

**Before the Committee on Commerce,  
Science and Transportation  
Subcommittee on Aviation  
United States Senate**

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# **Outlook for Aviation Delays in the Summer of 2005 and Actions Needed To Mitigate Congestion in the Short- and Long-term**

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



Mr. Chairman and Members of the Subcommittee,

Thank you for inviting us to testify today. As we venture into the summer months—historically the peak air travel time—congestion and delays are on the forefront of concern. In many markets, traffic and delays are back at a rate as severe as 2000, when travel disruptions were at their peak. And in some markets they are worse. Today I want to describe the scenario—what we’ve seen recently, and where we’re likely to be this summer, what is driving the delays, and what FAA must do to address congestion in both the short- and long-term.

### **Traffic Levels Are Growing as Are the Number, Rate, and Length of Delays in Key Markets**

Both enplanements and operations are back to or greater than 2000 levels, when air travel was at its peak. Enplanements in 2004 were 698.7 million, just about 250,000 short of 2000 enplanements. Flight operations in April 2005 actually exceeded April 2000 operations by 4 percent.

One of the factors stimulating traffic growth is the continued decline in average airfares. In April 2000, the average one-way airfare on a 1,000-mile flight was \$147—this past April the fare was down 20 percent to \$118. The one exception to rebounding traffic levels is in the area of small communities. In cities with non-hub airports like Missoula, Montana; Texarkana, Arkansas; Yuma, Arizona; and Charleston, West Virginia, scheduled flights in July 2005 to large, medium, small, and other non-hub airports are down 21 percent and seats are down 12 percent from July 2000.<sup>1</sup> Service levels remain depressed despite a doubling in recent years in Essential Air Service funds, and a near 50 percent increase in the number of subsidized cities.

As traffic has increased, so have delays. In the first quarter of 2005, arrival delays were up 17 percent over the first quarter of 2004, and affected more than 25 percent of all flights. The average length of delay is also rising, with first quarter 2005 delays averaging 52.3 minutes compared to 48.5 minutes in the same period in 2000. During the first quarter of 2005, more than one-third of all arrivals were delayed at five airports, including LaGuardia, Philadelphia, and Newark. We note that the most delayed airports are not necessarily the busiest airports. In fact, of the 15 *highest-volume* airports during the first quarter of 2005, only 5 are among the top 15 *most delayed* airports.

Overall, we expect the traffic and delay growth to continue, especially in those markets where we are already experiencing problems. Total operations are

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<sup>1</sup> Includes all domestic and international flights.

continuing to increase, and summer storms are notorious for adding delays in Southeast and Northeast markets like Atlanta and New York which are already suffering from capacity-related delays.

### **Outlook for This Summer and Beyond: Six Airports to Watch**

Airports to watch this summer include *Philadelphia, LaGuardia, Newark, Washington-Dulles, Atlanta, and Fort Lauderdale*. All have some or all of the following characteristics: significant delays last summer, in most cases exceeding summer 2000 delays; substantial projected traffic growth this summer; or consistently elevated delay rates sustained over the past year or longer. On a cautionary note, we learned a hard lesson last December when weather problems and traffic volume in a handful of cities bumped up against the pared-down operations of one network carrier. Many network carriers have been trimming operations to lower costs and improve their financial conditions. With traffic expected to grow this summer, the airlines—as well as FAA and the airports—need to ensure that staff and resources are commensurate with the level of scheduled operations.

On a positive note, delays appear to be improving at Chicago-O’Hare, an airport which has been plagued by congestion for more than 30 years, despite regulatory intervention. We expect the improvement to continue through the summer months. O’Hare ranked fourteenth in delays during the first quarter of 2005 in contrast to its rank of first in the same period in 2004. The improvement appears to be, at least in part, a result of the Department’s administrative actions in 2004 to cap hourly operations at O’Hare at a level consistent with available capacity. The controls on landing slots and schedules have temporarily brought some short-term relief, but in the long run, controls do not accommodate demand and can stifle competition.

### **Causes of Delay Growth Include Significant Low-Cost Carrier Expansion, Down-Sizing of Network Carrier Hubs and Subsequent Transfer of Service to Alternative Hubs, and Continued Growth in Regional Jet Operations**

- **Incursion of Low-cost Carriers into Legacy Hubs Spurs Traffic and Congestion Growth.** Low-cost carriers are now challenging legacy carriers in their hubs in most large- and medium-sized markets, increasing traffic and contributing to delays. For example, the increasing presence of JetBlue and other low-cost carriers at New York–JFK are causing delays in an airport that has been operating at under-capacity since traffic dropped off in late 2000. During the first quarter of 2005, low-cost carrier traffic increased more than

five-fold while other traffic<sup>2</sup> was down by 34 percent from the first quarter of 2000. During this same period, delays at JFK were 34.5 percent higher than during the same period in 2000 and represented an increase of more than 52 percent over the first quarter of 2004. Likewise, following the start-up of new low-cost carrier Independence Air at Washington-Dulles, traffic levels there increased by 79 percent and delays more than doubled.

New market entry by low-cost carriers can have dramatic effects on the average fares in those markets, often stimulating demand and driving additional service frequencies. For example, when Southwest began service between Philadelphia and Providence in 2004, the average one-way fare dropped from \$328 to \$54 and the number of passengers in the quarter following Southwest's market entry (third quarter 2004) increased from fewer than 10,000 to more than 100,000.

- **Displaced Traffic from Down-sized Legacy Carrier Hubs Contributes to Congestion Growth in Other Hubs.** In an effort to reduce costs and improve efficiency, several mainline carriers have closed hub operations at some airports and transferred operations into remaining hubs. For example, US Airways downsized its Pittsburgh hub operations by 3,800 flights in the fourth quarter of 2004 and shifted mainline aircraft and operations to its hubs in Philadelphia, Charlotte, and Fort Lauderdale. While delays in Pittsburgh were down minimally in the first quarter of 2005 from the first quarter of 2004, delays increased in each of the other three hubs by more than 60 percent.
- **Increased Regional Jet Operations and Rebounding Jet-powered General Aviation Traffic Are Increasing Demands on High-Altitude Airspace and Airport Runways.** Network carriers continue to shift service to regional jet aircraft. In July 2000, scheduled flights aboard regional jets accounted for 10 percent of all flights. In July 2005, they will account for 32 percent of all flights. Unlike their turbo-prop driven predecessors, regional jets occupy the same airspace and require access to the same runways as larger jet aircraft.

While the rest of the industry has shown signs of recovery, general aviation (GA) operations as a whole have continued to decline and remain 12.4 percent below 2000 levels. However, within the GA market, one sector—jet aircraft activity—is improving. Flight hours logged by GA jets in 2004 were up 6.2 percent over 2000 levels.

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<sup>2</sup> Domestic and international operations by US flag carriers, international operations by foreign flag carriers, and charter service.

