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Science, and Transportation
Subcommittee on Aviation
United States Senate**

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Short and Long-term Efforts to Mitigate Flight Delays and Congestion

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



Mr. Chairman,

Thank you for inviting us to testify today. As the Subcommittee will recall, our office was heavily engaged during the summer of 2000 when congestion and delays created gridlock conditions in some parts of the aviation system. We were also directed, by statute, to review airline customer service issues that grew out of the delay problems. Since then, we have regularly reported on air traffic control modernization and industry operations and finances. Our next report updating the performance of the aviation system will be issued in June. Our testimony today is based on this body of work.

Given the difficult financial circumstances within parts of the airline industry, it seems counterintuitive that we would be here today talking once more about some of the same congestion and delay problems that existed 4 years ago as a result of the economic *robustness* of the industry. Although we are unlikely to see the same levels of disruption that we saw during 2000, when nearly 1 in 4 flights were delayed or cancelled, the potential for congestion and delays this summer in some key airports is very real and the highest it has been since that terrible summer in 2000.

Today we would like to address four areas: current traffic and delay conditions, the changing drivers of congestion – including new security-related airport congestion, FAA's actions in the past 4 years, and what these all mean as we move forward this summer and beyond. This summer, our focus will necessarily be on finding quick fixes when problems surface. That will help us through the short term, but at the same time, we cannot afford to postpone the quest for long-term solutions to address the underlying root problems. We note that for the longer term, the Department and Federal Aviation Administration (FAA) have established a Joint Planning and Development Office to develop a longer term vision for the next generation air transportation system.

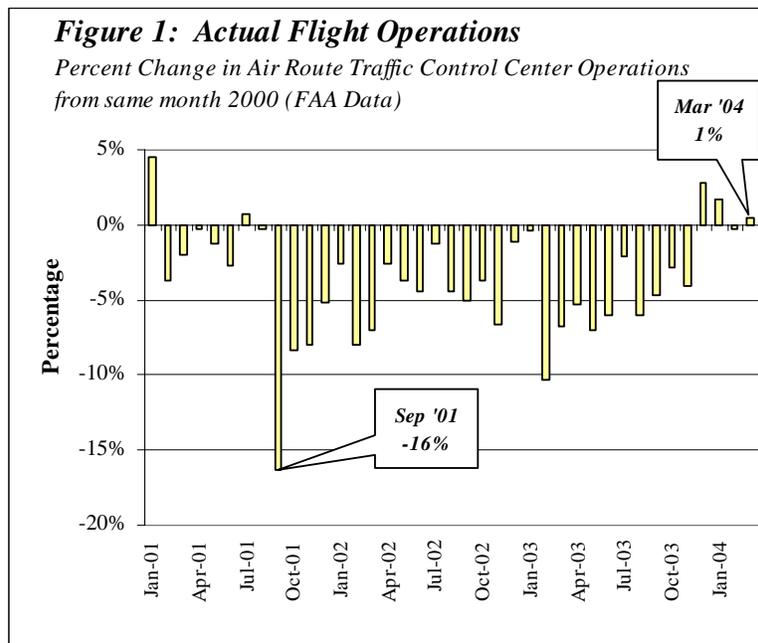
In addition to the Department's efforts to move forward this summer, we are making two recommendations today.

- First, FAA should complete and publish its revised capacity benchmarks as soon as possible, preferably before the end of May. These benchmarks were first developed in the aftermath of the summer of 2000 and set forth the number of flights a specific airport could support within the constraints of the airport's runways and the air traffic control system under varying weather conditions. As such, they were useful for disclosing capacity levels at specific airports in relation to proposed airline scheduling as well as for projecting additional capacity that could be gained through new runways, technology, and procedures.

