REMARKS FOR JOSEPH M. DEL BALZO
ACTING ADMINISTRATOR
FEDERAL AVIATION ADMINISTRATION
R&D ADVISORY COMMITTEE MEETING
MARCH 5, 1993

- It's a great pleasure to meet the three new members of this committee and to welcome back our long-time members.

- This year marks the fourth anniversary of the establishment of this committee. We can look back on four years of solid achievement. And we can look ahead to the most exciting developments in aviation technology that we will experience in our lifetime.

- A lot has changed since we last met. We have a new President and new directions.

- Don't believe it when you hear that the federal government is "on hold", waiting for the remaining Clinton appointments.

  -- The FAA has only a handful of key positions that are political appointees--seven in all. Just two, the Administrator and the Deputy, require confirmation.

  -- Moreover, we have a strong aviation advocate in Secretary Pena. So we're by no means on auto-pilot.

-- These past few weeks have given me a new appreciation for the job of the FAA Administrator. Some of you may have heard the exchange between David Letterman and Vice-President Gore the other evening. Letterman asked the Vice-President how he should be addressed. Said the Vice President, "Your Adequacy is okay."

Believe me, I know just how he feels.

o I'm encouraged by the Clinton Administration's determination to revitalize American industry and sharpen its competitive edge. Both the President and the Vice President have shown an appreciation and understanding of civil aviation's role in achieving these goals.

o I'm also delighted by the prominent new role that's being given to technology and research and development by the Clinton Administration.

o The President's technology plan calls for the redirection of billions of dollars from military projects to those involving private industry. Details are too sketchy to know how it will affect FAA programs. <u>But the work performed by this committee has greatly improved our chances for seeing some of the redirected military research dollars come our way.</u>

--The FAA has the strongest research and development plan its had in over a decade.

--The report prepared by the R&D Plan Review Panel, under Norm Augustine's leadership, has helped us secure additional funding and gain valuable support from our industry partners and on the Hill.

--I'd like to thank the panel and Norm for getting out an update on that report for the new administration.

o The President's plan also calls for a greater partnership between government and industry for the development of crucial technologies. The prospect of a closer partnership has already begun to inspire some imaginative thinking.

Right now, we're looking at a proposal brought to us by the MITRE Corporation. It involves the establishment of a government and industry consortium to develop the hardware and software for the Aeronautical Telecommunications Network. Under this proposal, the development of ATN would be a collaborative effort, in the form of a Limited Liability Corporation, through which both the private sector and the FAA would contribute.

It's a new idea...some might say revolutionary...and there will be a number of hurdles to get past. But this partnership could speed up the development and acquisition process by as much as two years. We want to encourage all such creative proposals, and we want to hear from anyone with a good idea for partnership building.

- I know that few agree on every aspect of the President's economic plan. But I believe we can all agree on this point: We can't afford, as a nation, to lose the leadership position we now hold in the world aviation market. As Secretary Pena said last week, this is our American industry. We care deeply about it and we should do whatever we need to do to make sure that it thrives.

  --Last week, the FAA released its annual aviation forecasts for the next 12 years. We're predicting modest growth over the period of 3.9 percent annually in domestic activity and 6.6 growth in international activity.

  --Some are saying our estimates are too modest. We hope they're right. But we all know it's going to take more than "modest" growth to pull the airlines out of their present financial difficulties.

- The FAA has got to do whatever it can to help the aviation industry through this period of hardship. We're focusing on three initiatives:

  -- the continued screening of regulations to minimize costs;

  -- the global harmonization of aircraft certification and operation;

  -- and the timely implementation of the capital improvement program.

- It is this third initiative where this committee can help. The FAA, along with its industry partners, must move much more quickly to catch up with the demands of the 1990's and to prepare for the coming century.

- Our programs will need sustained, consistent funding and this committee has done a great job at helping us sell our programs. But it's also imperative that we find ways to acquire and implement new technology much faster than we've been able to do in the past.

  --We're beginning to make greater use of fast-prototyping...a strategy where we award cost-plus development contracts prior to entering into a fixed-price contract. With fast-prototyping, we can iron out the problems before we go into full-scale production.

  --Another strategy we're considering calls for the FAA to fully embrace the concept of an open architecture for our systems and accept the idea of buying our technology off the shelf. We've asked this committee to help us find the best way to do this.

- We've also asked this committee to help us take advantage of satellite technology much more quickly. We know the benefits for civil aviation will be enormous. We can't afford, as an agency or an industry, to miss out on the opportunities this technology offers.

- As I mentioned earlier, this committee will be four years old this year. We've been fortunate from the beginning to have as our chairman, a man of proven leadership and accomplishment. That man, of course, is Bob Everett and he has made a lasting difference.

  Today, because of Bob's leadership, we have--not just a stronger Research and Development program--but a stronger research and development organization as well.

  Bob, if you will join me, I would like to present you with a small token of our appreciation. I hope that you will accept this plaque, in recognition of your many enduring contributions to the National Airspace System.

  (Applause.)

- Thank you, Bob, for giving us so much of your time, your skill and your energy.

- To replace Bob, we turned to General James Abramhamson. Jim has long been the champion of aviation causes and his depth of expertise on complex space systems is unchallenged. He directed the NASA Space Shuttle program from 1981 until 1984. Then, he was chosen by President Reagen to lead the Strategic Defense Initiative...the largest and most complex research and development effort ever undertaken in American History. He directed the SDI from April 1984 until his retirement from the Air Force in March 1989. More recently, at the request of former Administrator Jim Busey, he directed the RTCA study on the uses and implementation of satellite technology in civil aviation. I don't believe we could have found a more able candidate to lead this committee.

  It is now my great pleasure to turn this meeting over to our new Chairman, General James (Jim) Abrahamson.

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STATEMENT OF JOSEPH M. DEL BALZO, ACTING ADMINISTRATOR OF THE FEDERAL AVIATION ADMINISTRATION, BEFORE THE HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION, SUBCOMMITTEE ON AVIATION, CONCERNING THE ADVANCED AUTOMATION SYSTEM. MARCH 10, 1993.

Mr. Chairman and Members of the Subcommittee:

I am pleased to appear before you today to discuss the status of the FAA's Advanced Automation System program, which we refer to as the "AAS" program.

The AAS program is a key element of the FAA's Capital Investment Plan (CIP), which represents a variety of technological efforts to modernize our air traffic control system. The CIP is an outgrowth of our earlier National Airspace System (NAS) Plan, commenced in the early-1980's as the largest and most complex Federal technology-modernization effort ever in the Federal civil sector. This effort was begun to replace the tube type technology--which was the norm in our aging air traffic control system--with modern technology capable of providing the improved productivity and safety benefits needed to meet growing air traffic demands. Several years ago, over 90 projects were transitioned from the NAS Plan to the CIP, which is a continually-revised 10 year plan for capital improvements determined necessary to meet changing and projected demands on our air traffic control system.

Much has been accomplished to date under the NAS Plan and the CIP. Over 96% of the projects are under contract, and 43% of the

projects are completed. These plans have brought us improvements like the ASR-9 radar, operational at 47 airports, which provides better radar targets and improved weather detection; and the Low-Level Windshear Alert Systems that have been installed at 110 sites to provide hazardous weather alerts to controller personnel. Today's system offers a reliability and productivity unavailable a decade ago, when our planning efforts began in earnest. But much remains to be accomplished not only for the short-term, but in terms of additional planning for future improvements to the system.

One important lesson we learned along the way was the need to improve our acquisition processes, and several years ago we took strong action to do that. We have introduced greater discipline and structure into our procurement activities. I believe we have made important advances in this vital area, but I also recognize that continued focus and vigil are needed to see that we continue that progress. Our goal in each case, of course, is to develop, buy, and install the right equipment on time and on budget.

One thing that separates much of our work from other agencies is that the safety of our Nation's air transportation system must be foremost in our mind from conception of a project through installation and use by our controllers and technicians or by pilots. Every major technological conversion we make to our air traffic control system must work perfectly from a safety standpoint from the first moment; further, those changes must be

essentially "invisible" to the system users. The painstaking process of initial and operational testing of new equipment sometimes, despite our wish for earlier payoffs, may account for added--but necessary--delay. There are also times that new technological breakthroughs provide real opportunities for improvements to what we earlier conceived, and we must alter course to take advantage of those chances. And, as we sometimes find, some of the projects we have undertaken prove considerably more complicated and difficult than either our experts or private sector experts believed to be the case; this is particularly true in the computer software area, where virtually every major procurer of technology reliant on extensive software development experiences unanticipated problems.

These factors mean that our acquisitions success in terms of time and cost has been somewhat of a mixed bag throughout the extraordinarily demanding task of revamping our entire air traffic control system. And this has proved to be the case as well in the AAS program, as I will describe in a moment. First, though, I would like to briefly highlight what the AAS program is.

The AAS program is the cornerstone of our current modernization efforts. The AAS contract was awarded in 1988, and was at that time the largest automation contract ever awarded in the civil sector. AAS will provide the capacity to handle projected air traffic load well into the 21st century. It offers increased productivity and safety benefits, increased reliability, and the

adaptability to take advantage of new capabilities offered by satellite technology.

In developing the AAS program, we have worked with the aviation user community, and have actively involved working FAA controllers and technicians. The involvement of the aviation community and our air traffic controllers is critical to producing the right products. Early controller involvement has resulted in many changes that will improve our final product. Although user involvement in these early stages has resulted in requirements changes to the program, we believe it has been best to introduce needed changes early on rather than fielding a system that is not acceptable to our workforce or that must be changed later on.