## **Future Drivers of Congestion Will Include Continued Low-Cost Carrier Growth, Increased International Operations, and Expanding Jet-powered General Aviation Traffic**

- Continued growth of low-cost carrier networks in hubs formerly dominated by legacy carriers will increase demand on airport and air traffic control operations.
- International traffic, which has lagged behind domestic rebounding traffic, is once again picking up. In the summer 2005, scheduled international passenger and cargo operations are projected to exceed summer 2000 levels by 16 percent and 12 percent, respectively.
- One of the new challenges that we are likely to encounter within the next year is operations by a new class of aircraft called Very Light Jets (VLJs) or microjets, which are scheduled to enter the market as early as March 2006. Priced as low as \$1 million per aircraft, microjets may be more attractive to the business travel market than the currently available comparable aircraft priced at about \$6 million. Microjet manufacturers anticipate that these twin-engine, 4-6 passenger jets, will find a niche among a variety of corporate and private owners as well as on-demand air taxi service. While supporters believe that microjets have the potential to redefine business travel, others are more conservative about how quickly, where, and to what extent the market will materialize.

## **FAA Has Made Progress in Managing and Enhancing Capacity but Additional Actions Need To Be Taken To Meet the Demand for Air Travel in the Short- and Long-Term**

Since the Summer of 2000, FAA has taken a range of actions that have improved the flow of air travel. These include putting administrative controls in place at Chicago O'Hare, improved communications between airlines and FAA's Command Center, and procedural changes to help manage the affects of bad weather. Moreover, a number of new runways have come on-line. Most recently in January 2005, FAA reduced vertical separation for aircraft traveling at high altitudes (between 29,000 and 41,000 feet) to enhance the flow of air travel.

Without question, congestion and delays would be much worse this summer without these actions, particularly the administrative controls at Chicago O'Hare and the commissioning of new runways. However, the anticipated demand for air travel highlights the need for additional actions in both the short- and long-term.

- Keeping new runway projects on schedule, including projects at Minneapolis, Cincinnati, St. Louis, Atlanta, Boston, Philadelphia, Charlotte, and Seattle Airports, is important because FAA reports that new runways provide the largest increases in capacity. We note that of the 15 most congested airports (in terms of percent of operations delayed in the first quarter of 2005), only 3 airports (Atlanta, Boston, and Philadelphia) are expected to complete new runway projects within the next 2 to 3 years.
- Getting FAA's airspace redesign efforts on track is critical to enhance capacity. Earlier this month, we issued a report on FAA's airspace redesign efforts and found that cost and schedules for projects are not reliable, projects are delayed 3 years or more, and airspace redesign efforts are not effectively coordinated among FAA organizations. We made recommendations aimed at strengthening and speeding the transition from project planning to implementation by establishing cost and schedule controls for airspace projects, prioritizing efforts, and linking airspace projects to agency budgets.
- Addressing the pending wave of controller retirements will be a challenge. Over the next 10 years, FAA estimates that approximately 73 percent of the organization's 15,000 controllers will become eligible to retire. This past December, FAA issued the first in a series of reports outlining how the problem will be addressed. While a good first step, the plan does not discuss cost nor hiring and staffing needs by location. This information is critical because FAA has over 300 air traffic control facilities, and many (like Chicago O'Hare) have the potential to impact the entire National Airspace System. Without accurate facility-level planning, FAA runs the risk of placing too many or too few controllers at key locations and could waste a one-time opportunity to address longstanding concerns about controller staffing imbalances. FAA must also be cognizant that a much higher percentage of its controller workforce will be trainees. FAA will need to continually monitor the training results from individual facilities to ensure that the significant increase in trainees does not adversely impact efficiency or safety.
- Setting expectations for FAA's new Joint Planning and Development Office is critical. This office was mandated by Congress to develop a vision for the next generation air traffic management system in the 2025 timeframe. There are a number of reasons why this effort is important, including the forecasted demand in air travel and the factors (i.e., microjets) that may drive increased operations. It is also important because much of FAA's current capital account focuses on keeping things running (i.e., infrastructure sustainment), not new initiatives. FAA reports that the

current air traffic control system (or “business as usual”) will not be sufficient to accommodate future growth in traffic or the changes facing the aviation community. Key issues focus on what new systems are needed and how new systems, capabilities, procedures, and changes in airspace management can transform the way air traffic services are provided. FAA needs to determine what the new office can do in 5- and 10-year intervals and establish corresponding funding requirements.

- In the immediate term, there are two airports—Chicago-O’Hare and New York-LaGuardia—where traffic, if unchecked, is likely to overtax available capacity. Slot restrictions were in place in both airports through 2002, when O’Hare’s were lifted. At LaGuardia, slot controls were lifted in 2002 and then reinstated when delays became unmanageable. At O’Hare, the Administration has imposed administrative controls to cap the number of hourly flights at a level consistent with the airport’s capacity. The Department has a rulemaking underway that would extend these caps for 3 years until planned runway projects can add capacity.

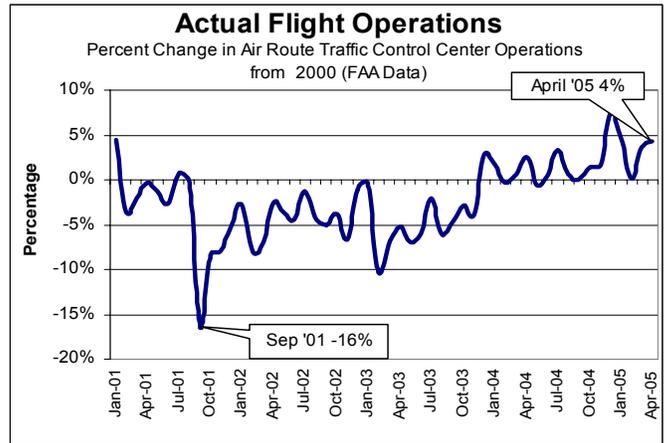
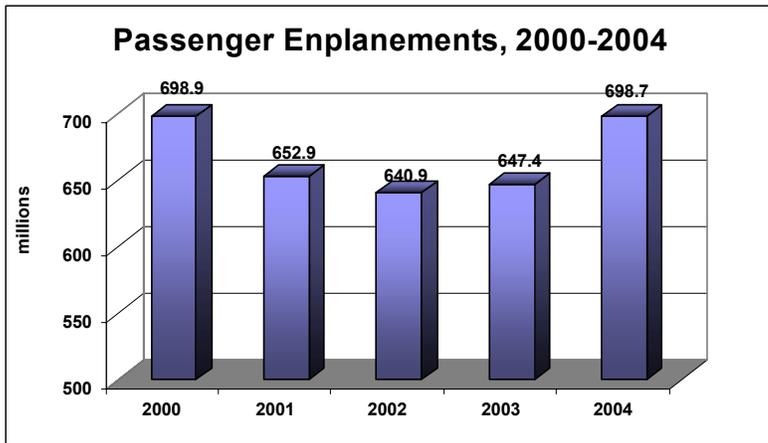
At LaGuardia, however, new construction is not a viable option because of land constraints. At LaGuardia, and potentially other airports where delays may return to a crisis level faster than capacity can be added, market-based solutions may offer some temporary, or even permanent, relief. Market-based solutions such as congestion pricing or slot auctions may allocate scarce capacity without distorting the market, but they entail difficult policy decisions such as how to value capacity, what the appropriate price is for the respective users, who should determine the price, who collects the revenues, and how the revenues should be used.

Mr. Chairman, this concludes my formal statement. An attachment to this statement includes charts, graphs, tables and other data that further illustrate the issues I have highlighted today. I would be happy to answer any questions.