- Second, the Department of Transportation, in collaboration with the Department of Homeland Security, should collect and report, on a monthly basis, airport-specific data disclosing wait-times at airport passenger security screening checkpoints, just as the airlines are required to report their on-time performance to the Department of Transportation. Secretary Mineta has directed DOT's Office of Aviation and International Affairs and the Bureau of Transportation Statistics to develop a statistically valid means to measure and report on security wait-times at the nation's most congested airports. Such information, in conjunction with currently collected causation data, will form a complete picture of delays in the aviation system and pinpoint where action is needed.

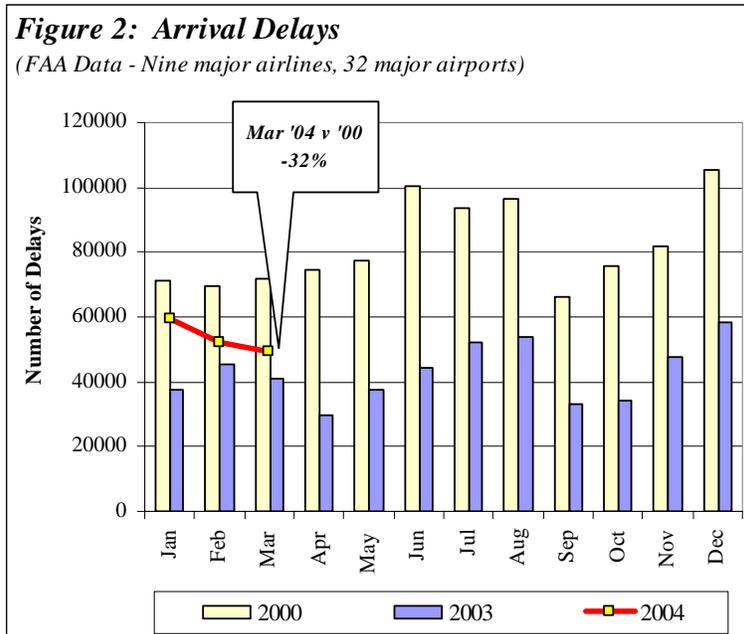
Current Conditions: Traffic is Rebounding and Existing Delays Are Likely to Worsen This Summer

Even though we are not yet into the summer months – typically the busiest for the airlines – we are already seeing delays and congestion resulting from the rebound in airline traffic. As Figure 1 illustrates, traffic levels in the past few months have come very close to or exceeded levels for comparable months in 2000.



As traffic has grown, so have delays. Although average arrival delays¹ in the first quarter of 2004 of 21.3 percent were below those experienced in the first quarter of 2000 (23.7 percent), they are up 24 percent from the same period in 2003.

¹ At the 55 Airports tracked by the FAA in the Aviation System Performance Metrics (ASPM) database.



This recent delay growth is particularly pronounced at some key airports. At Chicago-O’Hare, 37 percent of flights were delayed in the first quarter of 2004 compared to a delay rate of 21 percent in the first quarter of 2003. The average length of delay in the first quarter of 2004 at O’Hare totaled 64 minutes versus an average delay of 54 minutes in the first quarter of 2003. In the first quarter of 2000, 27 percent of flights at O’Hare were delayed for an average of 50 minutes.

One situation that bears watching, in particular, is the impact of the expected service growth at Washington’s Dulles airport. In June, when Independence Air is launched by former regional carrier Atlantic Coast Airlines as a new low-cost carrier, traffic at Dulles will increase significantly. With Independence Air’s announced intent to add as many as 300 additional daily flights by the end of the summer, and United’s intent to bring new regional partners to Dulles to replace the flights once operated by Atlantic Coast, the level of operations will increase significantly. Security lines are likely to be an issue in addition to airside congestion.

Other airports to watch include Philadelphia, Atlanta, New York-LaGuardia, and Cincinnati. All have operations levels that exceed those of the summer of 2000, experienced delay rates greater than 20 percent *last* summer, and are increasing their schedules this summer by more than 6 percent. Figure 3 identifies other airports that experienced delays last summer that are expecting increased operations in the summer of 2004.

