning System during flight. Because the system is satellite-based, WAAS costs us a lot less to maintain than traditional ground-based navigation systems. Plus WAAS can be made available at numerous airports without ground-based systems, opening up more runways, which ultimately increases capacity. Since WAAS became operational in July 2003, the FAA has developed 3,000 WAAS approaches. Industry surveys predict that as many as 20,000 certified WAAS receivers will be in aircraft by the end of this year. This is a significant accomplishment in modernizing how we use our airspace and one that will have lasting, positive affects on capacity.

I would also like to note that many FAA employees, including those in the ATO, must be commended for putting their personal safety and comfort at risk in order to help establish air traffic control and aviation safety systems, procedures, and oversight in the war torn countries of Afghanistan and Iraq. Their important work, largely unheralded, is essential to the success of these fledgling democracies. When asked to help, they answered and, as a result, these countries are receiving critical assistance from the foremost aviation safety experts in the world. The Department of Transportation, the FAA and I, personally, am very proud of these extraordinary individuals.

Along with our successes in this first year, we faced a number of challenges. As the 11,000 controllers hired after the strike in 1981 become eligible to retire, it was imperative that the ATO find a way to meet the demand for controllers without straining the hiring and training pipelines. We developed the Air Traffic Controller Workforce Plan and delivered the plan to Congress in December 2004. This plan lays out cost-saving mechanisms that will allow the ATO to reduce previous staffing projections by 10 percent over the next five years. Full implementation of the

plan is underway and it will enable us to have the right people in the right places at the right time.

Obviously, other significant challenges lie ahead. For example, we will enter into negotiations with two of our bargaining units this year. But with our labor costs accounting for almost 80 percent of our operating costs, we also must reach an equitable agreement that ensures financial solvency and corporate efficiency on all sides.

Another significant challenge we face is the fact that the nation's $30 billion inventory of air traffic control facilities and equipment is aging and deteriorating. The average condition of the FAA's en route centers is poor and is getting worse each year. The maintenance and repair backlog for these 21 facilities alone is about $118 million, a combination of repairs not made in the past, and the projected repairs needed in the current year. At some point we are going to have to replace them.

These challenges make it critical for us to change "business-as-usual" operating practices. We must make some fundamental changes. We need a revenue stream based both on our costs and on our actual units of production. And we need the right incentives in place to remain efficient.

Our biggest challenge will be to ensure that the ATO is as streamlined and efficient as possible in order to justify supporting our essential operating and capital costs as they compete with other important programs for limited fiscal resources. The ATO must deliver the safest, most efficient, cost-effective, and well managed services in order to serve our customers and stakeholders. Air traffic in this country is dynamic and the ATO must be able to adapt to future demands seamlessly and effectively without compromising safety.

The structural changes we have made and the management tools we have put in place in the last year will help us be more accountable and help you better understand those areas on which you want to focus your oversight responsibilities. Hopefully, in the upcoming years, I will be able to describe to you how these tools have helped us measure our success, prioritize our investments, and become a better, smarter, safer organization.

I am proud of the work we have done in the last year and I am even more confident in the direction we are headed. As we progress in our transformation, we intend to retain our global leadership in delivering air traffic services, by providing the greatest value to our customers, owners, and employees. We are very cognizant of the fact that we are part of a much broader team of people in government and industry that all of us are working toward keeping the most complex airspace in the world, the safest and most efficient in the world. We will work with Congress to determine the best methods for meeting the challenges facing the future of air traffic. I am grateful for the opportunity to be in a position to play a role at a time when meeting the challenges facing us will make such a difference to the future of aviation. There is hard work and tough choices before us, and I am confident that together we will do what needs to be done.

This concludes my prepared statement. I will be happy to answer any questions at this time.

Mica Questions for the Record

1. What will be the core technologies of the Next Generation of Air Traffic System (NGATS)? How much will FAA invest in development of these systems in FY '06?

   Response: Over the past year, the Joint Planning and Development Office (JPDO) has confirmed that the core technologies of NGATS, as it is currently envisioned, consist of digital communications, space-based infrastructure and network centric operations. FY06 investments in these areas include installation of digital-capable radios, and continued demonstration and expansion of Automatic Dependent Surveillance Broadcast (ADS-B). For FY06 the President proposed $50.5 million in funding for NGATS-related technologies. The future of NGATS assumes that infrastructure modernization programs, such as En Route Automation Modernization, will be delivered on schedule. As the plan for NGATS matures, and the need for additional enabling technologies is determined, they will be included in the annual report to Congress that is submitted with the President's budget.

2. How much will NGATS cost? When will you know? How much will the industry have to spend to equip? When will you begin transitioning? How long will it take?

   Response: The JPDO is working on an NGATS Transformation Roadmap that will address both the amount and timing of the investments to meet the goals of NGATS. Our estimate of the capital requirements for the early segments (the next five years) will be reflected in the FAA FY '07 Capital Investment Plan (CIP). As research and alternative analyses are completed, those estimates will be refined and reflected in the annual report to Congress and the President's budget.

3. The JPDO is looking at solutions for 2025, but we have a capacity problem today. We can't afford to have the JPDO be only a planning activity for the next decade. How do we start demonstrating and implementing these concepts as soon as possible and achieving benefits in the near term?

   Response: As noted above, the JPDO is working on an NGATS Transformation Roadmap that will include both mid and short term initiatives. Some of these initiatives directly support transforming the air transportation system, such as ADS-B and System Wide Information Management (SWIM), while others serve to determine future concepts of operation, such as network-enabled operations and Small Aircraft Transportation System (SATS) demonstrations. As the roadmap becomes more refined, different agencies will begin to develop programs that align with NGATS and industry can conduct business planning activity with greater confidence. All this activity, including activity on the mid and short term initiatives, will be reflected in the annual report to Congress. In

the meantime, FAA continues to add modernization technologies to today's system in order to achieve capacity increases. For example, Administrator Blakey recently announced that the FAA will install the NASA developed metering tool, Traffic Management Advisor (TMA), at all our En Route Centers. TMA has increased capacity by 3-10 percent, especially when used in conjunction with time-based metering.

4. Why can't we just continue incrementally modernizing the air transportation system as we have in the past? Why do we need to do something different now?

   Response: The foundation of today's system is old technology, such as ground based radar and navigational aids, and one-to-one communication capability. Advances in technology and information processing capability allow us to go beyond current system limitations and move more aircraft efficiently through the system.

5. The STARS program began in 1996. FAA still doesn't know to what extent it will deploy STARS. When will FAA complete its cost/benefit analysis and make a final decision on STARS.

   Response: In November 2003, the FAA completed a cost/benefit analysis and negotiated a multi-year firm fixed price agreement to complete the STARS deployments to all sites. The Agency had intended to re-baseline the STARS program at the Joint Resources Council (JRC) held that month and award the contract to complete the STARS deployment. However, the FY 2004 Conference Report on the Omnibus Appropriations Bills imposed restrictions on FAA's ability to obligate funds for procuring STARS to replace Common Automated Terminal Radar Systems (CARTS) or ARTS color displays (ACDs) until the Department of Transportation Office of the Inspector General (OIG) reviewed and validated the estimated life cycle costs for STARS. Once that was done, STARS was re-baselined on April 20, 2004 as Phase 1 of a multi-phase approach for Terminal Automation Modernization Replacement (TAMR). The Agency decided to limit its TAMR Phase 1 (STARS) procurement to the 47 of most critical-to-service Terminal Radar Approach Control (TRACON) facilities with systems that were already procured in FY2003. The same appropriation restriction was imposed in FY2005. Consequently, no new STARS systems have been procured in FY2004 or FY2005. Since the STARS contract award in 1996, 36 of the 47 FAA and 22 DoD systems have been successfully developed, deployed and currently are in operations. Of the remaining FAA systems, one is scheduled to go operational this year, eight in FY '06, and the last two in FY '07.

   As part of TAMR Phase 2, the Agency has evaluated the remaining 115 operational sites to determine their modernization needs; consisting of 11 CARTS IIIEs (large TRACONS) and 104 CARTS IIEs (smaller TRACONS). The TAMR Phase 2 decision focuses on the sites deemed most critical requiring attention before 2010. On June 30, 2005 the JRC approved the replacement of ARTS IIE

systems at West Palm Beach, Pensacola, Anchorage, Corpus Christi and Wichita with STARS systems. The JRC also decided to conduct a competitive procurement between qualified vendors that already have systems approved and certified for NAS operations for the modernization or replacement of ARTS IIIE systems at Chicago, Denver, Minneapolis/St Paul, and St Louis.

The remaining FAA sites not addressed in TAMR Phase 1 or 2 will be assessed in the near future.

6. Mr. Mead points out the benefits and difficulties of airspace redesign. Additionally, advances in aircraft will make managing airspace more difficult. Can you outline FAA's plan and schedule for completing the airspace redesign?

   Response: Airspace redesign is a continuous process. As new procedures are added, new technology is implemented, or new roles incorporated, the airspace structure supporting it must also evolve. National Airspace Redesign (NAR) is the FAA's main mechanism to modernize the nation's airspace that includes projects with planned completion dates through 2013. The timeframes for these projects are influenced by many factors. Some projects are tied to coincide with new runways or require other infrastructure changes before they are viable. Other projects require environmental review that may take several years.

   NAR was officially sanctioned as a national FAA effort in 1998. Since that time, the program has completed its first step, local optimization of airspace in critically constrained areas. The cornerstone of this effort was the National Choke Points initiative. This effort has saved aviation customers over $65M a year since its completion in 2002.

   NAR is now in the phase where we are building the foundation for major redesign. Current projects include large-scale projects, such as the Midwest AirSpace Enhancement (MASE) project, Bay to Basin Redesign, and the High Altitude Redesign (HAR). The routing, sectorization, and airspace management changes of these projects, planned for implementation between now and 2008, will mitigate congestion and reduce complexity. Another key element in future redesign is the extensive use of area navigation (RNAV)-based routing. Key projects, such as the Dallas-Fort Worth RNAV, Las Vegas Redesign, and Atlanta RNAV projects, are paving the way for larger scale terminal redesign efforts.

   Also in this timeframe (through 2008), NAR is implementing several airspace projects tied to new runways. Forty to sixty percent of expected benefits of the new runways will be lost without associated airspace changes (new arrival and departure routes and sectors to support these routes). These runway-based airspace projects affect Detroit Metropolitan Wayne County (DTW), Cleveland-Hopkins International (CLE), Minneapolis-St. Paul International/Wold-

Chamberlain (MSP), Chicago O'Hare International (ORD), George Bush Intercontinental/Houston (IAH), Cincinnati/Northern Kentucky International (CVG), Hartsfield-Jackson Atlanta International (ATL), and Lambert-St. Louis International (STL) Airports.

The 2008 to 2013 timeframe for NAR will be characterized by projects that will reflect major transformation of the Nation's en route, terminal, and oceanic airspace. As part of the later phases of the HAR, national en route airspace will be re-stratified and efficiently sectorized to reduce customer and FAA operations costs. Major terminal redesign efforts in New York, Chicago, and Los Angeles will be completed. These redesigns have the potential to drastically renovate the terminal and en route airspace serving these busy metropolitan areas. Finally, with new automation and separation standards, Oceanic Redesign will employ new airspace management techniques to allocate airspace where it is needed to more efficiently serve the dynamic ocean flows.

NAR is a broad reaching, continuous effort that will accommodate the diverse needs of the National Airspace System as it evolves. The information above outlines the current plans for NAR. These plans will continue to develop as the system and its stakeholders advance.

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7. GPS modernization will greatly impact WAAS's future. It could make WAAS more effective or it could make WAAS obsolete. To what extent has FAA been involved in DOD's GPS modernization plan? How are the two efforts tied together?

Response: First, we agree that modernization plans for GPS can significantly impact WAAS architecture. The WAAS augments GPS to meet stringent safety-of-life requirements for civil aviation. For the past 4 years the FAA has had a full time senior level person at the USAF GPS/ Joint Program Office (JPO). This person is the program manager for civil applications and represents civil aviation community on GPS design and acquisition issues. This individual is supported by FAA personnel who work with the USAF on developing requirements that leverage benefits of WAAS and GPS into a modernized GPS infrastructure and in source selection teams on GPS III. The FAA also has a full time person at USAF Space Command to work GPS operational requirements for the civil community. The FAA has a major role in the GPS Systems Engineering Forum (GSEF) that resolves technical issues regarding GPS. The GSEF is co-chaired by the FAA (Chief Engineer for Navigation Services) and the GPS/JPO (Chief Engineer, Navstar GPS Joint Program Office). The FAA was involved in the development of the Space Positioning, Navigation, and Timing Policy signed by the President last December. We intend to be involved in the implementation of that policy that includes GPS and all government augmentations.

8. GAO points out that the Administration has eliminated funding to start new programs and reduced planned funding in other areas. However, the Administration has provided no details on the impact of these cuts. What will be the impacts of these cuts?

   Response: The references made by GAO during the hearing about elimination of funding for new programs and reduced funding in other areas referred to a comparison of the FY2004 Capital Investment Plan (CIP) with the CIP for FY2006. The CIP shows the FAA's out-year plans for the capital programs, and is required by law to be submitted with the President's budget each year. The 2004 CIP was submitted to Congress in February 2003, along with the President's request for the FY 2004 budget. The 2006 CIP was submitted to Congress in February 2005, along with the President's most recent request for the FY 2006 budget.

   As GAO noted, a number of programs were reduced significantly between those two plans and some programs were eliminated completely. For the FY2004 budget of $2.9 billion, the agency's capital plans were aligned closely to Vision 100 authorization levels for FAA Facilities and Equipment (F&E). For the FY 2005 budget, FAA requested $2.5 billion for F&E. This request reflected reductions in projects that were experiencing cost and schedule overruns as well as projects that were undergoing baseline and business plan revisions. A similar funding level was proposed in the President's FY 2006 budget submission.

   Overall, the agency made the decision to commit to ongoing priority programs, reduce costs and schedule overruns, and defer programs that were in early development stages or had yet to be started. Major programs this impacted were the Local Area Augmentation System (LAAS), and Next Generation Communication System (NEXCOM) Segment 1b and 2. These programs and other deferred programs may be re-submitted in future budget submissions following validation of a favorable business case, and completion of some the current priority programs nearing completion, such as the Standard Terminal Automation Replacement System (STARS) phase 1, Advanced Technologies and Oceanic Procedures (ATOP), and User Request Evaluation Tool (URET).

9. Recently, there were rumors that FAA was considering limiting the hours of operation at several low-level towers where air traffic had fallen off. This set off a firestorm of political backlash. Should we consider an independent mechanism, maybe a BRAC-like commission, to re-examine the usefulness and cost-effectiveness of all of FAA's physical assets?

   Response: As the FAA continues efforts to reduce costs and increase efficiency with the establishment of the Air Traffic Organization, we will consider a range of alternatives to reexamine the usefulness and cost-effectiveness of all of the FAA's physical assets.

10. Two-thirds of all of FAA's capital assts are beyond their useful life. Yet, FAA's budget calls for a 20 percent cut below the guaranteed level in Vision 100 for the facilities and equipment account. If this continues, what types of risks does FAA run with respect to its operating costs? Can the FAA meet the JPDO's goal of 2025 with this budget?

    Response: Though it is early in the JPDO planning process to answer this question with precision, high level analysis suggest that there are significant opportunities in the NGATS roadmap to reduce operating costs associated with redundant ground-based infrastructure.

11. FAA plans to spend another $3.3 billion on WAAS. DOD is deciding how to move forward with GPS modernization. Are the two efforts tied into each other in an intelligent way? Should FAA be investing its own resources towards GPS modernization instead of more WAAS development?

    Response: The approved WAAS baseline includes approximately $3.3B in spending through 2028. As indicated in our response to Question # 7, the FAA is closely involved with DOD regarding GPS modernization. We are looking at analysis of alternatives to see what would be the most cost effective means of providing satellite navigation services for the civil community. The modernized GPS IIRM and GPS IIF satellites fully support civil aviation WAAS requirements. GPS III is currently scheduled to achieve full operational capability, useable for safety of life purposes the 2020-2025 time period. Both the DOD and civil community are looking at the requirements for GPS III beyond the current established baseline. Once these requirements are validated and priced, cost sharing can be established. This is consistent with FAA schedules to determine WAAS architecture and any funding needs beyond the year 2028.

12. Does FAA internally possess the technical expertise to proceed on its own with NGATS? Will FAA seek to retain a lead system integrator?

    Response: The JPDO is overseen by a Senior Policy Committee (SPC) comprised of agency principals from DoT, DoD, DHS, DoC, NASA, OSTP, and FAA. The power of the JPDO is in its ability, through the SPC, to reach and leverage resources across these agencies. Additionally, the JPDO has created the NGATS Institute to tap into a broad base of non-governmental resources. The governmental role is to ensure that the playing field is level for competition in developing elements of the future system. The purpose of the Institute is to provide an effective mechanism to engage private sector experts from across the breadth of aviation in the NGATS planning process. It is highly desired at this point in the NGATS planning to ensure a diversity of ideas, analysis, and research as a lead-in to defining the enterprise architecture, requirements, and operational concepts. But defining those requirements is a government responsibility. When the operational concepts for components of the future system are well understood

and justified, a lead system integrator contract may be awarded to execute development and integration of various components.

13. Some argue that Europe is ahead of the U.S. in regard to its next generation system. What is your assessment?

Response: Both Europe and the U.S. are undertaking extremely ambitious and needed efforts to develop next generation air transportation systems that will enable mobility advantages in the global economy. To attempt to compare the two is like comparing apples to oranges. They, hopefully, will end up at the same place; but, the strategies used are very different.

The Europeans, for example, have contracted-out their initial planning effort to private industry and *initially* are spending more than we are in the United States. Whereas, in the U.S., we are operating in collaboration *with* industry. JPDO recently formed the NGATS Institute, which will help JPDO populate its Integrated Product Team (IPTs) with the needed industry expertise.

Many think Europe is ahead of us because they have already spent more than us - - nothing could be further from the truth.

Europe's effort to transform their current system, known as SESAME (single European sky implementation programme), consists of two phases. The Definition Phase, currently underway, will finish at the end of 2007. The Definition phase will analyze the aviation requirements, and the resulting necessary changes for creating a next generation Air Transportation Management (ATM) system. Their second phase is the Implementation Phase that runs from 2007 through 2020.

On the other hand, the U.S. effort – NGATS (next generation air transportation system) is also currently in the definition phase - - although we call it our Roadmap segment that should be ready within the next six months.
So early into this effort, you could say that the U.S. is slightly ahead.

The ultimate success of the efforts to develop next generation air transportation systems will rest not on the ability to be the first with a solution. Success will rest in the ability to harmonize a solution globally. To that end, Administrator Blakely announced recently at the Paris Air Show that we are close to signing an agreement with the European Union that would generally commit Europe and the U.S. to cooperating in their planning efforts toward a next generation air transportation system.

14. GAO's statement indicates that FAA forecasts a 25 percent increase in air travel by 2015, while the JPDO sees the need to accommodate a tripling of air travel by

2025. Even if air travel increases by 25 percent by 2015, as FAA forecasts, and even if air travel increases by another 50 percent between 2015 and 2025, we would not have even doubled today's air travel. Why does the JPDO see the need to accommodate a tripling of capacity by 2025?

Response: Secretary Mineta focused on this goal early in the JPDO planning process to emphasize the need for transformation rather than simply modernizing the existing system. Tripling current capacity clearly requires fundamental changes in how we do business in aviation.

Various studies reach different conclusions pertaining to system growth through 2025. Some of FAA's forecasts are based on current system throughput and near-term history, even though certain locations are artificially constrained (such as Chicago, LaGuardia, etc.) due to slot availability limitations, and recent history reflects an extremely unusual downturn in air travel. These elements lead to a possible underestimate of the true unconstrained demand for 2025. Most estimates call for doubling capacity, which means tripling capacity in certain very high demand and high growth areas.

NGATS needs to accommodate demand to prevent the air transportation system from inhibiting economic growth. Tripling capacity is recognized by the JPDO as a stretch goal that forces innovation across all lines of development – policy, technology, cultural, and organizational.

15. The future of aviation may be vastly different than it is today. It may include commercial space flights, unmanned aviation vehicles, vertical takeoff and landing vehicles. How will the JPDO prepare for innovations that create major shifts in airspace usage?

Response: This question gets to the very core of why the JPDO is planning for a 3x growth in capacity – we simply can't predict the future. But, if we look at the amount of world-wide industry and government investment in new vehicle technology and capability, we know that there will be an emergence of vastly different aircraft to satisfy market demands that are yet unknown. In addition to the vehicles mentioned in the question there is significant investment in small five to eight passenger jets that are being sold at relatively low price points. There are also service providers who state a current market need for sonic business jets.

As the question suggests, the future <u>will</u> be vastly different than today, and unless we build a system with much greater capacity, the introduction of any new vehicles will disrupt the existing system. The air transportation systems that can accommodate new paradigms in flying will be the ones that will possess the mobility advantages necessary for economic growth in the global economy.

The JPDO is developing NGATS with the basic premise of being able to accommodate future market and national defense demands with procedures that are tailored to aircraft and aircrew performance.

- Today's system has evolved to accommodate the lowest common denominator when it comes to aircraft capability; tomorrow's system will be tailored to aircraft and aircrew performance.
- Today's airspace structure is static and unable to change dynamically based on demand; tomorrow's system will treat airspace as a resource that will be dynamically allocated based on market and national priorities.
- Today's system is staffed to meet 90 percent of maximum demand per facility - a very inefficient but necessary deployment of resources; in tomorrow's system, air traffic management will not be tied to geographic sectors. Government resources will be shifted to meet demand whenever and wherever it is.

OPENING STATEMENT OF
THE HONORABLE JERRY F. COSTELLO
AVIATION SUBCOMMITTEE
TRANSFORMING THE FEDERAL AVIATION ADMINISTRATION (FAA):
A REVIEW OF THE AIR TRAFFIC ORGANIZATION AND THE JOINT PROGRAM DEVELOPMENT OFFICE (JPDO)
APRIL 14, 2005

- I want to thank Chairman Mica for calling today's hearing on *Transforming the Federal Aviation Administration (FAA): a Review of the Air Traffic Organization (ATO) and the Joint Program Development Office (JPDO).*

- Mr. Chairman, commercial aviation is on track to exceed 1 billion passengers by 2015. At the same time, much of FAA's infrastructure, such as towers, TRACONs, and radars, is past its useful life. The General Services Administration (GSA) rates the average condition of the FAA's en route centers as poor and getting worse each year.

- Last December, the FAA's JPDO released its *Next Generation Air Transportation System (NGATS) Integrated Plan.* The Next Generation plan provides, in broad terms, a vision for the future of our air traffic system. Unfortunately, the JPDO's ambitious vision is challenged by the reality of severe cuts to the FAA's facilities and equipment (F&E) budget - the primary program for modernizing the National Airspace System.

- Just two years ago, the FAA requested and received from Congress a $3 billion a year authorization for its F&E program. However, the FAA is now proposing to cut the F&E program well below its authorized level, Also, the FAA's latest capital investment plan would freeze F&E spending at roughly $2.4 billion for the next 5 years.

- Compared to what FAA would have done with a $3 billion a year F&E program, the Agency will now spend 53 percent less over the next four years to technologically enhance the system. Accordingly, a number of technology programs that seem to fit with concepts outlined in the plan – such as satellite-based programs, data link programs and programs designed to enhance user situational awareness - have experienced cancellations, deferrals, extensions, or may not be started under the current capital investment plan.

- Mr. Chairman, this Subcommittee must demand specifics and ask tough questions about how the FAA intends to implement the Next Generation plan. While the JPDO's plan provides broad concepts, we need to know more about the specific technologies that are expected to transform our system. Additionally, we need to have a serious discussion about cost, resources and financing.

