

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

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# **Status Report on Actions Underway To Address Flight Delays and Improve Airline Customer Service**

**Statement of  
The Honorable Calvin L. Scovel III  
Inspector General  
U.S. Department of Transportation**



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Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to discuss initiatives underway by the Department of Transportation (DOT), Federal Aviation Administration (FAA), airlines, and airports to address delays and improve airline customer service. This hearing is timely given the record-breaking delays and cancellations that air travelers experienced last year and the upcoming busy travel season.

As this Subcommittee is aware, summer 2007 was part of the worst year on record for flight delays, cancellations, and long, on-board delays. From January through December 2007, over 1 in 4 flights (29 percent) were delayed or cancelled, affecting about 163 million passengers. More than 88,234 flights experienced taxi-in and taxi-out times of 1 hour to 5 hours or longer, affecting nearly 5.9 million passengers.

Our statement today is in response to the Chairman's request for an "after-action" analysis of (1) contributing factors to last summer's record-breaking flight delays; (2) the status of ongoing efforts by DOT, the airlines, and airports to improve airline customer service in response to record delays and our recommendations last September;<sup>1</sup> and (3) actions needed in the near- and mid-term to mitigate congestion and delays.

Secretary Peters has made reducing delays and improving the treatment of travelers a top priority within the Department. Because delays in the New York region had a nationwide effect, the Secretary formed the New York Aviation Rulemaking Committee (ARC) last September to explore various strategies to alleviate congestion and reduce delays in the New York area. At the same time, the Department ordered a schedule reduction meeting for John F. Kennedy International Airport (JFK), resulting in temporary flight caps at both JFK and Newark airports beginning this spring. The Department has also established a national task force to develop model contingency plans for minimizing the impact of long, on-board delays.

The success of efforts by all aviation stakeholders is particularly critical as aircraft load factors are at an all-time high of over 80 percent. Each year, Americans lose over \$9 billion in productivity from flight delays. Moreover, in the last 7 years, flight delays and cancellations have continued as the underlying causes of deep-seated customer dissatisfaction with air travel. We share the Subcommittee's concerns and note that ongoing efforts must translate into relief for air travelers in summer 2008 and beyond.

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<sup>1</sup> OIG Testimony Number CC-2007-099 "Actions Needed To Improve Airline Customer Service and Minimize Long, On-Board Delays," September 26, 2007. OIG reports and testimonies are available on our website: [www.oig.dot.gov](http://www.oig.dot.gov).

## After-Action Report: Multiple Factors Contributed to Last Summer's Flight Delays

The record-breaking flight delays of 2007 were magnified during the summer of 2007 when flight delays and cancellations hit all-time highs at major airports nationwide. We found that the number of passengers affected by delays last summer increased by 20 percent over the summer of 2006 (from 37,521,321 passengers to 44,871,404 passengers). The statistics below illustrate the severity of delays and cancellations during this period<sup>2</sup> at the 55 airports tracked by FAA.

- *Delayed flight arrivals*<sup>3</sup> rose from 26 percent in the summer of 2006 to 29 percent last summer. This represents nearly 621,000 delayed flights in the summer of 2007—an increase of 15 percent above the approximately 539,000 delayed flights in the summer of 2006.
- *The average length of delays* rose from 56 minutes in the summer of 2006 to 60 minutes in the summer of 2007 (a 7-percent increase). The length of the delays at 52 of the 55 airports increased, ranging from a less than 1-minute increase at Phoenix Sky Harbor International Airport to an 11-minute increase at Dallas/Fort Worth International Airport (DFW).
- *Flight cancellations* last summer (48,000 flights) increased by 28 percent over the summer of 2006 (37,000 flights cancelled), affecting nearly 3.2 million passengers during the summer of 2007.
- While *flight operations* for last summer were mostly unchanged nationwide compared to the summer of 2006, some airports experienced increased flight operations and corresponding delays. For example, at JFK, flight operations increased by 20 percent (an additional 9,700 scheduled flights) last summer. Delays and cancellations also increased during that period by 36 percent.