Figure 3: Airports With Delays Last Summer That are Increasing Schedules for Summer 2004*

	Airport	Percent Flights Delayed Summer 2003	Average Delay (Minutes)	Percent Increase in Flights Summer 2004 vs. Summer 2003
1	Newark	27.00	59.19	7%
2	Philadelphia	25.40	51.27	9%
3	NY-Kennedy	25.13	56.36	20%
4	West Palm Beach	24.47	46.49	12%
5	Atlanta	24.24	48.78	9%
6	Raleigh-Durham	23.45	48.29	13%
7	Fort Lauderdale	22.95	49.12	10%
8	Washington-Dulles	22.53	51.59	17%
9	Orlando	21.76	49.28	9%
10	NY-LaGuardia	21.66	59.66	8%
11	Baltimore	21.65	53.45	5%
12	San Antonio	21.28	45.55	6%
13	Chicago-O'Hare	21.18	64.26	9%
14	Boston	20.97	49.74	9%
15	Cincinnati	19.57	48.41	6%

*Airports in boldface all have scheduled operations for the summer of 2004 that exceed schedules filed in the summer of 2000.

As Operations Increase, Focus Must be Kept on Safety

As air traffic operations increases, it is important not to lose sight of safety. There are two key areas to watch—runway incursions (potential collisions on the ground) and operational errors (when air traffic controllers allow planes to come too close together in the air). Operational errors pose a significant safety risk, with an average of three operational errors per day and one serious error (those rated as high risk) every 7 days in Fiscal Year (FY) 2003. We have seen some progress on runway incursions during the first 7 months of FY 2004; however, the most serious runway incursions have continued to increase. In addition, although operational errors decreased marginally, they are still much too high.

Runway Incursions and Operational Errors						
For the 7 month Period						
October 1, 2003 through April 30, 2004*						
	Total Incidents			Most Serious Incidents		
	FY 2003	FY 2004	Percent Change	FY 2003	FY 2004	Percent Change
Runway Incursions	185	182	(2)	13	19	46
Operational Errors	601	589	(2)	32	22	(31)

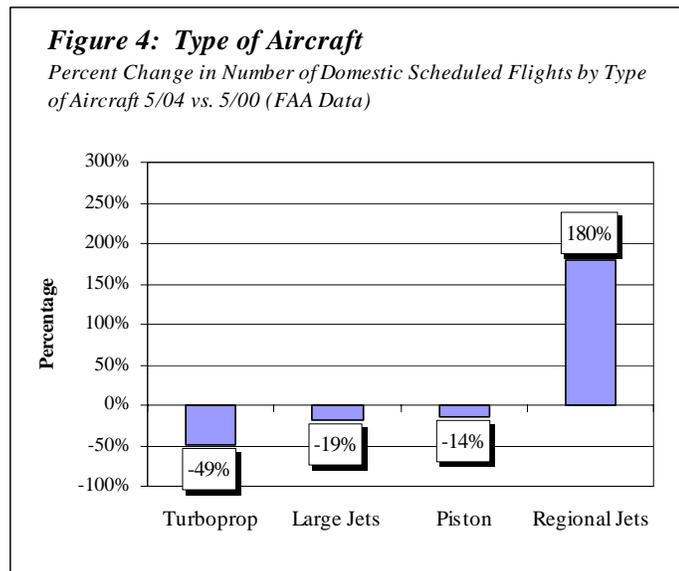
*FY 2004 information is preliminary as all incidents may not have received a final severity rating. Serious incidents for runway incursions include category A and B incidents. Serious incidents for operational errors include high severity incidents.

Changing Drivers of Congestion: Regional Jets, Low-Cost Carrier Expansion, and New Security Screening Procedures.

In addition to the traditional causes of delays, including weather and over-scheduling, there are new forces in place this summer that did not exist or were less prominent four summers ago. These forces, including significantly increased reliance on regional jets, new and expanded service by low-cost carriers, and post-9/11 security screening requirements, are presenting new challenges for our airports and airways.