- Yet, while Congress must provide the resources necessary for the JPDO to succeed, it must not abandon its efforts to control the cost of the FAA's programs. The Inspector General will testify today that 11 of 16 major FAA programs have experienced cumulative cost growth of $5.6 billion. Cost overruns on legacy systems cannot be allowed to crowd out our future. This Subcommittee must continue vigorous oversight to ensure that the FAA's scarce resources are used effectively and efficiently as possible.

- I am pleased that the Chief Operating Officer (COO) of the Air Traffic Organization (ATO), Russ Chew, is with us today to talk about the changes the FAA has undergone over the last two years. The new business-like ATO is expected to establish clear objectives, measurable goals and targets for improved cost and performance. I look forward to hearing from all of our witnesses about progress and problems at the ATO.

- Mr. Chairman, I am also glad to see both industry and union representatives, including the employees that operate the system, the National Air Traffic Controllers Association (NATCA) and the Professional Airways Systems Specialists (PASS), here today. The JPDO will clearly need to build consensus with employees and the industry to accomplish its mission. For example, if aircraft operators are unwilling to pay for upgrades to aircraft equipment to take advantage of new technology, it could pose a serious impediment to the JPDO's efforts to transform the system.

- Thank you once again, Mr. Chairman, for holding this hearing. I look forward to hearing from our witnesses.

United States Government Accountability Office

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Testimony

Before the Subcommittee on Aviation, Committee on Transportation and Infrastructure, House of Representatives

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NATIONAL AIRSPACE SYSTEM

Progress and Ongoing Challenges for the Air Traffic Organization

Statement of Gerald L. Dillingham,
Director, Civil Aviation Issues

GAO-05-485T

April 14, 2005

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Highlights

Highlights of GAO-05-485T, a testimony before the Subcommittee on Aviation, Committee on Transportation and Infrastructure, House of Representatives

NATIONAL AIRSPACE SYSTEM

Progress and Ongoing Challenges for the Air Traffic Organization

Why GAO Did This Study

Congress's formation of the Air Traffic Organization (ATO) and the Joint Planning and Development Office (JPDO), both within the Federal Aviation Administration (FAA), represent the latest efforts to address the monumental challenges of modernizing the national airspace system (NAS) during the first quarter of the twenty-first century. For more than two decades, FAA has been working to modernize the air traffic control (ATC) system, but projects have repeatedly missed cost, schedule, and performance targets. Consequently, ATC modernization has been on GAO's list of high-risk federal programs since 1995.

The ATO's focus is on a rolling 10-year outlook to operate and modernize the NAS. By contrast, the JPDO's vision is longer term, focused on coordinating the research efforts of diverse federal agencies to achieve a common goal of meeting potential air traffic demands in 2025.

This statement discusses (1) GAO's assessment of the ATO's efforts to date in addressing some of the key challenges for the ATC modernization program and (2) challenges that lie ahead for the ATO and options that it could consider in addressing the needs of the NAS over the next decade, as well as longer-term needs defined by the JPDO.

www.gao.gov/cgi-bin/getrpt?GAO-05-485T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Gerald L. Dillingham, (202) 512-2834, dillinghamg@gao.gov.

What GAO Found

The ATO is taking a number of positive steps to address the legacy cost, schedule, and performance problems that have affected the ATC modernization program for the past two decades. For example, the ATO is beginning to involve stakeholders early and throughout a system's development; has demonstrated a willingness to cut major acquisitions that are not meeting their goals, even after investing significant resources; and has improved its management of information technology. However, the ATO does not use a knowledge-based approach to acquisitions, characteristic of best commercial and federal practices, which would help avoid cost, schedule, and performance problems. Additionally, the ATO has used a process improvement model in several software-intensive acquisitions. However, because the ATO has not mandated use of the model in all such acquisitions, it risks taking a major step backwards in its capabilities for ATC systems and software. Finally, the ATO is taking steps to change the culture of its component organizations by, for example, replacing a personality-driven culture with one that is more sustainable and stable. Continued management attention in this area will be important to the organization's success.

The ATO faces the challenges of (1) modernizing and expanding NAS capacity to accommodate an expected 25-percent increase in the volume of air traffic over the next 10 years, (2) hiring thousands of air traffic controllers to replace those expected to retire over the next decade, (3) working with the new JPDO to coordinate the research efforts of diverse federal agencies to transform the NAS to meet potential air travel needs of 2025, and (4) addressing aging infrastructure. To fund its major system acquisitions through fiscal year 2009 while remaining within projected budget targets, the ATO has substantially reduced funding for other areas. However, the ATO does not provide administration and congressional decisionmakers with information about the impact of the reduced funding on NAS modernization. To deal with these challenges, some aviation experts suggested options that the ATO could consider, including contracting out more services and incurring debt to obtain multiyear funding for capital investments (an option requiring legislative change). Our work and some experts also suggest clarifying budget submissions to show decisionmakers how constrained budgets affect NAS modernization and how the ATO is working to live within its means.

Air Traffic Control Tower

Source: National Aeronautics and Space Administration.

Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to participate in today's hearing to discuss the implementation of the Federal Aviation Administration's (FAA) Air Traffic Organization (ATO) and the new Joint Planning and Development Office (JPDO). Both organizations represent the latest efforts of Congress and FAA to address the monumental challenges of transforming the national airspace system (NAS) during the first quarter of the twenty-first century. As key organizations for determining how to safely accommodate projected increases in air traffic demand, the ATO and JPDO are distinct yet complementary. The ATO's focus is on a rolling 10-year outlook to operate and modernize the NAS. By contrast, the JPDO's focus is longer term—determining how the NAS will meet possible air traffic demands in 2025.

As brief background: in 1981, over two decades ago, FAA began what it initially proposed as a 10-year program to replace and upgrade the NAS's facilities and equipment. However, systemic management problems associated with ATC system acquisitions and organizational culture resulted in cost growth, schedule slippages, and performance shortfalls, leading us to classify FAA's ATC modernization program as high risk in 1995.[1] In 2000, the administration issued an executive order that called for a performance-based air traffic organization to, among other things, improve the provision of air traffic services and accelerate modernization efforts, and Congress passed legislation that established an oversight body and a chief operating officer. FAA hired a chief operating officer in 2003 and in February 2004, formed the ATO, merging its former acquisitions[2] and air traffic operations offices, to manage FAA's air traffic control investments and operations. Congress also directed the Secretary of Transportation to establish the JPDO to develop a "next generation" transportation plan to meet air traffic demands by 2025. Located within FAA and reporting to the FAA Administrator, the JPDO has responsibility for coordinating the research efforts of several diverse federal agencies to support the goals of the next-generation plan.

My statement today will focus on two key questions: First, what is GAO's assessment of the ATO's efforts to date in addressing some of the key

[1]ATC modernization has remained on our high-risk list since 1995. See GAO *High Risk Series: An Update*, GAO-05-207 (Washington, D.C.: January 2005).

[2]These included FAA's Office of Research and Acquisitions and Free Flight Program Office.

challenges for the ATC modernization program? Second, what challenges lie ahead for the ATO, and what options could it consider in addressing the needs of the NAS over the next decade, as well as the longer-term needs defined by the JPDO? My statement is based on recently completed and ongoing studies for this committee and for the House Committee on Government Reform. We obtained information from FAA officials, an international panel of aviation experts, and relevant stakeholders on the ATO's prospects for addressing the systemic management problems on which we and others have reported. (See the list of related products at the end of this statement). Later this year, we expect to issue a detailed report that will address these and other related issues. We also obtained information and perspectives from the JPDO and other knowledgeable sources on its mission and plans for achieving that mission. We performed our work in accordance with generally accepted government auditing standards.

In summary:

- The ATO is taking a number of positive steps to address legacy challenges in system acquisitions and organizational culture that have affected the ATC modernization program for the past two decades. Our work indicates that four interrelated factors have contributed to the legacy challenges in meeting system acquisitions' cost, schedule, and performance targets: (1) funding acquisitions at lower levels than called for in agency planning documents, (2) adding requirements and/or unplanned work, (3) underestimating the complexity of software development, and (4) not sufficiently involving stakeholders throughout system development. Among the positive steps it is taking, the ATO is beginning to include stakeholders in all phases of system development, so that they can provide input in response to technical or financial developments. The ATO has also demonstrated a willingness to cut some major acquisitions that are not meeting their goals, even after investment of significant resources. And it has improved its management of information technology investments and software-intensive acquisitions. However, the ATO does not use a knowledge-based approach to system acquisitions, characteristic of best commercial practices for managing commercial and Department of Defense (DOD) product developments, which would help avoid cost, schedule, and performance problems. Additionally, because the ATO has not mandated use of a process improvement model for all software-intensive acquisitions, it risks taking a major step backwards in its capabilities for ATC systems and software. Finally, the ATO has recognized the fundamental importance of changing its organizational culture; it has been working on altering its leadership model and replacing a personality-driven culture—one that changes as leadership changes—

with one that is sustainable and stable. Continued improvement and management attention will be crucial if the organization's efforts are to succeed.

- The ATO's key challenges include modernizing and increasing NAS capacity to accommodate a 25-percent increase in air traffic operations by 2015, hiring thousands of air traffic controllers to replace those expected to retire in the next decade, working with the new JPDO to ensure that research programs led by diverse agencies support national goals, and repairing or replacing facilities believed to be beyond their useful lives. The ATO will be further challenged to accomplish these tasks while remaining within the administration's future budget targets, which are lower than those of recent years. To fund its major system acquisitions while remaining within the budget targets, the ATO has eliminated planned funding to start new projects and substantially reduced planned funding for other areas. However, when forwarding its budget submission for administration and congressional review, the ATO provides no detail on the impact of the planned funding reductions on ATC or NAS modernization. Aviation experts and our work have identified options for the ATO to increase its chances of success. First, some aviation experts proposed that the ATO evaluate its experience in contracting out flight service stations and, if positive, consider contracting out other services. Second, some experts suggested that the ATO be allowed to incur debt so that it could obtain multiyear funding for capital investments, an option that would require a legislative change. While we have consistently maintained that Congress should control new funding sources through the budget and appropriations processes, these experts believed that giving the ATO access to multiyear funds for capital investments would increase its flexibility, thereby allowing it to modernize systems more efficiently. Third, our preliminary work shows, and some experts agreed, that the ATO should provide the administration and Congress with detailed information in its budget submissions about the impact of reduced budgets on both ATC and NAS modernization. To do so, the ATO should explicitly identify the trade-offs it is making to reach administration budget targets, highlighting those programs slated for increased funding and those slated for reduced funding.

The ATO Has Made Progress in Addressing Key Challenges and Needs to Continue

The ATO inherited a decades-long legacy of cost, schedule, and performance problems in the ATC modernization program. We found that four interrelated factors contributed to these problems. The ATO has taken a number of positive steps to address these issues through improvements in its management of information technology investments and software-intensive acquisitions, but there is room for further progress. Additionally, the ATO recognizes that changing its organizational culture is a key challenge underlying its transition to a highly effective, performance-based organization. Options are available to help the ATO address these challenges.

Four Interrelated Factors Contributed to Acquisitions Missing Cost, Schedule, and Performance Targets

Our research shows that four common factors emerged that contributed to 12 of FAA's 16 major systems missing their original cost, schedule, or performance targets. (See table 1.) Appendix I provides the full name and a description of each of the 16 systems. Appendix II shows changes in cost and schedule for these systems.

Table 1: Four Key Factors Contributing to Cost Growth, Schedule Extensions, and Performance Shortfalls for 12 ATC System Acquisitions

Name of system	The funding level received was less than the agency-approved funding level[a]	The system acquisition experienced requirements growth and/or unplanned work	The complexity of software development was underestimated	Stakeholders were not sufficiently involved
ASDE-X	X			
ASR-11	X	X		
ATCBI-6	X			
CPDLC		X		
FFP2	X			
ITWS	X	X	X	
LAAS		X	X	X
NEXCOM	X	X		
NIMS-2	X	X		
OASIS	X	X	X	X
STARS		X		X
WAAS		X	X	X

Source: GAO Analysis of FAA Data

*Agency approved funding level refers to the annual funding required to deliver a system as planned—that is, as documented in an acquisition program baseline, the document approved by the agency at the beginning of an acquisition. In December 2004, the ATO began using the Office of Management and Budget's Capital Asset Plan and Business Case (exhibit 300) in place of the acquisition program baseline, as the primary decisionmaking document for acquisitions.

Note: Blank spaces in the chart denote that the specific factor was not a key contributor to a program's inability to meet cost, schedule, or performance targets. The remaining four major systems we reviewed are FTI, ERAM, ECG, and ATOP. FTI's revised baseline reflected increased costs to cover requirements which, while included in the original baseline, were unknown at the time the original baseline was prepared. ERAM, ECG, and ATOP are generally meeting cost, schedule, and performance targets.

According to FAA officials, funding gaps contributed to problems in one or more of three areas—cost, schedule, and performance—for 8 of the 12 system acquisitions. Most major acquisition programs establish a baseline that describes the programs' estimated annual costs, planned schedules, and performance expectations, which is approved by FAA's Joint Resources Council—the agency's executive body responsible for approving and overseeing major system acquisitions.[3] The estimated cost for a given year assumes that the program received all funding for prior fiscal years as described in the baseline. In practice, however, this is not always the case. For example, when FAA's budget level does not allow all system acquisitions to be fully funded at the levels approved in their baselines, FAA may elect to fully fund higher-priority acquisitions and provide less funding for lower-priority acquisitions than called for in their baselines. The ASR-11 acquisition, a digital radar system, illustrates how reduced funding has resulted in cost growth and schedule delays. FAA officials stated that because of funding reductions and reprogramming, the program received $46.45 million less than requested for fiscal years 2004 and 2005. According to FAA officials, total costs may escalate and schedules may slip under such circumstances.

The stories behind cost and schedule increases for WAAS—a satellite navigation system—and STARS—new controller and maintenance workstations—demonstrate how the remaining three contributing factors can interact. For WAAS, FAA underestimated the complexity of the software that would be needed to support this system when it reduced, by 3 years, its plans to develop, test, and commission the system. FAA then

[3]The Joint Resources Council is an executive body consisting of associate and assistant administrators, acquisition executives, the chief financial officer, the chief information officer, and legal counsel. The council determines, among other things, whether an acquisition meets a mission need and should proceed. The council also approves changes to a program's baseline, budget submissions, and the NAS architecture baseline.

tried to accomplish these tasks in 28 months, even though the software development alone was originally expected to take from 24 to 28 months. In retrospect, FAA acknowledged that the agency's in-house technical expertise was not sufficient to address WAAS's technical challenges, particularly the need to warn pilots in a timely manner when a system may be giving them potentially misleading and therefore hazardous information. FAA's efforts to resolve this issue resulted in unplanned work, which contributed to a $1.5 billion increase over the 1994 baseline costs and to a 6-year delay in commissioning the system. According to FAA, adding the cost of satellite leases, formerly listed as an operating cost, to the capital cost and adding 6 years to the program's life cycle also contributed to increased costs.

For STARS, a joint FAA/DOD acquisition, not adequately including stakeholders in development led to unplanned work, cost growth, schedule delays, and reduced deployment. Because the program's aggressive development schedule allowed for only limited evaluation by controllers and maintenance technicians, FAA and the contractor failed to recognize human-factors concerns that these stakeholders later identified.[4] Restructuring the contract to make up for these oversights contributed to $500 million in cost growth, a 7-year schedule delay, and a reduction in deployment from 172 to 47 facilities.

Three of the major ATC system acquisitions are currently operating within their original cost, schedule, and performance targets, but have exhibited symptoms of past problems, such as requirements growth or underestimating the complexity of software requirements. These acquisitions include a system for processing flight data for oceanic flights (ATOP), a communications system (gateway) for controlling high-altitude traffic at 20 en route facilities (ECG), and a replacement for the primary computer system used for controlling air traffic (ERAM). Despite successes to date, these acquisition programs will require sustained management attention to help ensure that they remain within their cost, schedule, and performance targets.

[4]A human-factors evaluation examines how humans interact with machines and identifies ways to enhance operators' performance and minimize errors.

ATO Is Taking Some Positive Steps to Address Legacy Acquisition Problems

The ATO has already taken some steps to control the legacy problems identified with the ATC modernization program.[6] For example, it has begun to include stakeholders throughout system development, so that they can provide input in response to technical or financial developments. Reviews of a precision-landing system augmented by satellites (LAAS), a digital e-mail-type communication system between controllers and pilots (CPDLC), and the next generation air/ground communication system (NEXCOM)—each of which had cost, schedule, and performance problems to varying degrees—contributed to the ATO's reducing or eliminating funding for these systems in FAA's budget request for fiscal year 2005. Additionally, the ATO has established collaborative teams of technical experts and ATC system users, reorganized air traffic services and the research and acquisition organization along functional lines of business to bring stakeholders together and integrate goals, rewarded cooperation by linking investments to operations, started preparing agency planning documents in a format consistent with that prescribed by the Office of Management and Budget, begun implementing portions of a cost accounting system, and reduced layers of management from 11 to 7 to help address the hierarchical nature of the organization.

These are positive steps. We believe the ATO should continue the phased approach to acquiring new systems, and involving stakeholders throughout a system's development should help avoid the types of problems that led to cost growth and delays for STARS. Additionally, we view the decision to cut major systems as an indication that the ATO is willing to make difficult decisions to suspend major ATC system acquisitions that are not achieving their intended goals—even after a substantial investment of agency resources.

FAA has made progress in addressing long-standing problems with managing the risks associated with acquiring major ATC systems, many of which are software-intensive, but further improvement is possible. For example, FAA has established some discipline for acquiring these systems through the Acquisition Management System that it began implementing after Congress exempted the agency from federal acquisition regulations in 1995. Also, FAA has begun basing funding decisions for system acquisitions, in part, on their contribution to reducing the agency's operating costs while maintaining safety. Currently, FTI, a new

[6]The improvements spanned the period when FAA created the ATO. In the future, the ATO will have the primary responsibility for making further improvements in these areas.

telecommunications system, is the only acquisition that will reduce FAA's operating costs. Most of FAA's major system acquisitions are aimed at increasing NAS capacity and delivering benefits to users.

However, as we reported last fall, the Acquisition Management System still does not ensure that FAA uses a knowledge-based approach to acquisition that is characteristic of the best procurement practices used in commercial entities or by DOD. Capturing specific knowledge and using it to determine whether a product has reached a level of development (product maturity) sufficient to demonstrate its readiness to move forward in the acquisition process helps to avoid cost overruns, schedule slips, and performance shortfalls that can occur if decision-makers commit to a system design before acquiring critical technology, design, or manufacturing knowledge.

FAA has reported that it met its annual acquisition performance goal for fiscal year 2004—to meet 80 percent of designated milestones and maintain 80 percent of critical program costs within 10 percent of the budget, as published in its Capital Investment Plan. In our opinion, having and meeting such performance goals is commendable, but it is important to note that these goals are updated program milestones and cost targets, not those set at the program's inception.[6] Consequently, they do not provide a consistent benchmark for assessing progress over time. Moreover, as indicators of annual progress, they cannot be used in isolation to measure progress in meeting cost and schedule goals over the life of an acquisition. Finally, given the problems FAA has had in acquiring major ATC systems for over two decades, it is too soon to tell whether meeting these annual performance goals will ultimately improve the agency's ability to deliver system acquisitions as promised.

[6]Our statements about cost, schedule, and performance in this testimony and in our past reports are based on original targets that FAA established and approved at the start of its acquisition programs.

FAA has made considerable progress in managing its information technology investments.[7] FAA recently informed us that it has taken a number of steps aimed at achieving a higher maturity level, including establishing service-level mission need statements and service-level reviews, which address operational systems to ensure they are achieving the expected level of performance. While these steps could resolve some of the deficiencies that we previously reported, we have not yet performed our own evaluation of these steps. FAA could realize considerable savings if these reviews result in the discontinuation of some investments, since operating systems beyond their second year of service accounted for 37 percent of FAA's total investment in information technology in fiscal year 2004.

Finally, FAA has made progress in improving its process for acquiring software-intensive systems. The quality of these systems and software, which are essential to FAA's ATC modernization program, depends on the value and maturity of the process used to acquire, develop, manage, and maintain them. In response to our previous recommendations, FAA developed an FAA-integrated capability maturity model (iCMM).[8] Since FAA implemented the model, a growing number of system acquisitions have adopted the model, and its use has paid off in enhanced productivity, higher quality, greater ability to predict schedules and resources, better morale, and improved communication and teamwork. However, while FAA has encouraged process improvement through iCMM, use of the model has remained voluntary, and the agency's future commitment to this

[7]GAO, *Information Technology: FAA has Many Investment Management Capabilities in Place, but More Oversight of Operational Systems Is Needed*, GAO-04-822 (Washington, D.C.: Aug. 20, 2004). This report evaluates how FAA's information technology investment management for NAS systems and other systems compares to our Information Technology Investment Management Framework. Information technology systems used in air traffic control are the principal technology component of the NAS. The framework is a maturity model composed of five progressive stages, based on our research and the practices of leading private- and public-sector organizations. For more information on the Information Technology Investment Management Framework, see GAO, *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, GAO-04-394G (Washington, D.C.: Mar. 1, 2004).

[8]GAO, *Air Traffic Control: System Management Capabilities Improved, but More Can be Done to Institutionalize Improvements*, GAO-04-901, (Washington, D.C.: Aug. 20, 2004). iCMM is similar to the Capability Maturity Model® (CMM) Integration (CMMI℠) developed by Carnegie Mellon University's Software Engineering Institute, but crafted to include international standards. CMM®, Capability Maturity Model, and Capability Maturity Modeling are registered in the U.S. Patent and Trademark Office. CMMI℠ is a service mark of Carnegie Mellon University. For a detailed description of these models, see GAO-04-901.

initiative is not certain. Unless FAA demonstrates a strong commitment to process improvement and establishes a consistent, institutional approach to implementing and evaluating this process improvement, the agency risks taking a major step backwards in its capabilities for ATC systems and software.

FAA has also continued to develop an enterprise architecture—a blueprint of the agency's current and target operations and infrastructure. However, this architecture is still not complete and compliance is not yet enforced. We have ongoing work evaluating what the agency needs to do to develop and enforce its enterprise architecture.

ATO Recognizes the Importance of Organizational Culture for Facilitating Transition

Recognizing that cultural factors can play a critical role in an organization's success, the ATO has initiated organizational changes that are designed to create a foundation for cultural change in the acquisitions and operations workforces, which FAA combined to form the new organization. For example, the ATO is giving high priority to changing its leadership model by linking top management more closely to operations in the field and by replacing "command and control" with communication across organizational levels. In the past, according to the chief operating officer, FAA's management culture was "intensely hierarchical, risk averse," and "reactionary." But now, he said, FAA is attempting to foster "results-focused, proactive and innovative behavior." Changing the agency's leadership model is also designed, he said, to replace a "personality-driven culture" with a viable, stable, and sustainable organization that can make rational decisions that transcend changes in leadership.

To further support cultural change, the ATO is emphasizing accountability and other core values. For example, it is holding managers accountable for managing their budgets and in fiscal year 2006, it plans to include financial management among the pay-for-performance criteria for its managers. Additionally, the ATO is using the results of the most recent Employee Attitude Survey[9] to set a baseline for cultural improvement in five core areas—(1) integrity and honesty, (2) accountability and responsibility, (3) commitment to excellence, (4) commitment to people, and (5) fiscal responsibility. FAA's Civil Aerospace Medical Institute analyzed the survey

[9]The most recent survey was administered in September 2003, before the ATO was formed. FAA organized the responses by suborganization to be consistent with the new ATO.

results by grouping three to seven survey items under each of these areas. For example, FAA placed the survey item "We are encouraged to express our concerns openly" with four other items under the Integrity and Honesty core value. For many items, across all core values, fewer than 40 percent of ATO employees indicated agreement or strong agreement. We are comparing the results of FAA's Employee Attitude Survey with our 1996 findings identifying culture as a problem in the acquisition workforce, which is now within the ATO.[10] We plan to report our findings later this year.