Also, according to the Department's Bureau of Transportation Statistics (BTS), *long, on-board tarmac delays* of 1 hour to 5 hours or longer increased by 25 percent (from 25,547 to 31,931 flights) over the summer of 2006, affecting over 2 million passengers last summer.

These statistics underscore the degree to which passengers are inconvenienced when traveling by air. The traveling public knows the aviation system needs improvement, and actions are needed by the airlines, airports, and FAA if consumer confidence is to be restored.

In the summer of 2007, we found that late arriving aircraft ranked as the number one cause of delays (35 percent), with carrier-caused delays (29 percent) and weather (23 percent) ranked as number two and three, respectively.

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<sup>2</sup> Data for summer months were taken from June, July, and August.

<sup>3</sup> A flight is considered delayed when it arrives 15 or more minutes after its scheduled arrival time.

However, the causal categories that BTS uses to gather data from airlines are too broad to accurately portray delay types. For example, late arriving aircraft delays can be attributable to a single factor, such as severe weather conditions, or a combination of factors, such as aircraft maintenance issues or ground holds. Also, the root cause of “carrier-caused delays” cannot be determined with any degree of precision because that information is not collected.

BTS needs to analyze the “late arriving aircraft” category to identify the factors driving delays and allocate those factors across the other categories—carrier-caused, weather conditions, the National Airspace System, and airport security. This type of analysis could also help to determine the underlying causes of flight cancellations, but no agency currently conducts this analysis. Until this step is taken, the *root causes* of delays cannot be determined with any degree of precision.

We therefore used various sources of data to further examine causes of delays at 15 major airports<sup>4</sup> that had the largest increases in delays between the summers of 2006 and 2007.

**System-Wide Effect of Prior Delays:** Delays are categorized as “late arriving aircraft” when the previous flight operated with the same aircraft arrives late, delaying that aircraft’s next flight. This categorization is non-specific because it does not address the root causes of the late arriving aircraft. Although carrier- and weather-caused delays were reported as the leading causes of delayed flights, the system-wide effect of those delays is far reaching. This “ripple effect” can then become the underlying cause of delays for other flights throughout the system, which are not directly experiencing carrier- or weather-caused delays. Late flights caused by previous delays in the system increased during the summer of 2007 to over one-third of all delayed flights. At the 15 airports reviewed, the “ripple effect” delayed 64,000 arriving aircraft last summer.

**Carrier-Caused Delays:** Carrier-caused delays were reported as the number one cause of delays at 5 of the 15 airports we reviewed last summer. Details were not available to identify the specific carrier issues, such as mechanical, aircraft servicing, or gate availability problems. However, we did determine that shortages of cockpit crew members led more than 1,000 cancellations at Northwest Airlines last summer.

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<sup>4</sup> The 15 airports examined for delays are members of the Airports Council International-North America (ACI) and include Chicago O’Hare International, Dallas/Fort Worth International, Dallas Love Field, Denver International, Fort Lauderdale International, Hartsfield-Jackson Atlanta International, John F. Kennedy International, LaGuardia, Miami International, Minneapolis-St. Paul International, Newark Liberty International, Philadelphia International, Phoenix Sky Harbor International, Ronald Reagan Washington National, and Tampa International. ACI is the trade association for America’s largest airports. Its members enplane more than 95 percent of the domestic and virtually all the international airline passenger and cargo traffic in North America.

**Weather Conditions:** At the majority of the airports we reviewed, the severity of weather impacting flight operations did not decline appreciably between the summers of 2006 and 2007. Nonetheless, airlines at those airports reported that weather was the leading, direct cause of delays (32 percent). The apparent conflict is answered by considering that as schedules increasingly exceed capacity, even in good weather, the slightest degradation in weather conditions can disproportionately affect on-time performance.

**Airspace Congestion:** While many airports and their surrounding airspace have adequate capacity, other locations reached their saturation points, including air corridors connecting New York, Chicago, and Atlanta. The biggest airspace bottlenecks this past summer were at the three major New York area airports and the surrounding airspace, accounting for *more than one-third* of the flight delays system-wide.