- **Regional Jet Growth Places Heavy Demands On Airports and Air Traffic Control.**

In recent years, the network carriers have begun to rely more heavily on their regional partners to serve smaller markets with their fleets of smaller regional jets. In May 2000, scheduled flights aboard regional jets accounted for only 9 percent of all flights. In May 2004, scheduled flights aboard regional jets will account for 29 percent of all offered flights. Since May 2000, scheduled regional jet departures have increased by 180 percent.



Data from all 31 large hub airports that are tracked by the FAA indicate that the growth is more pronounced on an airport-by-airport basis. In 12 of the 31 airports, including some of those that experienced serious delays in 2000, the number of scheduled flights in May 2004 exceeded the number of scheduled flights in May 2000. In 9 of those 12 airports, however, the number of available seats scheduled still lagged behind the number of available seats offered in May 2000, indicating, at least in part, how

network carriers are using a growing number of smaller aircraft to move a smaller number of passengers.

- **Low-Cost Carrier Expansion Adds New Flights to Large and Medium-sized Markets**

Low-cost carriers, which once opted to operate at alternative, but more affordable secondary airports, are now challenging legacy carriers in their hubs in most large and medium-sized markets, and in transcontinental markets which they had previously not served. Earlier this month Southwest Airlines began operations at Philadelphia International Airport, going head-to-head against incumbent carrier U.S. Airways on several of its most profitable routes. Frontier Airlines is scheduled to begin serving Philadelphia from Los Angeles later this month.

Low-cost carriers together now control about 21 percent of domestic air capacity – up from 15 percent 4 years ago. From a consumer standpoint, the impact of a low-cost carrier entering a market is often a sudden and significant reduction in average airfares. In fact, most low-cost carrier strategies are built on generating new passenger demand rather than shifting existing passengers from incumbent carriers. As a result, from an operational standpoint, the low-cost carriers new operations, coupled with incumbent carriers' competitive response to new entry can produce significant additional demands on an airport's runways and airspace.

- **Post 9-11 Security Screening Process Increases Travel Complexity.**

When the Transportation Security Administration (TSA) was created within the Department of Transportation after September 11, Secretary Mineta established a goal that airline passengers be processed through new Federally-staffed airport passenger screening checkpoints in 10 minutes or less; a standard that was considered appropriate to meet the dual needs of ensuring secure airways while maintaining national mobility.

TSA is periodically collecting data at a rotating list of selected airports. In April, TSA reports that average national wait time in April was 3.8 minutes during off-peak hours and 7.9 minutes during peak hours, although TSA advises that these numbers may be misleading as they do not reflect particular peaks during the week or in different seasons.

Meanwhile, many airports, airlines, and consumers are becoming very vocal about lines at security checkpoints that routinely extend an hour or longer. For example, at Atlanta-Hartsfield Airport last week, news media reported that security lines stretched 1/2-mile long on one morning. At LaGuardia's "B" terminal, which houses all of the airport's low-cost

carriers, security lines routinely stretch 30 to 60 minutes long in the evenings. With an anticipated growth in passengers during the busy summer season – some predict even longer delays.



At Phoenix-Sky Harbor International Airport, lines at security checkpoints averaged nearly 30 minutes in April 2004.

Passengers, airlines, and airports need accurate information concerning all aspects of the travel experience. It is time for detailed airport-specific data to be collected and reported, similar to the process used by the airlines to report delay occurrences and causes. If there are problems such as those being anecdotally reported, the first step to addressing them is to adequately quantify them.

The national goal is to provide high quality security in such a way that recognizes the importance of passenger mobility. In our work related to airline customer service commitments, one of the key shortfalls by the airlines was in how frequently and accurately they communicated with passengers about the occurrence of delays. The airlines made significant investments in systems to improve communications and the Government should adhere to the same standard.