It is incumbent upon the ATO, as it moves forward, to follow through with its commitment to transform the culture of its component organizations. Our studies suggest that transformations need focused, full-time attention from a dedicated team. The team must have vested authority and resources from top management to set priorities, make timely decisions, and move quickly to implement decisions. Such a team provides a visible signal that the transition is being undertaken with the utmost seriousness and commitment. Having a dedicated transition team is just one of several practices that we have identified, such as setting implementation goals and a timeline and establishing a communication strategy, that are key to successful mergers and organizational transformations. (See app. III for a complete list.)

To Address the Challenges of Modernizing and Expanding the NAS While Living within Its Means, the ATO Has a Number of Options

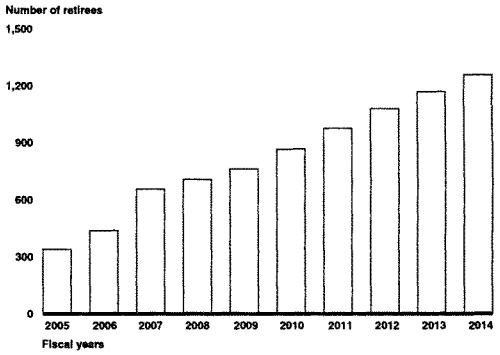
The ATO faces multiple challenges: (1) expanding and modernizing the NAS to accommodate an expected 25-percent increase in the volume of air traffic over the next 10 years; (2) hiring thousands of air traffic controllers to replace those expected to retire over the next decade; (3) working with the new JPDO to coordinate the research efforts of diverse federal agencies to transform the NAS to meet potential air travel needs of 2025; and (4) addressing aging infrastructure. The ATO faces the additional challenge of accomplishing these tasks with less funding than it has received in the past. A number of options are available for the ATO to consider in addressing these challenges.

The ATO plans to continue modernizing and expanding the capacity of the NAS to accommodate an expected 25-percent increase in air traffic volume over the next 10 years. Even after cuts to the LAAS, CPDLC, and NEXCOM

[10]GAO, *Aviation Acquisition: A Comprehensive Strategy Is Needed for Cultural Change at FAA*, GAO/RCED-96-159 (Washington, D.C.: Aug. 22, 1996).

budgets, the remaining major ATC systems would consume $4.4 billion, or 45 percent of FAA's total planned funding (excluding personnel and travel) for fiscal years 2005 through 2009. The funding situation is further exacerbated by the ATO's need to hire and train thousands of air traffic controllers to replace those reaching retirement eligibility over the next decade. (See fig. 1.)

Figure 1: Projected Controller Retirements, Fiscal Years 2005-2014



Source: FAA.

Additionally, as the ATO works with the JPDO to address the NAS's potential needs 20 years into the future, it will need to ensure linkage to and continuity with its own 10-year plans. The JPDO is responsible for developing a national vision and plan that will prepare the NAS to meet an assumed tripling of air traffic demand by 2025. In its first report, in December 2004, the JPDO concluded that meeting this demand would require a complete transformation of the NAS. It also predicted that fossil fuels would become less available and more costly, and global travel and commerce would become more interdependent. As one senior JPDO official suggested, if we fail to consider these issues now, future passengers may not be able to fly to their destinations in a single day and overnight package delivery may become a thing of the past. While the JPDO's plan did not discuss costs, the Vision 100—Century of Aviation

Reauthorization Act authorized $50 million annually for fiscal years 2004 through 2010 for the JPDO.

The ATO will be challenged to harness the efforts of the diverse agencies that participate in the JDPO, including DOD, the Department of Homeland Security and the National Aeronautics and Space Administration, and to align these efforts with the goals of the national plan. Although a relatively new organization, the JPDO has defined eight interdependent strategies to guide its work towards transforming the NAS and has established integrated product teams, each led by a participating federal agency, to address each of these strategies. These agencies have historically "gone their own way," with little thought given to coordinating with other agencies and moving toward a common goal. Aviation experts told us that within FAA, there is resistance to having outside organizations, rather than FAA, develop new procedures and systems for FAA to approve and institute. This will have to change under the JPDO paradigm.

Additionally, the ATO has cited the need to renew its aging infrastructure. The ATO estimates that such renewal will require an annual investment of $2.5 billion, assuming a $30-billion value of its assets and 7- to 12-year useful lives. According to the ATO, much of its physical infrastructure, including the buildings and towers that house costly ATC systems, is over 30 years old on average.[11] (See table 2.)

Table 2: Age of NAS Facilities

Facility	Average age
En route traffic control facilities	40 years
Air traffic control towers	30 years
Terminal approach control centers	34 years

Source: FAA.

Continued Reductions in Funding Levels Will Challenge the ATO's Ability to Live within Its Means

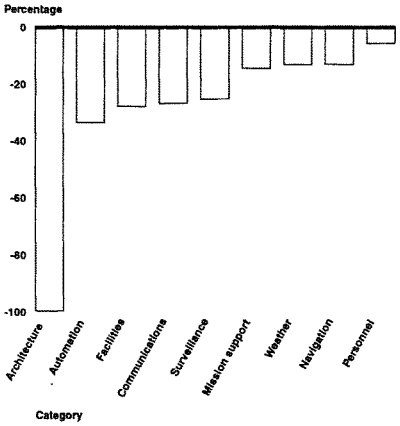
Because Office of Management and Budget funding targets for fiscal years 2005 through 2009 are lower than those for recent fiscal years, the chief operating officer predicts a cumulative $5-billion gap in operations funding and a $3.2-billion gap in capital funding. He said that, in effect, remaining within these lower targets would require a 21-percent reduction in costs and a 9-percent increase in productivity. The chief operating officer also

[11]We have not verified the ATO's reported refurbishment and replacement needs.

predicts that currently planned cost-saving measures would produce only half of the needed savings. One aviation expert predicted that the gaps would more likely have a gradual effect, rather than an immediately catastrophic effect, manifested by a slow but sure increase in air traffic delays.

To provide the $4.4 billion needed for its major system acquisitions while remaining within its budget targets through fiscal year 2009, the ATO has made significant cuts elsewhere in its capital funding plans. For example, the ATO eliminated all of the $1.4 billion that it had set aside for what it calls the "architecture segment." (See fig. 2.) These funds would have been used to perform about 2 years' worth of early research on new programs before they are mature enough to receive formal Joint Resources Council approval. The ATO also made significant reductions in planned investments for facilities—an action that runs counter to its reported need to refurbish or replace its physical infrastructure.

Figure 2: Capital Investment Plan Reductions, by Category, January 2005 Compared with January 2003



Source: GAO presentation of FAA data.

Such reductions reflect the end result of difficult decisions about which programs to fund and which to cut in order to remain within the administration's budget targets. However, when forwarding its budget submission for administration and congressional review, the ATO does not highlight the programs slated for increased or reduced funding and does not identify the impact of these decisions on ATC and NAS modernization. Such information would make clear how constrained budgets will affect NAS modernization and how the ATO is working to live within its means.

The ATO Has Options to Increase Its Prospects for Success

Contracting out more services and proposing legislation to provide borrowing authority are two options proposed by aviation experts[12] to improve the ATO's chances of success. A third option, providing more clarity in budget submissions, is supported by our work and some experts.

First, some members of our expert panel suggested that the analysis performed on contracting out flight service stations could be extended to other functions, such as oceanic or en route air traffic control, or nighttime operations. Under this option, experts said that ongoing government oversight could ensure the safety of contracted operations, and such a "staged outsourcing" of the NAS's functions might build confidence in the private sector's ability to provide air traffic services safely and efficiently. We view the agency's decision to study the contracting out of flight services as a significant step towards cost reduction and one that could be selectively expanded to other services if the current experience proves positive.

Second, some experts suggested that the ATO finance its capital investments by incurring debt through private capital markets, rather than relying on annual appropriations. While we have consistently maintained that Congress should control new funding sources through the budget and appropriations processes, these experts believed that debt financing would increase the ATO's flexibility by providing a dedicated, multiyear source of funds that it could manage as program needs dictate, thereby allowing it to modernize more efficiently. A legislative change would be required to give the ATO borrowing authority.

Our preliminary work shows, and some aviation experts maintain, that the ATO needs to prioritize its capital investments, as well as its investments in operating systems, with affordability in mind. These experts believe that the ATO needs to review all of its spending plans for modernization, determine which programs can realistically be funded, and select programs to cut. They also indicated that the ATO should have a mechanism to explain to Congress the implications that cutting the funding for one system has on other systems. Indeed, the ATO appears to

[12]As part of our research, we sought the perspective of an international group of experts. One of the issues that we asked these experts to address was how the ATO can improve its chances of achieving its mission. The options presented were identified by one or more members of our expert panel and do not necessarily reflect the views of GAO or of the panel as a whole. We expect to present additional options in our forthcoming report on the status of NAS modernization.

be prioritizing its investments, as indicated by the varying percentage reductions in various planned capital investments. We believe that the ATO could clarify how these trade-offs affect progress in modernizing the ATC system and related components of the NAS in the near, mid-, and longer term. Such transparency would provide senior agency officials and Congress with a clear view of how the ATO is working to live within its means.

In summary, we believe that the ATO has taken a number of positive steps. With continued management attention and focus to carry the momentum forward, the ATO has an opportunity to address its heretofore intractable problems with ATC modernization.

This concludes my statement. I would be pleased to respond to any questions that you or other Members of the Subcommittee may have at this time.

Contact and Acknowledgements

For further information on this testimony, please contact Dr. Gerald L. Dillingham, at (202) 512-2834 or by e-mail at dillinghamg@gao.gov.
Individuals making key contributions to this testimony include Tamera Dorland, Seth Dykes, Bess Eisenstadt, Maren McAvoy, Edmond Menoche, and Beverly Norwood.

Appendix I: Major ATC System Acquisitions

Air Traffic Control Radar Beacon Interrogator – Replacement (ATCBI-6)

ATCBI-6 is a replacement radar capable of determining both range and direction to and from the aircraft. It can also forward this information to the appropriate air route traffic control centers. It will replace radars that have exceeded their life expectancy and have proved extremely vulnerable to outages and critical-parts shortages.

Advanced Technologies and Oceanic Procedures (ATOP)

ATOP is an integrated system of new controller workstations, data-processing equipment, and software that will enhance the control and flow of oceanic air traffic to and from the United States. ATOP is planned for the three sites that control oceanic air traffic: Anchorage, Alaska; New York, New York; and Oakland, California.

Airport Surface Detection System – Model X (ASDE-X)

ASDE-X is an airport surveillance system that enables air traffic controllers to track the surface movement of aircraft and vehicles. The detection system automatically predicts potential conflicts and seamlessly covers airport runways, taxiways, and other areas.

Airport Surveillance Radar Model-11 (ASR-11)

ASR-11 is a digital radar that replaces aging analog radars, such as ASR-7 and ASR-8, with a single, integrated digital radar system. ASR-11 reduces operational costs, improves safety, and can accommodate future capacity increases.

Controller-Pilot Data Link Communications (CPDLC)

CPDLC is a communication system that will allow pilots and controllers to transmit digital data messages directly between FAA automated ground computers and aircraft.

En Route Automation Modernization (ERAM)

ERAM will replace software and hardware in the host computers at FAA's 20 en route air traffic control centers, which provide separation, routing, and advisory information. It provides a flexible and expandable base to facilitate further national airspace system (NAS) modernization initiatives.

En route Communications Gateway (ECG)

ECG provides a communications interface between radar sites and en route centers, and is a precursor to ERAM. The system has an open and expandable platform that allows for new connectivity and functionality as the NAS evolves. It replaces the interim Peripheral Adapter Module Replacement Item that has been operating for 10 years and has exceeded its life expectancy.

FAA Telecommunications Infrastructure (FTI)

FTI is FAA's new telecommunications system. It will replace costly networks of separately managed systems and services—both leased and owned—by integrating advanced telecommunications services within FAA's NAS and non-NAS infrastructures.

Free Flight Phase 2 (FFP2)

FFP2 is a suite of air traffic control tools and subsystems that allows air traffic controllers to move gradually from a highly structured system, based on elaborate rules and procedures, to a more flexible system wherein pilots, within limits, can change their route, speed, and altitude while keeping air traffic controllers informed of such changes. It includes the Traffic Management Advisor, Collaborative Decisionmaking, User Request Evaluation Tool, and the Surface Management Advisor.

Integrated Terminal Weather System (ITWS)

ITWS is a weather information system that furnishes air traffic controllers and supervisors with full-color graphic displays of weather conditions that need no meteorological interpretation. It provides a comprehensive representation of the current weather situation and precise 20 minute forecasts (to be increased to 60 minutes in 2006) of convective weather conditions.

Local Area Augmentation System (LAAS)

LAAS is a landing guidance system that would use global positioning satellites and would be installed at airports to allow aircraft to execute precision instrument approaches and landings in all weather conditions. LAAS would eliminate the need for multiple instrument landing systems at airports where it is installed.

NAS Infrastructure Management System—Phase 2 (NIMS-2)

NIMS is a centralized system to help manage and schedule maintenance on the NAS infrastructure, including its facilities, systems, and equipment. NIMS will decrease the number of en route delays by reducing the time required to restore systems to full operation following maintenance. NIMS Phase 1, already complete, provides initial Operational Control Center capability, along with remote monitoring and control functionality, to 3,700 NAS facilities and 5,800 deployed maintenance data terminals.[1] Phase 2 will fully implement resource management and enterprise management software and focus on increasing workers' productivity in receiving orders and managing resources.

Next Generation Air/Ground Communications (NEXCOM)

NEXCOM is a digital communications system, consisting of multimodal digital radios, avionics, and ground stations, which will improve air traffic control communications by replacing old analog communication systems. Segment 1A will replace 30- to 40-year-old radios, deploying 6,000 new radio sets that use analog and digital communications with aircraft. Segment 1B will create ground stations to communicate with aircraft equipped with digital capability.

Operational and Supportability Implementation System (OASIS)

OASIS a system used at flight service stations to assist general aviation pilots with flight planning. The system provides up-to-the-minute weather graphics by integrating real-time weather and flight planning data with overlays of flight routes. It replaces the Flight Services Automation system for which spare parts and hardware support have been difficult for FAA to obtain.

[1]Operational Control Center capability, established in 2001, was a standard set of tools and procedures needed to open the control centers. The tools provide the initial enterprise management and resource management technical capabilities needed at Operational Control Centers.

Standard Terminal Automation Replacement System (STARS)

STARS is workstation to allow civilian and military air traffic controllers to direct aircraft near major U.S. airports and will replace aging workstations at certain facilities. It has an open and expandable terminal automation platform that can accommodate air traffic growth, as well as new hardware and software that is designed to promote safety, maximize operational efficiency, and improve controllers' productivity.

Wide Area Augmentation System (WAAS)

WAAS is a navigation and landing guidance system that uses global positioning satellites to provide precise navigation and landing guidance at all airports, including thousands that have no ground-based instrument landing capability.

Appendix II: Changes in Cost and Schedule Targets for 16 Major ATC System Acquisitions

Dollars in millions

ATC system	Cost targets				Last site implementation targets		
	Original date	Original cost	Current cost (as of March 2005)	Change	Original date	Current date	Change (in years)
Airport Surface Detection Equipment – Model X (ASDE-X)	September 2001	$424.3	$510.2	$85.9[a]	2007	2009[b]	2
Airport Surveillance Radar Model – 11 (ASR-11)	November 1997	$743	$916	$173	2005	2013	8
Air Traffic Control Radar Beacon Interrogator – Replacement (ATCBI-6)	August 1997	$281.8	$282.9	$1.10	2004	2008	4
Advanced Technologies and Oceanic Procedures (ATOP)	June 2001	$548.2	$548.2	None	2006	2006	None
Controller-Pilot Data Link Communications (CPDLC)	1999	$166.7	To be determined	Not applicable	June 2005	To be determined	Not applicable
En Route Communications Gateway (ECG)	March 2002	$245.2	$245.2	None	2005	2005	None
En Route Automation Modernization (ERAM)	June 2003	$2,150	$2,150	None	December 2010	December 2010	None
Free Flight Phase 2 (FFP2)	June 2002	$546.2	$546.2	None	2006	2007	1
FAA Telecommunications Infrastructure (FTI)	July 1999	$205.7	$310.2	$104.5[c]	2008	2008	None
Integrated Terminal Weather System (ITWS)	June 1997	$276.1	$286.1	$10	July 2003	2009+	6+
Local Area Augmentation System (LAAS)	January 1998	$530.1	$696.1	$166	2006	To be determined	Not applicable
Next Generation Air/Ground Communications (NEXCOM)	September 1998	$405.7 (First segment only)	$986.4 (First segment only)	$580.7	2008	To be determined	Not applicable
NAS Infrastructure Management System – Phase 2 (NIMS – 2)	May 2000	$172.9	$172.9	None	2005	2010[d]	5
Operational and Supportability Implementation System (OASIS)	April 1997	$174.7	$155.50	($19.2)	2001	2004	3
Standard Terminal Automation Replacement System (STARS)	February 1996	$940	$1,460 (Phase 1 only)	$520	2005	2008	3
Wide Area Augmentation System (WAAS)	1994	$509	$2,036	$1,527[e]	December 2000	2013	13

Source: GAO presentation of FAA data.

[a]FAA plans to extend ASDE-X's current deployment target from 2007 to 2009 because the project's budgets were cut in fiscal years 2004 and 2005.

[b]According to FAA officials, the change in cost target for ASDE-X was due to an increase in the scope of the project.

[c]The increased costs were for requirements which, while included in the original baseline, were unknown at the time the original baseline was prepared.

[d]In light of reduced funding, FAA is revising NIMS-2's targets; a Joint Resources Council decision is planned for May 2005.

[e]According to FAA, adding the cost of satellite leases, formerly listed as an operating cost, to the capital cost and adding 6 years to the program's life cycle contributed to increased costs.

Appendix III: Key Practices and Implementation Steps for Mergers and Organizational Transformations

Practice	Implementation steps
Ensure top leadership drives the transformation.	Define and articulate a succinct and compelling reason for change. Balance continued delivery of services with merger and transformation activities.
Establish a coherent mission and integrated strategic goals to guide the transformation.	Adopt leading practices for results-oriented strategic planning and reporting.
Focus on a key set of principles and priorities at the outset of the transformation.	Embed core values in every aspect of the organization to reinforce the new culture.
Set implementation goals and a time line to build momentum and show progress from day one.	Make public implementation goals and time line. Seek and monitor employee attitudes and take appropriate follow-up actions. Identify cultural features of merging organizations to increase understanding of former work environments. Attract and retain key talent. Establish an organizationwide knowledge and skills inventory to allow knowledge exchange among merging organizations.
Dedicate an implementation team to manage the transformation process.	Establish networks to support the implementation team. Select high-performing team members.
Use the performance management system to define responsibility and ensure accountability for change.	Adopt leading practices to implement effective performance management systems with adequate safeguards.
Establish a communication strategy to create shared expectations and report related progress.	Communicate early and often to build trust. Ensure consistency of message. Encourage two-way communication. Provide information to meet specific needs of employees.
Involve employees to obtain their ideas and gain ownership for the transformation.	Use employee teams. Involve employees in planning and sharing performance information. Incorporate employee feedback into new policies and procedures. Delegate authority to appropriate organizational levels.
Build a world-class organization.	Adopt leading practices to build a world-class organization.

Source: GAO.

Related GAO Products

High Risk Series: An Update, GAO-05-207. Washington, D.C.: January 2005.

Air Traffic Control: FAA Needs to Ensure Better Coordination When Approving Air Traffic Control Systems. GAO-05-11. Washington, D.C.: November 17, 2004.

Air Traffic Control: FAA's Acquisition Management Has Improved, but Policies and Oversight Need Strengthening to Help Ensure Results. GAO-05-23. Washington, D.C.: November 12, 2004.

Information Technology: FAA Has Many Investment Management Capabilities in Place, but More Oversight of Operational Systems Is Needed. GAO-04-822. Washington, D.C.: August 20, 2004.

Air Traffic Control: System Management Capabilities Improved, but More Can Be Done to Institutionalize Improvements. GAO-04-901. Washington, D.C.: August 20, 2004.

FAA Budget Policies and Practices, GAO-04-841R. Washington, D.C.: July 2, 2004.

Federal Aviation Administration: Challenges for Transforming into a High-Performing Organization. GAO-04-770T. Washington, D.C.: May 18, 2004.

Air Traffic Control: FAA's Modernization Efforts—Past, Present, and Future. GAO-04-227T. Washington, D.C.: October 30, 2003.

Aviation Safety: Information on FAA's Data on Operational Errors at Air Traffic Control Towers. GAO-03-1175R. Washington, D.C.: September 23, 2003.

National Airspace System: Current Efforts and Proposed Changes to Improve Performance of FAA's Air Traffic Control System. GAO-03-542. Washington, D.C.: May 30, 2003

National Airspace System: Reauthorizing FAA Provides Opportunities and Options to Address Challenges. GAO-03-473T. Washington, D.C.: February 12, 2003.

National Airspace System: Better Cost Data Could Improve FAA's Management of the Standard Terminal Automation Replacement System. GAO-03-343. Washington, D.C.: January 31, 2003.

Air Traffic Control: Impact of Revised Personnel Relocation Policies Is Uncertain. GAO-03-141. Washington, D.C.: October 31, 2002.

National Airspace System: Status of FAA's Standard Terminal Automation Replacement System. GAO-02-1071. Washington, D.C.: September 17, 2002.

Air Traffic Control: FAA Needs to Better Prepare for Impending Wave of Controller Attrition. GAO-02-591. Washington, D.C.: June 14, 2002.

National Airspace System: Long-Term Capacity Planning Needed Despite Recent Reduction in Flight Delays. GAO-02-185. Washington, D.C.: December 14, 2001.

National Airspace System: Free Flight Tools Show Promise, but Implementation Challenges Remain. GAO-01-932. Washington, D.C.: August 31, 2001.

Air Traffic Control: Role of FAA's Modernization Program in Reducing Delays and Congestion. GAO-01-725T. Washington, D.C.: May 10, 2001.

National Airspace System: Problems Plaguing the Wide Area Augmentation System and FAA's Actions to Address Them. GAO/T-RCED-00-229. Washington, D.C.: June 29, 2000.

National Airspace System: Persistent Problems in FAA's New Navigation System Highlight Need for Periodic Reevaluation. GAO/RCED/AIMD-00-130. Washington, D.C.: June 12, 2000.

Air Traffic Control: Status of FAA's Implementation of the Display System Replacement Project. GAO/T-RCED-00-19. Washington, D.C.: October 11, 1999.

Air Traffic Control: FAA's Modernization Investment Management Approach Could Be Strengthened. GAO/RCED/AIMD-99-88. Washington, D.C.: April 30, 1999.

STATEMENT BY
MR. JOHN W. DOUGLASS
PRESIDENT AND CHIEF EXECUTIVE OFFICER
AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA

Hearing on "Transforming the Federal Aviation Administration; a Review of the Air Traffic Organization and the Joint Planning and Development Office"

House Transportation & Infrastructure Aviation Subcommittee

April 7, 2005

Introduction

Chairman Mica, on behalf of the Aerospace Industries Association of America, or AIA, I wish to thank you, Representative Costello, and members of the Aviation Subcommittee for the opportunity to testify this morning on the strong connection between our national prosperity and the transformation of the U.S. aviation infrastructure. AIA, whose member companies employ 607,000 engineering and production workers, has a long history with air traffic systems issues. With more than 100 regular and 170 associate members, we also operate as the largest aerospace manufacturing trade association in the United States.