**Airline Scheduling and Airport Capacity:** In 2007, airlines scheduled flights above airport capacity to handle demand, and this contributed significantly to delays at specific airports. Our analysis of the 15 airports examined showed that during summer 2007, 6 had flights scheduled either at or over capacity at optimum weather conditions. For example, in one 15-minute period at Chicago O'Hare International Airport, we found that over 45 flights were scheduled to depart—nearly double the average departure capacity of the airport at that time. There were 2 other 15-minute time periods when 35 or more flights were scheduled to depart in one 15-minute period.

When airports are over-scheduled during peak hours, even small increases in flight operations can have a disproportionately larger impact on flight delays, as was the case in the New York region. For example, as flight operations expanded at JFK over the last several years, delays increased at that airport and at LaGuardia and Newark.

**Spacing of Aircraft on Final Approach:** While problems are traceable to increased operations, “excessive spacing” on final approach was also a factor in the New York area. In its December 2007 report, the New York ARC reported that spacing between aircraft on final approach has been steadily increasing beyond limits needed for safety, which contributed significantly to arrival delays at JFK, LaGuardia, and Newark airports.

Because of additional spacing, well-established, predictable airport acceptance rates became unreliable. This resulted in increased probability of go-arounds, no-notice holdings, increased vectoring, and sector overload. FAA recognizes the importance of the problem but has not quantified the impact on last summer's delays.

## *Outlook for Summer 2008*

Whether or not delays this summer will reach the extreme levels of last year depends on several factors. These include weather conditions, impacts of a softening economy and higher fuel prices on the industry, major airlines' efforts to reduce capacity (by taking aircraft out of service), and the effectiveness of initiatives planned or underway at already congested airports. We note that three airlines have ceased operations in the last 2 weeks.

Our analysis shows that there are several airports to watch closely this summer because of severe peaking during part of the day. These include the three New York airports as well as the Chicago O'Hare and Minneapolis-St. Paul airports. For example, Northwest Airlines has scheduled 56 departures in one 15-minute window at Minneapolis-St. Paul—nearly three times the airport's departure capacity for that window.

### **DOT, the Airlines, and Airports Have Progressed Toward Improved Airline Customer Service, but Much Work Remains**

Since we last testified in September 2007, DOT, the airlines, and airports have begun initiatives to address the action items we outlined at that hearing.

**Departmental Efforts:** In 2007,<sup>5</sup> we recommended that the Department take a more active role in overseeing customer service issues by ensuring that airlines include long, on-board delays in their on-time performance reporting, conducting incident investigations of these delays, and closely monitoring the airlines' policies for dealing with them.

- In November 2007, the Department issued two proposed rulemakings to address measures for enhancing airline passenger protection and airline quality performance reporting (to fill in data gaps giving consumers a more accurate portrayal of arrival and tarmac delays). Specifically, these two rulemakings address, among other things, clarifying terms in airlines' contingency plans, establishing specific targets for reducing chronically delayed or cancelled flights, disclosing on-time flight performance on the airlines' Internet sites, resuming efforts to self-audit customer service plans, and implementing the necessary changes in the airlines' on-time performance reporting to capture all long, on-board delays.
- In January 2008, the Department established a national task force to develop model contingency plans for minimizing the impact of long, on-board delays. The task force will also address our recommendation to conduct incident investigations of long, on-board delays and their causes; identify trends and patterns of such incidents; and determine solutions to mitigate the impact on passengers. The task force will report its results and recommendations directly to the Secretary.

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<sup>5</sup> OIG Report Number AV-2007-077 "Actions Needed To Minimize Long, On-Board Flight Delays," September 25, 2007.

**Airline Efforts:** The airlines have initiated their own voluntary actions to enhance customer service, as promised in the Airline Customer Service Commitment of 1999 (see figure below).

As we emphasized at the last hearing—the key to the success of these planned actions will be execution. In 2007, we recommended, among other things, that DOT require airlines to clarify delay terminology, set limits for delay durations before deplaning passengers, and establish targets to reduce chronically delayed flights.