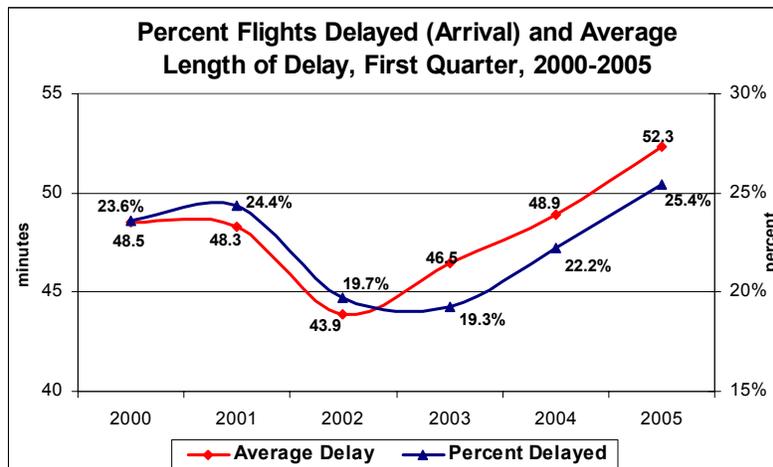
## ATTACHMENT

# Traffic Growth In Key Markets Is Driving Delays and Congestion While Smaller Communities Continue To Experience Depressed Service Levels

Both enplanements and operations are back to or at even greater levels than 2000, when air travel was at its peak. Enplanements in 2004 were 698.7 million, just about 250,000 short of 2000 enplanements. Flight operations in April 2005 actually exceeded April 2000 operations by 4 percent.



Traffic growth has led to a resurgence in congestion and delays. Systemwide arrival delays in the first quarter of 2005 were up 17 percent over the first quarter of 2004, affecting more than 25 percent of all flights. The number and percentage of delays in the first quarter of 2005 were also greater than the number of delays in the first quarter of 2000, generally considered to be the hallmark of poor on-time performance. The average length of delay is also rising, with first quarter 2005 delays averaging 52.3 minutes compared to 48.5 minutes in the same period in 2000.



The increased rate of flight delays for the first quarter of 2005 was concentrated in airports in the Northeast and Florida. We note that the most delayed airports are not necessarily the busiest airports. In fact, of the *15 highest-volume* airports during the first quarter of 2005, only 5 are among the *top 15 most delayed* airports. The following table identifies the Top 15 highest-volume airports as ranked by scheduled arrivals and their delay profiles.

<b>Delay Profiles at 15 Highest-Volume Airports: First Quarter of 2005</b>				
<b>Volume Rank</b>	<b>Airport</b>	<b>Scheduled Arrivals</b>	<b>Percent Delayed</b>	<b>Top 15 Delayed?/ Rank</b>
1	Atlanta (ATL)	117,862	28%	<b>Yes (11)</b>
2	Chicago-O'Hare (ORD)	114,870	27%	<b>Yes (14)</b>
3	Dallas-Fort Worth (DFW)	85,505	18%	<b>No</b>
4	Los Angeles (LAX)	74,211	25%	<b>No</b>
5	Denver (DIA)	65,821	20%	<b>No</b>
6	Houston Int'l (IAH)	64,057	20%	<b>No</b>
7	Cincinnati (CVG)	62,475	21%	<b>No</b>
8	Minneapolis (MSP)	61,864	22%	<b>No</b>
9	Washington-Dulles (IAD)	61,270	25%	<b>No</b>
10	Detroit (DET)	61,265	24%	<b>No</b>
11	Phoenix (PHX)	60,309	25%	<b>No</b>
12	Philadelphia (PHL)	60,291	33%	<b>Yes (4)</b>
13	Charlotte (CLT)	57,929	23%	<b>No</b>
14	Las Vegas (LAS)	50,518	27%	<b>Yes (15)</b>
15	Newark (EWR)	49,399	33%	<b>Yes (5)</b>

**Most of the Top 15 Delayed Airports Experienced Traffic Growth, Increased Delay Rates, and Longer Average Delays.**

- **Twelve of Fifteen Airports Experienced Traffic Growth.** Among the top 15 delayed airports, as ranked by percent of flights delayed, 12 airports experienced traffic growth of between 1 and 18 percent over first quarter 2004 levels, with the largest growth at Indianapolis (+18 percent), Philadelphia (+16 percent), and Fort Lauderdale (+15 percent). Scheduled arrivals were flat at LaGuardia and scheduled arrivals at Newark and O'Hare actually declined

by 2 percent and 3 percent, respectively. Both O’Hare and LaGuardia are operating under administratively-imposed traffic caps.

- Fourteen of Fifteen Airports Experienced Growth in Delay Rates.** The percent of flights delayed increased over first quarter 2004 levels in all of the top 15 delayed airports except O’Hare, most notably at Fort Lauderdale (+11.3 percentage points), LaGuardia (+11.2 percentage points), and Philadelphia (+9.6 percentage points). The percentage of flights delayed at O’Hare actually *decreased* by nearly 10 percentage points from this period.
- Fourteen of Fifteen Airports Experienced Increased Average Lengths of Delay.** In the first quarter of 2005, the average length of delay increased over the first quarter of 2004 at 14 of the 15 airports, with the greatest increases at Fort Lauderdale (47 to 57 minutes), Philadelphia (50 to 60 minutes), and Atlanta (52 to 61 minutes). The average length of delay at O’Hare was 62 minutes, which was more than a 2 minute decrease from the average 65 minute delay experienced during the first quarter of 2004.

The following table identifies the 15 most delayed airports and their net growth in traffic, percent of flights delayed, and change in average length of delays. Chicago-O’Hare is highlighted because it is the only airport on the list that improved in the first quarter 2005 over the first quarter of 2004.