There are five components to the AAS program. The first element is the Peripheral Adapter Module Replace Item (PAMRI), which substitutes for several pieces of existing equipment at our air traffic centers. PAMRI provides higher data transmission rates for radar site interfaces, and will permit the later introduction of data from additional radar sites to a particular facility. It will support full air traffic control operations under the present system, while providing the needed redundancy to support transition to the second phase of the AAS program--the Initial Sector Suite System (ISSS).

The ISSS component will introduce new air traffic control work stations into our air traffic facilities that control en route

flight. It will rely principally on the automation capacity afforded by our earlier acquisition and installation of improved main frame computers in all of our air traffic centers. These "Host" computers have performed extremely well since their completion in 1988.

Each work station or "sector suite" will consolidate controller functions now performed at several scopes or workplaces into one suite. Improved data portrayal will be available to our controllers through much enhanced displays that offer higher resolution, color, and better depicted weather information. Electronic flight data, in lieu of handwritten paper strips, will also be available. The sector suite configuration, along with communications improvements, will enable us to simply and speedily reconfigure airspace within an air traffic center to respond to staffing or workload requirements. It also enables a supervisor to monitor on one screen air traffic activity at any control station under that supervisor's authority. Today, a supervisor must walk around the control room in order to observe air traffic activity.

The ISSS portion of the AAS program provides the needed platform for the subsequent achievement of a variety of user benefits that are offered by other elements of the AAS program. Remaining elements of the overall AAS program include: TAAS--Terminal Advanced Automation System--new equipment and software for the terminal operational environment; TCCC--Tower Control Computer

Complex--new software and selected hardware upgrade for airport control tower operations; ACCC--Advanced Computer Complex--new software and selected hardware upgrade for consolidated air traffic operations; and AERA--Automated En-Route Air Traffic Control to facilitate fuel savings and other efficiencies in the en route air traffic environment.

When AAS is completed, computers will perform many existing controller functions that can be done more efficiently and precisely by automation, freeing controllers to perform functions that humans can do better. For example, the AERA portion of the AAS will evaluate radar data to combine aircraft locations, altitudes, and velocities along with wind speed predictions. Looking ahead as much as 20 minutes into the future, it will scan for potential conflicts with other aircraft, highlighting in bright red the potential collision course on the controller's display. AERA will then rank potential course corrections for the controller who will decide what action to take. This will help tremendously in assigning aircraft more direct and fuel efficient routes, saving time and money.

As I mentioned earlier, our success in the overall AAS program to date has been mixed. PAMRI is a real success story, with the last system to be implemented this April, ahead of schedule. And our user teams and the creation of the Development Demonstration Facility have been invaluable in helping to assure that fielded products will be useable, acceptable, and appropriate to the

task. But we have experienced problems with ISSS, as I will describe.

About 2 years ago, FAA and IBM modified the AAS contract, which resulted in a 19-month delay for ISSS. Five months of the delay were due to FAA changes in requirements and the remaining 14 months resulted from software development difficulties encountered by IBM. This past November, IBM advised us that it would experience an additional 14 month slippage in the program due to significant software development problems.

Following that notice, we acted promptly to insist upon a proposed plan from IBM to cure this problem, to set course corrections, and firm up a schedule. IBM responded with an initial proposed cure plan. A senior-level FAA team was appointed to work directly with IBM officials to see that this plan was strengthened to meet our requirements. IBM has recently provided us with its "cure" plan, which is under technical review within the FAA. On a separate track, IBM has already taken a number of positive actions, which they will describe today, to respond to the problems encountered with the ISSS program. They now have a much-strengthened management focus on this program along with a greater resource commitment. IBM has also strengthened its internal audit of ISSS as well as its testing procedures.

FAA has taken several major steps to change the way we have done business with the AAS program. Our review of the problems

encountered with the program indicates to us that we previously did not exercise sufficient, continuing top-management focus on the program; that we have generally taken far too long to respond to technical issues or problems raised by IBM; and that we were not providing adequate top-level attention to requirements changes in the program. The recent changes we have instituted address all these issues.

We have restructured our management of the AAS program to provide program support and oversight at the top. A program director for the overall AAS program now reports directly to the Administrator. The program director is empowered to make decisions on issues affecting requirements, except where schedule or cost of the program will be affected by a requirements change. That authority is reserved to the Administrator. The program director will be accountable for cost containment and keeping the program on schedule. The FAA's Acquisition Review Council, chaired by the Administrator, will review the status of the AAS program at least every two weeks, and more often if necessary.

We are also establishing separate program managers for the different segments of the AAS program. We have already selected the program manager for the ISSS segment. The segment program managers will report directly to the AAS program director, who will have responsibility for overall direction and program coordination.

The FAA has now established a dedicated ISSS team on site at IBM. The team includes representatives from our air traffic and airways facilities organizations, as well as a contracting officer. This team is fully empowered to resolve issues as they arise, eliminating the decision-making delays of the past where it simply took too long for us to come to grips with technical problems. We have worked our way through nearly 100 open items in the last several weeks, leaving two major technical issues on the table.

Another key step we have taken is to fix the requirements for ISSS. We need to assure that we have everything our controllers need under this program, but we also need to provide a steadier target for IBM to work toward. We need to separate the "nice to haves" from the "need to haves," and we are doing that. Toward this end, we have established an operational suitability action team.

We plan to freeze requirements for the ISSS by April 1. I want to stress that this freezing of requirements does not mean that there will be no additional changes to the system. Based on prior experience, I am sure that operational testing of ISSS will highlight some aspects of the system that need tweaking or changing before full-scale deployment can begin. We are, however, committed to maintaining much closer control over any requirements changes than was the case before. I would also add that there may be requirements, which we believe are needed, but which can be deferred until after an operational system is fielded. In those

cases, sticking to the schedule will take top priority. Schedule and cost considerations will be much greater drivers of this program than before. I can assure you that we are committed to fielding an operational system in Seattle in October 1996, and that we will do all we can to make that goal a reality.

So far, I have discussed what we have done to address problems with the ISSS segment of AAS. I would like to briefly touch on the status of the rest of the AAS program. As I mentioned earlier, the terminal AAS or TAAS will introduce new equipment and software into the terminal operational environment. The lastest TAAS milestone demonstration was successfully concluded this February. However, delivery of TAAS will be delayed by 7 months due to the ISSS delay.

The tower control computer complex--TCCC--and the area control computer complex--ACCC--are unaffected by the ISSS slippage. Funding restrictions, however, have decreased activity in these segments, and we are reviewing the impact of these restrictions on program schedules.

With respect to AERA, we are currently reviewing what actions we need to take to make AERA available as soon as possible after completion of ISSS. AERA, as I mentioned earlier, offers significant benefits to the user community. Therefore, we plan to bring it on line at an earlier phase of the program than was first conceived. This is a high priority with us.

In closing, Mr. Chairman, I would like to emphasize the importance we place on the AAS program, and the need for its timely completion. AAS is an investment in our air transportation infrastructure that is needed to take the aviation industry into the 21st century. We deeply regret the recent slippage we have encountered in the program. The steps we have taken reflect our commitment at the top to provide a much improved foundation for managing the program in a way that will keep it on budget and on schedule. I assure you that we will not relent in these efforts.

That completes my prepared statement. I would be pleased to respond to questions you may have at this time.

REMARKS BY JOSEPH M. DEL BALZO
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Good Morning.

Two weeks ago, we released our annual aviation forecasts in Washington. If you've attended our forecast conferences before, you know that we divide them into two sessions: one for commercial aviation and another for general aviation. We found that trying to do both in a single event didn't give us enough time to do justice to either one.

The day after we released the forecasts, several leading analysts challenged our figures for commercial aviation. They said that if the economy continues to grow and if the airlines can hold down fares, the industry will surpass our projections. I hope they're right. For when aviation thrives, so does the entire country. But when aviation hurts, the pain is felt, eventually by everyone...everywhere.

General aviation has been hurting for some time now. It's been hurt by high fuel and maintenance costs which make airplanes too expensive for many pilots to operate. Last year, the number of hours flown by general aviation declined 2% and the pilot population dwindled by more than 10,000. General aviation has been hurt by the success of deregulation, which has made regularly scheduled, reasonably priced air service available in more communities than ever before. It's been hurt by the loss of the investment tax credit in 1986 and by the addition of the 10% luxury tax.

It's been hurt by three recessions here in the United States and by the downturn in the world economy. Last year, general aviation aircraft exports fell almost 9 percent below the 1991 levels. Worse still, this decline triggered a 22 percent drop in billings from the previous year.

But general aviation been hurt the most...some say permanently crippled...by product liability lawsuits which have caused the price of an airplane to double...even triple since 1978. There were only 899 general aviation aircraft sold in 1992. That's the lowest number since the 1920's, when flying was still in its pioneering phase.

Our latest forecasts for general aviation take these and many other factors into account. It's not the bright picture we would have hoped for, but we can still find positive signs. We're predicting that the general aviation fleet will grow at an annual

rate of six-tenths of one percent over the next 12 years. Slow growth...but growth nonetheless. Turbine powered aircraft and rotocraft for business use will be the biggest gainers. We're also predicting a small increase in the number of hours flown. Here again, business use will account for most of the growth. The pilot population will also see modest growth, most of it in the rolls of airline transport pilots. There are two other encouraging signs in our forecast: More pilots will become instrument rated, and the number of student and recreational pilots is will increase at a steady pace. And this should mean more business for flight training and pilot schools.