Since 2000, FAA Has Made Progress in Managing and Enhancing Capacity, But Additional Actions Need to Be Taken.

An important lesson from the summer of 2000 is that it is very difficult to make decisions and take action in the middle of a busy travel season. FAA and the airlines have taken a number of actions since the summer of 2000 that will help to enhance the flow of air travel this summer. Nevertheless, several efforts, including a new precision and approach landing system, that FAA believed held promise in the aftermath of the summer of 2000 have not materialized.

Actions Taken

- The Department and FAA have demonstrated a willingness to work with airlines at Chicago O’Hare to adjust airline schedules when flights exceeded the physical capacity of the airport. This willingness to take a hands-on approach to address delays was not present in 2000.
- FAA and the airlines have worked together to develop plans specifically for this summer. These include establishing express lanes in the sky and establishing a 90-minute delay trigger. When delays at an airport reach 90 minutes or more, other airports sending flights into the congested area will hold until congestion clears.
- FAA and the airlines now have daily conference calls about the status of the National Airspace System and expected weather patterns to help manage traffic, which provides an automatic feedback mechanism.
- FAA completed its “choke point” initiative to address bottlenecks in airspace that caused delays in the heavily traveled airspace triangle between Chicago, Washington DC, and Boston.
- New runways have been built at Phoenix, Detroit, Miami, Denver, Houston, and Orlando airports. The first phase of a runway project in Cleveland was also completed last year. Without a doubt, congestion would be much worse this summer without the new capacity in the system, particularly since five of the new runways are at hubs for network carriers and Orlando is a destination airport for much of the Eastern U.S.
- We note that for the longer term, the Department and FAA have established a Joint Planning and Development Office to develop a longer-term vision for the next generation air transportation system.

Actions Needed

During the summer of 2000, it was clear that a number of factors, including airline scheduling, impact of weather on various runway configurations, and air traffic control considerations determined how many aircraft an airport could handle under good and bad weather conditions. In 2000, FAA did not coordinate these data.

This was highlighted in Congressional hearings, and the Agency developed and published capacity benchmarks for the 31 busiest airports in 2001. These benchmarks set forth the number of flights a specific airport could support within the constraints of the airport's runways and air traffic control system under varying weather conditions. As such, they were useful for disclosing capacity levels at specific airports in relation to proposed airline scheduling as well as for projecting additional capacity that could be gained through new runways, technology, and procedures. Because of the reduced traffic that followed the economic downturn and 9/11, the benchmarks were not as critical to FAA for decision-making purposes in 2002 and 2003.

As of today, we do not have updated capacity benchmarks but we understand that they are almost done. FAA has been updating its capacity benchmarks for months, and has expanded its analysis to include 35 airports, but has not yet released them. FAA should move to finalize and publish these updated benchmarks as soon as possible, preferably before the end of May 2004.

A number of efforts were advanced in the 2000-2001 timeframe for enhancing capacity in the near-term, including airspace redesign, the Local Area Augmentation System (a new precision landing system), and Controller-Pilot Data Link Communications (a new way for controllers and pilots to exchange information). There was even some discussion about accelerating the development of the Local Area Augmentation System. Since then, all three of these efforts have experienced problems.

While FAA completed its choke point initiative, our recent work shows that much work remains to get airspace redesign efforts on track and determine what can be accomplished in the near- and long-term. For example, FAA has over 40 ongoing airspace redesign projects but many of the them are not on schedule due to environmental issues, changes in the scope of projects, and/or difficulties in developing new procedures. In addition, the Local Area Augmentation System and Controller-Pilot Data Link Communications clearly had merit but they faced fundamental problems with respect to misjudging technological maturity or unexpected cost growth that needed to be addressed before they could move forward.