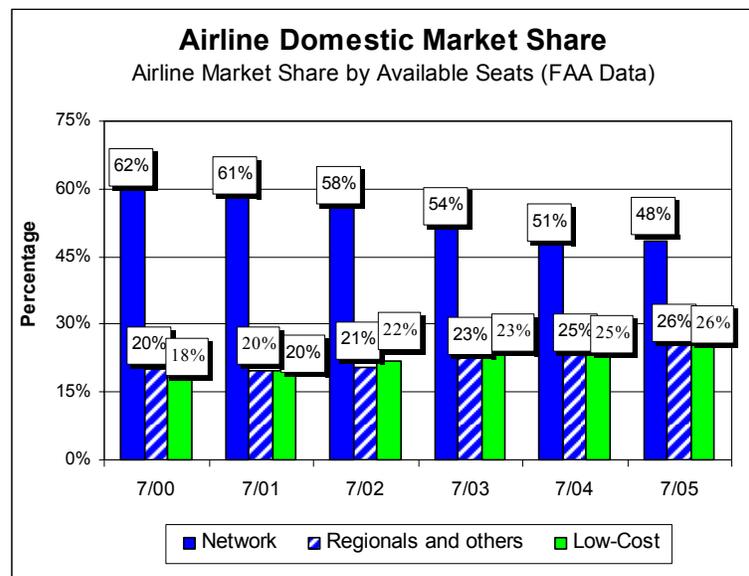
Top 15 Delayed Airports – First Quarter 2005 vs. First Quarter 2004, by Percent Delayed (Columns may not total due to rounding)												
1Q05 Rank	Airport	Arrivals	% Delay	Average Minutes	1Q04 Rank	Arrivals	% Delay	Average Minutes	Change Arrivals	Percentage Point Change	Change Minutes	
1	West Palm Beach	13,354	40.0%	51	2	13,171	35.3%	47	1%	4.7%	4	
2	Fort Lauderdale	32,502	37.8%	57	3	28,287	26.5%	47	15%	11.3%	10	
3	NY-LaGuardia	47,642	35.5%	59	8	47,738	24.3%	51	0%	11.2%	8	
4	Philadelphia	60,291	33.3%	60	10	52,135	23.7%	50	16%	9.6%	10	
5	Newark	49,399	33.3%	61	4	50,611	26.4%	53	-2%	6.9%	7	
6	NY-JFK	37,783	30.4%	56	12	33,078	22.8%	51	14%	7.6%	5	
7	Louisville	17,776	29.3%	43	7	17,369	25.4%	42	2%	3.9%	1	
8	Burbank	9,658	28.7%	45	13	9,182	21.5%	43	5%	7.2%	1	
9	Dayton	9,977	28.1%	52	6	9,780	25.6%	49	2%	2.5%	3	
10	Boston	42,996	27.8%	52	15	41,977	19.9%	47	2%	7.9%	5	
11	Atlanta	117,862	27.7%	61	5	116,842	25.9%	52	1%	1.8%	9	
12	Tampa	29,283	27.5%	51	14	25,745	20.2%	44	14%	7.3%	7	
13	Indianapolis	24,420	27.3%	49	9	20,741	24.2%	46	18%	3.1%	3	
14	Chicago-O’Hare	114,870	27.2%	62	1	118,276	36.9%	65	-3%	-9.7%	(2)	
15	Las Vegas	50,518	26.9%	53	11	47,144	23.3%	50	7%	3.6%	3	

Of the top 15 delayed airports, the only airport to *improve* over the first quarter of 2004 was O’Hare. For the first quarter 2005, O’Hare ranked fourteenth in percent of delayed arrivals (27 percent), a sea-change from its ranking of first in the same period in 2004, when 37 percent of flights arrived late. This improvement, at least in part, can be attributed to the Administration’s interventions with the carriers serving O’Hare. In 2004, the Department intervened on three separate occasions to negotiate and/or impose schedule reductions to cap operations at a level consistent with O’Hare’s available capacity. The first intervention in March 2004 resulted in a 5 percent reduction in schedules by United and American. The second intervention in June 2004 reduced schedules another 2.5 percent. The third and final intervention in November 2004 capped scheduled peak-hour departures at 88 combined among all carriers. Congestion in the Chicago area was also mitigated after bankrupt ATA Airlines reduced operations out of Chicago-Midway airport by 19 percent.

### Growth in Low-Cost Carriers, Hub Consolidation, and Regional Jet Growth Drive Congestion

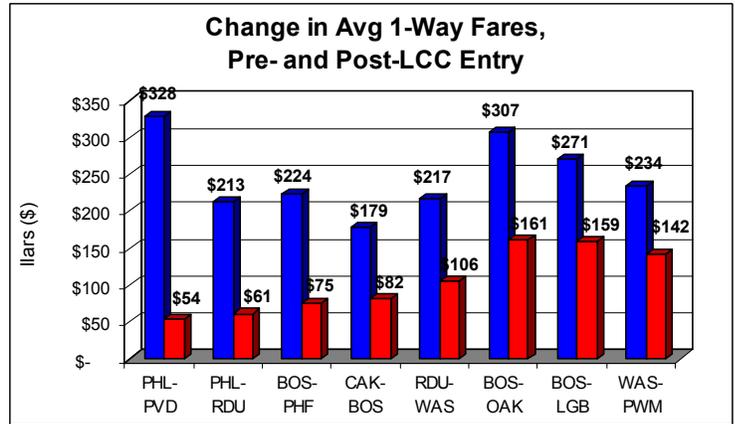
#### Incursion of Low-Cost Carriers into Legacy Hubs Spurs Traffic and Congestion Growth.

Low cost carriers (LCCs), 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. Based on July 2005 scheduled flights, low-cost carriers will account for 26 percent of all departures, compared to 18 percent in 2000. The share of service provided by network carriers and their regional affiliates has likewise declined from 82 percent in July 2000 to 74 percent in July 2005.

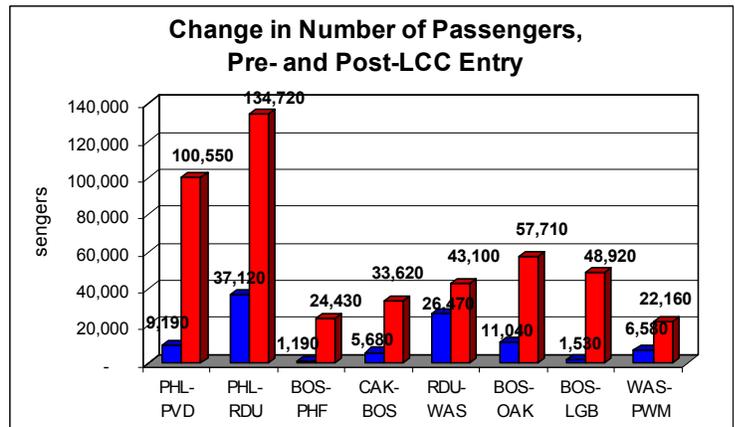


The entry of new low-cost carrier service can have dramatic effects on the average fares on those markets as all carriers are pressured to reduce fares to levels competitive with the new low-cost service.

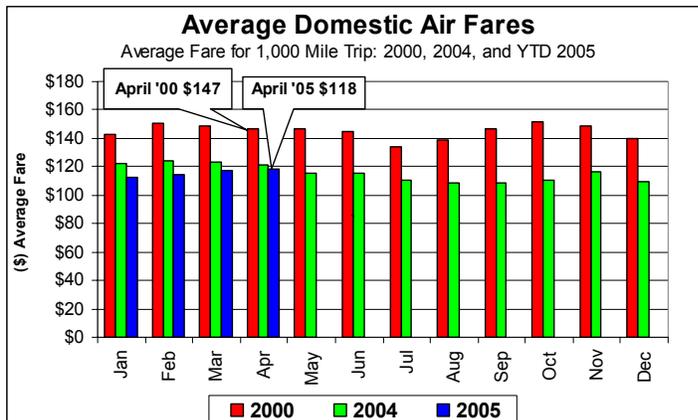
Significant fare reductions often stimulate demand, driving additional service offerings. For example, when Southwest began service between Philadelphia (PHL) and Raleigh-Durham (RDU), the average one-way fare dropped from \$213 to \$61, spurring passenger growth of 263 percent in the third quarter of 2004 over the third quarter of 2003.



Similar effects occurred when Southwest initiated service from Philadelphia to Providence (PVD), AirTran began service to Newport News (PHF) and Akron (CAK) from Boston (BOS), Independence Air began service to Raleigh Durham and Portland, Maine (PWM) from Washington (WAS – Dulles), and JetBlue began service to Oakland (OAK) and Long Beach (LGB) from Boston.