I want to be up front about our forecasts, They were made before President Clinton released his economic stimulus plan. The two-year investment tax credit is certainly good news and it looks like there's a chance the luxury tax will be repealed. There are lingering doubts, I know, about the energy tax, higher aircraft registration fees, and higher corporate taxes. Not everyone agrees on these proposals, and I don't know what effect they will have on general aviation. But I believe most Americans agree that we've each got to do our part to get control of the deficit, and we've got to do whatever we can to put America back to work.

I recently read a statement written by John Olcott, the president of the National Business Aircraft Association. He told his members that the likelihood that one segment or special interest within our country can avoid being taxed while the rest of the nation backs the President is nil. John then went on to say that aside from being politically impossible, it's also irresponsible considering the state of our economy and the size of our nation's debt. The overriding question for John, for Phil Boyer at AOPA, for Ed Stimpson at GAMA, for the FAA...for all of us who love general aviation...the question isn't whether or it should be taxed...it's can this be done in a way that won't imperil the survival of an already precarious sector of the economy?

Some of the major problems underlying the general aviation industry are well illustrated by a story about a hiker in Oregon who was apprehended for killing and eating a spotted owl, which, as we all know, is a protected species. The hiker was taken before a judge, who agreed to listen to his side of the story before passing sentence. The hiker explained that he had been lost in the forest and had been wandering for three days and three nights without food or water. Just by chance, he came upon the owl sitting in a tree, threw a rock at it, killed it, and ate it. Then he walked for three more days and three more nights before getting back to civilization.

The hiker told the judge that he if he hadn't eaten the owl, he wouldn't be alive to be in court. The judge agreed that those certainly were unusual circumstances...unusual enough to justify a suspended sentence. The defendant thanked him and was about to leave the courtroom, when the judge asked "Oh, by the way, what did that owl taste like?" The hiker thought for a moment and then responded, "Well, it was kind of like a cross between a bald eagle and a condor".

The point of this story is that the judge was operating on a false assumption. The judge assumed that the hiker understood why the spotted owl was valuable--that it was an indicator species...and that any decrease in the number of owls was a tell-tale sign that the entire forest ecosystem was in danger.

Much of the general public--and many policy makers--have been making a similar mistake about the value of general aviation. They think of it as an upscale hobby for the well-to-do...a status symbol for hollywood types, rock stars, and overpaid corporate presidents. You and I know better.

We know that, like the spotted owl, general aviation is an indicator species...that its state of health as an industry is a tell-tale sign of the health of the entire economy. General aviation is the economic lifeline between small town USA and the rest of the world...a source of jobs for over half a million people and a mainstay of the U.S. export trade. Like our highways, bridges, and tunnels, general aviation is a national resource. If it dies, an essential part of our transportation infrastructure will die with it.

But that's not going to happen. I'll even go so far as to say that I believe there are good reasons for general aviation to be optimistic about the future. First of all, there's been a change at the FAA. I hope you've begun to see the benefits, first-hand, of what I honestly believe to be a more enlightened stance by the agency in the way it interprets its mission as regulator and enforcer.

I hope some of you know what Dave Sclair meant in General Aviation News...when he said that the FAA was actually getting to be user friendly. Or that you've actually experienced what Scott Spangler wrote about in Flight Training Magazine...that "the FAA is, indeed, now listening".

This past October, our Flight Standards Office issued the first General Aviation Action Plan. This isn't just an FAA plan. It was developed in partnership with the trade and industry associations that represent your interest. The coalition which grew out of this activity meets regularly for the express purpose of promoting general aviation safety and prosperity.

This kind of partnership building demonstrates what President Clinton has been advocating: that government and industry can and must work together...to improve economic conditions here at home and to promote our competitive position in world markets. We've already taken some important first steps together, including ways to lower the cost of owning and maintaining a plane.

This past fall, the FAA issued the final rule establishing a more affordable primary category aircraft. We also streamlined the certification process for new entry level aircraft. And now, after two and a half years, we're about to put the finishing

touches on a procedure which will allow certain small, low performance, personal-use airplanes to be certified based on the European-approved (JAR) design criteria for these aircraft. If all goes well, the procedure will be in place next month.

The primary category rule and the new type certification rule were both proposals that resulted from a joint collaboration between the Aircraft Owners and Pilots Association (AOPA), the Experimental Aircraft Association (EAA), the General Aviation Manufacturers Association, (GAMA), the Sport Aviation Manufacturing Association, (SAMA) and the FAA's Small Airplane Directorate. I want to encourage all such creative proposals, and we'll offer a receptive ear to anyone with other good ideas.

These actions have helped general aviation, to be sure. The growth that we've predicted in our forecasts will help as well. An upturn in the economy will do even more good. While we can feel some relief at this prospect, we also know that it won't be enough to restore financial stability to the general aviation industry.

We can talk about the need for lower taxes and for changes in the product liability laws. I know those are important issues. But the reality is, neither one is going to happen in the foreseeable future. So we've got to look for other ways to bolster general aviation, starting with those that can be implemented right away.

There are three initiatives underway in the FAA now that I'd like to mention briefly. The first is the modernization of the National Airspace System. The second is the global harmonization of aircraft certification and operation; and the third is the continued screening of regulations to minimize costs and inconvenience.

The FAA is in the eleventh year of a multi-billion dollar modernization program to improve safety, increase capacity, and ease pilot and controller workloads. We're literally replacing all our old, outmoded equipment with new technology, including the most advanced real-time computer system ever developed. We've also developed a new non-voice communication system. It's called aeronautical data link and it can electronically transfer digital messages, like weather updates and traffic information, to computer screens located on the ground and in the cockpit.

Data link is almost instantaneous and its error-free. One day soon, half or more of all the communications between pilots and controllers will be over data links instead of the traditional voice channels we use today.

I'd like it clearly understood that I disagree with those people who say our modernization programs are stalled. They're not stalled. Hundreds of systems are being shipped to the field every month: improved navigation and landing aids, state-of-the-art communication systems, better weather observing equipment, sophisticated new terminal and en route radar. And software packages to enhance capacity, increase routing efficiency, and reduce flight crew and controller workloads.

I won't deny that progress on some key programs has been painfully slow. The most visible example is the advanced automation system. The delays in this program have been especially troubling. We need the AAS in order to add on attractive new functions that will enable us to make real gains in capacity and efficiency. Most of the delay stems from too many changes in the system requirements and from the brain-numbing complications of developing over a million and a half lines of code. Most of these problems have been ironed out, or will be by the end of the month.

One of the lessons we learned from our experience with AAS, is that we've got to change the way we acquire and manage large programs. The way we do business today, we're hard-pressed to hang onto the trailing edge of technology. With the right reforms, we can again be on the leading edge.

One such technology, with revolutionary implications for general aviation, is satellite technology. Here in the United States, it's the Global Positioning System, or GPS. Private pilots were the first to advocate the use of this technology. And, as it turns out, they will the first beneficiaries. This past December, the FAA issued certification criteria for GPS receivers. By next fall, we hope to complete instrument approach overlay procedures that will allow aircraft with approved GPS receivers to use them at over 5,000 published non-precision approaches in the United States. We began flight testing these approaches last fall, with AOPA providing the test pilots and the planes.

GPS, combined with small, powerful computers offers us virtually unlimited opportunities for improvements in aviation safety, capacity, service flexibility, and operating costs. What's more important, we now have the means, for the first time in aviation history, to create a truly global air traffic control system.

I'm proud that the FAA ...indeed the entire aviation industry in this country...has been at the forefront in recognizing both the promise and the perils of globalization...and in pursuing negotiations at the international level to achieve significant harmonization and standardization.

We at the FAA were quick to realize that no single country, not even our own, can any longer expect to the sole arbiter of standards. If we do not participate with others in the development of future standards...if we do not work to achieve world-wide harmonization of those standards...the result will be a growing gap between U.S. standards and those of Europe and the rest of the world. And with that gap would come a loss of influence and weakening of the competitive advantage we now enjoy.

This is the reason that for a number of years now, the FAA has been working closely with the European Joint Aviation Authorities, the JAA, and a number of other nations around the world to establish common rules and procedures for aircraft certification. Differences in airworthiness standards from country to country cost U.S.

aircraft manufacturers millions each year. And lack of uniform operating rules surely cost even more.

Such sensitivity to costs may not be what you'd expect from government regulators. But we've had our cost consciousness raised by industry representatives who have participated with us in developing a coordinated approach to the problems of regulatory burden.

I believe that, on the whole, the FAA has tried to work as a partner with industry. But at times, our role as a regulator can make this partnership an uneasy one. We know that unneeded regulation can create an unnecessary economic burden on an industry already struggling to survive. If we're not careful, our rules can put our aircraft manufacturers at a competitive disadvantage, without any gain in safety.

Can we do a better job of estimating the economic impact of our rules, as our critics have challenged us to do? Yes we can, and we will.

Government regulations, unfortunately, almost always pit one interest against another. I know that many private pilots are chaffing at security procedures that are, to their minds, excessive, even unnecessary. I'm told that where it doesn't affect overall security, some airports have already reduced the secured areas and others are reviewing possible relaxation of their rules.