The following summarizes the Air Transport Association (ATA) member-airlines’<sup>6</sup> progress to date:

- Eleven of 12 ATA member airlines have defined “an extended period of time” for meeting passengers’ essential needs during long, on-board delays. Two airlines consider this internal policy not publicly available, three have incorporated it into their customer service plans and placed it on their Internet sites, and six have incorporated it into their contracts of carriage<sup>7</sup>—only then does it become legally enforceable by the customer against the airline.

**Figure. Provisions of the Airline Customer Service Commitment**

- Offer the lowest fare available.
- Notify customers of known delays, cancellations, and diversions.
- Deliver baggage on time.
- Support an increase in the baggage liability limit.
- Allow reservations to be held or cancelled.
- Provide prompt ticket refunds.
- Properly accommodate disabled and special-needs passengers.
- Meet customers’ essential needs during long, on-aircraft delays.
- Handle “bumped” passengers with fairness and consistency.
- Disclose travel itinerary, cancellation policies, frequent flyer rules, and aircraft configuration.
- Ensure good customer service from code-share partners.
- Be more responsive to customer complaints.

Source: Airline Customer Service Commitment, June 1999

The trigger thresholds for meeting passengers’ essential needs vary from a half-hour to 2 hours on arrival and from 1.5 hours to 3 hours on departure. We think it is unlikely that passengers’ definition of an extended period of will vary depending upon which airline they are flying. We are still of the view that a consistent policy across the airlines would be helpful to passengers.

- Eleven of the 12 ATA airlines have now set a time limit on delay durations before deplaning passengers or elevating the situation to senior operational managers for resolution. Three airlines consider this as an internal policy, only one has incorporated it into its customer service plan, and seven have incorporated this into

<sup>6</sup> The Air Transport Association is the trade association for America’s largest air carriers. Its members transport over 90 percent of all the passenger and cargo traffic in the United States. The 12 airlines selected for review are members of the Air Transport Association (ATA) and include Alaska Airlines, Aloha Airlines, American Airlines, Continental Airlines, Delta Air Lines, Hawaiian Airlines, JetBlue Airways, Midwest Airlines, Northwest Airlines, Southwest Airlines, United Airlines, and US Airways. Aloha Airlines just recently went out of business. AirTran Airways just recently became a member of ATA.

<sup>7</sup> A contract of carriage is the document air carriers use to specify legal obligations to passengers. Each air carrier must provide a copy of its contract of carriage free of charge upon request. The contract of carriage is also available for public inspection at airports and ticket offices.

their contracts of carriage. The trigger thresholds for deplaning passengers vary from a half-hour to 5 hours on arrival and 1 hour to 5 hours on departure.

- Only 4 of the 12 ATA airlines have completely satisfied our recommendation to establish specific targets for reducing chronically delayed or cancelled flights. These airlines established a “zero tolerance” policy for reducing chronically delayed and cancelled flights. However, only three of those four airlines publish information about chronically delayed flights and methods for handling them in their customer service plans. Unfortunately, many airlines are losing an opportunity to educate the public on the efforts they are taking to reduce delays.

While some airlines are making a concerted effort to improve the passenger experience, others are not willing to formally promise this in their customer service plans and contracts of carriage. It is still our opinion that the airlines need to publish their promises to customers in writing with all the Commitment provisions and associated policies. This would hold the airlines to a higher standard and clearly demonstrate that their commitment to customer service matters.