New runways provide the largest increases in capacity, and seven new runways are expected to be completed between now and 2008. There are about 10 other new runway projects in various planning stages, including a major effort at Chicago O’Hare, but FAA does not yet have firm completion dates for them. While the six recently completed runways will enhance capacity and limit delays at those airports, only one of the five airports (Atlanta) currently seeing the most delays is expected to have a new runway within the next 2 years. It is important that FAA continue to monitor the status of new runway projects to ensure they come on line.

Status of Major New Runway Projects – May 2004

Airport	Estimated Completion Date (Calendar Year)	Phase(s)	Cost Estimate (Millions)	Observations and Challenges to Timely Completion (as provided by the airport)
Cincinnati	2005	Construction	\$250	None cited.
Minneapolis	2005	Construction	\$618	The runway was delayed from 2003 to 2005 because of the economic situation of the air carriers serving the airport. The current challenges are: <ul style="list-style-type: none"> ✓ Having NAVAIDS operational. ✓ Relocating tenants.
Atlanta	2006	Construction	\$1,250	The runway was delayed from 2005 to 2006 due to lawsuits related to fill dirt. The current challenge is: <ul style="list-style-type: none"> ✓ Complexity of the project.
Boston	2006	Construction	\$78	The runway was delayed from 2005 to 2006 because of public opposition and lawsuits. The current challenge is: <ul style="list-style-type: none"> ✓ Maintaining current operations during construction.
St. Louis	2006	Construction	\$1,023	The runway was delayed for 6 months due to airport contract delays and soil settlement concerns. Current challenges are: <ul style="list-style-type: none"> ✓ Weather and potentially unknown site conditions.
Dulles	2008	Environmental	\$247	The runway was delayed from 2007 to 2008 due to economic concerns with the major hub airline. The airport did not cite any current challenges.
Seattle	2008	Environmental and Construction	\$1,200	The runway was delayed from 2006 to 2008 due to environmental concerns. The current challenge is: <ul style="list-style-type: none"> ✓ Pending citizen lawsuits.

Where Do We Go From Here?

Increased flights and the onset of summer weather disturbances are likely to exacerbate the problems already apparent in the system. Summer schedules filed by the airlines indicate significant increases in flight operations, including those in markets already experiencing significant delays. Also, passenger counts are likely to increase during the airlines' busiest season, further exacerbating security-related delays.

- **FAA Needs to Complete and Publish Revised Capacity Benchmarks.** FAA needs to complete its updates and finalize its work on airport capacity benchmarks and publicly release them. These benchmarks show the maximum number of flights that can be handled each hour for both good and bad weather at the airports analyzed.

If the airlines' scheduled flights at an airport exceed its good weather capacity or far exceed its bad weather capacity (particularly if it is an airport that can be expected to experience many days of severe weather in the summer), then we can expect delays radiating out into the aviation system from this airport. But by having updated benchmarks and using them to analyze scheduled operations, the Department and FAA will be in a position where they can anticipate and attempt to ameliorate delays before they materialize this summer.

- **Accurate and Specific Airport Security Wait-time Data Needs to be Collected and Publicly Disclosed.** Information on all parts of the travel experience is necessary for consumers who make travel decisions based on total door-to-door trip times – not just take-off to landing times. Both the Department of Transportation and the Department of Homeland Security have mandates concerning air transportation. DOT has a mandate to ensure safety and mobility, while DHS has a mandate to ensure security. The two agencies need to work collaboratively to find a way to meet these missions. As a start, a reasonable wait-time standard needs to be developed at each airport, for peak and off-peak hours. Data measuring performance against this standard should be submitted to the Department of Transportation, similar to the monthly delay data the Department required from the air carriers following the gridlock experienced in 2000.

The collection of this data has had some positive impacts on the industry. Monitoring and publishing performance statistics has exerted pressure on the airlines to publish more realistic schedules and improve on-time performance.

In response to this emerging problem, Secretary Mineta has directed the Office of Aviation and International Affairs and the Bureau of Transportation Statistics to develop a statistically valid means to measure and report on security wait-times at the nation's most congested airports. Such information, in conjunction with currently collected causation data, will form a complete picture of delays in the aviation system and pinpoint where action is needed.