Systemwide, the effects of low-cost carriers are taking their toll on average airfares. In April 2005, the average fare for a 1000-mile trip<sup>3</sup> was \$118, a drop of 20 percent from the \$147 average fare for a 1,000-mile trip in April 2000.



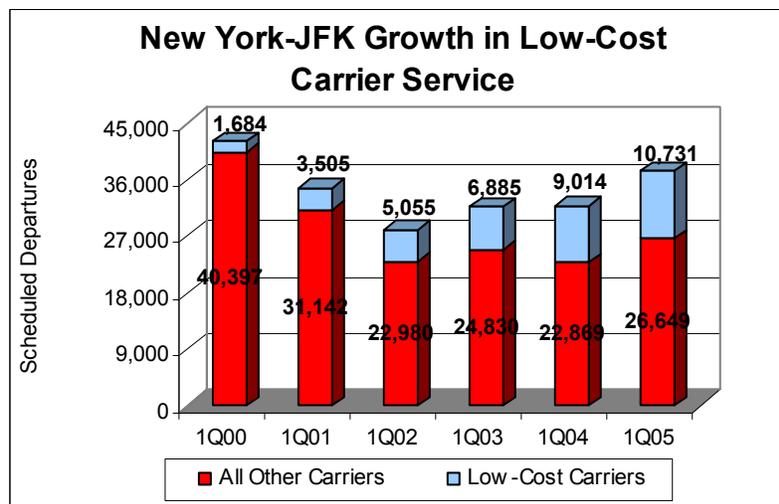
The new low-cost carrier operations, coupled with competitive responses from existing service providers can significantly tax runways and airspace at airports that may be already congested. Examples of the impact of low-cost carrier

entry on congestion include Independence Air's operation out of Washington-Dulles and JetBlue's growing operation at New York-JFK.

<sup>3</sup> For eight major US Airlines, as reported to the Air Transport Association.

In 2004, Independence Air (formerly Atlantic Coast Airlines) launched a new low-cost service with its hub operation at Dulles Airport. United, the incumbent legacy carrier, matched Independence Air on fares, further stimulating growth in the markets served by both carriers. As a result, flights increased 79 percent in March 2005 over March 2004 levels. In the same period, the number of delayed flights increased by 7,700 or more than 100 percent.

Growth at New York-JFK is almost entirely attributable to growth in low-cost carrier service, led predominantly by JetBlue. In the first quarter of 2005, total JFK traffic was down 11 percent from the highs of the first quarter of 2000, largely as a result in lagging International traffic. However during this period, low-cost carrier traffic increased more than five-fold while other traffic<sup>4</sup> was still down by 34 percent. Delays as well have increased as traffic has grown. In the first quarter of 2005, the number of delayed arrivals was 35 percent higher than the same period in 2000 and represented a more than 52 percent increase over the first quarter of 2004.



**Displaced Traffic from Down-sized Legacy Carrier Hubs Contribute to Congestion Growth in Other Hubs.** In an effort to reduce costs and improve efficiency, several mainline carriers have closed hubs and transferred operations to remaining hubs. For example, Delta Airlines eliminated 7,500 flights from its hub operations in Dallas/Fort Worth Airport (DFW) during the first quarter of 2005 and shifted its DFW-based mainline and regional affiliate aircraft to Atlanta, Cincinnati, and Salt Lake City. Other carriers backfilled some of the vacated slots, but the net impact was a 17 percent decrease in total scheduled operations at DFW.

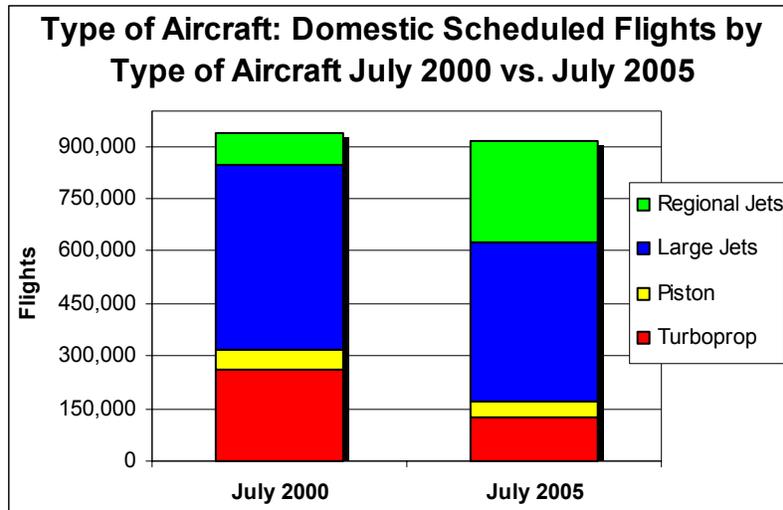
<sup>4</sup> Domestic and international operations by U.S. flag carriers, international operations by foreign flag carriers, and charter service.

On the flip side, however, operations in Atlanta, Cincinnati, and Salt Lake City in March 2005 were 7 percent, 5 percent, and 22 percent greater than operations in March 2004, respectively. Delays in the first quarter at these airports showed effects of these shifts, with delays down 14.4 percent at DFW from the first quarter of 2004 and up in Atlanta, Cincinnati, and Salt Lake City 7.9 percent, 13 percent, and 3.4 percent, respectively.

In a similar pattern, US Airways cut its Pittsburgh hub operations by 3,800 flights during the fourth quarter of 2004, shifting mainline aircraft and service to Philadelphia, Charlotte, and Fort Lauderdale. Overall traffic in Philadelphia increased by 29 percent, and was up 20 percent in Charlotte and 23 percent in Fort Lauderdale. Compared to the 402 daily Philadelphia departures scheduled on a typical day last summer, US Airways is now scheduling 495 daily flights, an increase of 23 percent. While delays in Pittsburgh were down minimally in the first quarter of 2005 over the first quarter of 2004, they were up 62.4 percent in Philadelphia, 65.2 percent in Charlotte, and 63.7 percent in Fort Lauderdale.

**Increased Regional Jet Operations and Rebounding Jet-powered General Aviation Traffic Are Increasing Demands on High-Altitude Airspace and Airport Runways.** The shift from turboprop or piston aircraft to jet aircraft (regional jets, jet-powered general aviation aircraft, and microjets) are posing new challenges to airports and air traffic control. The shift essentially pushes the former low-altitude turboprop traffic up to the 35,000 to 40,000+ foot airspace—the same altitudes where larger jet aircraft fly—and thus crowding the high-altitude airspace. In addition, regional jets and jet-powered general aviation aircraft have the same airfield requirements, utilizing the same runways as larger jets. In some congested airports, such as Newark, the runways that once accommodated propeller-driven regional aircraft are underutilized, while delays mount as jet-powered general aviation, regional jets, and large aircraft vie for landing slots on the longer runways.

- **Regional Jets Now Represent Nearly One-third of All Scheduled Flights.** The airlines are continuing to shift service to jet aircraft. In July 2000, scheduled flights aboard jets accounted for 66 percent of all flights offered. In July 2005, scheduled flights aboard jets will account for 81 percent of all offered flights. In contrast, scheduled turboprop flights decreased from 28 percent in July 2000 to 14 percent in July 2005. The growth in jet traffic reflects, in large part, significantly increased reliance on regional jets. In July 2000, scheduled flights aboard regional jets accounted for 10 percent of all offered flights. In July 2005, scheduled flights aboard regional jets will account for 32 percent of flights.