The Imperative for Air Traffic Management Modernization

Mr. Chairman, under your leadership, *The Century of Aviation Reauthorization Act of 2003*, or *Vision 100*, framed the public policy issues on which Congress and the Administration must build a consensus if the United States, the most mobile nation on earth, will attain an air traffic management system that reflects the national security and economic requirements of our time.

As you noted after the House overwhelmingly passed *Vision 100*, "No nation relies on the safe and efficient operation of aircraft more than the United States. Almost two-thirds of all the world passengers take off or land on U.S. soil." *Vision 100* emerged from an unprecedented strategic environment in which the communications and capacity needs of the Air Transportation System (ATS) have changed significantly.

Rising fuel prices, Internet-generated business, foreign trade, the September 11th attacks, and the need for improved airport security have imposed unanticipated demands on an air transportation system designed in the 1960s. A 2004 report by the FAA revealed that in the next 20 years, 20 more U.S. airports will handle at least 500,000 arrivals and departures on an annual basis. Combined FAA and industry estimates project that the number of air passengers worldwide will triple by 2025 after doubling since 1985, and according to the Census Bureau, aircraft now carry one-third of the nation's exports as measured by value.

Delays, however, follow insufficient capacity, and lost time in the aviation sector means lost money. In 1994, 81 percent of all domestic flights took off on time yet NASA reported that delays of 15 minutes or more still cost the aviation industry $2.3 billion. By 2000, the on-time rate had decreased to 72 percent, and the *Aerospace Commission* estimated that the cost of delays to the entire economy could exceed $30 billion each year.

AIA therefore believes that Section 709 of *Vision 100,* establishing the FAA-led Joint Planning and Development Office (JPDO), represents a historic effort to coordinate federal government resources, in the words of the law, to:

- *"Improve the level of safety, security, efficiency, quality, and affordability of the National Airspace System and aviation services."*

The need for a systems modernization consensus among public officials, Mr. Chairman, goes beyond even the vital objective of reducing air travel delays and congestion. An ATS network that relies on state-of-the art capabilities will reduce our vulnerability to acts of terrorism unknown to Americans before the homeland came under attack. It will become more reliable in the delivery of investors and cargo to points of economic opportunity and soldiers to points of armed conflict. In an aviation sector that accounts for nearly 15 percent of the nation's GDP, it will operate as one of the technological backbones of economic growth and job creation.

The Complexities of an Inter-Agency Effort

Charged with the task of modernization, the JPDO must develop an adaptable air traffic management system capable of handling increased conventional and unconventional traffic loads while orchestrating the policy input and financial contributions of seven different government agencies. This task, however daunting, is not unprecedented.

First, for the JPDO to accomplish its goals by 2025, two developments must happen. The establishment of a new, dynamic air transportation system must become a clear Congressional *and* Presidential priority. Without the support of Capitol Hill and the White House, the JPDO will have little leverage in enlisting the fiscal and strategic cooperation of the seven federal agencies.

Second, it remains essential that this Congress and the Bush Administration (as well as their successors) provide clear direction to the Department of Transportation, the Federal Aviation Administration, the Department of Defense, the Department of Homeland Security, the Department of Commerce, and NASA, that the Next Generation Air Transportation System (NGATS) is of critical importance to the economic and national security of the United States.

Only with clearly stated backing from both the legislative and executive branches of our government will an adaptable and effective air transportation system come to fruition.

One key to a successful, cost effective implementation of the NGATS will be the transfer of existing military technologies for use by the civilian agency leaders and the commercial aviation marketplace. Existing Defense Department technologies must be made readily available for use by the JPDO and the future systems integrator as a part of the NGATS. The transfer of these technologies, however, may become bogged down by inter-agency disputes and will only occur with clear direction from the legislative and executive branches of government.

The Next Generation Air Transportation System Institute: Platform for Industry-Government Cooperation

In their December 2004 *Integrated Plan*, Mr. Chairman, JPDO leaders declared that the NGATS "must be driven by industry efforts to promote the economic efficiency of the system . . . and to ensure protection of the public in terms of safety, security, and environmental concerns."

To support the execution of this mission, AIA formed the NGATS Institute to work on a daily basis with the JPDO on air systems transformation and investment issues. A high-level Management Council composed of leading civil aviation community representatives will direct the efforts of the Institute. The Institute will provide industry representatives to the JPDO's eight Integrated Product Teams (IPTs) to furnish input and coordinate activities with the agency's program staff and Senior Policy Committee.

Stakeholder involvement will bring capabilities and insights to the JPDO that would not otherwise be available. Broad user involvement representing all segments of the aviation community is key to defining the architectural and operational needs for the NGATS. Involving the users, operators and providers of the aviation system will ensure that it can be practically deployed, and safely and efficiently operated. The JPDO will benefit from the extensive industry experience industry stakeholders have gained through the transformational initiatives with other agencies. For example, manufacturers of aircraft, aircraft systems and air traffic systems will provide broad systems engineering skills, technology readiness awareness and business case understanding to support the definition of an optimized architecture and timeline for deployment.

Joint operations by the JPDO and the Institute will unite researchers, regulators, producers, organized labor, and operators in the construction of a safe and flexible Next Generation Air Transportation System. In this context, Mr. Chairman, the Institute reflects the Subcommittee's desire for a more collaborative and accountable relationship between industry and government on aviation modernization strategies.

The Role of Congress

The broad public benefits of ATS transformation should lead Congress to make this mission a standing national priority. *Vision 100* began this process in the realm of policy, and the Administration commendably increased JPDO funding allocations in the federal government's FY 2006 budget request. As I mentioned previously, with seven government entities involved, Congress must also require inter-agency cooperation and accountability, particularly between NASA, FAA, and the Defense Department, on JPDO technology sharing and personnel assignments. In addition, AIA encourages the Subcommittee to scrutinize the FY06 budget request to ensure that the JPDO continues to receive adequate resources to begin the implementation of its agenda as outlined in the organization's December 2004 *Integrated Plan*.

Congressional ATS funding and oversight initiatives, Mr. Chairman, assume greater importance in light of the aggressive R&D programs of America's main civil aviation competitor overseas: the European Union (EU). At the end of March, the *Advisory Council for Aeronautics Research in Europe*, a branch of the European Commission (EC), released a new blueprint authorizing a 70 percent increase in spending over the next twenty years, for a total of $221 billion, on five "high-level target concept" areas: operational cost reduction, safety, delays, airport and airframe security, and environmental improvements. This spending goal reinforces the EC's January 2001 plan entitled *European Aeronautics: A Vision for 2020*, a document that adopts the goal of "a world-class European aeronautics industry that leads in global markets for aircraft and engines."

Yet NASA, the government's leading aeronautics research agency, moves in the opposite direction of the EU with proposed cuts in aeronautics programs of almost 25% over the next four fiscal years even though it focuses on vital public interest research: initiatives that make air travel more quiet, secure, and reliable.

EU officials take an integrated strategic view of air systems modernization because they understand the linkages among aviation, economic growth, and international influence. AIA urges the Subcommittee to consider the EU's intense commitment to its air transportation sector in overseeing not only the JPDO, but also in working with the House Science and Appropriations Committees to expand government-wide aeronautics research.

The Challenges That Lie Ahead

In the face of daunting budgetary and international challenges, there should be no misunderstanding about the financial cost of creating the NGATS. This undertaking will be time-consuming and expensive. Over the next 20 years, the JPDO will have the charge of assessing the current and future states of air traffic, (including passenger loads, aircraft size and performance capabilities), the use of rotorcraft and other vertical take-off and landing vehicles, and the use of UAVs, among other issues. The air traffic management system we see in 2025 will likely look vastly different than the one in place today.

Federal decision-makers must also consider the use of skies for civilian access to space in the NGATS planning process. Will the FAA continue to shut down large sectors of airspace for every launch of a space vehicle, as it has historically done with NASA flights, or will the system of the future provide for seamless integration of both conventional and space-bound aircraft?

The JPDO, working with industry stakeholders, must design a system that can accommodate all of these current aircraft types and those that may become available in the years ahead. A new network must be adaptable enough to deal with technology and customer demand changes without requiring costly reengineering of the system as a whole.

If the decision is made to completely rebuild the current air traffic management system, the NGATS will require a large and predictable infusion of federal funds. The challenge will be for the government to provide a stable stream of funding and thus allow the JPDO and the future systems integrator to carry out their work.

The time to debate federal funding of the NGATS is now. The JPDO is currently in its evaluation phase, examining the needs of the system of the future and the most efficient way to achieve them. It is at this time of relatively low funding ($5 million in FY05, a proposed $28 million in FY06) that fiscal plans for the future must be laid.

For this program to succeed, a transparent and reliable funding method must be identified.

Conclusions

Our current air transportation system, Mr. Chairman, is straining to meet the capacity demands triggered by an evolving US economy. A transformed air traffic management system with adequate capacity to handle future needs will stimulate economic growth by facilitating the widespread use of tools such as just-in-time deliveries for lean manufacturing.

The integration of information and secure communications in the future air transportation system will be necessary to ensure situational awareness among all system managers and users. Enhanced passenger, baggage, and cargo screening procedures will also ensure a seamless security network without constraining the movement of people of products.

In addition, the elimination of delays caused by congestion and bad weather will allow continued growth in the travel and tourism sector by making air travel more convenient and affordable to the public.

Beyond economic, security, and capacity improvements, the NGATS will provide the nation with lasting environmental benefits since today's on-ground delays and indirect air routings increase fuel consumption and produce higher emissions.

Mr. Chairman, America's world aviation leadership remains critically important to our prosperity in the age of the information economy and our public safety in the era of trans-national terrorism. AIA therefore congratulates the Subcommittee for its leadership in creating the JPDO and encourages Congress to take the subsequent policy and funding steps necessary to sustain the organization's air systems modernization efforts.

U.S. House of Representatives
Committee on Transportation and Infrastructure

Washington, DC 20515

Don Young
Chairman

Lloyd A. Jones, Chief of Staff
Elizabeth Megginson, Chief Counsel

James L. Oberstar
Ranking Democratic Member

David Heymsfeld, Democratic Chief of Staff

April 29, 2005

Mr. John W. Douglass
President and Chief Executive Officer
Aerospace Industries Association of America
1000 Wilson Boulevard
17th Floor
Arlington, Virginia 22209

Dear Mr. Douglass:

On April 14, 2005, the Subcommittee on Aviation held a hearing on "Transforming the Federal Aviation Administration: A Review of the Air Traffic Organization and the Joint Planning and Development Office."

Attached is a question to answer for the record. I would appreciate receiving your written response within 30 days so that it may be made a part of the hearing record.

Sincerely,

Jerry F. Costello
Ranking Democratic Member
Subcommittee on Aviation

JFC:pk
Attachment

Q: Mr. Douglass, the FAA's Joint Planning and Development Office (JPDO) will clearly need to build consensus with the industry to accomplish its mission. For example, if aircraft operators are unwilling to pay for upgrades to aircraft equipment to take advantage of new technology, it could pose a serious impediment to the JPDO's efforts to transform the system. How do you envision the industry will interact and cooperate with the JPDO to address issues like aircraft equipage?

A: Thank you Congressman Costello for that question. Preliminary steps toward developing a new technologically superior air transportation system have been positive, rounding up all the federal government agencies that have a stake in the project. Directly involving those agencies, including the Federal Aviation Administration and NASA, together in the Joint Planning and Development Office ensures a cooperative approach that will likely avoid stifling interagency disputes. But planners should keep in mind that there is another partner with experience and know-how – the aerospace industry. Tapping into the technology and knowledge industry already possess is the surest way to craft the Next Generation Air Transportation System in a manner to assure the greatest success.

The JPDO has already engaged industry in the NGATS effort. Working with the AIA-affiliated non profit National Center for Advanced Technologies, JPDO helped establish the NGATS Institute, a body made up of representatives of companies at every level of industry that will come into play in the creation of the new system. As the institute continues to come together JPDO has a vehicle to forge the strongest partnership possible that includes users, labor, and manufacturers. The federal government can establish a comprehensive and well-thought-out plan only through close interaction with these stakeholders, who can also help develop the support and confidence necessary to aggressively deploy it. Manufacturers of aircraft, aircraft systems, and air traffic systems will provide systems engineering skills, technology readiness awareness, and business case understanding to support the definition of the optimum transformation architecture and timeline for deployment. In addition, user involvement is key to defining operation needs and labor representatives ensure the systems deployed during the transformation are safe, efficient and implementable.

A comprehensive, integrated, and internationally harmonized roadmap for the transition to a new air traffic management system is critical to motivating the necessary investments by both government and industry. It is vital that leaders tap the services of industry in designing and developing NGATS. The JPDO will benefit from the extensive industry experience and knowledge and proven ability to develop and implement transformational systems capable of meeting international standards and needs. Early and continued involvement of industry, through the NGATS Institute will also lay the foundation for support of the new system and in turn increase the likelihood of voluntary equipage.

Before the Committee on Transportation and Infrastructure
Subcommittee on Aviation
United States House of Representatives

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Next Steps for the Air Traffic Organization

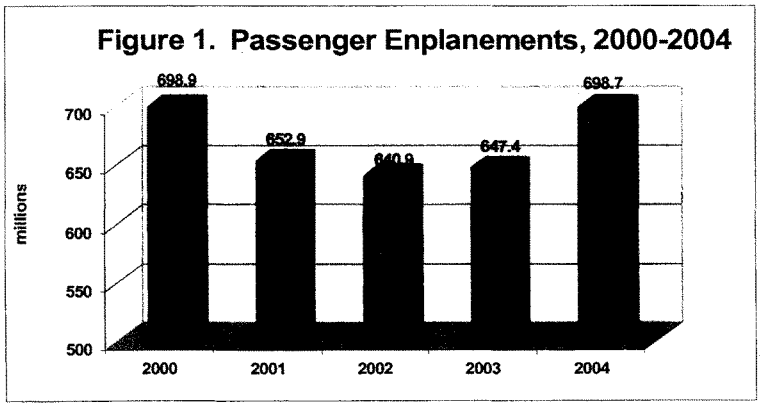
Statement of
The Honorable Kenneth M. Mead
Inspector General
U.S. Department of Transportation

Mr. Chairman and Members of the Subcommittee,

We appreciate the opportunity to testify today regarding the next steps for the Air Traffic Organization (ATO). Two years ago, the Federal Aviation Administration (FAA) took the first steps to create the ATO by appointing a Chief Operating Officer. The expectations were that the new organization would be focused on accountability for performance and operate more like a business. Since that time, we have seen progress in establishing the foundations that will be needed for meeting those expectations in the future.

Since its inception, the ATO has worked to flatten its organizational structure and align responsibility for acquiring new systems with the organizations that provide the services. Those actions are initial steps but very critical ones. The ATO has also begun establishing a series of metrics for evaluating its progress and performance. However, a great deal of the ATO's efforts thus far have been focused on "dealing with the hand they were given"—growing operating costs, a high salary base, reduced capital funding, and a portfolio of systems that are substantially behind schedule and over budget. Nevertheless, providing air traffic services that are both safe and efficient to an ever-increasing number of passengers and aircraft operations and accomplishing that mission in a cost-effective way remain the next steps for the ATO. And this will be the focus of our testimony today.

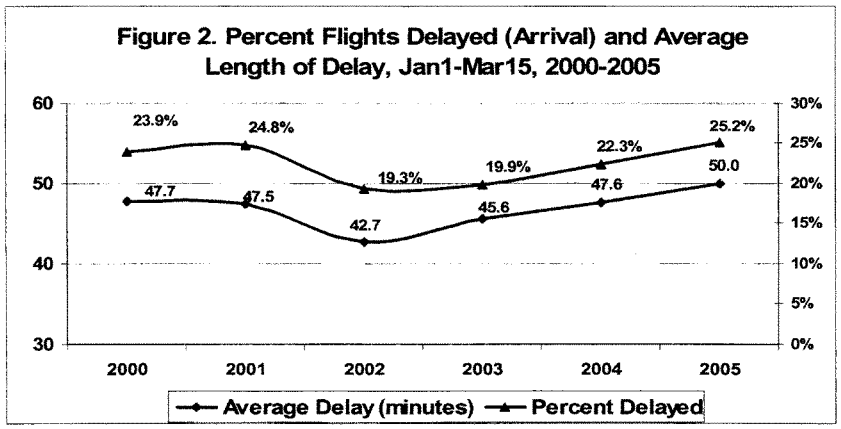
An important point, Mr. Chairman, is that the ATO is facing this challenge against a backdrop of ongoing and pervasive changes occurring within the industry. First, air traffic activity is on the rise. Passenger enplanements in 2004 were within 1 percent of total enplanements in 2000. By 2015, FAA estimates that 1 billion passengers will board planes domestically.



Air traffic operations are also on the rebound. In 2004, operations at en route centers were up 1.5 percent compared to 2000, although tower activity remained below 2000 levels largely due to a drop in general aviation operations.

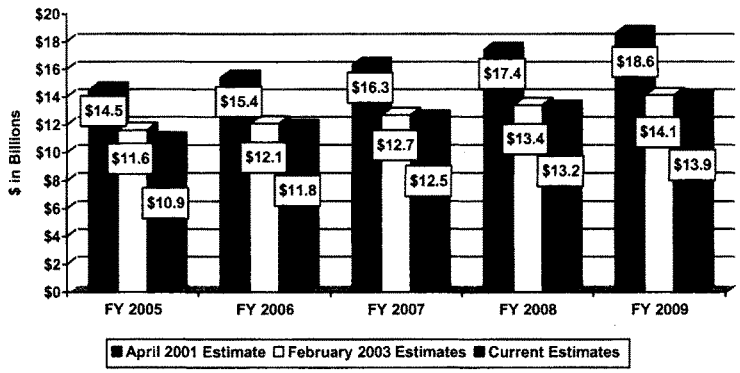
On the horizon, there is an emerging issue that could have tremendous repercussions on air traffic levels—micro-jets (relatively inexpensive aircraft that seat 4 to 6 people). FAA estimates that a 2 percent shift of today's commercial passengers to micro-jets would result in triple the number of flights.

As air traffic has returned, however, so have delays, as we have previously testified. For the period January 1 through March 15, 2005, more than 25 percent of flights were delayed (at the 55 airports FAA tracks for delays), for an average delay of 50 minutes. In comparison, in 2000, 24 percent of flights were delayed during that same time period, with an average delay of 48 minutes.



Second, like the airlines, the ATO is facing significant financial challenges. While air traffic levels continue to show improvement from the sharp declines that began early in 2001, there still remains a substantial decline in projected Aviation Trust Fund revenues. In 2001, FAA estimated that Trust Fund revenues in 2005 would be about $14.5 billion. That estimate has now been reduced to $10.9 billion, a reduction of $3.6 billion or nearly 25 percent. Those decreases can be attributed largely to reduced yields from the 7.5 percent ticket tax because of lower fares. In Fiscal Year (FY) 2006, FAA's budget is expected to exceed estimated Trust Fund revenues by $2.0 billion.

Figure 3. Estimated Trust Fund Revenues



The current budget level for the capital account is not sustainable. The reason for this is that the cost of current systems have experienced so much cost growth that there is little room for FAA to both pay for current systems and simultaneously take on new initiatives. This explains why the bulk of FAA's modernization projects now focus on keeping things running (i.e., infrastructure sustainment) and on systems that have been delayed by years.

Given the mismatch between funding and requirements, an emerging issue for the Congress, the Department, and aviation stakeholders is how to finance the ATO and the FAA. We understand this issue will be the focus of a hearing before this Subcommittee sometime next month. Within this context, Mr. Chairman, we see eight matters that the ATO will need to address in its next steps.

- Reducing operational errors,
- Major Acquisitions,
- Reducing cost and development risks of ERAM, a new software-intensive system,
- Getting control of support service contracts and reducing associated costs,
- Addressing the pending wave of controller retirements,
- Negotiating a new collective bargaining agreement,
- Airspace redesign, and
- Developing long-term strategies for meeting future demand for air travel.

1. ***Reducing Operational Errors:*** The ATO reduced the number of operational errors (when controllers allow aircraft to come too close together in the air) from 1,185 during 2003 to 1,150 during 2004. Despite that progress, serious incidents still occur much too often—last year one high-severity operational error (where a collision was barely avoided) occurred every 9 days.

   A significant concern regarding operational errors is that only 20 of the 524 air traffic control facilities (both FAA and contractor-operated) have an automated system that identifies when operational errors occur. Instead, the ATO depends on an unreliable system of self-reporting operational errors at towers and terminal radar approach controls (TRACONs). In FY 2003, 22 percent of the operational errors occurring at TRACONs and towers were identified as a result of reports from pilots, neighboring air traffic control facilities, or other outside sources, not by facility controllers or managers.

   We are concerned that this system can allow operational errors to go unreported. For example, prior to our investigation at one location, the facility reported just two operational errors during the 6-month period from January 1 to June 24, 2004. However, during our investigation, we identified five operational errors that occurred in May and June alone that had not been previously reported. After instituting appropriate use of playback tools in June 2004, the facility reported 36 operational errors during the next 6 months ending December 2004. *The statistics show that the ATO needs procedures to ensure that substantially all operational errors are being reported.*

2. ***Major Acquisitions:*** The ATO needs to get control of cost growth and make decisions on billion dollar projects that have been delayed for years. We recently reviewed 16 of the ATO's major acquisitions—11 of these projects have experienced cumulative cost growth of about $5.6 billion. Additionally, 10 of these 16 projects account for schedule delays ranging from 2 to 12 years and 2 projects have been deferred until at least 2008. There has been cost growth with major acquisitions since the establishment of the ATO, but the bulk of the cost growth represented by the $5.6 billion occurred before the ATO's establishment. It is also a reflection of the ATO's efforts to re-baseline a number of projects, which identified costs that have been pent up for some time.

   To its credit, the ATO is taking more incremental approaches to major acquisitions and rethinking several efforts, such as the Standard Terminal Automation Replacement System (STARS). Getting a handle on major acquisitions is critical to defining the ATO's cash flow needs for the capital account and establishing future funding requirements.

Nevertheless, key decisions need to be made. For example, FAA's revised estimates show that a "full STARS" solution (the replacement program for computers and controller workstations at terminals that began in 1996) would cost over $2 billion. Faced with the additional cost growth of STARS, the ATO has been studying its approach to terminal modernization since 2003, and is committed to assessing alternatives. *A decision needs to be made on what technology is needed to complete terminal modernization based on cost, time, and capabilities.*

Of immediate concern is the state of aging displays at four large sites, such as Chicago and Denver. Displays at Denver, for example, are locking up randomly—this problem has occurred over 100 times in the last 3½ years and is now occurring a little over once a week.

3. ***Reducing Cost and Development Risks of ERAM, a New Software-Intensive System:*** The ATO needs to take proactive steps now to reduce risk with ERAM, a new multibillion dollar program. The purpose of ERAM is to replace HOST computers at en route centers. The ERAM contract is currently a cost-reimbursable type, which places most of the risk with the Government. The early stages of this effort are within schedule and budget, but the heavy lifting with respect to software development lies ahead.

   Significant opportunities exist to make use of fixed price agreements for items not yet negotiated. The ATO should also streamline software development and assess the advantages of state-of-the-art network computer capabilities to centralize computer processing that allows for sufficient redundancy. This step can be taken independent of larger questions about facility consolidation. *The results of this assessment need to be provided to the Congress and the Secretary of Transportation by this time next year.*

4. ***Getting Control of Support Service Contracts and Reducing Associated Costs:*** A matter of concern is FAA's use of support service contracts, particularly three large Indefinite Delivery contracts valued at over $2 billion that involve over 100 contractors. A number of indicators show that greater controls and oversight by FAA is needed. For example, there is a lack of centralized controls over these contracts to ensure that FAA gets the best price. We found cases where contract employees were doing the same job at the same location but for significantly different rates charged by different contractors.