I encourage you to express your concerns in person by visiting the Civil Aviation Security Field Office for the airport in question. We'll help you if we can. But in the end, safety...in the public interest...will always take first priority.

I'd like to close by reminding you of something I said earlier about the decline in general aviation sales. Of the 899 planes sold in 1992, 551 were piston-powered. By comparison, SAMA estimates that 1,500 airplane kits were sold in 1992--that's nearly 3 times the number of small, ready-made planes shipped by manufacturers like Beech, Cessna, and Piper.

This is one of the best reasons I know to be optimistic about general aviation. The success of airplane kits shows the creativity and resilience that still exists in this industry. There is still a will to survive and the energy to make things happen. Like the spotted owl, give general aviation a fighting chance and it will find a way to hang on...eventually even to thrive in a restored economic environment.

Thank you.

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REMARKS BY JOSEPH M. DEL BALZO
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March 16, 1993

Good morning.

As I read through the recommendations written for each of today's thirty award recipients, I was struck by the far-reaching changes which have taken place within the FAA over the past 16 years...how we have changed--not just as an organization, but as people--since the first set of EEO awards were given out.

Among those we are honoring today are 15 people in supervisory and senior management positions. There is a regional and a deputy regional administrator, two associate administrators, one assistant administrator, two service directors, a division manager...the list goes on.

Most of us know them. They've been around for a while, and they have well-earned reputations throughout the Agency. We know them to be able executives, experts in their fields. Yet today we are recognizing an aspect of their leadership which would have rated scant attention twenty years ago.

The high priority we give today to the recruitment and promotion of minorities and women...this was of very little concern at the time most of the individuals in this group were starting their careers in the federal government. Their success in working their way up through the bureaucracy didn't depend on their dedication to equal opportunity. They were judged by a different set of standards entirely.

I believe it's a testament to their quality as leaders that they not only adapted and conformed to changing times...but seized the initiative in aggressively pursuing the ideal of diversity.

The FAA didn't have to wait for its present generation of managers to retire before it could bring about a fundamental change in values. These are people who had the insight and strength of character to change the organization by first changing themselves.

The achievements of today's other award recipients offer dramatic evidence of the way the Agency is vigorously reaching out...not only to bring minorities and women into the organization as employees...but to make meaningful contact with the youth and the economically deprived of our nation.

I'm thinking of Dean Edmonds, stationed in Pago Pago, who is trying to increase the number of Samoan air traffic controllers. And Walter Daigle in Wisconsin who has been working with the Hmong and Laotians who were resettled in Eau Claire and Green Bay as refugees from the Vietnam conflict.

There's James Sappier trying to interest his own Penobscot people and other Native Americans living in New England in FAA careers.

How many of us know that we have an aviation education resource center on a Navajo reservation in Arizona? It was started by one of our award winners.

How many of us know about the "A Plus" program at the Houston Center? This was a well-planned effort to actively recruit minorities and women as potential air traffic controllers and to follow up with a specially designed training course to bring the new recruits up to a level where they could compete with other candidates. Two of today's award recipients --Daryl Johnson and Ricardo Mills -- played significant roles in developing this program.

A number of our FAA employees work with elementary and high school students. People like Francisco Estrada and Lawrence Stroud have helped organize summer enrichment programs and raise scholarship funds for minority youth.

Our reach even extends to riot-torn south central Los Angeles, where FAA employees in the Western Pacific regional office provide volunteer tutoring and homework assistance as part of an adopt-a-school program. Maria Sanchez has helped to coordinate that effort, working with a public affairs specialist there, Henry Verbais. Henry has also been instrumental in establishing magnet school programs in Phoenix and Tucson which attract inner city students with courses that appeal to their fascination with aviation.

These are people who have a profound realization that they live in a larger world for which they take more than their share of responsibility.

Cecil Hoyer organized a drive in his suburban Maryland community to collect food for the victims of Hurricane Andrew. Then he drove 22 hundred miles to the Homstead area of south Florida to personally deliver relief supplies.

Ingrid Johnson is a volunteer at the Night Shelter in Arlington, Texas ...counselling the homeless about findings jobs, housing and child care.

And then there are those who have contributed so much to making the FAA a more responsive and a more responsible organization. For once we have achieved a diverse workforce, the next step is to achieve a hospitable workplace.

Mamie Mallory has made us all more sensitive to the special needs of our employees who are physically disabled. Mary Juarez and Janice Pope have taught us all how to be more effective in our cultural diversity training. And Marie Portis has set the pace for our agency in providing opportunities to disadvantaged businesses.

All of these efforts reveal an important fact about the FAA today. They reveal the ever-expanding scope of cultural diversity...a concept which now embraces far more than it did when the EEO awards were first presented 16 years ago.

Not too long ago...when we first started talking about diversity...we saw our workforce as made up of a simple majority and one large minority. It wasn't quite that simple, of course. Even then. there were important differences which we didn't see or refused to recognize. But now we're more aware of the complex nature of our society. And the people we are honoring today have done much to heighten our awareness within the FAA.

That we have been able to make real progress in setting aside assumptions about workers based on race, sex or ethnic background...this progress is due, in large part, to the dedicated efforts of those we are honoring here today...the 30 individuals who are to receive the 16th annual Equal Opportunity Awards.

I congratulate you all.

Remarks by Joseph M. Del Balzo
Acting Administrator, Federal Aviation Administrator
Distinguished Career Service Award Presentation to Al Lupinetti
March 12, 1993

Good evening. By now all the gifts have been opened, the funny stories have all been told, and the last of the wine has been poured from the bottle. Al Lupinetti has been my friend for over 30 years. I know he will believe me when I say how much I wish I could have been there to share this evening with him, with Rita and Martin, and with his many friends.

Events like these are a celebration of friendship, an occasion to remember the sad times, the happy times, and the proud moments that crowd into a lifetime of service to one's country, one's family, and one's community. Al Lupinetti has much to be proud of. He founded and led the Atlantic County Chapter of The Compassionate Friends, a self-help organization for bereaved parents.

He's given generously of his time to support volunteer activities like the United Way and the Atlantic Community College. On a more personal level, I'm sure there are many people in this room who've been helped by Al at one time or another. I know I have been.

Tonight we honor Al for these achievements. We also honor him for enriching our work life at the FAA and for his contributions toward the advancement of the science of air traffic control.

Most people don't know this, but Al developed the original concept for BCAS. That was almost three decades ago, but Al still remembers making a note in his journal that the BCAS concept would make a good collision avoidance system. Not even the Mighty Technack could have predicted that this early system would grow into the successful TCAS program we have today.

Throughout the 1960's and 70's, Al achieved some important firsts: He was the first to design, build, and test the capability to increase the number of radar beacon identity codes from 64 to 4,096--the number in use today. He was the first to design, build, and test a digital radar beacon aircraft tracking system with alphanumerics on the air traffic control display.

He conducted the testing on the first common digitizers. Then, in his spare time, he designed and patented the digital target generator test set--a capability which is still in use today. Al was the first Technical Center program manager for a system called DABS. No one knows it by that name any more. We call it MODE S.

Al's early career was marked by a host of important achievements--far too many to mention here. I'll just tell you that they were impressive enough to earn him a listing in Who's Who in Aviation. And along the way, he picked up 29 performance awards and commendations; two certificates of achievements, plus a few awards that were created just for him.

I heard someone say the other day that giving an award to someone for doing his job is like praising the birds for flying...with bureaucrats, just as with birds, it's hard to tell how much is really flying and how much is just coasting from the last flap.

Al Luppinetti could have coasted on his record long ago, but he's not that kind of man. He never stopped striving for the important firsts.

As the Technical Center's Chief Scientist, he organized a number of orphan programs and made them part of the FAA culture. Through his efforts, he opened a window between academia, the industry and the FAA.

Al, your career at the Technical Center has been marked with distinction in every job you have ever held. I can think of no one who more richly deserves the award for distinguished service which I now have the great honor to present to you.

On the evening of this celebration, and in the evening of this day, surrounded by his family and friends, Al Luppinetti can, indeed, look back on his career and say how splendid the day has been.

God bless you and good luck.

REMARKS BY JOSEPH M. DEL BALZO
INTERNATIONAL AVIATION ROUNDTABLE
MARCH 19, 1993

Let me first thank Joan Bauerlein and the Transportation Research Board for arranging this discussion for the FAA's senior managers. I would also like to thank our moderator Dr. McLucas and our guest speaker, Dr. John Meyer, for agreeing to share their insight with us on important issues going on now in Eastern and Western Europe.

When the Berlin wall came down, we knew that it symbolized the end of an historic struggle for people's minds and a triumph, not only of freedom, but of free markets as well. What we were slower to realize is that it also signalled the end of an era...literally the end of the world as we knew it...just as surely as the funeral of Queen Victoria did in another time nearly a century ago.

We now find ourselves in the throes of a transition between the kind of country we have been for the last 50 years and the kind we will be...or want to be...for the next 50 and beyond. The 20th century will no doubt go into the history books as one dominated by wars and the politics of conflicting idealogies. The 21st century we are about to enter is more likely to be dominated by the total globalization of the planet.

I think most of us realize that aviation has always been a multinational industry. We know complex technical systems and standards must be designed for worldwide compatibility...and we know that important decisions must mesh with those taken by other nations.

But how many of us can honestly say that we understand the complex issues at stake in the BA/USAir deal. Not just the conflicting viewpoints of U.S. Airlines, but from British Airway's viewpoint as well. I'm not asking for a show of hand, but how many understand the difference between the agreement approved by Secretary Pena and the one rejected by former Secretary Card?