**Airport Efforts:** In 2007, we recommended that DOT, airlines, and airports convene a task force to address lengthy delays. We also recommended that airport operators implement processes to monitor and mitigate long, on-board delays. The airports have begun the following initiatives to address delays and improve air travelers’ experience, but further actions are needed:

- *Convening a task force of vested stakeholders to address flight delays and customer service issues in the New York area.* In our prior testimony, we reported that the Port Authority of New York and New Jersey convened a task force in July 2007 to focus on the burgeoning problem of flight delays and customer service. The task force issued its report on December 6, 2007, identifying a total of 96 recommendations to enhance capacity, reduce delays, and improve customer service for the region’s three major airports. Nineteen of the recommendations address improving customer service through better communication with passengers and better coordination among airlines, airports, and the various service providers. The task force intends to meet this summer to assess the status of the recommendations.
- *Convening workshops of vested stakeholders to address contingency planning for extraordinary flight disruptions.* Two workshops were convened—one hosted by DFW and the other by Airports Council International-North America—to identify best practices for contingency planning during extraordinary flight disruptions. A cross-section of airports, airlines, government agencies, and industry vendors attended the workshops. Breakout sessions were held to identify best practices for dealing with flight disruptions and passenger care.



- *Monitoring tarmac delays and assisting airlines during flight disruptions.* In our prior testimony, we emphasized that airport operators must become more involved in contingency planning for extraordinary flight disruptions. We found that the Airports Council International member-airports selected for review<sup>8</sup> are, to some degree, getting more involved in contingency planning for extraordinary events.<sup>9</sup> For example, of the 20 airports we reviewed, 8 have either refined or established policies to identify the resources and procedures needed to assist airlines in extended ground delays. These procedures include identifying remote areas for parking aircraft when gates are not available and methods to transport passengers from remote parking areas to the terminal.

In our view, all airports need to establish policies and procedures to proactively monitor and minimize the impact of long, on-board delays. As passenger traffic continues to grow, airports will need to become more responsive in dealing with contingency planning for extraordinary flight disruptions, especially those airports with limited airfield or gate capacity.

These initiatives have merit and, if properly executed, should help to improve airline customer service. However, most of these will not be in place by summer 2008. The Department should continue to make these efforts a priority to improve the accountability, enforcement, and the protection afforded to air travelers. In the meantime, the airlines and airports must follow through with their plans to reduce delays and improve airline customer service.

### **Actions Are Needed in 2008 and 2009 To Mitigate Congestion**

The long-term solution to customer dissatisfaction with air travel and reducing delays depends largely on expanding capacity through the Next Generation Air Traffic Management System (NextGen). Since this program is targeted for the 2025 timeframe, it will be important to keep efforts on track that can enhance capacity over the next 5 years, such as new airport infrastructure and airspace redesign efforts.

It is important to note that ongoing and planned initiatives are not intended to significantly boost capacity but rather to enhance efficiency and better manage delays. While capping hourly operations at JFK and Newark may alleviate the over-scheduling at peak times, history shows that caps do not necessarily translate into a significant reduction in delays or an increase in airline on-time performance.

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<sup>8</sup> The 20 airports selected for review are members of the Airports Council International-North America (ACI) and include Boston Logan International, Chicago O'Hare International, Dallas/Fort Worth International, Dallas Love Field, Denver International, Fort Lauderdale International, General Mitchell International, George H. Bush Intercontinental, Hartsfield-Jackson Atlanta International, Honolulu International, John F. Kennedy International, LaGuardia, Miami International, Minneapolis-St. Paul International, Newark Liberty International, Philadelphia International, Phoenix Sky Harbor International, Ronald Reagan Washington National, and Seattle-Tacoma International and Tampa International.

<sup>9</sup> An extraordinary event is any event that does not fall under an Emergency Operation category (e.g., crash, hijacking, or bomb threats) and disrupts optimized flight schedules and negatively impacts the normal flow of passengers through the air transportation system.

For example, flight caps at Chicago O'Hare have been in place since 2004, and although delays have stabilized, they still occur at about 25 percent annually, with a delay rate of 31 percent last summer.