   We also have concerns over exactly how the contractors' work differs from work FAA employees do, but at substantially higher costs to the Government. For example, one of the contractor employees on one task order is a retired FAA support staff manager who earned $109,000 just before retiring from the

FAA in 2003. This same person went to work for the contractor (within days after their retirement) as a senior financial analyst, performing the same type of duties but at an annual rate charged by the contractor of over $206,000.[1] *The savings from greater controls over these contracts could be substantial.*

5. ***Addressing the Pending Wave of Controller Attrition:*** Over the next 10 years, the ATO estimates that approximately 73 percent of the organization's nearly 15,000 controllers will become eligible to retire. Because it currently takes an average of 2 to 5 years for new controllers to become certified, the ATO anticipates hiring slightly more controllers than will retire during that 10-year period (about 12,500) in order to accommodate the required training time. A significant challenge will be to hire and train those new controllers within a tightly constrained operating budget.

   In December, the ATO issued the first in what will be a series of annual reports outlining the organization's plans for addressing that challenge. In our opinion, the plan is a good first step, but subsequent reports will need further details in two key areas. First, the plan does not address how much it will cost. Second, the plan does not address hiring and staffing needs by location. That level of detail is critical because there are over 300 FAA-operated air traffic control facilities.

   The ATO recognizes this need, has committed to evaluate its facility staffing standards beginning this year, and intends to have the first group of facilities (en route centers) completed by March 2006. *Given the importance of this issue, we believe this evaluation needs to be completed before the ATO's next report to Congress, which is due at the beginning of the next Appropriations cycle.*

6. ***Negotiating a New Controller Collective Bargaining Agreement:*** Another critical issue for the ATO will be negotiating a new collective bargaining agreement with the controllers' union. The current agreement expires in September 2005. Although new controllers will generally have lower base salaries than the retiring controllers they replace, it is unlikely that significant reductions in operating cost growth can be achieved without substantial improvements in the organization's workforce productivity. *Initiatives such as new air traffic systems, technological improvements, and work rule changes will be important issues in the upcoming negotiations.*

[1] This rate is the annual loaded rate charged by the contractor and does not reflect the actual salary paid the employee.

7. ***Airspace Redesign:*** Airspace redesign efforts need to get on track to enhance the flow of air traffic by establishing cost and schedule controls and setting priorities. It is not always well understood how important airspace changes are in getting benefits in terms of capacity increases and delay reductions from new runways. Chicago O'Hare is an example where the benefits from new runways are contingent on airspace changes. *Getting a handle on airspace redesign efforts is important because we found that airspace redesign projects are not effectively coordinated among agency stakeholders, projects can be delayed 3 years or more, and it is unclear how much they would cost to implement.*

8. ***Developing Long-Term Strategies For Meeting Future Demand For Air Travel:*** The new Joint Planning and Development Office needs to focus on aligning budgets of diverse agencies with different missions, leveraging research, and determining how the new office can work to get new systems into the National Airspace System. While the 2025 timeframe is important, benchmarks for what can be done in 5- and 10-year intervals are needed. *Given the current funding situation, the other imperatives for the JPDO focus on determining what level of funding is actually required, how much other agencies will contribute, what specific capabilities will be pursued, and when they can be implemented.*

That concludes my testimony, Mr. Chairman. I would be glad to answer any questions you or other members of the Subcommittee may have.

NEXT STEPS FOR THE AIR TRAFFIC ORGANIZATION

Reducing Operational Errors

As air traffic operations increase, a significant focus of the ATO must be reducing operational errors (when air traffic controllers allow planes to come too close together in the air). Reducing operational errors has been a key performance goal for the organization. The ATO and controllers reduced the number of operational errors from 1,185 during FY 2003 to 1,150 during FY 2004. Despite that progress, serious incidents still occur too often. In FY 2004, one high-severity operational error (where a collision was barely avoided) occurred every 9 days.

A significant concern regarding operational errors is that only 20 of the 524 air traffic control facilities (both FAA and contractor-operated) have an automated system that identifies when operational errors occur. The ATO depends on an unreliable system of self-reporting operational errors at tower and TRACON facilities. In FY 2003, 22 percent of the operational errors occurring at TRACONs and towers were identified as a result of reports from pilots, neighboring air traffic control facilities, or other outside sources and were not identified by facility controllers or managers.

During an investigation at one air traffic facility, we identified multiple operational errors that were not reported. Prior to our investigation, the facility reported just two operational errors during the 6-month period from January 1 to June 24, 2004. However, during our investigation, we identified five operational errors that occurred during May and June alone that had not been previously reported. After instituting appropriate use of playback tools in June 2004, the facility reported 36 operational errors during the next 6 months ending December 2004.

While none of the 36 operational errors were classified as high severity, 28 were rated moderate severity (based on the proximity of the aircraft and their respective direction of flight).

The statistics indicate that the ATO cannot rely on a system that is based on self-reporting. The ATO needs a procedure that will provide greater assurance that substantially all operational errors are being reported. As a result of our audit, the ATO recently established an audit process at tower and TRACON facilities that will ensure more accurate and full reporting of operational errors.

Major Acquisitions

For FY 2006, the ATO is requesting $2.4 billion for its capital account. The FY 2006 request is slightly less than last year ($2.5 billion) but significantly less than FY 2004 ($2.9 billion). It is also less than the investment level called for in Vision 100. At this Subcommittee's request, we recently reviewed 16 of the ATO's major acquisitions—11 of these projects have experienced cumulative cost growth of about $5.6 billion, which is more than double the amount of FAA's FY 2006 capital request. Additionally, 10 of these 16 projects account for schedule delays ranging from 2 to 12 years, and 2 systems have been deferred until at least 2008. We note that many of FAA's major acquisitions focus on infrastructure sustainment rather than longer-term efforts.

The ATO has recently sought to be more realistic about the cost of some programs, and is taking a more phased approach to major efforts. There has been cost growth with major acquisitions since the establishment of the ATO but the bulk of the cost growth represented by the $5.6 billion occurred before the establishment of the new organization. It is also reflection of the ATO's efforts to re-baseline a number of projects, which identified costs that have been pent up for some time.

Nevertheless, key decisions need to be made. For example, FAA's revised estimates show that a "full STARS" solution (the replacement program for computers and controller workstations at terminals that began in 1996) would cost over $2 billion. Faced with the additional cost growth of STARS, the ATO has been studying its approach to terminal modernization since 2003 and is committed to assessing alternatives. A decision needs to be made about what technology will be expected to complete terminal modernization based on cost, time, and capabilities.

Because of delays in developing STARS, FAA replaced aging computers at 141 terminal sites between 1998 and 2003. However, the Agency did not replace aging controller displays at most of these sites. Of immediate concern is the state of aging displays at four large sites, including Chicago and Denver. For example, controller displays at Denver are locking up randomly—FAA officials told us that this problem has occurred 100 times in the past 3½ years and now is occurring a little over once a week.

Under FAA's current plan, the Agency will not begin installing STARS and replacing the aging displays at the four large sites until sometime in FY 2008. In September 2003, we reported that the ATO could replace aging displays more quickly and save more than $268 million by not waiting to install full STARS suites of new computers and displays.

Reducing Cost and Development Risks of New Systems

With an estimated cost of $2.1 billion, the ERAM program (replacing Host computers at FAA's 20 en route centers) is one of the most expensive and complex acquisitions in the ATO's modernization portfolio. The organization is already spending more than $240 million a year on the program, which will rise to more than $300 million next year. Because of the size, complexity, and cost of the ERAM effort, any cost increase will have cash flow implications for the entire modernization account. The ATO is pursuing ERAM through a predominantly cost-reimbursable contract already valued at about $1.2 billion, which places most of the risk with the Government. Progress is being made with ERAM, but the ATO can take proactive steps now.

- *First, contract management.* Our work on a wide range of major acquisitions over the years shows that FAA has been plagued by an inability to manage long-term complex automation projects with cost-reimbursable contracts, particularly when requirements are not well understood. This has led to cumulative multibillion dollar cost growth and multiyear schedule delays, as well as unmet expectations. Although the ERAM contract is already valued at about $1.2 billion, the prices of a number of contract elements have not yet been negotiated. There are significant opportunities to use fixed price agreements with respect to maintenance and logistics support.

- *Second, software development.* In the past, FAA has allowed complex software development to grow without sufficient consideration given to cost implications. We note that to date the contractor reports modest software code growth of about 70,000 lines with ERAM. Moreover, the ATO has not yet defined, priced, or negotiated later software releases that provide advanced capabilities. These factors argue for focusing the scope of ERAM work on the first software release and deferring plans for later software releases.

- *Third, the ATO needs to "think outside the box" to identify ERAM savings.* For example, currently, the ATO plans to deploy an ERAM computer system with a redundant backup system to each of its 20 en route facilities to support the controller workstations at those facilities. However, as a result of technological advances in computer networking and telecommunications, the ATO may be able to support the controller workstations at all 20 en route facilities by deploying fewer ERAM computer systems without jeopardizing safety or redundancy. The ATO needs to assess this issue and report the results to the Congress and Secretary of Transportation by this time next year. This is a step that can be taken independent of larger questions about facility consolidation.

Getting Control of Support Service Contracts and Reducing Associated Costs

Over the past 3 years, we have seen an increased use of support services contracts acquired under Indefinite Delivery multiple-award contracts. Since 2001, FAA has awarded three of these contracts, involving over 100 contractors, with a value of over $2 billion. We have several significant concerns regarding the increased use of these contracts.

- *First, there is a lack of clarity about what the contracts are actually used for.* Under these contracts, FAA acquires the services of many contractors under a large umbrella contract and then awards task orders to individual contractors. These umbrella contracts are broadly defined as used for information technology services, but individual task orders are awarded for services that do not appear to support information technology, including timekeeping and federal budget responsibilities.

  For example, in a recent investigation concerning just one task order awarded to one support service contractor we found that when our investigators met with FAA officials, they were unable to tell us the full extent of this contractor's work with the Agency. So far, we have determined that the contractor is involved in at least 46 different task orders, under two multiple-award contracts, with a total value of over $115 million.

- *Second, there is a lack of centralized controls over the contracts.* These contracts are issued out of multiple locations across the country—one out of FAA Headquarters in Washington, D.C.; one out of the Aeronautical Center at Oklahoma City, Oklahoma; and one out of the William J. Hughes Technical Center in Atlantic City, New Jersey. Task orders are normally awarded without competition under FAA's largest multiple-award contract, the Broad Information Technology and Telecommunications Services with a potential value of up to $1.8 billion. Although the three contracts provide similar support services, they are billed at different rates. For example, under one contract, a Senior Systems Engineer is billed at $110.17 per hour, while on another contract, a Senior Systems Engineer is billed at $90.81 *even though they both perform the same type of work at the same location.*

- *Third, there are serious questions over how the contractors' work actually differs from work FAA employees do, but at much higher costs to the Government.* We have found instances in which some employees left FAA to accept senior positions with these contractors. These individuals then provided services similar to those they executed while at FAA, but at much higher costs to the Government For example, one of the contractor employees on one task

order is a retired FAA support staff manager who earned $109,000 just before retiring from the FAA in 2003. This same person went to work for the contractor (within days after their retirement) as a senior financial analyst, performing the same type of duties but at a rate charged by the contractor of over $206,000.[2]

On the same task order, we found one employee who was classified as an "Information Engineer" and was billed out by the contractor at a rate of $63 an hour. However, based on our interviews, we found that the employee was actually performing timekeeping duties at an FAA facility.

We intend to look into these matters in greater detail later this year.

Addressing the Pending Wave of Controller Attrition

Over the next 10 years, the ATO estimates that approximately 73 percent of the organization's nearly 15,000 controllers will become eligible to retire. Because it currently takes an average of 2 to 5 years for new controllers to become certified, the ATO anticipates hiring slightly more controllers than will retire during that 10-year period (about 12,500) in order to accommodate the required training time. A significant challenge will be to hire and train those new controllers within a tightly constrained operating budget. In FY 2006, FAA requested $24.9 million to hire and train a net increase (after attrition) of 595 new controllers.

At the direction of Congress, this past December, the ATO issued the first in what will be a series of annual reports outlining its plans for addressing controller staffing over the next 10 years. In our opinion, the plan is a good first step in that it lays out the magnitude of the issue and establishes broad measures for meeting the challenge. However, there are several key elements of the plan that need to be addressed in subsequent reports to Congress. For example, the ATO has not identified the total costs associated with the plan, nor the number of controllers that will be needed by location.

An important point, Mr. Chairman, is that new controllers will generally have lower base salaries than the retiring controllers they replace. Over time, the lower base salaries of new controllers could help reduce the ATO's operating cost growth. According to FAA, the average base salary (excluding premium pay) of certified professional controllers today ranges from about $73,000 to about $134,000 at the busiest locations. However, with premium pay such as overtime and holiday pay, certified professional controllers' annual salaries can be

[2] This rate is the annual loaded rate charged by the contractor and does not reflect the actual salary paid the employee.

substantially higher (generally from 17 percent to 21 percent but as much as 37 percent higher at busy locations).

However, if the ATO does not place new controllers where and when they are needed, the potential reductions will be offset by lower productivity from placing too many or too few controllers at individual facilities. That concept is important for the ATO's workforce planning because the current plan does not provide details on staffing by location. Planning at the facility level is critical because the ATO has over 300 air traffic control facilities—many with significant differences in the levels of air traffic they manage and the complexity of operations they handle. Some are essential locations (like Chicago O'Hare) that have the potential to significantly impact operations of the entire National Airspace System.

The ATO recognizes this need, has committed to evaluate its facility staffing standards beginning this year, and intends to have the first group of facilities (en route centers) completed by March 2006. Given the importance of this issue, we believe this evaluation needs to be completed before the ATO's next report to Congress which is due at the beginning of the next Appropriations cycle.

Negotiating a New Controller Collective Bargaining Agreement

Another critical issue for the ATO will be negotiating a new collective bargaining agreement with the National Air Traffic Controllers Association (the union representing the ATO's largest workforce). The current agreement expires in September 2005. An important part of those negotiations will be discussions concerning workforce productivity. Although new controllers will generally have lower base salaries than the controllers they replace, it is unlikely that significant reductions in operating cost growth can be achieved without substantial improvements in the organization's workforce productivity.

Initiatives such as new air traffic systems, technological improvements, work rule changes, efforts to redesign the National Airspace System, and consolidating locations all have the potential to significantly improve productivity. In light of the expected surge in controller attrition, it will be important for the ATO to have new productivity initiatives and new work rules in place and operating effectively as the organization begins hiring and training the next generation of air traffic controllers.

Airspace Redesign

It is not always well understood how important airspace changes are in getting benefits (in terms of capacity and delay reduction) from new runways. For example, very few of the benefits of the Chicago O'Hare Modernization Plan (the

addition of one new runway, the extension of two runways, and the relocation of three others) will be realized without significant airspace changes. On the other hand, the Choke Points initiative (following the summer of 2000) demonstrated that airspace changes can also have important impacts even without new runway construction.

We reviewed FAA's 42 approved airspace redesign projects in FY 2004 and found that FAA's process for controlling costs, mitigating risks, and coordinating airspace redesign efforts is fragmented and diffused. Specifically, the cost and schedule estimates for projects were not reliable—we could not, nor could FAA—determine the cost of implementing the approved 42 projects. In addition, redesign projects are often delayed 3 years or more because of environmental concerns, problems in developing new procedures, the inability to link operating and capital budgets, or changes in a project's scope.

We will issue a report shortly that outlines the steps the ATO needs to take to get airspace redesign efforts on track. They include, among other things, establishing cost and schedule controls for airspace projects, prioritizing projects and establishing criteria for assessing a project's system-wide impact, and evaluating how resources are used at the Headquarters and regional level. The ATO recognizes that significant changes are needed.

Developing Long Term Strategies To Meet Future Demand for Air Travel

Lastly, Mr. Chairman, let me conclude our testimony today with our observations on the new Joint Planning and Development Office (JPDO)—an important effort mandated by Congress. There are a numbers of reasons why this effort is particularly important, including a forecasted increase in the demand for air travel as well as factors (i.e., micro jets) that may drive increased operations. The safety implications of these changes will also need attention. The new office is expected to coordinate research efforts among diverse Federal agencies and to develop a vision for the next generation air traffic management system in the 2025 timeframe. FAA is requesting $18 million for this office in FY 2006, an increase of $13 million over last year's level of $5 million. This is exclusive of research conducted at other Federal agencies.

It is important to set some realistic expectations for the JPDO. In that regard, we see several imperatives for the next year that focus on determining what level of funding is actually required, how much other agencies will contribute, what capabilities will be pursued, and when they can be implemented.

- *Aligning budgets and plans of diverse Federal agencies and leveraging existing research to transition new capabilities into the National Airspace System.* The key to JPDO success at this stage is not an infusion of funds but rather how well it leverages research dollars managed by the other agencies, including the National Aeronautics and Space Administration (NASA) and the Department of Defense. We note that NASA, exclusive of the other JPDO participants, is requesting over $800 million for civil aeronautics research in FY 2006. Of particular importance to the JPDO is NASA's $200 million planned investments for FY 2006 in "agile" air traffic management systems.

  The issue of technology transfer—and how the JPDO will actually work—is important because our past work shows FAA has experienced mixed success in transitioning systems developed by other agencies. For example, FAA ultimately abandoned work on an automated controller tool pioneered by NASA because of complex software development and cost issues. It is not yet clear how the new office will shift from its initial planning efforts to the hard work of aligning budgets and plans, leveraging research, and getting new capabilities ready for implementation.

- *Determining strategies for what can be done in 5- and 10- year intervals.* We understand the need for a long-term vision, but the 2025 timeframe is difficult to relate to without 5- to 10-year benchmarks. The JPDO needs to provide details on what can be done in those intervals, what "core capabilities" will be pursued, and how they can be implemented. The JPDO is working on what can be done in shorter timeframes and what capabilities can indeed be "fast tracked." These decisions will, of course, require adjustments to the Agency's Flight Plan and Operational Evolution Plan. Also, determining what can be done in short intervals will be important in establishing funding requirements.

- *Examining how barriers to transforming the National Airspace System that have impacted past FAA programs can be overcome.* Equally important to technology development for the JPDO is a full understanding of complex policy questions that go hand-in-hand with new systems. This is particularly true for initiatives that require airspace users to purchase and install new avionics, such as data link communications. For example, the JPDO must tackle policy questions that focus on whether or not new systems will be mandated, what incentives will be put in place, and concerns about how to handle "mixed equipage" in the National Airspace System (where aircraft with markedly different capabilities operate in the same airspace).

ATTACHMENT A

Improving Management of Major Acquisitions and Controlling Capital Costs

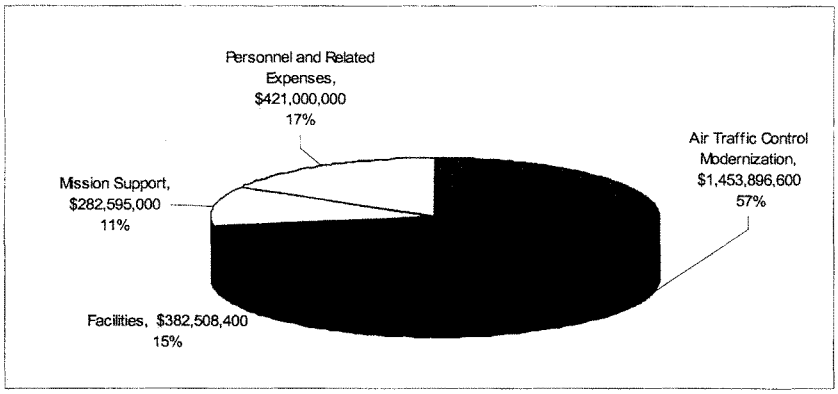
FAA's capital account is the principle vehicle for modernizing the National Airspace System, and the ATO represents the largest portion of this account. Historically, FAA's major acquisition projects have experienced considerable cost growth, schedule slips, and shortfalls in performance. While the ATO has made some progress, key decisions affecting billion dollar acquisitions remain to be made.

For FY 2006, FAA is requesting $2.4 billion in the Facilities and Equipment (F&E) account for the Agency's major acquisition programs. FAA is requesting slightly less for modernization than it did last year and significantly less than the $2.9 billion level received in FY 2004. FAA's FY 2006 request is $500 million less than the investment level called for in Vision 100.

At this Subcommittee's request, we recently reviewed 16 of the ATO's major acquisitions. We found that 11 of these projects have experienced cumulative cost growth of about $5.6 billion, which is more than double the amount of FAA's FY 2006 request for F&E programs. Additionally, 10 of these 16 projects account for schedule delays ranging from 2 to 12 years, and 2 have been deferred until at least 2008. We will be issuing a report on our results later this month.

We note that the ATO's modernization efforts are increasingly focusing on infrastructure sustainment. This includes major efforts to improve systems at facilities that manage air traffic at higher altitudes and in the vicinity of airports. As illustrated in Figure 4, of the $2.5 billion funded in FY 2005, a little more than $1.4 billion or 57 percent will be used for developing and acquiring FAA's air traffic modernization projects. The remaining funds are used for personnel-related expenses, mission support (support contracts), and FAA facilities.

Figure 4. FAA's FY 2005 Facilities and Equipment Budget



The ATO has deferred several long-term programs that often rely on user equipage, such as the Local Area Augmentation System (LAAS), the Next Generation Communications (NEXCOM) system, and the Controller-Pilot Data Link Communication (CPDLC) system. While it is true these projects had merit, they also faced unresolved issues of cost, schedule, and implementation.

The ATO has recognized the importance of having more accurate cost information and is rethinking its overall approach to modernization. The ATO is also seeking ways to reduce operating costs through the modernization account. This is important because the vast majority of past and current projects in the acquisition pipeline have not reduced operating costs. *Notwithstanding recent efforts to rebaseline some programs, key decisions need to be made.* For example:

- ***STARS*** is a program to replace computers, software, and controller workstations at TRACONs and towers. Faced with additional cost growth with STARS, the FAA is studying its terminal modernization approach—a long overdue step. In April 2004, after receiving a revised cost estimate of more than $2 billion for 162 sites, FAA limited STARS deployment to 50 sites. In FY 2005, FAA plans to determine whether additional sites should be approved. Thus, a program that was originally estimated to cost less than $1 billion could cost more than $2 billion. If approved for all sites, deployment will not be complete until 2012—a 7 year delay compared to its original planned completion date.

  Because of STARS schedule delays, FAA replaced aging computers at 141 terminal sites between 1998 and 2003. However, the Agency did not

replace aging controller displays at most of these sites. Of urgent concern is the state of aging displays at four large sites, including Chicago and Denver. For example, controller displays at Denver are locking up randomly—FAA officials told us that this problem has occurred 100 times in the past 3½ years and now is occurring a little over once a week. Under FAA's current plan, the Agency will not begin installing STARS and replacing the aging displays at the four large sites until sometime in FY 2008. We recently reported that FAA could replace aging displays more quickly and save $268 million compared to the cost if it waits for STARS.

- ***WAAS*** is a new satellite-based navigation system that is intended to impact all phases of flight and augments Global Positioning System (GPS) satellites. In May 2004, FAA rebaselined WAAS and raised the program's cost estimate from $2.9 billion to $3.3 billion. FAA now intends to provide a capability called "LPV" in late 2008, which is less than the program's original goal of Category 1 performance. The principle beneficiaries of WAAS will be general aviation and some regional carriers because large commercial air carriers already have sophisticated onboard systems.

  We see the key risks to WAAS implementation being the development of flight procedures and how quickly airspace users will equip with new avionics. Additionally, FAA is adding new software to resolve safety-critical technical and performance issues. FAA also must effectively manage a contract with Lockheed Martin to procure and place into orbit new satellites to improve WAAS availability and coverage throughout the United States.