One newspaper reported that Mr. Pena's decision came against a backdrop of stiffening economic competition between the United States and Europe and of tough initial steps taken by the Clinton Administration on trade policies. How does this affect the FAA and its European counterparts?

Still another newspaper reported that Mr. Pena will press hard for a revised bilateral aviation agreement with the British government giving US carriers greater access to the European market. How many of us would feel comfortable discussing this issue, even among ourselves?

Let me give you another example: The European journal has called the liberalization of European air transport and the manifestation of the Single Market, the most significant development in international air transport since the signing of the Chicago Convention in 1944. According to The European, the effect on the rest of the world will be profound. Other than one or two people in our international office, how many of us could discuss this subject, in any depth, with your European counterparts?

In a related matter, Tuesday's Financial Times reported that the EC Transport Ministers rejected the European Commission ambitions to negotiate open skies deals on behalf of the EC as a bloc. Instead, the Ministers decided to remain fully responsible for their relations with third countries in the field of aviation. But the Ministers did agree on common equipment standards for air traffic control...an initiative aimed at integrating the EC's 54 control centers. What should we know about this and how does it affect U.S. industry, the national air transportation system, and the FAA?

All of us should know by now that the President has taken a very tough stance on Airbus. I don't encourage any of you to try to debate the matter with your British or French counterparts. But as the agency's most senior executives, we should at least understand all sides of the issue.

And that's what this roundtable is about. It's about being informed. It's about understanding that everyone in this room can count him or herself part of the growing trend toward a global market. Most of all, it's about understanding that in order to fulfill our mission in the coming decades, the FAA must assume a more global perspective.

REMARKS BY JOSEPH M. DEL BALZO
AAAE/ACI WASHINGTON CONFERENCE
MARCH 23, 1993

Good Afternoon.

Let me first thank George Howard and Chip Barclay for inviting me to participate in your conference. By whatever standard you choose to measure it by, U.S. aviation stands at a critical crossroads. In many ways, the decisions that will be made over the next few months will determine what kind of industry we will be in the next century. So my message this afternoon is not one of business as usual but a message of challenge and opportunity.

Over the past three years, America's air carriers have lost billions of dollars...enough, according to ATA, to wipe out more than fifty years of accumulated earnings. Aviation workers by the tens of thousands have lost their jobs. Countless others have taken pay cuts to avoid layoffs. U.S. aircraft and avionics industries are facing stronger competition from foreign companies than ever before. After nine decades as the undisputed leader in world aviation, many now fear that the United States could lose its leadership position.

The challenge is clear: each of us...the federal government...the airline operators...and airport managers and operators in this room and across the country...we must do whatever is required to help the aviation business--our business--get through this period of hardship and turmoil. For when aviation thrives, so does the entire country. But when aviation hurts, the pain is felt, eventually by everyone...everywhere.

There are encouraging signs that the worst may be behind us. The economy is recovering and more people are going back to work. We have a President who's not only willing to act to revitalize American industry and sharpen its competitive edge...but one who appreciates and understands aviation's role in achieving these goals.

The annual aviation forecasts which the FAA released a few weeks ago also provides reasons to be optimistic about the future. We're predicting that over the 12 years covered by the forecasts, domestic air carrier revenue passenger miles will increase at an annual rate of 3.9 percent...not the heady growth of the early 1980's, but growth nonetheless. International activity looks much better...we say it will grow by 6.6 percent over the forecast period. We're also predicting that between 1993 and 1994, the number of tower operations will climb from 62.5 to 64.1 million. That's slightly higher than at any time since before the air traffic controller's strike in 1981.

Moreover, we predict that, as the economic recovery gains momentum, tower operations will continue to grow, steadily increasing to a new high of 76.6 million in the year 2004. Let me put this in perspective for you. Our all time peak operations was 69 million and that occurred in 1979.

I want to be up front about our forecasts. They were made before President Clinton released his economic stimulus plan. I can't tell you what impact it will have on either business or leisure travel. But I can tell you that the day after we released the forecasts, many leading industry analysts challenged our figures. They said that if the economy continues to grow and if the airlines can hold down fares, the industry will surpass our projections. If this happens, and I certainly hope it will, our airports and our air traffic control system are going to have to be ready for it.

According to our estimates, 23 U.S. airports experienced more than 20,000 hours of air carrier delays in 1991. Over the next 5 years, if nothing is done to improve capacity, we expect such serious delays to affect 13 more airports. The problem lies in the limited capacity of airports to accommodate aircraft on the ground, the limited capacity of the air traffic management system to accommodate aircraft in the air, and the difficulties in integrating the two.

The International Air Traffic Association has reported that delays cost the airline industry, worldwide, around 3 billion pounds sterling each year. At the present exchange rate, that's about 4 and a half billion dollars. The cost to U.S. carriers alone has been placed at about 3 billion dollars a year. IATA predicts that the costs could triple by the end of this decade. Whether you measure it in pounds sterling or in dollars, delays are costing U.S. carriers dearly, at a time when they can least afford it. This must change. The FAA and its partners in the aviation community simply have to move much more quickly to catch up with the demands of the 1990's and to prepare for a new era of air transportation in the coming century.

One of the key ingredients of President Clinton's Economic Stimulus Plan is the strengthening of our nation's infrastructure. I expect that when Secretary Pena was here this morning, he told you that the President's plan would provide an additional $250 million for airport grants in this fiscal year. That's over and above the 1.8 billion dollars which the Congress had already authorized us to obligate in our Fiscal Year 1993 budget. This is new spending authority we can use for safety and capacity improvements projects which are ready to go now. We don't have the exact numbers for Fiscal Year 1994 and beyond yet, but we're cautiously optimistic that AIP funding will be somewhat above our original FY 1993 base level.

Another powerful funding tool is the Passenger Facility Charge...the PFC as most of us call it. When the PFC regulation was first issued almost two years ago, it created for airports a major source of revenue which can be used for a host of improvements, including those needed to enhance capacity, safety, and security, and to

protect the environment. Since the program began, we've approved 88 applications with a collection value of over $5.8 billion dollars. With these funds, airports have been able to build new terminals...improve their security systems...to add scores of new aprons, taxiways, and runways...and install people movers and access roads. And, they've been used, as they were at Denver, to pay both the principal and interest on airport development bonds.

But as laudable as these projects are, people are becoming very uneasy about a few spending plans that, to them, appear extravagant. And revenue-starved public officials are beginning to cast envious looks in our direction. I agree with ATA President James Landry that all of us should avoid grandiose, gold-plated projects, and we should oppose any attempt to bleed-off aviation generated revenues for non-aviation purposes. But I think it's worth mentioning here that, while we have approved projects totaling $5.8 billion, we rejected many others--projects costing almost twice the amount we approved. The reviews we conduct are both thorough and comprehensive...as these disapproval rates indicate. If further safeguards are needed, we can tighten the requirements even more...I hope with your cooperation. But I would sincerely regret to see additional oversight on an already complicated process.

By now, most of you know of the commitment that President Clinton has made to streamline the government and reduce Federal spending. In order to fulfill this commitment, the President has set government-wide goals aimed at achieving significant economies in every executive department and agency. For those of us at the FAA, this means that money is going to be tight...probably tighter than we've ever experienced before. Over the long haul, I'm convinced, we're going to have to make some fundamental changes in the way we do business. Not just because the President expects it, but because it's the wise thing to do...the right thing to do.

We've already begun to look at where we can be more efficient...more responsive...hopefully relieve some of the economic burden for the nation's carriers. I've been asked why the FAA suddenly has this newfound interest in airline finances. I could tell you that it's an essential part of our mission...that would be the bureaucratic answer. But you and I know that the more profits the industry makes, the more likely it is to reinvest in quieter, cleaner aircraft and in new equipment to improve the margin of safety. A profitable industry means stronger production lines, jobs for American workers, and a strengthened competitive position abroad.

Those are the real answers...that's the reality. And that's why, for the short term, we're focusing on those things that will aid economic recovery. We've identified three key areas. The first is the rapid deployment of new technology to increase capacity. The second is international harmonization of aircraft certification and air traffic control operations. And the third is the continued screening of regulations to minimize costs.

The FAA is in the eleventh year of a multi-billion dollar modernization program to improve safety, increase capacity, and ease pilot and controller workloads. The agency is literally reinventing itself with new technology, including the most advanced real-time computer system ever developed. Hundreds of systems are being shipped to the field every month: improved navigation and landing aids, state of the art communications systems, better weather observing equipment, new terminal and en route radar. Others, like the highly sophisticated terminal doppler weather radar will arrive at 45 airports over the next two years. Three of them, I understand, have already been delivered to Memphis, Houston, and Atlanta.

But I won't deny that progress on some key programs has been painfully slow. Delays in the Advanced Automation System--the AAS--have been especially frustrating. Once we get this system installed...then we can add on an array of new functions that will enable us to make real gains in capacity and efficiency. Much of the delay in the program stems from too many changes in the system requirements and from the brain-numbing complications of developing over a million and a half lines of computer code. Most of these problems have been ironed out, or will be very soon.

Three weeks ago, George Howard organized an industry group which spent a day critiquing this program with us and the prime contractor, IBM. I'd like to thank George and all those who attended that meeting. With their help, we're getting the program back on track. One of the lessons we learned from our experience with the AAS is that we've got to change the way we acquire and manage large programs. The way we do business today is depriving us of ready access to leading edge technologies at time when we need them the most.