With this in mind, we see several near-term actions that are needed to reduce congestion and delays:

- DOT needs to negotiate a plan with the Department of Defense for use of *special use airspace* to open up additional lanes of traffic at specific chokepoints during summer 2008.
- FAA needs to continue to address concerns about controller productivity and excess spacing on final approach while training large numbers of new controllers.
- FAA needs to further expand the number of its *Airspace Flow Program* locations to help reduce delays. This program allows FAA to manage traffic fairly and efficiently by identifying only those flights scheduled to fly through storms and giving them estimated departure times. Airspace Flow Programs can also be used in conditions not related to weather, such as severe congestion near major cities.
- FAA needs to establish procedures for keeping capacity benchmarks for the major airports current. We recommended this in 2000, but FAA has not published updated capacity benchmarks since 2004. These benchmarks are critical to understanding airline scheduling practices and what relief can be expected from new procedures, technology, and new runways.
- The airlines should attempt to level out the arrival and departure banks at their large-hub airports to create more manageable flight operations at peak times at these airports. Airlines have successfully rescheduled at hub airports in the past, which reduced congestion and delays.
- The airports need to work jointly with FAA to improve procedures governing efficient use of taxi-ways and runways. Improvements to ground movement enable aircraft to taxi more quickly and safely between runways and terminals.
- BTS needs to perform an analysis of the causal flight delay and cancellation data submitted by the airlines. BTS should use the data to analyze locations of initial delays, underlying causes of system-wide effects, and the role of airports as net generators or absorbers of delays. This would provide the Congress, DOT, FAA, and other stakeholders a better understanding of the causes of delays and the solution sets needed to address them.

That concludes my statement, Mr. Chairman. The attachment to this testimony contains further details on the issues I have outlined today. I would be pleased to answer any questions that you or other Members of the Subcommittee may have.

## **Actions Underway To Address Flight Delays and Improve Airline Customer Service**

Flight delays continue as a major source of customer service dissatisfaction. The severe delays and cancellations last year drew national attention and demonstrated that airlines, airports, the Federal Aviation Administration (FAA), and the Department (DOT) must work together to mitigate delays and cancellations and minimize the impact on passengers. The extent to which delays will impact passengers in the remainder of 2008 and beyond will depend on several key factors. These include weather conditions, the impact of the economy on air travel demand, and capacity management at already congested airports.

At the request of the Chairman of the House Subcommittee on Aviation, we have completed an after-action analysis of last summer's record-breaking flight delays, their causes, and actions needed to mitigate recurrence of such events. We have also assessed progress by DOT, FAA, airlines, and airports to improve airline customer service.

### ***Airlines Agreed To Execute a Voluntary Airline Customer Service Commitment***

Airline customer service first took center stage in January 1999, when hundreds of passengers remained in planes on snowbound Detroit runways for up to 8 and a half hours. After those events, both the House and Senate considered whether to enact a "passenger bill of rights."

Following congressional hearings on these issues, the Air Transport Association (ATA) member-airlines agreed to execute a voluntary Airline Customer Service Commitment<sup>1</sup> to demonstrate their dedication to improving air travel (see figure 1). The Commitment provisions include meeting passengers' essential needs during long, on-board delays.

#### ***Figure 1. Provisions of the Airline Customer Service Commitment***

- Offer the lowest fare available.
- Notify customers of known delays, cancellations, and diversions.
- Deliver baggage on time.
- Support an increase in the baggage liability limit.
- Allow reservations to be held or cancelled.
- Provide prompt ticket refunds.
- Properly accommodate disabled and special-needs passengers.
- Meet customers' essential needs during long, on-aircraft delays.
- Handle "bumped" passengers with fairness and consistency.
- Disclose travel itinerary, cancellation policies, frequent flyer rules, and aircraft configuration.
- Ensure good customer service from code-share partners.
- Be more responsive to customer complaints.

Source: Airline Customer Service Commitment, June 1999

Because aviation delays and cancellations continued to worsen, eventually reaching their peak during the summer of 2000, Congress directed our office to evaluate the effectiveness of the Commitment and the customer service plans of individual ATA

<sup>1</sup> ATA signed the Commitment on behalf of the then 14 ATA member airlines (Alaska Airlines, Aloha Airlines, American Airlines, American Trans Air, America West Airlines, Continental Airlines, Delta Air Lines, Hawaiian Airlines, Midwest Express Airlines, Northwest Airlines, Southwest Airlines, Trans World Airlines, United Airlines, and US Airways).

airlines. We issued our final report in February 2001.<sup>2</sup> Overall, we found that the ATA airlines were making progress toward meeting the Commitment, which has benefited air travelers in a number of important areas, such as offering the lowest fare available, holding reservations, and responding in a timely manner to complaints. However, these areas are not directly related to flight delays or cancellations—which the Commitment did not directly address—and these areas are still the underlying causes of deep-seated customer dissatisfaction.