- General Aviation Jet-powered Aircraft Activity Is on the Rebound.** While the rest of the industry has shown signs of recovery, general aviation (GA) has not improved since a steep drop-off after September 11<sup>th</sup>. In fact, GA operations at combined FAA and contracted towers declined 1.6 percent in 2004 and remain 12.4 percent below 2000 levels. However, within the GA market, one sector—jet aircraft activity—is showing signs of improvement. The number of GA jets filing instrument flight rule flight plans (generally not filed by locally operating recreational pilots) and the number of flight hours were up 1.6 percent and 6.2 percent, respectively, during 2004.

And it appears the trend will continue. The General Aviation Manufacturers Association (GAMA) reports that shipments of business jet units were up 26 percent in the first quarter of 2005 compared to the first quarter of 2004. FAA forecasts the number of general aviation hours flown by jet aircraft to expand at an average annual rate of 6.7 percent over the next 12 years. The large increase in jet hours is largely due to expected increases in the fractional ownership fleet and its activity levels. The growth of this traffic sector is a concern to the FAA because GA jets fly at the same altitudes, occupy the same airspace, and could potentially require use of the same runways as large commercial jets.

- Microjets Have Potential To Further Crowd Dense Airspace.** Beginning as early as March 2006, microjets or VLJs (Very Light Jets) are scheduled to enter the market priced between \$1 million and \$3 million per aircraft.<sup>5</sup> Manufacturers anticipate that these twin-engine jets carrying four to six passengers will be attractive to a variety of owners and operators. For example, Florida-based DayJet has ordered 239 Eclipse 500 microjets and

<sup>5</sup> Compared to comparable aircraft currently priced at around \$6 million.

plans to use them to operate what it calls “Per-Seat, On-Demand” jet services. The company plans to provide point-to-point service to and from small community airports, including markets that have limited, if any, scheduled airline services. The Eclipse 500™ and several other VLJ models are undergoing testing this spring, and manufacturers have announced that customer deliveries will begin in 2006, pending FAA certification.



Eclipse 500™ Very Light Jet (VLJ) during testing; Photo Courtesy of Eclipse Aviation

Beyond the air taxi business model, manufacturers of VLJs also see a market in private ownership, corporate business jet fleets, and logistics (on-demand air cargo—when “overnight” is not fast enough). While supporters believe that the microjets have the potential to redefine business travel, others are more conservative about how quickly and to what extent the market will materialize. FAA’s forecast assumes that the VLJs begin to enter the fleet in 2006 (100 aircraft) and grow by between 400 to 500 aircraft a year thereafter, reaching a total of 4,500 aircraft by 2016. However, some industry estimates suggest that the market could reach 5,000 aircraft by as early as 2010, although it is not clear to what extent this represents domestically deployed aircraft.

## Short-term Outlook Is for Trouble Spots This Summer

The summer travel season is historically the busiest travel time for the airlines. Schedules increase to accommodate increased demand and traffic volume increases, elevating the potential for an increased number of delays. Extreme weather conditions often add an additional layer of difficulty in meeting on-time performance goals. The following table identifies the 13 airports with summer 2004 arrival delays of greater than 25 percent. The airports with an asterisk, (Washington-Dulles, New York-JFK, and Fort Lauderdale) are those airports whose absolute delays in the summer of 2004 exceed the number during the summer of 2000 (considered the peak in aviation delays), and are projecting scheduled operations growth of greater than 10 percent for the summer of 2005.

In addition to *Washington-Dulles*, *New York-JFK*, and *Fort Lauderdale*, three other airports are likely to experience significant disruptions this summer. Delays in *Philadelphia* last summer affected more than 29 percent of all flights and

scheduled departures this summer are 18 percent higher than the summer of 2004. *Newark* and *Atlanta* bear watching as both have sustained consistently high delays since the summer of 2000 and are likely to experience similar delay levels this summer.

Thirteen Airports with Summer 2004 Arrival Delays Greater Than 25 Percent							
Airport	Rank 2004	June-August 2004		June--August 2000		Summer 05 vs Summer 04	
		% Delayed Gate Arrivals	Delayed Gate Arrivals	% Delayed Gate Arrivals	Delayed Gate Arrivals	Increase in Scheduled Departures	% Increase in Scheduled Departures
<b>Newark</b>	<b>1</b>	<b>29.60</b>	<b>16,116</b>	<b>31.96</b>	<b>16,130</b>	<b>45</b>	<b>0.1%</b>
<b>Washington-Dulles*</b>	<b>2</b>	<b>29.46</b>	<b>16,623</b>	<b>31.59</b>	<b>15,537</b>	<b>5,920</b>	<b>12.6%</b>
<b>Philadelphia</b>	<b>3</b>	<b>29.42</b>	<b>16,577</b>	<b>36.76</b>	<b>18,842</b>	<b>8,540</b>	<b>17.6%</b>
<b>NY-Kennedy*</b>	<b>4</b>	<b>29.16</b>	<b>11,670</b>	<b>33.32</b>	<b>11,283</b>	<b>2,889</b>	<b>11.5%</b>
Miami	5	28.23	10,339	32.72	12,522	627	3.2%
<b>Atlanta</b>	<b>6</b>	<b>28.10</b>	<b>34,108</b>	<b>27.74</b>	<b>30,180</b>	<b>7,496</b>	<b>6.6%</b>
<b>Fort Lauderdale*</b>	<b>7</b>	<b>26.49</b>	<b>6,820</b>	<b>30.31</b>	<b>6,626</b>	<b>4,622</b>	<b>23.0%</b>
Chicago-O'Hare	8	26.42	33,103	40.49	44,029	-2,568	-2.3%
Boston	9	26.22	13,237	39.39	21,797	372	0.8%
Chicago Midway	10	26.12	9,301	29.51	8,055	-6,139	-19.4%
Las Vegas	11	25.90	12,913	28.81	12,808	4,140	9.3%
Orlando	12	25.76	9,662	29.46	11,564	3,185	9.1%
NY-LaGuardia	13	25.36	12,522	37.72	16,399	453	0.9%

## Long-Term Outlook Calls For Continued Growth

**International Traffic Is on the Rebound.** International traffic is forecast to exceed pre-September 11<sup>th</sup> levels this year, with approximately 145 million passengers traveling to and from the United States; an increase of 11 million passengers since 2004. In the summer 2005, scheduled international passenger and cargo operations are projected to exceed summer 2000 levels by 16 percent and 12 percent, respectively. According to the FAA, the move toward deregulation overseas, privatization of national carriers, and expansion of open-skies agreements could result in significantly greater international traffic growth. This month the United States signed a bilateral open-skies agreement with the Maldives which follows agreements recently signed by India, Sri Lanka, Paraguay, and Pakistan.