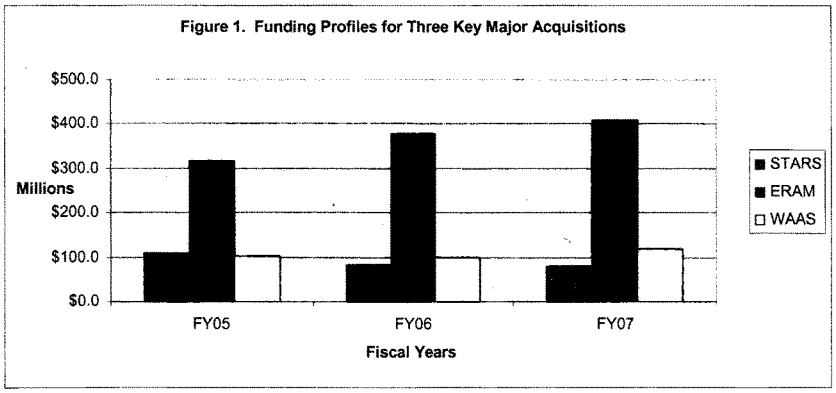
  FAA still intends to pursue Category 1 capabilities and plans to make a formal decision in 2007. However, we believe a decision could be made much sooner. To provide Category 1 capability, FAA now depends on the Department of Defense's (DOD) plans to enhance the GPS satellite constellation (i.e., a second civil signal for aviation use). Given shifting benefits, and uncertainty regarding DOD plans, we question whether or not FAA should commit funds for Category 1 development. A decision not to pursue Category 1 would significantly reduce the $3.3 billion cost of WAAS.

The ATO can also take steps now with a multibillion dollar program that is still in its early stages. At an expected cost of $2.1 billion, the ERAM program is one of the most expensive and complex acquisitions in FAA's modernization portfolio. Because FAA expects the Host computer hardware and software—the brains and central nervous system of the National Airspace System—to be obsolete within the next 5 years, the Agency has placed a high priority on fielding ERAM at its

20 en route centers nationwide by 2010. The organization is already spending more than $240 million a year, which will rise to more than $300 million next year, on the program.

Additionally, as noted in Figure 5, FAA is planning to spend from $500 million to $600 million annually on STARS, WAAS, and ERAM over the next 3 years, which equals about a third of the available funds used to support air traffic control acquisitions during that same period. This leaves little room for additional cost growth with FAA's acquisitions, and requires the Agency to make funding decisions that provide the greatest benefits.

Figure 5. Three Key Major Acquisitions Will Consume About One-Third of the ATO's Available Modernization Funds



Because of the size, complexity, and cost of the ERAM effort, any cost increase will likely have cash flow implications for the entire modernization account. The ATO is pursuing ERAM through a predominantly cost-reimbursable contract already valued at about $1.2 billion. Cost-reimbursable contracts place most of the risk with the Government.[3] We note that FAA's problem-plagued Advanced Automation Systems and, more recently, STARS development also used cost-reimbursable contract types. In both cases, requirements and cost growth became unmanageable.

[3] FAA uses two primary types of acquisition contracts: cost-reimbursable and fixed price. A cost-reimbursable contract places most of the risk with the Government because the contractor is entitled to be reimbursed for all authorized costs, even if the contractor overruns estimates.

The ATO can take proactive steps now to keep this critical effort on track over the next several years:

- ***Contract Management:*** Our work on a wide range of major acquisitions over the years shows that FAA has been plagued by an inability to manage long-term complex automation projects with cost-reimbursable contracts, particularly when requirements are not well understood. This has led to significant cost growth and unmet expectations with major acquisitions. Although the ERAM contract is already valued at about $1.2 billion, the prices of a number of contract elements have not yet been negotiated. These include, among other things, maintenance and logistic support. *The ATO needs to reduce cost risk with the multibillion dollar ERAM by ensuring that requirements are well-defined and maximizing the use of fixed priced agreements rather than cost-reimbursable ones.*

- ***Software Development:*** The ATO can reduce ERAM schedule and technical risk by focusing development on the first software release. The first release is well defined, focuses on Host replacement, and will provide some capabilities that do not exist today, such as increased surveillance coverage. We note that in addition to acquiring new hardware, Release #1 work involves developing, integrating, and testing 1.3 million lines of software code to replace the Host beginning in FY 2009. We note that to date the contractor reports modest software code growth of about 70,000 lines. Moreover, the ATO has yet to define, price, or negotiate later software releases to provide advanced capabilities.

  These factors argue for focusing the scope of ERAM work on the first release and deferring plans for additional ERAM features. In the past, FAA has allowed complex software development to grow without sufficient consideration given to cost implications. This was particularly true with STARS when the planned scope of software development grew from about 800,000 lines of code to more than 1.2 million, with major ramifications for cost and schedule. The ATO needs to ensure that ERAM software development does not follow suit.

- ***Value Engineering:*** The ERAM program may also benefit from a value engineering analysis. The purpose of value engineering is to analyze a series of design alternatives and consider appropriate trade-offs among system capabilities, schedules, costs, and other factors and recommend the most cost-beneficial technical solutions to a given problem.[4] Although

[4] FAA policy directs the following factors to be included in value engineering analysis: reliability, testability, supportability, survivability, compatibility, and producibility.

ERAM is underway, FAA can still benefit from applying value-engineering principles to potentially identify savings. Currently, the ATO plans to deploy 20 computer systems to its 20 en route facilities, which is the Host configuration setup established in the 1960's. However, the ATO can take steps now, independent of larger questions about facility consolidation, by examining the benefits of centralizing computer systems and how savings could be achieved.

We will be issuing our report on ERAM later this month.

STATUS OF 16 KEY MODERNIZATION PROJECTS

Program	Estimated Program Costs (Dollars in Millions)		Percent Cost Growth	Implementation Schedule		Schedule Delay
	Original	Current		Original	Current	
WAAS	$892.4	$3,339.6	274%	1998-2001	2005-2013	12 years
STARS	$940.2	$2,760.4	194%	1998-2005	2002-2012	7 years
NEXCOM	$406.0	$986.4	143%	2002-2008	2002-TBD	Deferred
FTI	$205.5	$310.2	51%	2002-2008	2004-2008	2 years
OASIS	$174.7	$251.0	44%	1998-2001	2002-TBD	4 years
ADS-B	$215.1	$294.8	37%	2001-TBD	2001-TBD	N/A
ASR-11	$743.3	$1,003.0	35%	2000-2005	2003-2013	8 years
NIMS	$273.7	$362.3	32%	1997-2000	2001-2010	10 years
LAAS	$530.1	$696.1	31%	2002-TBD	2006-TBD	Deferred
ASDE-X	$424.3	$505.2	19%	2003-2007	2003-2009	2 years
ITWS	$276.1	$286.1	4%	2002-2003	2002-2009	6 years
ATCBI-6	$281.8	$282.3	N/A	2000-2004	2002-2009	5 years
FFP2	$546.2	$495.8	N/A	2003-2005	2003-2007	2 years
ERAM	$2,154.6	$2,141.9	N/A	2009-2010	2009-2010	N/A
ECG	$315.1	$315.1	N/A	2003-2005	2004-2005	N/A
ATOP	$548.2	$ 548.2	N/A	2004-2006	2004-2006	N/A
Total	**$8,927.3**	**$14,578.4**				**2 to 12 years**

Source: Project specific acquisition program baselines or FAA's Capital Investment Plan
N/A: Not applicable
TBD: To be determined

Definitions of Program Acronyms

Program	Definition of Program Acronym
1. WAAS	Wide Area Augmentation System
2. STARS	Standard Terminal Automation Replacement System
3. NEXCOM	Next Generation Air/Ground Communications
4. FTI	FAA Telecommunications Infrastructure
5. OASIS	Operational and Supportability Implementation System
6. ADS-B	Automatic Dependent Surveillance-Broadcast
7. ASR-11	Airport Surveillance Radar-11
8. NIMS	NAS Infrastructure Management System
9. LAAS	Local Area Augmentation System
10. ASDE-X	Airport Surface Detection Equipment-X
11. ITWS	Integrated Terminal Weather System
12. ATCBI-6	Air Traffic Control Beacon Interrogator-6
13. FFP2	Free Flight Phase 2
14. ERAM	En Route Automation Modernization
15. ECG	En Route Communications Gateway
16. ATOP	Advanced Technologies and Oceanic Procedures

ATTACHMENT B

Controlling Costs of Operating the Air Traffic Control System

This past year, the ATO has made some notable steps in beginning the process of controlling operating costs. A significant accomplishment was the completion and subsequent contract award of its A-76 competition for the Organization's Flight Services. According to FAA, the contract with Lockheed Martin is expected to save the ATO about $1.7 billion over the next 10 years.

The ATO has also embarked on several programs that are designed to increase accountability for costs. For example, the ATO is in the process of developing financial budgetary planning and reporting by location. The new program will hold air traffic facility managers accountable for submitting and meeting annual budgets for their location. (Until the introduction of this program, most facility managers were neither assigned nor accountable for a facility budget.) Clearly, those efforts represent progress on the part of the ATO towards its goal of becoming a performance-based and cost-driven organization. However, much more effort is needed if the ATO is to operate more like a business, particularly in terms of controlling costs. We see several significant challenges in terms of operating costs that will need to be addressed in the ATO's next steps.

- ***Implementing an Effective Cost Accounting and Labor Distribution System.*** A critical tool for controlling costs is an accurate cost accounting system to identify where and when costs are incurred. Cost accounting is a basic tool that the private sector uses to improve operational effectiveness and control costs. The ATO (and FAA) have made deployment of an effective cost accounting system a priority and plan to have a fully operational system in place by September 2006.

  However, there are several significant challenges that will need to be addressed. The ATO must revamp the system to account for its recent organizational changes, begin assigning actual labor costs and other unassigned service costs to facilities and activities (which is the first requirement to effective budgeting by location), and link performance measures to the cost accounting system. Those efforts are critical for achieving performance efficiencies and cost savings.

  A reliable system to track labor costs is also a basic requirement for an effective cost accounting system. Labor distribution is the process of

associating labor cost directly with activities and services by requiring employees to record their time worked on specific activities. FAA is deploying a labor distribution reporting system for the ATO which, when fully deployed, will be used by about 35,000 employees and will include about $3.8 billion in labor costs for air traffic controllers and maintenance technicians.

The labor distribution system also requires enhancements before it can capture complete information about the activities worked on by employees. For example, it does not identify the off-scope activities or collateral duties that air traffic controllers perform. It also does not require employees to enter actual start and stop times or record collateral duties by function. FAA and the ATO have made a commitment to implement the labor distribution system, correct these deficiencies by June 2005 and link this labor distribution system to the cost accounting system by December 2005.

- ***Addressing an Expected Surge in Controller Attrition.*** A significant cost driver now facing the ATO is addressing an expected surge in controller retirements. Over the next 10 years, the ATO estimates that approximately 73 percent of the organization's nearly 15,000 controllers will become eligible to retire. The ATO is anticipating a need to train and hire 12,500 new controllers over the same 10-year period in order to have enough recruits in the pipeline to meet anticipated needs. A substantial challenge for the organization will be to hire and train these new controllers within a severely constrained budgetary environment.

  At the direction of Congress, in December the ATO issued a report outlining its plans for addressing controller staffing over the next 10 years. In our opinion, the plan is a good first step in that it lays out the magnitude of the issue and establishes broad measures for meeting the challenge. However, there are notable gaps in the plan that need to be addressed in subsequent reports to Congress. For example, the ATO has not identified the annual and total costs for hiring and training the number of new controllers it says it needs over the next 10 years or identified the offsetting savings it will realize from retiring controllers.

  An important point worth noting is that new controllers will generally have lower base salaries than the retiring controllers they replace. Over time, this could help reduce the ATO's average base salary and, in turn, help reduce the organization's operating cost growth. However, if the ATO does not place new controllers where and when they are needed, the potential reductions in base salaries will be offset by lower productivity from placing too many or too few controllers at individual facilities.

The staffing plan also does not provide details on planned staffing by location. That level of detail is critical because the ATO has over 300 air traffic control facilities—many with significant differences in the levels of air traffic they manage and the complexity of operations they handle. Some facilities are key locations (like Chicago O'Hare) that have the potential to significantly impact operations of the entire National Airspace System. The ATO recognizes this need, has committed to evaluate its facility staffing standards beginning this year, and intends to have the first group of facilities (en route centers) completed by March 2006.

Facility-level details are also necessary because the staffing plan assumes a dramatically increased percentage of trainees within the controller workforce (from 15 percent of the total workforce to 35 percent). To effectively manage that kind of increase, facility managers will need to know how many new controllers will be hired for their location and when so managers can begin planning the logistics needed to handle the increase (i.e., determining the number of experienced controllers that will be needed to perform on-the-job training duties and determining the amount of overtime that will be required to maintain operations).

We will be issuing our report on FAA's staffing plan later this month.

- ***Negotiating a New Collective Bargaining Agreement With the ATO's Largest Union.*** Another critical issue for the ATO will be negotiating a new collective bargaining agreement with the National Air Traffic Controllers Association (the union representing the ATO's largest workforce). The existing collective bargaining agreement expired in September 2003 but was extended by the union and the Agency for an additional 2 years. The extension is now due to expire in September 2005. An important part of those negotiations will be discussions concerning workforce productivity.

  Although new controllers will generally have lower base salaries than the controllers they replace, it is unlikely that significant reductions in operating cost growth can be achieved without substantial improvements in the organization's workforce productivity. Initiatives such as new air traffic systems, technological improvements, work rule changes, efforts to redesign the National Airspace System, and consolidating locations all have the potential to significantly improve productivity. In light of the expected surge in controller attrition, it will be important for the ATO to have new productivity initiatives and new work rules in place and operating effectively as the organization begins hiring and training the next generation of air traffic controllers.

ATTACHMENT C

Getting Airspace Redesign Efforts on Track To Enhance the Flow of Air Traffic

Revamping the Nation's airspace is critical to enhancing capacity and meeting the demand for air travel, which is rebounding to 2000 levels in terms of flights and delays. In fact, the most recent holiday season was projected to be the busiest in 5 years, exceeding 2000 holiday traffic levels by 1.5 percent—a period when air travel was at a peak.

Airspace changes are critical to get the most benefits from new runways. For example, the capacity increases and delay reductions envisioned through the Chicago O'Hare Modernization Plan (the addition of one new runway, extension of two runways, and relocation of three others) depends on significant airspace changes. For the first stage of the plan expected to be complete in 2007 (the new north runway only), a combination of airfield and airspace changes provides for more than a 50 percent reduction in the average minutes of projected delay per flight, from 19.6 to 9.6 minutes. FAA and Mitre analyses show the new north runway, without corresponding airspace changes, will have little impact on delays.

Even without new runways, airspace changes can reduce congestion and enhance the flow of air travel. FAA's Choke Point initiative—the Agency's effort to revamp airspace done in response to delays that reached intolerable levels in 2000—focused on eliminating bottlenecks east of the Mississippi. FAA reports that the Choke Point initiative reduced delays and resulted in an annual savings to airspace users of $70 million. The Choke Point initiative was successful because it was placed on a fast track, had significant management oversight, and linked plans and resources—all of which are best practices that need to be transferred to all airspace projects.

We reviewed the 42 approved airspace redesign projects in FY 2004 and found that FAA's overall process for controlling costs, mitigating risks, and coordinating local, regional, and Headquarters efforts is not effective. The management and oversight of airspace projects is diffused and fragmented between FAA Headquarters and various local FAA facilities. Specifically, we found:

- Cost and schedule estimates for the vast majority of airspace redesign projects are not reliable. Cost estimates—for the program as well as individual projects—include only costs for planning, not for implementation. Therefore, we could not, nor could FAA, determine the cost of implementing the 42 approved projects in FY 2004.

- FAA's redesign projects are often delayed 3 years or more because of changes in a project's scope, environmental issues, and problems in developing new procedures for more precise arrival and departure routes. For example, of the 42 approved projects in FY 2004, 7 were affected by environmental concerns, 10 by problems in developing new procedures, and 21 by changes in a project's scope.

- Projects are not effectively coordinated among Agency organizations that manage resources (e.g., new equipment and radio frequencies) or linked to the Agency's budget process. This directly affects a project's implementation. We found that 19 of the 42 approved projects in FY 2004 had unresolved equipment issues.

FAA needs to get its airspace redesign efforts on track by determining what reasonably can be expected of the projects and when they can be completed. There are also opportunities for the ATO to make airspace redesign projects considerably more cost effective, including prioritizing projects, assessing a project's impact on the rest of the National Airspace System, and re-evaluating roles and resources at both the Headquarters and regional level. We will be issuing our report on FAA's airspace redesign efforts shortly.

ATTACHMENT D

Next Steps for the Joint Planning and Development Office

A critical effort to help meet the anticipated future demand for air travel is the JPDO. The establishment of this new office at FAA was mandated by the Congress to coordinate research and development efforts among diverse Federal Agencies (including the Departments of Defense, Homeland Security, and Commerce and the National Aeronautics and Space Administration) and is expected to develop a vision for the next generation air traffic management system in the 2025 timeframe. FAA is requesting $18 million for the JPDO in FY 2006, an increase of $13 million over last year's level of $5 million.

This past December, the JPDO published its first plan for moving forward. It laid out goals, strategies, and research directions but did not provide details on what specific technologies would be pursued or how much it might ultimately cost to transition to the next generation air traffic management system.

It is important to set some expectations for the JPDO. This is important for both the Congress and various aviation stakeholders. In that regard, we see several core imperatives for the next year.

- ***Aligning budgets and plans of diverse Federal agencies to transition new capabilities into the National Airspace System.*** Leveraging research dollars is particularly important in today's resource constrained environment and given the fact that FAA conducts very little longer-term air traffic management research in its Research, Engineering, and Development (RE&D) account. FAA is requesting $130 million for RE&D for FY 2006 but the majority of research will focus on safety-related concerns such as aging aircraft and fire safety. FAA has historically conducted significant development work in its F&E account, but most of the work focuses on systems already in the development pipeline. FAA is requesting over $200 million for development work (called Engineering, Development, Test, and Evaluation) in the F&E account for FY 2006.

  NASA is an important part of the JPDO effort because it now conducts a significant amount of civil aviation related research. NASA is requesting $852 million for aeronautics research for FY 2006, which includes $459 million for vehicle systems, $200 million for airspace systems, and $193 million for aviation safety and security. NASA expects to spend over $700 million annually on aeronautics research from FY 2007 to FY 2010.

NASA's investments are exclusive of research conducted by the Department of Defense and other members of the JPDO.

The JPDO intends to rely on a senior policy committee chaired by the Secretary of Transportation; interagency integrated product teams; and an institute to align research budgets, coordinate efforts (both Federal and private), and ultimately transition new systems into the National Airspace System. It is not yet clear how the new office will shift from its initial planning efforts to the hard work of aligning budgets and plans, leveraging a wide range of research, and getting new capabilities ready for implementation into the National Airspace System.

Our past work shows FAA has experienced mixed success transitioning systems developed by other agencies into the National Airspace System. For example, FAA ultimately abandoned work on an automated controller tool developed by NASA (the Passive Final Approach and Space Tool) for sequencing and assigning runways to aircraft because of complex software development and cost issues. This underscores the need to set realistic expectations for the JPDO.

- ***Strategies are needed for what can be done in 5- and 10-year intervals.*** The primary objective of the office is to develop a vision for next generation air traffic management system in the 2025 timeframe. However, given expected growth in demand and the fact the much of the current modernization portfolio focuses on infrastructure sustainment, potential improvements set in 5- and 10-year intervals are also warranted. The new office has begun examining what can be done in shorter timeframes through demonstration projects.

  In its December 2004 plan, the JPDO promised to provide Congress with a roadmap for how to move forward in various timeframes. FAA should provide, with a degree of specificity, what can be done in the near term and what "core technologies" will be pursued and how they can be implemented. *This will, of course, require adjustments to the Flight Plan as well as the Operational Evolution Plan. Determining what can be done in shorter intervals is also important to establish funding levels for the ATO.*

- ***Finally, the JPDO needs to examine barriers to transforming the National Airspace System that have impacted past FAA programs and how they can be overcome.*** Our work on many major acquisitions shows the importance of clearly defined transition paths, expected costs (for both FAA and airspace users), and benefits in terms of reduced delays and

reduced operating costs. This is particularly important for initiatives that call for airspace users to purchase and install new avionics. FAA canceled the controller-pilot data link communications program specifically because of uncertain benefits, concerns about user equipage, cost growth, and impact on FAA's operations budget. The inability to link data link schedules with other modernization efforts, such as the new multi-billion ERAM, was also a factor.

Other critical barriers to be overcome include how to ensure new systems are certified as safe for pilots to use and getting the critical expertise in place at the right time. Problems with the Wide and Local Area Augmentation Systems were directly traceable to these problems.

The JPDO must address policy questions, as well as technology development. For example, key policy questions focus on whether or not new systems will be mandated, what incentives will be put in place, and how to handle "mixed equipage" in the National Airspace System (where aircraft with markedly different capabilities operate in the same airspace).

ATTACHMENT E. RELATED OFFICE OF INSPECTOR GENERAL AUDITS 1998 - 2004

Operations

- FAA's Actions To Address Leave and Overtime Abuse at Five Locations – AV-2004-081, September 9, 2004
- Short- and Long-term Efforts to Mitigate Flight Delays and Congestion – CR-2004-066, June 17, 2004
- Opportunities To Improve FAA's Process for Placing and Training Air Traffic Controllers in Light of Pending Retirements – AV-2004-060, June 2, 2004
- Using CRU-X To Capture Official Time Spent on Representational Activities – AV-2004-033, February 13, 2004
- FAA's Management of Memorandums of Understanding with the National Air Traffic Controllers Association – AV-2003-059, September 12, 2003
- Safety, Cost and Operational Metrics of the Federal Aviation Administration's Visual Flight Rule Towers – AV-2003-057, September 4, 2003
- FAA's Oversight of Workers' Compensation Claims in Air Traffic Services – AV-2003-011, January 17, 2003
- FAA's National Airspace System Implementation Support Contract – AV-2003-002, November 15, 2002
- FAA's Air Traffic Services' Policy of Granting Time Off Work To Settle Grievances – CC-2002-048, December 14, 2001
- Subcontracting Issues of the Contract Tower Program – AV-2002-068, December 14, 2001
- Automated Flight Service Stations: Significant Benefits Could be Realized by Consolidating AFSS Sites in Conjunction with Deployment of OASIS – AV-2002-064, December 7, 2001
- Compensation Issues Concerning Air Traffic Managers, Supervisors, and Specialists – AV-2001-064, June 15, 2001
- Technical Support Services Contract: Better Management Oversight and Sound Business Practices Are Needed – AV-2000-127, September 28, 2000
- Contract Towers: Observations on FAA's Study of Expanding the Program – AV-2000-079, April 12, 2000
- Staffing: Supervisory Reductions Will Require Enhancements in FAA's Controller-in-Charge Policy – AV-1999-020, November 16, 1998
- Personnel Reform: Recent Actions Represent Progress but Further Effort Is Needed To Achieve Comprehensive Change – AV-1998-214, September 30, 1998

Acquisition and Modernization

- Report on Terminal Modernization: FAA Needs To Address Its Small, Medium, and Large Sites Based on Cost, Time, and Capability – AV-2005-016, November 23, 2004
- FAA's Advanced Technologies and Oceanic Procedures – AV-2004-037, March 31, 2004
- FAA Needs To Reevaluate STARS Costs and Consider Other Alternatives – AV-2003-058, September 10, 2003
- Status of FAA's Major Acquisitions – AV-2003-045, June 27, 2003
- Integrated Terminal Weather System: Important Decisions Must Be Made on the Deployment Strategy – AV-2003-009, December 20, 2002
- FAA's Progress in Developing and Deploying the Local Area Augmentation System – AV-2003-006, December 18, 2002
- Follow-up Memo to FAA on STARS Acquisition – CC-2002-087, June 3, 2002
- Letter Response to Senator Richard Shelby on FAA's Advanced Technologies and Oceanic Procedures (ATOP) – CC-2001-210, April 12, 2002
- Status Report on the Standard Terminal Automation Replacement System – AV-2001-067, July 3, 2001
- Efforts to Develop and Deploy the Standard Terminal Automation Replacement System – AV-2001-048, March 30, 2001

Aviation Safety

- Observations on FAA's Controller-Pilot Data Link Communications Program – AV-2004-101, September 30, 2004
- Report on FAA Controls Over the Reporting of Operational Errors – AV-2004-085, September 20, 2004
- Review of Air Carriers' Use of Aircraft Repair Stations - AV-2003-047, July 8, 2003
- Operational Errors and Runway Incursions - AV-2003-040, April 3, 2003
- Air Transportation Oversight System (ATOS) - AV-2002-088. April 8, 2002
- Oversight of FAA's Aircraft Maintenance, Continuing Analysis, and Surveillance Systems - AV-2002-066, December 12, 2001
- Further Delays in Implementing Occupational Safety and Health Standards for Flight Attendants Are Likely - AV-2001-102, September 26, 2001
- Despite Significant Management Focus, Further Actions Are Needed To Reduce Runway Incursions - AV-2001-066, June 26, 2001

These reports can be reviewed on the OIG website at http://www.oig.dot.gov.