Following the December 2004 holiday period, we issued a report<sup>3</sup> assessing severe air travel disruptions in various parts of the Nation over a 7-day, holiday travel period. We reported that, system-wide for the 7-day holiday travel period, 44.5 percent of flights were delayed compared to 23.4 percent during the same period in 2003, and 6.2 percent of flights were canceled compared to 1.3 percent in 2003. The contributing causes at airlines we reviewed included severe weather, failure of computer systems used to schedule crews, and staffing shortfalls going into the holiday travel period in two critical functions—fleet service employees and flight attendants.

In November 2006,<sup>4</sup> at the request of the Chairman of this Subcommittee, we issued a follow-up review of airlines' efforts to fulfill the Airline Customer Service Commitment. We found that the airlines needed to: (1) resume efforts to self audit their customer service plans, (2) emphasize to their customer service employees the importance of providing timely and adequate flight information, (3) train personnel who assist passengers with disabilities, (4) provide transparent reporting on frequent flyer award redemptions, and (5) improve the handling of bumped passengers. We also recommended that the DOT's Office of Aviation Enforcement and Proceedings improve oversight of air traveler consumer protection requirements and that DOT strengthen its oversight and enforcement of air traveler consumer protection rules.

In December 2006 and February 2007, severe weather crippled flight operations at airports in Dallas, Texas, and the New York area—with many passengers delayed on the tarmac for more than 5 hours. After the 2007 incidents, Secretary Peters requested that we review these events and examine airlines' customer service commitments, contracts of carriage, and policies for on-board, extended ground delays. The Secretary also requested that we recommend actions that the airlines, airports, and Federal Government could take to prevent these situations in the future.

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<sup>2</sup> OIG Report Number AV-2001-020, "Final Report on the Airline Customer Service Commitment, February 12, 2001. OIG reports and testimonies are available on our website: [www.oig.dot.gov](http://www.oig.dot.gov).

<sup>3</sup> OIG Report Number SC-2005-051, "Review of December 2004 Holiday Travel Disruptions," February 28, 2005.

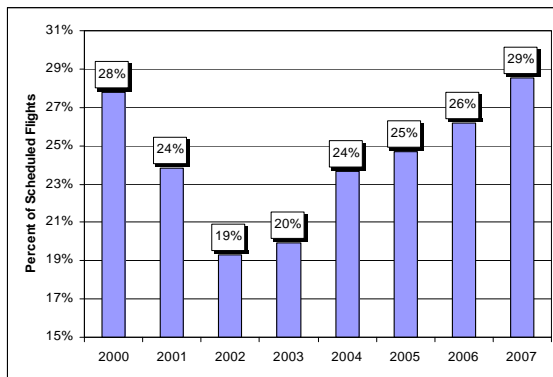
<sup>4</sup> OIG Report Number AV-2007-012, "Follow-Up Review: Performance of U.S. Airlines in Implementing Selected Provisions of the Airline Customer Service Commitment," November 21, 2006.

Our report<sup>5</sup> recommended, among other things, that airlines define what constitutes an “extended period of time” for meeting passengers’ essential needs and setting limits for delay durations; establish specific targets for reducing chronically delayed or cancelled flights; disclose on-time customer performance; and self-audit customer service plans. We also recommended that DOT, FAA, airlines, and airports establish a task force to develop and coordinate contingency plans to address lengthy delays.