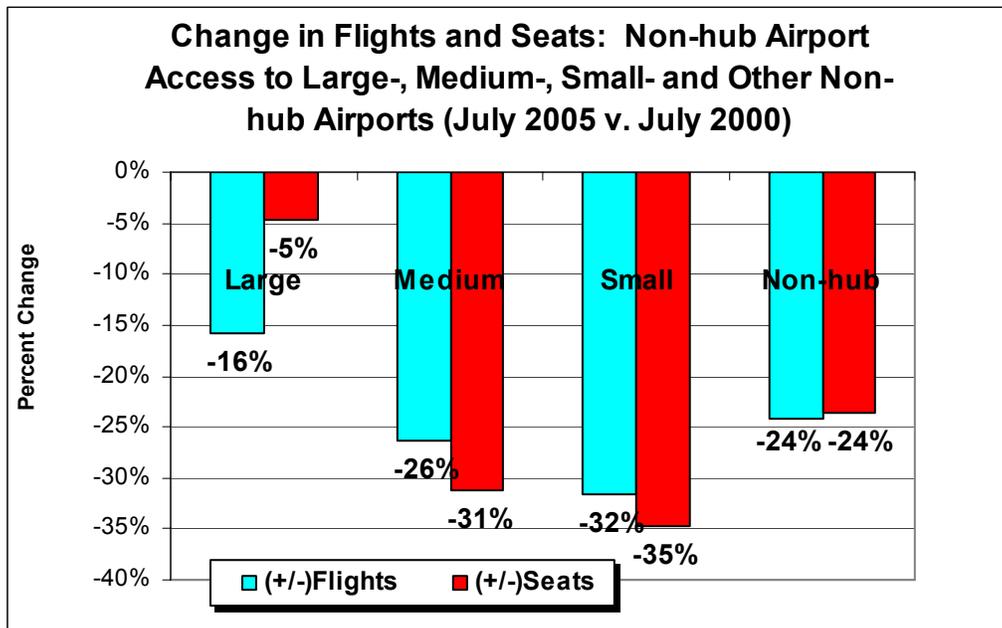
**General Aviation Will Continue To Grow.** The Department will need to closely monitor the growth and utilization of VLJs, which will expand jet traffic in airspace above 38,000 feet and increase the demand for air traffic services for jet aircraft. Depending on how and where VLJ traffic materializes—much of which is unknown at this point—the impact on safety, staffing needs, airspace, and

infrastructure could be significant. In addition, VLJs could raise complex policy issues in areas such as landing rights, airport congestion, and security.

### **Despite Growth in Traffic and Congestion at Large and Medium-Sized Hubs, Small and Non-hub Airports Still Lag Their Larger Counterparts in Service Recovery Since 2000**

Service this summer connecting the smallest airports—otherwise known as non-hub airports—to large, medium, and small hub airports will remain significantly below service scheduled during the summer of 2000. Non-hub airports include those in cities like Key West, Florida; Missoula, Montana; Roanoke, Virginia; Lincoln, Nebraska; Charleston, West Virginia; and Redmond, Oregon. Access to large hub airports (like Phoenix, Honolulu, and Newark) from non-hub airports is down 16 percent from July 2000 levels. Scheduled flights to medium-sized hub airports (like San Antonio, San Jose, and Manchester) are down 26 percent from July 2000 levels. Scheduled flights to small-hub airports (like Spokane, Washington; El Paso, Texas; and Portland, Maine) are down 32 percent. Finally, flights between non-hub airports (e.g. Helena-Great Falls, Montana; Juneau-Ketchikan, Alaska; and Ithaca-Elmira (New York) are down 24 percent.

Service levels remain depressed despite funding increases in the Essential Air Service (EAS) program. Annual funding between FY 2002 and FY 2005 has averaged about \$100 million, or twice the level of subsidy available in 2000 and 2001. The number of cities with EAS subsidies has increased also, growing from 106 in 2000 to 151 in 2005.



## **The Department Faces Short- and Long-term Challenges in Addressing Congestion and Delays**

Since the Summer of 2000, FAA has taken a number of actions in managing and enhancing capacity. These include putting administrative controls in place at Chicago O'Hare, improved communications between airlines and FAA's Command Center, and procedural changes to help manage the impact of bad weather (including greater use of joint civilian/military airspace on the East Coast). FAA has also established a new office to develop a vision for the next generation air traffic management system. Most recently in January 2005, FAA reduced vertical separation for aircraft traveling at high altitudes which provided for six new flight levels between 29,000 and 41,000 feet. In addition, a number of new runways have come on-line.

Without question, congestion and delays would be much worse without these actions, particularly the administrative controls at Chicago O'Hare and the commissioning of new runways. However, the anticipated demand for air travel and the factors we discussed earlier highlight the need for additional actions. We see several areas that require attention in the short- and long- term:

- Keeping new runway projects on schedule,
- Getting FAA's airspace redesign efforts on track, which is critical to enhance capacity,
- Determining what FAA's new Joint Planning and Development Office can do in 5- and 10-year intervals and establishing corresponding funding requirements, and
- Continuing to explore market-based and administrative solutions where alternatives for providing new capacity are limited in the immediate term, for Chicago O'Hare and LaGuardia airports.

### **Keeping New Runway Projects on Schedule**

FAA reports show that new runways provide the most significant increases in capacity but these increases vary by location. New runways have been built at the Phoenix, Detroit, Miami, Denver, Houston, Orlando, and Cleveland airports. Without a doubt, congestion would be much worse this summer without the new capacity in the system.

Between 2005 and 2008, eight additional new runway projects (7 new runways and a major extension of an existing runway) are expected to be completed. FAA will need to make sure, among other things, that new procedures and navigation equipment are in place when new projects are commissioned. We note that of the 15 most congested airports (in terms of percent of operations delayed in the first quarter of 2005) only 3 airports (Atlanta, Boston, and Philadelphia) are expected to complete new runway projects within the next 2 to 3 years. The following table provides information on the eight runway projects FAA is monitoring as part of its Operational Evolution Plan (OEP), the agency's blueprint for enhancing capacity.

### Status of Major New Runway Projects – May 2005

Airport	Initial OEP (June 2001) Estimated Completion Date	Current Estimated Completion Date	Phase	Cost Estimate as of Oct 2001 (Millions)	Current Cost Estimate (Millions)
Minneapolis	Dec 2003	Oct 2005	Construction	\$563	\$682
Cincinnati	Dec 2005	Dec 2005	Construction	\$233	\$255
St. Louis	May 2006	Apr 2006	Construction	\$1,100	\$1,043
Atlanta	May 2005	May 2006	Construction	\$1,200	\$1,200
Boston	Dec 2005	Nov 2006	Construction	\$95	\$118
Philadelphia	Not in initial OEP	Dec 2007	Design	n/a	\$40
Charlotte	June 2004	Feb 2008	Design	\$187	\$201
Seattle	Nov 2006	Nov 2008	Construction	\$773	\$1,129

Note: The Philadelphia project is a runway extension  
Source: FAA and Airport Sponsors

There are about 10 other new runway projects in various planning stages, including major efforts at Chicago O'Hare, Los Angeles, and Washington-Dulles. However, FAA does not yet have firm completion dates for them and therefore has not yet included them in the OEP.<sup>6</sup> We will issue a report shortly on plans to revamp Chicago O'Hare, which represents the largest and most costly reconfiguration of an existing airport in the United States.