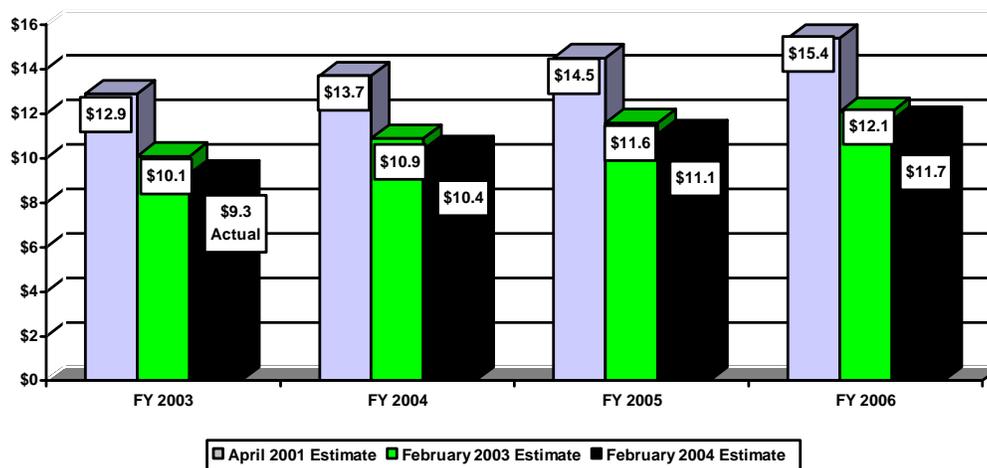
- **Short-term Allocation of Capacity.** We are likely to see travel disruptions this summer as demand once again exceeds capacity in some markets. The Administration has several options for addressing the problems. It could take a "hands-off" approach and rely on airlines to take actions to match schedules to available capacity. In recent years, some major airlines have taken actions to depeak their dominated hubs to alleviate self-imposed congestion and the self-imposed penalties of delays and cancellations that result.

At airports where no single carrier dominates, airlines are reluctant to voluntarily reduce schedules for fear of ceding market share to competitors. In these situations, the Administration could take a more interventionist, command and control approach such as brokering or ordering schedule adjustments. The Administration has shown that it is willing to do so by its actions to deal with the spiraling delays at Chicago O'Hare earlier this year, although it is still too early to tell whether the most recent round of schedule reductions will have its desired impact. Administrative intervention within a competitive marketplace is not an ideal long-term solution, but given the severity of delays in Chicago, there were few other options available with potential for immediate relief.

If neither of these options provides relief, and the situation continues to get worse, the time may be appropriate to begin to identify and evaluate market-based solutions. Even if administrative solutions work this summer to reduce queuing and customers' dissatisfaction with uncertain and unreliable service, their continued use would introduce distortions into aviation markets over time.

- **Long-Term Solutions Will Require Rethinking of How System is Funded.** One of the most significant changes between 2000 and 2004 is the loss of the premium business passengers. In addition to hurting the industry's revenues, the Aviation Trust Fund took a hard hit when the market for thousand dollar unrestricted tickets dried up. The Trust Fund's primary funding source – the 7.5 percent ticket tax – applied to lower average fares results in lower tax revenue to the trust fund. In 2001, FAA estimated that Trust Fund revenues in 2005 would be about \$14.5 billion. That estimate has now been reduced to \$11.1 billion.

Figure 6: Aviation Trust Fund: Comparison of Trust Fund Receipts
\$ in billions



It is against this backdrop that aviation funding is constrained and any material increases are going to require either a change in the tax structure, i.e., how revenue is generated for the Trust Fund, or a greater reliance on the General Fund.

Mr. Chairman, this concludes my statement. I am happy to answer any questions that you might have.