There are some who blame our acquisition problems on inconsistent leadership and inefficient organization. They argue in favor of a fixed term for the FAA administrator, for an independent FAA, privatization of many of our functions, and other structural changes. I don't know how any of these proposals will fare. I don't think any of us will know for months...possibly years. We can't afford to wait that long, so we're looking for reforms that can be implemented now.

One calls for the FAA to fully embrace the concept of an open architecture for our systems and accept the idea of buying our technology off the shelf. We're also beginning to make greater use of a procurement strategy we call "fast proto-typing". This means that we will award cost-plus development contracts prior to entering into a fixed-price production contract. It's a way to eliminate the problems before we go to full-scale production. We used this strategy for the first time on the parallel runway monitor demonstration project at Raleigh-Durham Airport. We developed a prototype system of high-speed radar, approach monitors, and air traffic control procedures. Then we successfully demonstrated that independent parallel approaches were feasible in low visibility conditions (IMC) on runways spaced 3,400 feet or more apart. The demonstration also confirmed that the use of parallel approach procedures can increase

an airport's capacity by 40 percent in inclement weather. We plan to deploy the new system at five airports within the next 2 years.

If fast proto-typing had been an option when we were developing the new airport surface detection equipment radar, the ASDE-3, I believe we could have avoided some of the snares which have slowed our pace on that program. The ASDE-3 will soon be installed on 29 airports and we're buying 11 more. This new radar is just one component of a comprehensive plan to reduce...hopefully eliminate...runway incursion accidents.

I'd like to thank every airport operators out there working to make surface movement safer...whether your trying to put new signs in place by the December 1994 deadline...develop low-visibility operations plans...or install stop bars. And I'd like to thank Chip Barclay and the American Association of Airport Executives (AAAE) for the many publications and training materials they've distributed on this critical safety issue, and for doing such a great job in getting the word out on the new signage standards.

I've mentioned only a few of our modernization programs...those which I believe will help us expand the capacity of our existing airports. Our capital investment plan contains dozens more. This plan, along with our research and development program, introduces a wealth of new technologies that are either available now or could be deployed in the near future to cut the cost of flying for all users of the airspace. I'm encouraged by the prominent new role that's being given to technology research and development by the Clinton Administration. The President's technology plan calls for the redirection of billions of dollars from military to domestic projects. Details are too sketchy to know how it will affect the our programs. But I can tell you this, the FAA has the strongest research and development plan its had in over a decade.

Satellite technology is the prominent feature of our plan. Satellites, more specifically, the U.S. Global Positioning System, combined with small, powerful computers, offer us virtually unlimited opportunities for improvements in safety, capacity, service flexibility, and operating efficiency. With satellite technology, we have the means, for the first time in history, to create a truly global air traffic control system. The FAA have always had the will to make revolutionary changes, but seldom had the technology. Now we have the technology and the only barrier is our collective will and that of our international partners.

We at the FAA...indeed the entire aviation industry in this country...has been at the forefront in recognizing both the promise and the perils of globalization...and in pursuing negotiation at the international level to achieve significant harmonization and standardization. I read last week that the European Transport Ministers have agreed to harmonize their air traffic control systems. I believe they now use 51 ATC centers, 22 operational systems, and 33 computer languages to coordinate European air transport.

As a result, delays at European airports are 2 and a half times greater than here in the United States. In a time of financial distress for air carriers and aircraft manufacturers around the world, there is every incentive to eliminate such costly confusion and inefficiency. The Ministers' agreement is an important first step toward improving the quality of air travel on both continents and I commend them for it.

We've been working closely with the European Joint Aviation Authorities and a number of other nations around the world for many years to establish common rules and procedures. I would welcome the opportunity to work more closely with our international partners and with our industry partners here at home.

I believe that, on the whole, the FAA, has tried to work in tandem with industry. But at times, our role as a regulator can make this partnership an uneasy one. The FAA takes its rule-making and enforcement responsibilities seriously. We know that unneeded, arbitrary regulations can create an unnecessary burden. Mandatory drug testing, unescorted access, alcohol misuse prevention, and the over wing exit rules are examples of recent rules that some have called "regulatory excess". Do we want our regulatory activity to be responsive to the many stakeholders we serve? Of course we do. Government regulations, unfortunately, almost always pit one interest against another. And in the end...safety...in the public interest...will always take first priority. Can we do a better job of estimating the economic impact of our rules, as our critics have challenged us to do? Yes we can, and we will.

I would like to close with a brief discussion of another rule. One year ago, in a late March snowstorm, USAir Flight 405 pushed back from the gate at LaGuardia Airport bound for Cleveland. But that night something went dreadfully wrong. Flight 405 crashed on takeoff and twenty-seven people perished.

That crash was a jolting reminder to the world of the hazards of wintertime flight. Most of us suspected at the time that icing contributed to that accident. We could have waited for the National Transportation Safety Board to issue its finds of probably cause...an investigation that we knew would take months to complete. But the aviation community decided that it could not afford to wait...that it had to confront this problem and find a solution before the beginning of another winter season. Within two months of the accident at La Guardia, the FAA's Ground Deicing Rulemaking Team had organized an international conference which brought together more than 800 experts and aviation leaders from around the world.

By the end of that meeting, a consensus had emerged that the situation required substantial regulatory changes. We then took the extraordinary step of announcing that a new rule would be in force by the beginning of this winter. Since regulatory actions normally take about two years, hardly anyone believed that this deadline could be met. Yet early this fall, the first draft of the new regulation was published. By the first of November, all major air carriers had an approved ground de-icing plan in place. The

winter deadline had been met, just seven months after the accident which had propelled us to action.

Those plans were put to the test just 10 days ago under the worst possible conditions anyone could imagine. That storm created 10,000 delays in the system. But, with your help, we weathered it safely.

I believe that the de-icing story will be remembered because it demonstrates that a modern society cannot function without rules and regulations...but that the process of their formulation and enforcement need not be cumbersome and arbitrary. The de-icing story is important because it sets a new, higher standard for the entire FAA. We discovered something about ourselves. We learned that we could move quickly and decisively. That we could coordinate the participation of every faction: the carriers, the airports, the international agencies. We've shown the world...as we've shown ourselves...that we can act with urgency and effectiveness to protect and promote the essential interests of aviation. This restored sense of confidence will, I am certain, stand us in good stead as all of us try to cope with the many complex issues which confront our common industry and imperil its future.

Thank you.

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A NATIONAL PRIORITY FOR U.S. AVIATION
Let's Get the Airlines Out of the Red and Into the Blue
Delivered by Joseph M. Del Balzo
Acting Administrator
Federal Aviation Administration
Exchange Club of Washington
March 31, 1993

Good Morning.

I believe it's the tradition that breakfast speakers are expected to be upbeat and cheerful. And I do have an optimistic message to deliver today. But before the sugar and cream, coffee starts out bitter and black.

If you keep up with the news, you know that the U.S. aviation industry is in a state of crisis. Over the past three years, America's air carriers have been hit by the worst financial losses in history...enough to wipe out more than fifty years of accumulated profits. The U.S. market share for transport aircraft has fallen from 87 percent in 1980 to just 64 percent today. Boeing and McDonnell Douglas once dominated this market. Today, the Airbus, manufactured by a European consortium, has edged out McDonnell Douglas and now controls second place.

What's more, the production of commuter aircraft--planes with 20 to 100 seats--has been taken over by European and Canadian manufacturers. Our share of this market is virtually nil. General aviation manufacturers, which once sold as many as 17,000 aircraft a year, sold only 899 planes in 1992. That's the lowest number since the 1920's, when powered flight was still in its pioneering phase.

The result--the cumulative effect: aviation workers by the tens of thousands have lost their jobs. Countless others have taken pay cuts to avoid layoffs. The Air Transport Association, the industry's trade group, reports that some 100,000 aviation jobs have been eliminated in the past three years alone. After nine decades as the undisputed leader in world aviation, many now fear that the United States could lose its leadership position.

The causes for the decline in the sale of general aviation aircraft are generally understood. It's been hurt by high fuel and maintenance costs which make airplanes too expensive for many private pilots to operate. Some of the damage was done by the competitive workings of the marketplace. The success of deregulation, which has made regularly scheduled, reasonably priced air service available in more communities than ever before, reduced our dependence on general aviation.

The loss of the investment tax credit in 1986 and the addition of the 10 percent luxury tax hurt general aviation. And it's been hurt, as other businesses have been, by recessions here at home and by the downturn in the worldwide economy. But general aviation has been hurt the most...severely wounded according to informed opinion...by product liability lawsuits which have caused the price of an airplane to double...even triple since 1978. General aviation manufacturers, to their great credit, have continued to hang on by improving their product lines and focusing on their strongest markets. Some of them have even managed to eke out a profit.

The President's Economic Stimulus Plan will help general aviation in two important ways: It's designed to put more American's back to work and that means a stronger economy. And it contains a two-year investment tax credit that's applicable to aircraft purchases. Although it's not part of his plan, you've probably heard news reports that the President has said he will support the repeal of the luxury tax. If any one of these measures is implemented, it means very good news for the general aviation industry.