While adding new capacity (via new pavement) may ultimately be the most comprehensive solution, it is not always a *feasible one*. For example, at congested New York-LaGuardia, where slot controls are slated to expire in 2007, land constraints preclude new construction. This is why FAA and some airports are looking into market-based or administrative solutions to manage congestion and

<sup>6</sup> FAA includes a new runway in the OEP when all the planning and environmental processing has been completed, a Record of Decision has been issued, and the sponsor has provided FAA with the dimensions, timing, and planned use of the runway. FAA just recently added Philadelphia to the plan.

delays. However, a number of policy questions need to be resolved with such approaches.

## **Getting FAA's Airspace Redesign Efforts on Track Is Critical to Enhance Capacity**

Airspace redesign efforts are critical in getting the most benefits (in terms of capacity and delay reduction) from new runways. FAA's OEP indicates that 40 to 60 percent of projected capacity improvements from new concrete will be lost without corresponding changes in airspace. In some cases, airspace redesign plays an even greater role.

For example, very few of the benefits of the Chicago O'Hare Modernization Program (the addition of one new runway, the extension of two runways, and the relocation of three others) will be realized without significant airspace changes. For the first stage of the O'Hare Modernization Program expected to be complete in 2007 (the new north runway only), a combination of airfield and airspace changes provides for more than a 50 percent reduction in the average minutes of projected delay per flight, from 19.6 to 9.6 minutes. FAA and Mitre analyses show the new north runway, without corresponding airspace changes, will have little impact on delays.

On the other hand, the Choke Point initiative (following the summer of 2000) demonstrated that airspace changes can also have important benefits even without new runway construction. FAA reports that the Choke Point initiative reduced delays and resulted in an annual savings to airspace users of \$70 million. The Choke Point initiative was successful because it was placed on a fast track, had significant management oversight, and linked plans and resources—all of which are best practices that need to be transferred to all airspace projects.

We recently issued a report on the importance of FAA's airspace redesign projects in enhancing capacity and the range of actions the agency needs to take to get these efforts on track.<sup>7</sup> We reviewed the 42 approved airspace redesign projects in FY 2004 and found that FAA's overall process for controlling costs, mitigating risks, and coordinating local, regional, and Headquarters efforts is diffused and fragmented. Specifically, we found:

- Cost and schedule estimates for the vast majority of airspace redesign projects are not reliable. Cost estimates—for the program as well as individual projects—include costs for planning but not for implementation.

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<sup>7</sup>OIG Report Number AV-2005-059, "Airspace Redesign Efforts Are Critical To Enhance Capacity But Need Major Improvements," May 13, 2005.

Therefore, we could not, nor could FAA, determine the cost of implementing the 42 approved projects in FY 2004.

- FAA's redesign projects are often delayed 3 years or more because of changes in a project's scope, environmental issues, and problems in developing new procedures for more precise arrival and departure routes. For example, of the 42 approved projects in FY 2004, 7 were affected by environmental concerns, 10 by problems in developing new procedures, and 21 by changes in a project's scope.
- Projects are not effectively coordinated among agency organizations that manage resources (e.g., new equipment and radio frequencies) or linked to the agency's budget process. This directly affects a project's implementation. We found that 19 of the 42 approved projects in FY 2004 had unresolved equipment issues.

We recommended that FAA (1) establish cost and schedule controls for airspace redesign projects (and include costs for both planning and implementation), (2) establish procedures to ensure projects are coordinated among agency offices, (3) prioritize airspace projects and establish criteria for assessing a project's systemwide impact, and (4) re-evaluate how resources are used at the local and regional levels. FAA has actions underway to address our recommendations.

### **FAA's Joint Planning and Development Office—Determining What Can Be Done in 5- and 10- year Benchmarks and Establishing Funding Requirements**

Another important effort to help meet the anticipated demand for air travel is FAA's Joint Planning and Development Office (JPDO). The establishment of this new office was mandated by Congress to coordinate research and development efforts among diverse Federal agencies, including the National Aeronautics and Space Administration and the Department of Defense, and develop a vision for the next generation air traffic management system in the 2025 timeframe.

There are a number of reasons why this effort is important, including the forecasted demand in air travel as well as the factors (i.e., microjets) that may drive increased operations. The new office is also important because the majority of projects in FAA's current capital account (\$2.4 billion for fiscal year 2006) focus on keeping things running, or "infrastructure sustainment." The combined effects of increased operations costs and the fact that modernization projects have suffered so much cost growth over the years has left little room for new

initiatives.<sup>8</sup> This one of the reasons why there is so much discussion about how to finance new air traffic management initiatives.

FAA reports that the current air traffic control system (or “business as usual”) will not be sufficient to accommodate the anticipated future growth in traffic or the changes facing the aviation community. Key issues focus on what new systems are needed and how new systems, capabilities, procedures, and changes in airspace management can transform the way air traffic services are provided. The JPDO published its first plan this past December. It laid out goals and strategies but did not provide details on what capabilities will be pursued or how much they would cost to implement.

While the 2025 timeframe has merit, benchmarks for what can be done in 5- and 10-year intervals are also important. *Other imperatives focus on determining what level of funding is actually required, how much other agencies will contribute, what specific capabilities will be pursued, and when they can be implemented.* The Department committed to Congress that by the year’s end, it would provide specifics on how much money is needed, when, and for what purposes.

### **Administrative and/or Market-Based Solutions May Provide Congestion Relief in Markets Where Alternatives are Limited**

As delays return, FAA and some airports are considering a variety of administrative and/or market-based solutions that would allow variable pricing of access in order to control congestion and delays. Some of the congestion management alternatives under study include slot auctions, congestion pricing, administratively imposed scheduling caps, and incentives for up-gauging aircraft.

In 2004 and 2005, the FAA used administrative actions to reduce delays at Chicago-O’Hare by first negotiating and later imposing schedule reductions with the carriers serving O’Hare. The FAA is now soliciting comments on whether to continue the administrative controls at O’Hare for another 3 years, until ultimately, the first phase of the O’Hare Modernization Plan is complete and additional capacity could relieve some of the congestion. At LaGuardia, another airport where scheduled operations are anticipated to exceed capacity when slot controls expire in 2007, new construction is not a viable option. At LaGuardia, some demand management tool—whether market based or administrative, will likely be needed to prevent what could be crippling delay conditions.

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<sup>8</sup> We reviewed 16 of FAA’s major acquisitions. We found that 11 of the 16 experienced cost growth of about \$5.6 billion, which is more than double the amount of FAA’s Fiscal Year 2006 budget request for its Facilities and Equipment account. Additionally, 10 of these 16 projects accounted for schedule delays ranging from 2 to 12 years and 2 projects have been deferred until at least 2008. For additional details on FAA’s major acquisitions as well perspectives on the JPDO, see our testimony entitled “Next Steps for the Air Traffic Organization” (CC-2005-022, April 14, 2005).

Market-based approaches, while on paper appear to be a reasonable solution for some airports, entail difficult policy considerations, such as who sets the fees, how the fees should be set, who collects the fees, how (and whether) fees are shared between airports and the FAA, how general aviation will be treated, and small community access. These are difficult questions that will need definitive answers—the consequences of moving forward without working out the details could result in severe market consequences. We believe this debate needs to be joined with the debate taking shape on financing FAA—there should be some degree of equity between who benefits from premium services (i.e., rush hour departure slots), and who pays for these privileges.