Attachment

The following charts are text-only versions of graphical charts that appear earlier in this document:

Runway Incursions and Operational Errors For the 7 Month Period October 1, 2003 through April 30, 2004		
FY 2003	Runway Incursions – Total Accidents	185
FY 2004	Runway Incursions – Total Accidents	182
Percent Change	Runway Incursions – Total Accidents	(2)
FY 2003	Operational Errors – Total Accidents	601
FY 2004	Operational Errors – Total Accidents	589
Percent Change	Operational Errors – Total Accidents	(2)
FY 2003	Runway Incursions – Most Serious Accidents	13
FY 2004	Runway Incursions – Most Serious Accidents	19
Percent Change	Runway Incursions – Most Serious Accidents	46
FY 2003	Operational Errors – Most Serious Accidents	32
FY 2004	Operational Errors – Most Serious Accidents	22
Percent Change	Operational Errors – Most Serious Accidents	(31)

Figure 1 - Actual Flight Operations

Percent Change in Air Route Traffic Control Center Operations from same month of 2000 (FAA data)

Month	Year	Percent Change
January	2001	4.51%
February	2001	-3.68%
March	2001	-2.00%
April	2001	-0.31%
May	2001	-1.30%
June	2001	-2.73%
July	2001	0.73%

August	2001	-0.30%
September	2001	-16.38%
October	2001	-8.35%
November	2001	-8.01%
December	2001	-5.18%
January	2002	-2.63%
February	2002	-8.02%
March	2002	-7.00%
April	2002	-2.57%
May	2002	-3.65%
June	2002	-4.46%
July	2002	-1.22%
August	2002	-4.39%
September	2002	-5.01%
October	2002	-3.75%
November	2002	-6.63%
December	2002	-1.10%
January	2003	-0.36%
February	2003	-10.28%
March	2003	-6.81%
April	2003	-5.27%
May	2003	-6.95%
June	2003	-6.00%
July	2003	-2.08%
August	2003	-5.97%
September	2003	-4.63%
October	2003	-2.84%
November	2003	-4.04%
December	2003	2.82%
January	2004	1.72%
February	2004	-0.25%
March	2004	0.51%

Figure 2 - Arrival Delays

(FAA Data - Nine major airlines, 32 major airports)

Month	Year	Number of Delays
January	2000	71,485
February	2000	69,499
March	2000	71,757
April	2000	74,655
May	2000	77,400
June	2000	100,115
July	2000	93,399
August	2000	96,550
September	2000	66,251
October	2000	75,543
November	2000	81,731
December	2000	105,180
January	2003	37,552
February	2003	45,191
March	2003	41,095
April	2003	29,885
May	2003	37,305
June	2003	44,507
July	2003	52,063
August	2003	54,001
September	2003	33,266
October	2003	34,422
November	2003	47,814
December	2003	58,318
January	2004	59,228
February	2004	52,127
March	2004	49,087

Figure 4 - Type of Aircraft

Percent Change in Number of Domestic Scheduled Flights by Type of Aircraft
May 2004 versus May 2005 (FAA Data)

Type of Aircraft	Percent Change
Turboprop	-49%
Large Jets	-19%
Piston	-14%
Regional Jets	180%

Figure 6 - Aviation Trust Fund: Comparison of Trust Fund Receipts

FY 2003	April 2001 Estimate	\$12.9 million
FY 2003	February 2003 Estimate	\$10.1 million
FY 2003	February 2004 Estimate	\$9.3 million
FY 2004	April 2001 Estimate	\$13.7 million
FY 2004	February 2003 Estimate	\$10.9 million
FY 2004	February 2004 Estimate	\$10.4 million
FY 2005	April 2001 Estimate	\$14.5 million
FY 2005	February 2003 Estimate	\$11.6 million
FY 2005	February 2004 Estimate	\$11.1 million
FY 2006	April 2001 Estimate	\$15.4 million
FY 2006	February 2003 Estimate	\$12.1 million
FY 2006	February 2004 Estimate	\$11.7 million