U.S. House of Representatives
Committee on Transportation and Infrastructure
Washington, DC 20515

Don Young
Chairman

Lloyd A. Jones, Chief of Staff
Elizabeth Maggianou, Chief Counsel

James L. Oberstar
Ranking Democratic Member

David Heymsfeld, Democratic Chief of Staff

April 29, 2005

The Honorable Kenneth Mead
Inspector General
U.S. Department of Transportation
400 7th Street, S.W.
Washington D.C. 20590

Dear Mr. Mead:

On April 14, 2005, the Subcommittee on Aviation held a hearing on "Transforming the Federal Aviation Administration: A Review of the Air Traffic Organization and the Joint Planning and Development Office."

Attached are questions from Rep. Ellen O. Tauscher to answer for the record. I would appreciate receiving your written responses within 30 days so that they may be made a part of the hearing record.

Sincerely,

Jerry F. Costello
Ranking Democratic Member
Subcommittee on Aviation

JFC:pk
Attachment

Questions and Answers for Representative Tauscher from the ATO and JPDO Hearing

1. Inspector General Mead, has the Inspector General's office audited the results of the above stated comparison between STARS and Common ARTS?

Although we have called for a direct comparison between STARS and Common ARTS for a number of years, FAA has not yet completed this analysis. In September 2003, and again in November 2004, we recommended that FAA conduct a direct comparison of the costs and benefits of STARS versus Common ARTS. Until FAA does so, we are not in position to review the results.

FAA continues to review its plans and no decisions have been made. We are concerned that the analysis to support a decision in June about terminal modernization will not include a comparison of all of the sites that still need modernization. We have been told by FAA officials that the Agency will only address a limited number of sites (less than 10) in June—not a comprehensive review of all sites as expected. It appears that decisions for the majority of sites will be postponed into the future.

As we noted in our November 2004 report, the essential question facing FAA is how to best finish terminal modernization expeditiously, while addressing the needs of its small, medium, and large sites measured against the three factors: cost, time, and capability. FAA needs to make decisions and move forward.

2. Inspector General Mead, I understand that the agency has made a decision to install Common ARTS color displays at several critical sites, including Chicago. Given air traffic controllers concerns at additional sites, such as St. Louis and Minneapolis, will the agency install these color displays at all critical sites? If not, why not?

We note that FAA has requested $20 million in its Fiscal Year 2006 budget to replace aging displays at Chicago and Denver. However, program officials told us that no final decision has been made concerning replacing the displays at these sites. Given the ongoing problems with the displays, this is an urgent matter and action needs to be taken. Also, FAA has not made a decision about replacing the displays at St. Louis and Minneapolis, or other sites. According to FAA, terminal modernization efforts for the next three years will be decided in late June.

OPENING STATEMENT OF
THE HONORABLE JAMES L. OBERSTAR
AVIATION SUBCOMMITTEE
TRANSFORMING THE FEDERAL AVIATION ADMINISTRATION (FAA):
A REVIEW OF THE AIR TRAFFIC ORGANIZATION AND THE JOINT PROGRAM DEVELOPMENT OFFICE (JPDO)
APRIL 14, 2005

I want to thank Chairman Mica and Ranking Member Costello for calling today's hearing on *Transforming the Federal Aviation Administration (FAA): a Review of the Air Traffic Organization (ATO) and the Joint Program Development Office (JPDO).*

Mr. Chairman, commercial aviation is on track to exceed 1 billion passengers by 2015. At the same time, much of FAA's infrastructure—towers, TRACONs, radars, etc. — is past its useful life. The General Services Administration (GSA) rates the average condition of FAA en route centers as poor and getting worse each year.

In VISION 100, Congress created the JPDO to provide a long-term vision for a responsive air traffic system that will address anticipated capacity issues. Unfortunately, the JPDO's vision already appears to be at odds with the reality of declining trust fund balances, budget cuts, and shrinking capital investments dollars. While Secretary Mineta has pledged to "harness technology in a way that triples the capacity of our aviation system over the next 15 to 20 years", in reality, there is a serious disconnect between the rhetoric and the resources being applied to a key issue facing the Nation.

Two years ago, the FAA requested and received from Congress a $3 billion a year authorization for its facilities and equipment (F&E) program – the primary program for modernizing the National Airspace System. However, FAA is now proposing to cut the F&E program well below its authorized level for a second straight year, and the FAA's latest capital investment plan would freeze F&E spending at roughly $2.4 billion for the next 5 years. Compared to what the FAA would have done with a $3 billion a year F&E program, the Agency will now spend 53 percent less over the next four years to technologically enhance the system.

Last December, the JPDO released its *Next Generation Air Transportation System (NGATS) Integrated Plan.* The Next Generation plan provides, in broad terms, one possible direction for the future of our air traffic system. However, over the last two years a number of technology programs that seem to fit with concepts outlined in the plan – such as, satellite-based programs, data link programs and programs designed to enhance user situational awareness - have experienced cancellations, deferrals, extensions, or may simply not be started under the most recent capital investment plan.

Mr. Chairman, it is incumbent upon this Committee to demand specifics and ask tough questions about how the FAA intends to implement the Next Generation plan. While the JPDO's plan provides broad concepts, we will need to know more about the specific technologies that are expected to transform our system. Additionally, we will need to have a serious discussion about cost, resources and financing.

Yet, while Congress must provide the resources necessary for the JPDO to succeed, it must not in any way abandon efforts to control the cost of the FAA's programs. The Inspector General will testify today that 11 of 16 major FAA programs have experienced cumulative cost growth of $5.6 billion, and 10 of these programs have been delayed 2 to 12 years. Overruns and delays on legacy systems cannot be allowed to crowd out our future. This Subcommittee, the Inspector General, and the Government Accountability Office (GAO) must continue vigorous oversight to ensure that the FAA's scarce resources are used effectively and efficiently as possible.

In that regard, I am very pleased that the Chief Operating Officer (COO) of the Air Traffic Organization (ATO), Russ Chew, is with us today to talk about the changes being made at the FAA. In addition to the formation of the JPDO, the FAA has undergone a substantial restructuring over the last two years. The Agency's

Research and Acquisitions, Air Traffic Services, and Free Flight offices have been consolidated into the ATO. This new organization is expected to establish clear objectives, measurable goals, customer service standards and targets for improved cost and performance without any reduction in safety. I look forward to hearing from all of our witnesses about progress and problems at the ATO.

Mr. Chairman, I am also glad to see industry and union representatives, including the employees that operate the system, the National Air Traffic Controllers Association (NATCA) and the Professional Airways Systems Specialists (PASS), here today. The FAA's ability to forge consensus with the industry will be crucial to the success of the JPDO's mission. For example, if aircraft operators are unwilling to pay for upgrades to aircraft equipment to take advantage of new technology, it could pose a serious impediment to the JPDO's efforts to transform the system. I look forward to hearing from industry witnesses about what, specifically, the industry will be doing to support the JPDO.

Thank you once again, Mr. Chairman, for holding this hearing. I look forward to hearing from our witnesses.

Statement of Rep. Jon Porter (R-NV)
House Transportation and Infrastructure Committee
Subcommittee on Aviation
April 14, 2005

Mr. Chairman, I thank you for holding this hearing today on Transforming the Federal Aviation Administration: a Review of the Air Traffic Organization and the Joint Program Development Office.

This hearing should provide us with an understanding of both the challenges and progress that face the Joint Planning and Development Office.

Aviation observers universally recognize that greater efforts must be made to ensure that FAA's scarce resources are used as effectively and efficiently as possible. After almost a decade of Congressional initiatives designed to improve performance and reduce costs - especially in the areas of acquisition and service delivery - the FAA has reorganized itself to create a new performance-based, value-driven organization within the agency to provide air traffic control services

The Joint Planning and Development Office (JPDO), created within the FAA, will lead an inter-agency effort to leverage expertise and resources within NASA, the Departments of Defense, Commerce, Homeland Security, and the Office of Science and Technology Policy. It has begun to develop a unified approach to completely transform the NAS by 2025.

As Chairman of the Federal Workforce and Agency Organization Subcommittee at the Government Reform Committee I share oversight with Chairman Mica on this matter and I would like to work with him in any capacity I can to be helpful.

Mr. Chairman, I thank the witnesses for being here and look forward to their testimony. I yield back.

STATEMENT
OF
JEFFREY N. SHANE
UNDERSECRETARY OF TRANSPORTATION FOR POLICY
BEFORE THE
HOUSE TRANSPORTATION AND INFRASTRUCTURE
SUBCOMMITTEE ON AVIATION
APRIL 14, 2005

Introduction

Mr. Chairman, on behalf of Secretary Mineta I would like to thank you and the distinguished members of the subcommittee for this opportunity to discuss the Next Generation Air Transportation System – or "Next Generation" – initiative. This initiative is one that Secretary Mineta has taken a strong personal interest in, which is why he asked me to be here today to discuss what we have achieved thus far and how we can work with Congress to transform our nation's air transportation system.

Recognizing our Future Needs

FAA's Chief Operating Officer Russell Chew's testimony notes that the FAA and its Air Traffic Organization are doing all that is possible in the short term to increase the capacity of our current air transportation system. These efforts include: building new runways; redesigning airspace to wring out more capacity from the current system; working with industry to help increase operational efficiency; and examining ways to manage demand more effectively at our most congested airports.

In the longer term, however, we know that these short- and mid-term efforts will simply not be enough. The recent FAA aviation forecast provides further evidence that our current system, already coming under stress in some areas, will be stretched to its limit as future demands continue to grow. Passenger totals are expected to exceed one billion by 2015, and we project up to a tripling of passengers, operations and cargo by the year 2025. As Secretary Mineta said in a speech before the Aero Club in January 2004: "The changes that are coming are too big, too fundamental for incremental adaptations of the infrastructure. We need to modernize and transform our air transportation system – starting right now."

I don't need to tell any of you – who all depend so regularly on air transportation – how critical it is to our economy and to our quality of life to have a safe, secure and efficient national aviation system. As noted in the report of the Commission on the Future of the United States Aerospace Industry, consumers could lose as much as $30B annually if people and products cannot reach their destinations within the time periods we expect today. The truth is that air transportation has become part of the very fabric of our nation's economy, and we simply must not allow delays in the system to limit our future growth potential.

The importance of developing such a future system is also quite clear to policymakers in Europe, where a comparable effort is well underway. This presents both a challenge and an opportunity to the United States at this critical time for our nation's aerospace industry. Creating a modernized, global system that provides interoperability could serve as a tremendous boost to the industry, fueling new efficiencies and consumer benefits. Alternatively, we could also see a patchwork of duplicative systems and technologies develop, which would place additional cost burdens on an industry already struggling to make ends meet.

VISION 100 and Creation of the JPDO

In recognition of these challenges, the 108th Congress and President Bush took the first critical step toward transforming our air transportation system by passing and signing into law the Vision 100 – Century of Aviation Reauthorization Act (P.L.108-176), which provides for the development and implementation of an integrated plan for the Next Generation system. The law also provided for the creation within the FAA of the Joint Planning and Development Office (JPDO) to develop the Integrated National Plan that guides the development of this system and manages the work associated with it.

Under the leadership of Administrator Blakey and with her strong support, the JPDO now serves as a focal point for coordinating the research related to air transportation for agencies across the federal government, including the Departments of Transportation, Commerce, Defense and Homeland Security; NASA; and the Office of Science and Technology Policy. Early on, we realized that an initiative of this magnitude and complexity could never be successfully completed by DOT alone, especially in a post-9/11 context. We sought support from others, and they delivered. NASA has been a close partner from the beginning, helping to fund the JPDO and contributing several staff members, including its Deputy Director, and all the other agencies involved have provided invaluable support to the JPDO that has helped us establish a strong, collaborative atmosphere.

Another special feature of this initiative is the high-level participation from each of these organizations. Secretary Mineta chairs a Senior Policy Committee made up of Deputy Secretary-level officials from these organizations that direct the effort and will be responsible for its ultimate success or failure. These individuals have been highly engaged from the outset, and we are grateful for their continued support.

A successful transformation will also require a close partnership with the research community, industry and other stakeholders. The JPDO is establishing a formal structure, which I will describe later in my testimony, to manage these relationships and in doing so ensure a full public-private partnership.

The first product of the JPDO – the Integrated National Plan – was delivered to Congress in December 2004 and can be viewed at www.jpdo.aero. This strategic business plan lays out a common vision for the Next Generation system, establishes benchmarks for success, and creates a structure by which we can design and implement the changes we

need to make. It will be continually updated and expanded each year going forward as we further define the exact specifications and requirements of the Next Generation system.

The Way Forward and the Roadmap to Success

With that as a backdrop, let me now talk about the way forward. Our overarching goal in the Next Generation initiative is to develop a system that will be flexible enough to accommodate very light jets and large commercial aircraft, manned and unmanned air vehicles, small airports and large, business and vacation travelers alike, and to handle up to three times the number of operations that the current system does with no diminution in safety, security and efficiency. Additionally, this system will still need to accommodate the needs of the Department of Defense for flights within this flexible system while providing available Special Use Airspace to meet current and future training requirements.

To coordinate research, development, and implementation efforts that will take us to the Next Generation system, the Integrated National Plan sets out eight major strategies. These strategies focus on those aspects of aviation that hold the keys to capacity and efficiency improvements – airport infrastructure, security, a more agile air traffic system, shared situational awareness, safety, environmental concerns, weather and global harmonization of equipage and operations. For each strategy, there is an Integrated Product Team to refine the actions needed to make the Next Generation system a reality. Each agency involved in the initiative leads at least one of these Teams. These Teams will work closely with our stakeholders to ensure that they have an early window into our thinking and that we take full advantage of their expertise every step of the way.

What truly sets this new structure apart is that it eliminates duplication of effort and gets everyone involved in aviation across the federal government working toward a common goal – creation of a Next Generation system. Moreover, we are using the JPDO process to bring agencies together as we develop the Integrated National Plan in more detail to ensure that all of the different parts of the future system are fully understood and addressed from the outset.

This process ensures full coordination of research across agency lines and between government and the private sector in ways that have not been done in the past. The fact is that we already have a sizable amount of resources being spent each year on air transportation related research. By better coordinating our actions, avoiding duplication and tying these activities together through a long-term, integrated national plan we can maximize the benefits of those public and private investments and target our limited resources more effectively.

Getting Stakeholders Involved

Given the JPDO's unique structure and mission and the Bush Administration's commitment to develop innovative public-private partnerships, the JPDO is employing a

blend of traditional and non-traditional mechanisms to help foster and expand our outreach process.

Existing federal advisory committees will be used to ensure all plans and decisions receive broad review and public comment. These committees include senior-level executives from across industry empowered to provide advice on strategy and transition issues. Let me stress in the strongest possible terms that existing federal advisory committees with an interest in air transportation will continue to play a strong advisory role for the Next Generation system.

We are especially grateful, however, to Dr. John Hamre, former Deputy Secretary of Defense, who agreed to chair a new subcommittee of the FAA's Research, Engineering and Development Advisory Committee (REDAC) focused exclusively on providing high-level advice on development of the Next Generation system. Dr. Hamre and his colleagues have already made enormous contributions to this effort.

In addition to this high-level advice however, we also want to make sure that the preliminary technical plans we propose have the benefit of private sector expertise before they are delivered to these bodies for review. We need the best minds in America across both the public and private sectors working on the task of creating a Next Generation system.

To achieve this, we have entered into an agreement with the Aerospace Industries Association's National Center for Advanced Technologies to establish a Next Generation Air Transportation System Institute (the "Institute") that will allow stakeholders to get directly involved in the transformation process. And while AIA will host the Institute, it will also be co-chaired by the presidents of the Air Traffic Control Association and the Air Transport Association and open for participation by all segments of the industry.

This Institute will provide assistance directly to the JPDO in a number of important areas. For example, it will help populate the eight Integrated Product Teams that will develop the more detailed action plans for achieving the Next Generation system. We want to ensure that the right industry experts are there to participate in deliberations of the Teams in order to provide their unique expertise. Using requirements laid out by each of the Teams, the Institute will solicit expressions of interest from industry representatives and then select the most qualified participants. The Institute will also be called upon to perform specific research in areas identified by the JPDO as critical for implementing the Integrated National Plan.

Next Steps

The JPDO has a very ambitious schedule for this year with a number of important deliverables. Since the December 2004 publication of the Integrated National Plan, the Integrated Product Teams have begun to add detail to their individual contributions to the Next Generation system and set out the actions – system modernization, research and

development, policy issues for resolution – that will be required to achieve that portion of our vision.

The office will also more fully develop the metrics we will use to measure the benefits of the Next Generation system and our performance in delivering those benefits. These more detailed plans can then be included in the second edition of the Integrated National Plan to be delivered to Congress later this year and through the President's FY07 budget submission.

Perhaps most importantly, over the next three years the JPDO and its member agencies will move from planning to actual implementation in creating a Next Generation system. The first step in this direction will be through demonstration projects currently under development. These demonstrations will seek to apply some of the key elements we see in the future system – like shared situational awareness – and test their applicability and readiness for use in the Next Generation system.

Conclusion

Mr. Chairman, the Next Generation Air Transportation System initiative is unprecedented in its scope, complexity and the challenges it will face. Far from being a turn-key operation, it will require years of hard work, managing risk and unparalleled coordination among the many federal agencies and stakeholders involved. The process has now begun in earnest, however, and by aligning our resources and activities through the JPDO, I am confident we will succeed. We will, of course, need strong support from members of Congress, and we therefore look forward to working with all of you on this critical endeavor. Thank you very much for the opportunity to appear before you today, and I look forward to answering your questions.

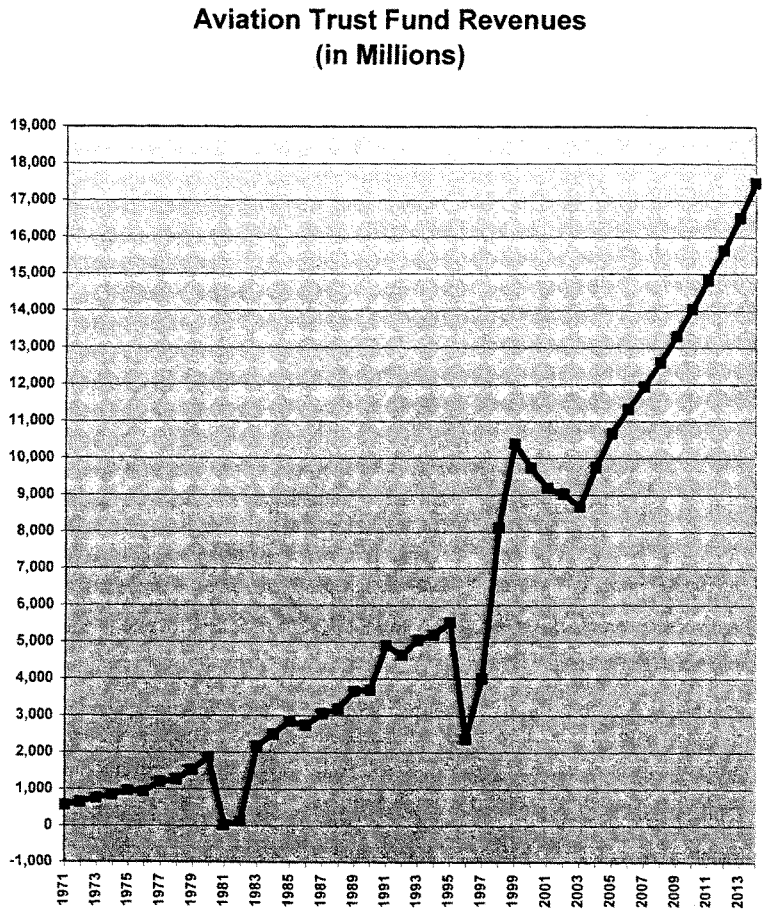
The Aviation Trust Fund:

Revenue Growth at a Time of Shifting Policy

Ruth E. Marlin
Executive Vice President
National Air Traffic Controllers Association

March, 2005

Airport and Airway Trust Fund
Revenue Growth at a Time of Shifting Policy



rates and indexing for the international passenger ticket tax, rural passenger taxes, special taxes for flight to Hawaii and Alaska, added other miscellaneous aviation related excise taxes and shifted the 4.3-cent per gallon aviation fuel from the general fund to the Trust Fund.

The Wendell H. Ford Aviation Investment and Reform Act for the 21st Century, enacted in April of 2000, substantially increased the annual funding for the Airport Improvement Program (AIP). It was intended to ensure that all revenue from aviation related taxes was spent on aviation programs through 2003. It allowed airports to raise passenger facility charges up to $4.50 and increased both the minimum and maximum annual funding available to large airports as well as raising the state apportionment and guaranteeing funding to general aviation airports for the first time.

The Trust Fund provides 100% of the funding for FAA airport grants (AIP), facilities and equipment, and research, engineering and development. Funding from the Trust Fund as well as an appropriation from the General Fund supports FAA Operations. The percentage of Federal Aviation Administration operations that has been funded from Trust Fund revenue has fluctuated from year to year from 0% to 100% depending on Congressional Action.[3] Trust Fund revenue is currently supported by ten dedicated excise taxes:

- 7.5% tax on the price of domestic airline tickets
- 7.5% tax on the value of awards of free or reduced-rate airfares (frequent flyer tickets)
- 7.5% tax on the price of domestic airline tickets to "qualified rural airports" (flight segment fees do not apply if this tax is levied)
- $3 on each flight segment, indexed to inflation starting in 2003 [4]
- 6.25% tax on the price charged for transporting cargo by air
- $0.043 per gallon tax on commercial aviation jet fuel

[3] Federal Aviation Administration, *Airport and Airway Trust Fund (AATF)*, 2004.
[4] In 2004, the flight segment fee increased to $3.10

revenue and not necessarily the general availability of the funding from the source. Smaller fluctuations are more likely source based rather than policy based as can be seen as a result of temporary declines in air travel, including those as a result of the 1991 Gulf War and the September 11 terrorist attacks and subsequent war in Iraq. However, as the fluctuations have been temporary in nature, the structure of the Trust Fund, permitting structural surpluses, has allowed funding for aviation programs to continue with steady funding levels.