With all the attention the air carriers are getting these days, you may wonder why I'm concerned about general aviation. I'm concerned because in many parts of the country, general aviation is the still the economic lifeline between small town USA and the rest of the world...it's a source of jobs for over half a million people and the mainstay of the U.S. export trade. Like our highways, bridges, and tunnels, general aviation is a national resource. If it fails, America will lose an essential part of its transportation infrastructure. We can't let that happen.

Most of us agree on what caused the problems in general aviation and what needs to be done to solve them. There's also widespread agreement within the industry as to what caused the airlines present financial woes: too many seats for too few passengers. But there's far less agreement over how this situation came about and what the Clinton Administration can, or should, do to help.

If he hasn't already done so, the President is expected to approve legislation very soon to establish a 26-member blue-ribbon commission to study the problems facing the aviation industry and recommend solutions. Appointments may be announced this week. The commission will then have 90 days to develop its findings and report back to the President and the Congress. It's been reported that the commission will consider a number of measures...tax relief...loan guarantees...the lifting of restrictions on foreign ownership and the redrafting of bilateral agreements...even re-regulation.

I won't try to anticipate what the findings of this commission may be. But I will tell you that we at the FAA have already begun to look at where we can be more efficient...more responsive...hopefully relieve some of the economic burden for the air carriers and all users of the national airspace. I'd like to speak briefly about two of

these initiatives. The first is the continued screening of regulations to minimize costs. The second is the modernization of the air traffic control system.

We at the FAA want to set the pace in demonstrating what President Clinton has been advocating: that government and industry can and must work as partners to promote our competitive position in world markets. Yet, at times, our role as a regulator can make this partnership an uneasy one.

The FAA takes its rule-making and enforcement responsibilities seriously...very seriously. In the aftermath of the bombing of PAN-AM 103, we published the Airport Security Access Rule which required airports to install security measures to prevent access to the ramp areas by unauthorized persons. Many airline operators and pilots argue that the FAA's rule went too far and that we underestimated the cost of these measures. They make similar arguments about periodic drug and alcohol testing of aviation workers and other rules.

We're taking another look at some of these regulations. Whenever we can, we'll weed out or modify the unnecessary and burdensome rules that impose excessive costs on the industry. But we're also aware that government regulations almost always pit one interest against another. And in the end, safety will always be our first priority.

Why is the FAA, with its vital safety mission, so sensitive to the costs of its regulations? I could tell you that an essential part of our mission is to foster aviation growth...that's the bureaucratic answer. But you and I know that the more profits the industry makes, the more likely it is to reinvest in new equipment, personnel, and training to improve the margin of safety. Profitable airlines are also more likely to invest in quieter, cleaner aircraft to meet the public's growing concern to safeguard the environment.

Assuring the long-term growth and prosperity of our aviation industry...that's the goal of the second of our major initiatives...the modernization and upgrading of our air traffic control system. The FAA and the aviation community simply has to move much more quickly to catch up with the demands of the 1990's and to prepare for a new era of air transportation in the coming century.

Even with the present economic slowdown, 23 of the country's largest airports experience more than 20 thousand hours of delay each year. Over the next 5 years, if nothing is done to improve capacity, we expect serious delays will affect 13 more of our airports.

We estimate that in 1991, air traffic delays cost the airlines 2.5 billion dollars in added operating costs alone. Add in lost passenger time and the cost goes up to $8.1 billion. That's almost enough to offset the airlines' losses for the past three years.

One obvious response--a kneejerk response--is to build new airports. But you and I know that people, in general, associate airports with noise, congestion, and pollution. And none of us wants one built in our neighborhood. So we've got to make better use of what we have available to us by building new runways, new ramps, new taxiways, and through the continued modernization of our air traffic control system.

The FAA typically awards about $1.8 billion a year in grants to improve the nation's airports. One of the key ingredients of President Clinton's Economic Stimulus Plan is the strengthening of this country's infrastructure. For the FAA, this means an additional $250 million for approved airport safety and capacity improvement projects which are ready to go now. This is new spending which will be used for projects like runway extensions, noise abatement, and installing runway lights to improve safety. The projects are limited to around 5 million dollars each, and will be awarded to airports of all sizes with a wide geographic distribution. Rather than tie up all the money in a few places, we want to make improvements and create jobs all across the country.

In addition to our airport improvement program, there is a wealth of new technologies that are either available now or could be deployed in the near future to cut the cost of flying for all users of the airspace.

The FAA is in the eleventh year of a multi-billion dollar modernization program to improve safety, increase capacity, and ease flight crew and controller workloads. The agency is literally reinventing itself with new technology, including the most advanced real-time computer system ever developed. It's called the Advanced Automation System--the AAS--and it contains over one and a half million lines of code. Once we get it installed, we can add on a host of new functions that will enable us to make even greater gains in capacity and efficiency.

The program, as you may have read, is behind schedule. Some of this is the FAA's fault...some of it is the prime contractor's fault...we're both responsible. But much of the delay was caused by the sheer magnitude of the task. Most of the problems have been ironed out, or will be very soon.

One of the lessons we learned from our experience with the AAS is that we've got to change the way we acquire and manage large programs. We've shown a bias toward bigness in the past--a bias which has led us to ask for systems that take ten, fifteen, or even twenty years to field. The way we do business today is depriving us of ready access to leading edge technologies at a time when we need them the most.

We've looking at several ways to improve our acquisition process. One calls for the FAA to embrace the concept of an open architecture for our systems and accept the idea of buying our technology off the shelf. This innovation in acquisition strategy would have the effect of creating incentives for the private sector to think creatively

about our problems rather than stifling this creativity, as we do now, by dictating in advance the solutions that we will accept. Instead, we should describe what we want to accomplish and let the marketplace do the rest. Buying off the shelf will encourage us to think like the cost-conscious, hard-to-convince consumers we are when we go shopping for a new car or VCR. It will curb our bureaucratic tendencies to plan everything from scratch, to plan it to an unattainable--and unnecessary--degree of perfection, and to plan it bigger than we need.

We're also looking at a new idea that has been advanced by The MITRE Corporation. It involves the establishment of a consortium between government and industry to develop specific systems. In this case, it's the hardware and software for a new global digital data communications architecture. Under this proposal, the development of the system would be a collaborative effort, in the form of a limited liability corporation, through which both the private sector and the FAA would contribute.

In theory, such an arrangement could have two very positive benefits: it could speed up the development and acquisition process by as much as two years, and it could enhance our competitive position by promoting the transfer of highly advanced technology between government and industry. The FAA wants to encourage all such creative proposals, and we'll offer a receptive ear to anyone with a good idea for partnership building.

I don't know yet what all the solutions are. But I know that, with the acquisition process we have today, we're hard-pressed to hold on to the trailing edge of technology. With the right reforms, we can again be on the leading edge.

One such advancement, with revolutionary implications for air traffic control, is satellite technology. Here in the United States, it's the Global Positioning System--GPS. Combined with small, powerful computers, GPS offers us virtually unlimited opportunities for improvements in safety, capacity, service flexibility, and operating efficiency.

It's hard for me to overstate the importance of the GPS. We know that the benefits will be enormous. Fewer delays and more fuel-efficient routes could mean annual savings of 100 million dollars or more for air carriers and business aviation.

The economic stimulus which will come from the introduction of this new technology is equally impressive. We're told by industry analysts that sales of avionics-related products in the GPS market are expected to increase from 6 million dollars in 1990 to somewhere between 500 million and 740 million by 1996. Sales of all GPS products...auto, marine and aviation...are predicted to reach 4 billion dollars by the year 2000.

People tell me that this is not the time to ask the airline industry to make an investment in a satellite-based system. I know the costs will be substantial. But we

have only to recall an earlier instance when we lacked the national will to protect our technological lead in aviation. In the early 1970's, we opted out of the race to build a supersonic transport.

There were sound reasons against the venture and they were, in the end, persuasive. We abandoned the field to the Europeans and they proceeded to build the Concorde. Most of the arguments against the project have held up well, in retrospect. The Concorde hasn't been anywhere near the commercial success its builders had hoped. But the Concorde had one unanticipated benefit. The European partnership went on to produce the Airbus family of aircraft.

We can't afford, as an agency, to miss this opportunity to better fulfill our public mandate. We can't afford, as an industry, to lose out in the competition for the vast worldwide market in satellite technology. And we can't afford, as a nation, to miss this chance to assert our technological leadership.

I'd like to close with this message. There are encouraging signs that aviation's worst problems may be behind us. The economy is recovering and more people are going back to work. But we can't expect that better economic times will automatically bring solutions to all our problems. Nor can we allow lean times to discourage us from making long-term plans and taking decisive action. For while advances in the aviation sector certainly depend on global and domestic prosperity, it's just as true that aviation progress, itself, stimulates economic growth. Whatever we can achieve in making air travel safer, more efficient, more competitive, will, I am certain, help move our nation's economy into a new era of technology-driven growth.

Thank you.

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"*When Spider Webs Unite, They Can Tie Up a Lion*"
THE CONTINUING PARTNERSHIP BETWEEN THE
FEDERAL AVIATION ADMINISTRATION
AND
HISTORICALLY BLACK COLLEGES AND UNIVERSITIES

Presented By
Joseph M. Del Balzo
Acting Administrator
Federal Aviation Administration
National Conference on Blacks in Higher Education
March 31, 1993

Good Afternoon:

It's a great pleasure to here. I welcome this opportunity to talk with educators who are interested in working with the FAA, both to train the next generation of aviation professionals and to participate in our exciting program of research in the aviation sciences.