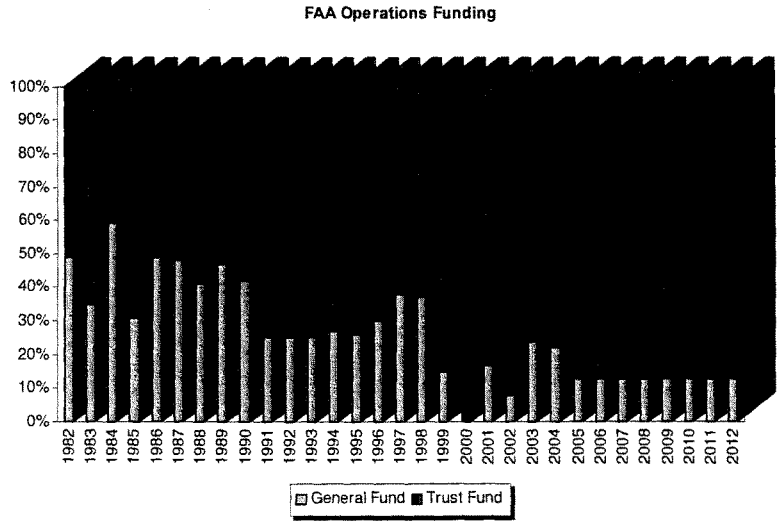
The percentage of the FAA operations that is funded from Trust Fund revenue (and conversely the amount of Trust Fund revenue that is expended) is determined by Congress and has been subject to a number of policy and statutory restraints. From 1982 to 2000, Trust Fund based funding of operations was limited by tying it to levels of capital investment funding. Under the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR 21), specific limitations were put on distribution of Trust Fund revenues specifically requiring that the Airport Improvement Program (AIP) and Facilities and Equipment (F&E) receive Trust Fund allocations under a formula before an allocation for operations is made, and data from 2004 to 2012 (projections) are based on the FY05 President's budget. The projected percentage of funding from the general fund is limited by the President's proposal to 13% of operations, which represents historically low levels.

The question of appropriate use of the Trust Fund is not new. From 1973 to 1976 the Trust Fund was prohibited from financing FAA operations and maintenance. In 1976, Congress capped the amount of Trust Fund revenue available for operations and maintenance and included a penalty clause, which remained in place until 1990. In 1984, the annual appropriations bill specified that only general treasury funds would be used for FAA operations. In February of 1999, the General Accounting Office responded to an inquiry from Representative Frank R. Wolf, Chairman of the Transportation and Related Agencies Subcommittee of the House Appropriations Committee, who asked the General Counsel's office to review the legislative history and advise whether the Airport and Airway Trust Fund was created solely to finance aviation infrastructure.

Transportation Inspector General said, "When trust-fund revenues are less than the FAA budget, the President's proposal and Congress' appropriation can make up the gap with money from the general fund, allocation of trust-fund surpluses built up in previous years, or a combination of both."[9] Russ Chew was reported as saying that in order to match revenue predictions the ATO operating budget would have to be reduced by 21 percent by 2009.[10]

Throughout the Trust Fund's history the revenues had routinely exceeded allocations from the fund, creating large surpluses causing the administrations and lawmakers to consider options available for reducing the aviation trust fund balance as reflected in GAO studies in 1988 and as recently as 2003.

Figure 2: FAA Operations Funding by Source

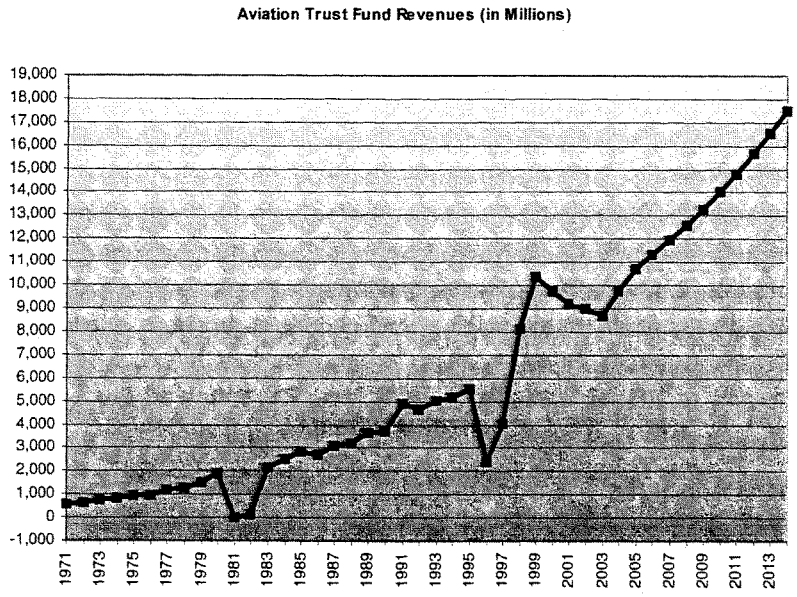


data source: FAA

[9] David Bond, *Collision Course: FAA's Trust Fund isn't What it Used to Be, but Airlines Want Cost Reductions – Not a Fix,* Aviation Week and Space Technology, November 22, 2004

[10] *Chew Says More Cost Controls Needed to Match Revenue Drop,* Aviation Week's The Weekly of Business Aviation, November 8, 2004.

Figure 3: Aviation Trust Fund Revenue



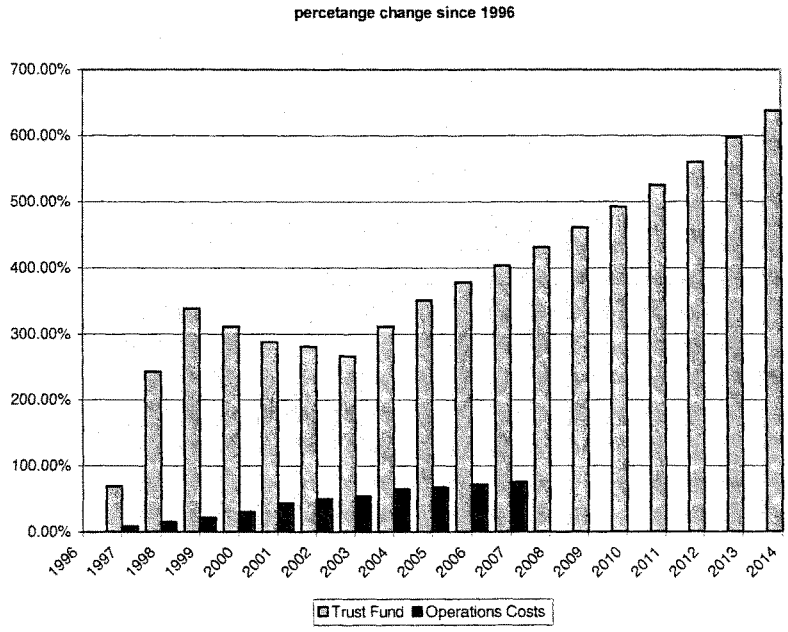
Ops Accounts Growth vs. Trust Fund Growth

Since the mid 1990's the Department of Transportation Inspector General has been highlighting the growth in the FAA operations budget. Trust Fund revenue is the most direct indicator available of the demand placed on the system as it comes directly from the users of the system. So while periodic reviews of the growth in the operations budget have compared it to other FAA budgeted categories, so far the comparisons have not compared the budget growth to the growth in demand and corresponding revenue.

Various reports from the DOT Office of the Inspector General select 1996 as a base year for operations when examining the growth in the budget. The reason for selecting 1996 as the base year is not explicitly stated in the reports, however the year corresponds to the first year under legislation establishing a five-year term for the FAA Administrator. 8

While there are brief periods while the Trust Fund was in decline, yet operations cost increased, the overall picture is quite stable and presents an extremely favorable outlook. Rather than a year-by-year analysis, it is instructive to evaluate both costs and revenue growth over a longer term.

Figure 5: Cumulative Trust Fund Revenue and FAA Operations Cost Changes [12]



However, this approach presents three distinct challenges. First, out-year estimates (2008 and beyond) are based on an estimated percentage increase each year and it is difficult to determine the validity of the assumptions used in making the long term forecast. Second, in 1996 the authority to collect Trust Fund taxes lapsed affecting revenue in both 1996 and 1997. As the revenue levels were depressed in these two years are a result of the

[12] The Trust Fund authority expires in 2007, this chart assumes reauthorization of current excise tax and fee structure

Conclusion

There is no escaping the facts that the expiration of the Trust Fund authority in 1996 following by the sudden decline post September 11, 2001 and the associated increase in security related spending in 2001 and 2002 has caused a reduction in the uncommitted balance of the aviation trust. It is equally true that a policy decision to require the Trust Fund to finance higher than average percentages of the FAA operations costs will place continued pressure on the uncommitted balances. In addition, treating the Aviation Trust Fund as the primary source of funding for operating expenses further reduces the funding available for capital improvements as the legislation originally intended.

FAA data illustrates that while the Airport and Airway Trust Fund suffered a brief but predictable decline as a result of the reduction in air travel post September 11, 2001. It is equally clear that as air travel is increasing, so too is the Trust Fund and continued growth is forecast by the FAA. The question of available resources for FAA operations is limited by policy choices rather than Trust Fund forecasts. The question of Trust Fund allocation and what percentage of FAA operations is appropriately funded from the general treasury vs. the Trust Fund, more so than Trust Fund revenue itself, will determine whether adequate resources are available to meet the demands placed on the system.

NATIONAL ASSOCIATION OF AIR TRAFFIC SPECIALISTS

11303 Amherst Avenue, Suite 4
Wheaton, Maryland 20902

Phone: (301) 933-6228
Fax: (301) 933-3902

STATEMENT FOR THE RECORD

**STATEMENT OF
KATE BREEN, PRESIDENT,
NATIONAL ASSOCIATION OF AIR TRAFFIC SPECIALISTS
ON THE FEDERAL AVIATION ADMINISTRATION AIR TRAFFIC
ORGANIZATION
BEFORE THE
HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
SUBCOMMITTEE ON AVIATION
WASHINGTON, DC
APRIL 14, 2005**

Mr. Chairman and Members of the Subcommittee:

My name is Kate Breen. I began my first year as President of the National Association of Air Traffic Specialists (NAATS) on November 1, 2004. Prior to that time I have worked for the Federal Aviation Administration (FAA) as an air traffic control specialist at the Bridgeport Connecticut Automated Flight Service Station (AFSS), with other assignments at FAA Headquarters as a NAATS liaison to Resource Management and as a NAATS liaison to FAA Headquarters on the AFSS A-76 Study.

NAATS is the exclusive representative of the more than 2,100 controllers and automation specialists who work at the Flight Service Stations (FSS) throughout the United States, and I providing this testimony today to give you their views. I want to note that these dedicated men and women have continued to provide vital safety functions to the flying public during our times of national crises, including the 1981 strike and 9/11.

My testimony will focus on the NAATS cost savings proposal that our organization submitted to the FAA in May of 2003.

The flight service air traffic controllers perform many critical and essential services to the aviation public. Our air traffic controllers are also essential to the safety and security of the national airspace system.

Our controllers provide briefings of weather conditions along a pilot's route of flight. Although this is done with mostly general aviation pilots, we also work with a number of corporate and military pilots, and often times with airline pilots. This is done either with the pilot on the telephone before they depart, or on the radio while they are airborne.

Once a pilot is airborne they will call our controllers and receive information about severe weather conditions such as icing and thunderstorms. Instructions are passed on to them by our controllers on new routes to which they can deviate in order to avoid these conditions.

Traffic conditions are given to pilots by our controllers. These pilots are landing and departing at airports where there is no control tower or at airports where the control tower has closed for the day.

Flight service controllers maintain the nationwide information system that has data on the conditions of runways, significant restricted areas as well as the national enroute navigational system used by pilots to safely guide them along their route of flight.

Flight service controllers are responsible for providing the temporary flight restriction (TFR) information to ensure pilots do not stray into prohibited, restricted or special use airspace. Examples of these are the restrictions during the President's State of the Union Address and the Air Defense Identification Zone restrictions, implemented here in our nation's capital and planned for other sensitive areas across the US. When President Bush travels by air, our responsibility is to disseminate restrictions around the President's flight route. It's hard to imagine a more inherently governmental operation relating to national security. Without doubt the duties performed by FSS controllers are central to the core safety and security mission of the FAA.

Our services are appreciated and valued by our customers, the aviation public. A January 2004 FAA survey of pilots[1] found the following:

- 97.2% of the respondents indicated they obtain weather information from Flight Service Stations,
- 92.4% indicated that they feel the current level of service they receive meets their expectations,
- 86.3% agreed that they rely on Flight Service Stations to act as their primary provider of aviation-related National Security information.

Indeed, the FAA has stated that all of air traffic control (Flight Service, enroute and terminal) is interrelated and interdependent[2]. Further, the FAA has acknowledged that the remarkable air traffic control efforts in the aftermath of the September 11 attacks could not have taken place without the FSS controllers. Already critically short-staffed, the FSS employees absorbed a fourfold or greater increase in workload and were instrumental in accomplishing the agency mission during the trying days that followed.

Notwithstanding all the above, the FAA has indicated that our group of employees could be out-sourced as soon as October, 2005. No congressional approval is required for this action and the FAA has scheduled only limited congressional briefings on this matter.

Pursuant to the out-sourcing initiative, NavCanada and Serco (a British based company) had been approved by the FAA to partner with vendors on A-76 bids thus setting up the scenario of non-US companies providing critical air traffic services.

The FAA business case for subjecting this group of controllers to out-sourcing cites four factors:

1. DOT IG recommendation on consolidation,
2. FAA Studies,

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[1] MTR 04W0000005 MITRE Technical Report, Flight Service Station (FSS) Survey Report, January 2004
[2] Director of Air Traffic letter, dated November 5, 2001

3. OMB Guidance,

4. President's Management Agenda.

I want to address each of these in turn.

1. The DOT IG report did not recommend that the FAA conduct an out-sourcing study[3]. The IG did, however make the following recommendations.

    - The FAA develop a strategy to consolidate the 61 existing automated flight service stations and

    - The FAA ensures the consolidation issues are addressed in collective bargaining negotiations with NAATS.

   The FAA made no attempt to address either of these.

2. FAA Studies. No known FAA studies were ever conducted on potentially outsourcing FSS controllers prior to initiating this process.

3. OMB Guidance. In fact, this guidance recommends that agencies preplan outsourcing studies 12-18 months prior to initiating them. There is no evidence that the FAA did any preplanning prior to commencing this process in May 2002.

4. President's Management Agenda. Actually this does not mandate what groups of employees should be subject to out-sourcing, only that public sector studies should be done where appropriate to determine which public sector functions are inherently governmental.

The FAA will state that the FSS cost of their budget exceeds $500 million a year. Mr. Chairman, the true cost of FSS, both equipment and personnel, is closer to $300 million a year. The only way that the FAA can reach the $500 million figure is to include airways facilities and research and development costs, neither of which is properly attributable to FSS operational costs and is, in fact, not considered as part of the FAA out-sourcing process.

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[3] DOT IG Report Number: AV-2002-064 Date Issued: December 7, 2001

Another piece of misinformation that you may hear is that Flight Service costs are anywhere from $30 to $60 per pilot contact. In reality the FAA has no cost accounting system in place or verified data to even estimate these costs. It would be just as accurate to say that these costs are 50 cents per contact.

The FAA has gone to considerable length to obscure the fact that flight service specialists are actually air traffic controllers as defined in 5 U.S.C. § 2109. This designation is a congressional acknowledgement of the critical and essential duties provided by our group of controllers.

The FAA has also misrepresented the NAATS participation in the FAA A-76 process. In the eventuality that our jobs are out-sourced to the lowest bidder, we obviously believe it is prudent to do what we can to ensure a quality product. We have been allowed to participate, to a very limited extent, on both the performance work statement (PWS) and the in-house FAA bid or most efficient organization (MEO). However you should know that we feel both of these efforts are seriously flawed.

The PWS does not in any way accurately reflect the current responsibilities and duties of flight service controllers. Because of the PWS definition of responsibilities and duties, a private sector bidder will be providing sufficiently less in the way of safety and security services to the general aviation public.

Our participation on the MEO has been very much that of a junior partner. The FAA has the final decision on all matters and has acted accordingly. Our attempts to use consensus for these decisions has been repeatedly rejected. In fact, the part of the FAA responsible for conducting this process, ACA, has stated that all union concerns had to be resolved prior to the contract award date or the MEO bid would be considered high risk. As a result of our unwillingness to waive all bargaining rights for adversely impacted employees, ACA, assigned greater risk to the MEO bid. Clearly that's not the intent of either the A-76 Circular or Chapter 71 of Title 5.

In no way is any part of this A-76 out-sourcing process a joint FAA/NAATS venture. We're simply trying to make the best of a very bad deal.

In addition to flaws in the process of making an award to out-source our federal jobs, the FAA has been extremely slow in making any of the necessary decisions regarding what will happen to current employees directly affected by this process. The FAA does, however, have great interest in pushing ahead as fast as possible with the contract award and the employee concerns are entirely secondary in their consideration and in the approach that they have taken in the out-sourcing award.

It should be noted that not all agencies take such a draconian approach to its employees. The National Institute of Health (NIH) has issued a policy statement from the Secretary of Health and Human Services[4] ensuring its employees they will have a job after the A-76 process. NIH has also addressed a number of other employee concerns. Senior DOT/FAA management has been totally silent on all such matters in relation to our situation[5].

I do not mean to imply that Flight Service shouldn't modernize and improve on its delivery system. Our controllers work with outdated computers and an antiquated management structure that frequently hinders rather than helps them to perform their mission. A-76, however, is the wrong vehicle to accomplish this task.

The latest FAA estimates for conducting this A-76 outsourcing process are that it will cost more than $20 million. This does not include the cost of severance pay and annual leave payments that conservative FAA estimates put at $80 million. In fact, a recent internal FAA study[6] concluded $225 million in unbudgeted expenses will have to be absorbed by parts of the FAA not even subject to the study. This means that no savings will be realized for at least the first three years of any vendor contract and possibly not at all.

In addition to relatively speculative cost-savings, the FAA has no contingency plan in the event of vendor default. In the event of a default, we destroy the system of aviation safety that the general aviation public enjoys today. Once our employees leave employment, they leave for good.

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[4] http://osmp.od.nih.gov/a76.asp
[5] Letter to FAA Administrator, July 6, 2004
[6] Flight Services Operating Plan, June 2, 2004

Mr. Chairman, the foregoing issues are hanging over our heads with no obvious resolution in sight. The topic of this hearing is efforts to make the Air Traffic Organization (ATO) more efficient and safer. We concur with this objective, and to that end, in May 2003 NAATS made an innovative proposal[7] to the FAA that would result in cost savings of $600 million over seven years. This compares favorably with the aforementioned IG report that estimated $500 million cost savings could be realized over the same period. Unlike the current A-76 out-sourcing proposal, our concept would embrace the current technology and enhance our services to the aviation public.

Specifically, our proposal would result in significant reduction in both staffing and facilities without compromising either safety or security. The proposal enhances service to aviation customer by maximizing efficiencies to the voice switch program, allowing productivity gains through communications and improving the efficiency of flight service controllers. Additionally, greater implementation of the OASIS system can be used to improve the quality of aviation safety services, and will ultimately increase controller productivity. These changes along with others that we proposed to the FAA will both reduce cost and improve and increase services.

Commensurate with the implementation of technological enhancements would be the ability to rationally and safely reduce staffing and facility costs by 50% over a seven year period. Ultimately, this could result in close to a thirty percent annual reduction in cost in Flight Service Station operations. We would be happy to provide the Subcommittee with more details on our proposal to reduce costs, while maintaining and enhancing aviation safety and security.

We remain prepared to work with the FAA and our customers to implement our proposal.

By contrast, the FAA award to Lockheed Martin has raised many questions regarding the process used in the award of the contract, and raises the specter of improper actions. We also believe the planned out-sourcing does not provide a guarantee of continued level of service, or safety, and in fact, creates a tension between public safety and the private sector profits of Lockheed Martin.

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[7] NAATS Report on the Future Structure of Flight Service, April 11, 2003

The personnel issues for those employees adversely affected by this award are even more troubling. According to the Lockheed Martin plan, AFSS controllers who are ineligible to retire on October 1, 2005 will lose substantially all of their federal retirement contributions.

Even those controllers fortunate enough to be eligible to retire face inequities. The AFSS controllers covered by FERS are excluded from their full retirement calculation even though they have contributed an extra amount for this consideration[8].

Controllers at the 38 facilities scheduled to close under the Lockheed Martin plan will only have job guarantees of between 6 to 17 months - the amount of time it takes the FAA and Lockheed Martin to close their facilities[9].

In closing I would state that we do not oppose the A-76 process in concept. It makes economic sense to study some jobs for out-sourcing to private industry. However, aviation safety and security considerations require that flight service jobs should remain under governmental control. Simply put, safety should not be put up for sale.

Mr. Chairman, we ask that you and the members of this subcommittee instruct the FAA to stop this ill-considered A-76 out-sourcing process and to work with NAATS to realize the cost savings and enhanced services contained in our proposal. We would emphasize once again, that we do not object to working with the government to achieve cost savings and make aviation travel safer. We have received no serious response at all to our proposal to reduce costs and make the system safer. Instead the FAA has unilaterally determined to out-source aviation safety jobs in the hope that it would reduce costs, not taking into account potential safety and security considerations. At the very least we ask that you delay the process until such time as this Subcommittee is satisfied that out-sourcing to the lowest bidder is proper for this workforce.

Mr. Chairman, thank you for the opportunity to present our views.

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[8] FAA Interpretation of PL 108-176, Section 226

[9] Lockheed Flight Service Station Open House Briefing 3/4/05

NAATS

The National Association of Air Traffic Specialists (NAATS) is a labor union with national exclusive recognition as the bargaining agent for all GS-2152 series Air Traffic Control Specialists employed by the Federal Aviation Administration (FAA) in the Flight Service option. NAATS was certified as the national exclusive bargaining representative in February 1972.

The objectives of NAATS are to promote, enhance and improve the dignity and stature of controllers in the Flight Service option; to improve the hours, wages, and working conditions of NAATS members; to foster public sentiment favorable to reforms sponsored by NAATS; to petition Congress and other government agencies for the enactment and enforcement of laws and regulations that protect and enhance the welfare of our members; and to cooperate with all persons interested in the promotion and advancement of aviation safety and services. As we say in our motto, "Aviation Safety Is Our Business."

April 29, 2005

The Honorable Russell G. Chew
Chief Operating Officer
Air Traffic Organization
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, D.C. 20591

Dear Mr. Chew

On April 14, 2005, the Subcommittee on Aviation held a hearing on "Transforming the Federal Aviation Administration: A Review of the Air Traffic Organization and the Joint Planning and Development Office."

Attached is a question to answer for the record. I would appreciate receiving your written response within 30 days so that it may be made a part of the hearing record.

Sincerely,

Jerry F. Costello
Ranking Democratic Member
Subcommittee on Aviation

JFC:pk
Attachment

Costello Question for the Record re
Architectural Budget Cut

As GAO's statement indicates, FAA eliminated all of the $1.4 billion funding for the architecture segment from its 5 year capital investment plan. GAO states that these funds would have been used to perform early research on new programs before they mature enough to receive formal Joint Resources Council approval. How will this budget cut affect the FAA's ability to introduce new technologies into the system, and ultimately to transform the system?

Response: The $1.4 billion that you refer to does not impact the Joint Planning and Development Office's (JPDO) ability to introduce the new technologies necessary to transform the system. As you know, the JPDO is a multi-agency organization comprised of the Departments of Commerce, Defense, Homeland Security and Transportation, NASA, and the White House Office of Science and Technology Policy. As such, it has access to the budgets of multiple agencies in addition to FAA. The JPDO's ability to successfully transform the system is premised upon its ability to align Member agencies' research and budgets. Currently, $1.5 billion is targeted for research by the JPDO Member agencies and some of that research is redundant. Beginning in FY '06, the JPDO's task will be to eliminate those redundancies and maximize the efforts of fully combined research and budgets. This effort will continue into the out years.

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