During the next two days of this conference, you will hear a great deal about the vast program of technological renewal which is underway at the FAA. We're in the process of replacing computers and radar and other electronic gear which date from the 1960s and 70s. Back then, our equipment was state-of-the-art. But the pace of technological change was beginning to accelerate. Beginning in the late sixties, there has been -- every two years -- a doubling of the number of transistors on a silicon chip. And with each doubling, whole technologies arise, only to be quickly rendered obsolete by their successors.

For those of us at the FAA who are responsible for building and operating our nation's air traffic control system, these new technologies present both opportunity and challenge. We're literally re-inventing ourselves through technological innovation...on a scale that is unprecedented in our history.

But it's not only our technology which is changing. The character of the FAA as an organization...as a place to work...is undergoing fundamental change as well. Just as our agency tries to fulfill its responsibilities to keep up with all the current developments in science and engineering...we also try to respond to our society's demands for basic fairness and equality of opportunity. The two imperatives reinforce each other, I believe. They are mutually supportive.

There's an interesting parallel between what's happening in the FAA and another well-known institution. Back in the late 1960s...at the time when chip transistors first began to double..another important event took place. That's when we first began to watch the television series, "Star Trek".

All of us know, from the late night reruns, that the original starship Enterprise was run almost exclusively by white males. True, there was a black female communications officer and an Asian helmsman. But the non-white skin colors usually belonged to exotic non-human species. Star Trek: The Next Generation, the 1980s relaunch of the series, showed distinct signs of progress. The cerebral Captain Jean Luc Ricard replaced swaggering, tough-guy Captain Kirk. A blind black male was given a responsible post on the bridge. And both the ship's doctor and its security officer were female. Women were no longer there just for decorative diversion.

Now, this year, a third series...Star Trek: Deep Space Nine...is being produced. The 90s version is set on a stationary space station rather than a roving starship. And the best roles are reserved for minorities and women. The commander is Ben Sisko, a black single parent. His deputy is a feisty female and another character is a fusion of genders -- a young woman's body with the memories of an old man. The station is packed with aliens of all shapes and sizes, many of whom dislike and misunderstand each other...a metaphor, I suppose, for the friction and fraction we all experience as members of a multi-racial, multi-cultural society.

One purpose of science fiction is to imagine possible futures. In this instance, the changing composition of the Star Trek cast has been an accurate advance look at the changing makeup of the FAA workforce. For we're making steady progress toward our goal of achieving a balanced mix of races and cultures and genders at all levels of the FAA...in every part of our organization. We're well on our way to achieving true workplace diversity.

Now, I'd like you to imagine another possible future...one where the link between technological excellence and workplace diversity is forged even more strongly. It is a future in which a cadre of well-educated men and women from diverse racial and social backgrounds not only have the intellectual resilience to adapt to the constant advances in the aviation sciences...but have the capacity to succeed in a government structure and bureaucratic culture quite different from what we know today.

The future I'm imagining assigns a key role to the historically black colleges and universities. It anticipates a relationship with the FAA which significantly extends the collaboration which has existed since 1982...when all federal agencies were first directed by presidential order to support our country's long-established black institutions of higher education.

The future I envision will build on our past and current success in establishing FAA-recognized degree programs in the Airways Sciences...and in helping to strengthen these curricula once they are in place through our cost-sharing Airway Science grants. This future will build on our success in providing students with supervised work experience at FAA facilities as part of a nationwide work-study program. And, together, we will build a capacity for advanced scientific and technical research through the competitive award of aviation research grants and contracts.

We at the FAA place a high value on our relationship with the historically black colleges and universities because we, as an agency, have come to recognize the value of diversity. We realize that it is through the constant infusion of new people from widely varied backgrounds that our organization is best able to cope with the stress and strain of relentless change...to maintain the high levels of energy and creativity which are essential if we are to adapt to a world which everyday grows more complex and demanding.

For more than a decade now, the FAA has been working in partnership with the historically black colleges and universities in a coordinated effort to interest our youth in exploring all the career possibilities in aviation and to motivate promising students to pursue formal degree programs in the Airway Sciences. I think that, working together, we have made some real progress in overcoming the stubborn cultural barriers which have discouraged so many young Afro-Americans from even trying to learn mathematics, science and engineering.

Now we look to these same institutions to provide a new generation of managers and technical specialists...young professionals able to revitalize the FAA...with a new spirit of entrepreneurship. I know it may seem a little strange to talk of entrepreneurship in connection with the federal government. The bureaucracy we have come to know through the years has --at its best -- placed a high value on diligence and dependability, integrity and impartiality ...but it has rarely been a hot-bed of innovation and risk-taking.

It has always been politic for the federal employee to play it safe. And the reward for prudence and caution has been a lifetime berth in the bureaucracy, with the prospect of periodic promotions to the next higher grade.

Now, as we are all acutely aware, that system is undergoing a profound and, I think, permanent transformation. One sign of the times is the fact that government today is relying more and more on a different approach to management...especially of those large, complex, seemingly intractable problems which seem to dominate the federal agenda these days.

The idea is to inspire fresh thinking on an issue by bringing together informal and temporary groups of advisers and experts who thrash out a new policy or solution before disbanding and moving on. These committees and task forces and loosely defined clusters are a deliberate effort to escape the inertia and lethargy of the old-line bureaucracy. In this ad hoc world of what has been called "liberation management," agency names and job titles lose much of their importance.

This is an approach which makes sense whenever a problem reaches a certain critical mass of urgency and complexity. Well before the arrival of the Clinton administration, we at the FAA have employed the team approach in managing some of our large scale acquisition programs. We discovered that for us to successfully overcome bureaucratic foot-dragging and buck-passing...to get everyone working together to achieve a specific aim...we needed to develop a new mentality in our people, to teach them to show individual initiative and take personal responsibility.

It was necessary for us to begin to create a new culture of entrepreneurship within the FAA. This new culture is still in its sapling stage, overshadowed by the far older and more firmly rooted bureaucratic code of cautious self-protection. But its survival is essential if the FAA is to be succeed in fulfilling its public mandate in the years immediately ahead.

If Star Trek gives us an accurate advance look at our future, it is not accidental that the star ship was named "Enterprise". I believe that the partnership between the FAA and the historically black colleges and universities can take a historic turn...if you take it upon yourselves...as educators...to contribute to the survival and growth of our new entrepreneurial culture. And this may be exactly the right time for you to take this initiative. For there is evidence that a new generation of entrepreneurship is now emerging among young black professionals.

Last month, at a conference sponsored in Atlanta by Dow Jones and the Wall Street Journal, a number of speakers told of a new wave of black entrepreneurs who were different from their forebears in one key respect: they're not opening low-profit businesses in run-down neighborhoods.

In the past, many black entrepreneurs had little education or money, and the businesses they started appealed only to other low income blacks. The new people are more likely to be college-educated, have more financial resources, and are aggressively entering those sectors which have long been dominated by the white commercial establishment -- businesses such as wholesaling, finance and general contracting.

There was a story in the papers last week that when Louis Gerstner was trying to decide whether to take over as the new chairman of IBM, he remembered a motto which he had once seen embroidered on a pillow. The motto offered the advice to "Watch the turtle. He only moves forward by sticking his neck out." The emerging class of young black entrepreneurs would agree with that advice. This is a very welcome trend, and I would urge that all of us here today find ways to build its momentum. I think that, working together as partners, we can have a real impact.

What then, specifically, can we do?

The FAA's program of research grants offers a genuine opportunity for your college or university to become a center of technological excellence in some highly specialized niche of aviation science. To achieve this calls for some initiative on your part. You'll have to pick your target and commit the required resources. You'll have to take a risk. In a period of government austerity, we cannot give anyone a blank check. But the FAA...working through its HBCU program officer...will provide all the help we can. We can be particularly helpful in trying to find a match between you and one of the many minority-owned businesses...those which are participating in the 8-(A) program of the Small Business Administration.

There is an old African proverb which says "When spider webs unite, they can tie up a lion". Here is a way to pool resources, to generate entrepreneurial synergy, to collaborate with a forward-looking black business to the advantage of everyone involved...the college or university, the minority-owned firm, and the FAA. A successful tie-in with an 8-(A) company would not only build specialized technical competence but might well provide future employment opportunities for your students, both before and after graduation.

A close working relationship with a successful black-owned business would do much to stimulate student interest in scientific and technical careers. With more interest, you can broaden and expand your Airway Science curricula. And as you strengthen your position academically, you will be better able to compete for an FAA Airway Science grant which would fund even further expansion.

All this calls for some entrepreneurial drive on your part...a willingness to take a calculated gamble. But I believe that entrepreneurship is contagious. If you nurture it in your own institutions, you will pass it on to your students. And they in turn will carry this spirit with them as they seek careers in the aviation industry. Some may be emboldened to start their own companies. But even those who come to work for the FAA will be a new style of federal employee. They will be well prepared to thrive in this new era of fast-moving, high risk, high stakes entrepreneurial government.

Arthur Ashe once wrote that the presence of blacks profoundly transformed every sport they entered. In the case of basketball, blacks brought a style of improvisation, of quickness, of cool...qualities quite different from the white playing style which for years had dominated the game. I fully expect that the presence of young black professionals... both men and women...well-trained graduates of this nation's Historically Black Colleges and Universities, energized by a vigorous new spirit of black entrepreneurship, will profoundly transform the FAA.

Thank you.