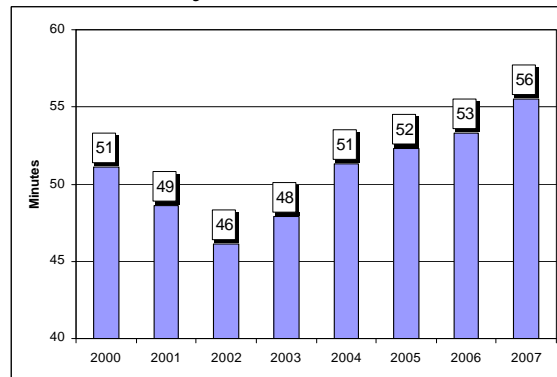
**Observations on Record-Breaking Flight Delays and Cancellations in 2007**

Last year, flight delays and cancellations exceeded the previous peak set in 2000 by 4 percent (2.4 million versus 2.3 million). During the early part of the decade, the affect that key global events had on air travel temporarily suppressed delays; these included a persistent slowdown in economic growth, the terrorist attacks of September 11, 2001, and the war in the Middle East. However, we began to see rising delays and cancellations again in 2003, and these numbers have continued to escalate through 2007, reaching new highs of 29 percent. Likewise, the average length of arrival delays also increased after an initial decline—from 51 minutes in 2000 to 56 minutes in 2007 (see figures 2 and 3).

**Figure 2. Percent of Flights Arriving Late and Cancelled, 2000 to 2007**



**Figure 3. Average Length of Arrival Delays, 2000 to 2007**



Flight delays have increased nationwide since 2000, and some airports experienced reductions in service coupled with significant increases in delays. This was evident when comparing the arrival delay data from the summers of 2006 and 2007. For example, although there was a 2-percent decrease in the number of flights to Dallas-Fort Worth International Airport (DFW) during this time period, arrival delays increased from 20.3 percent to 32.6 percent.

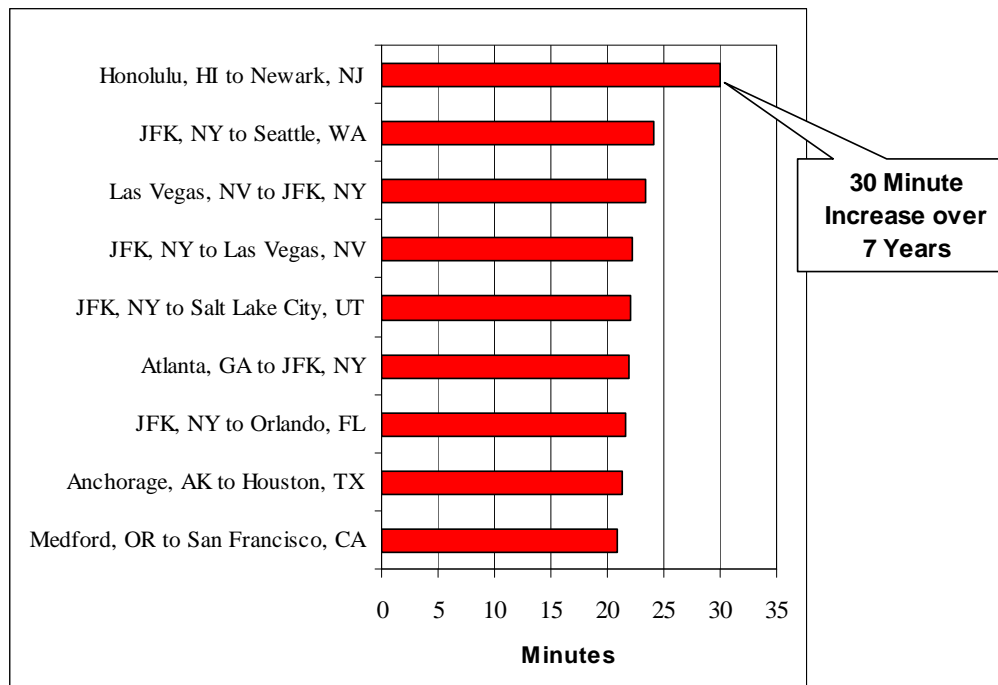
<sup>5</sup> OIG Report Number AV-2007-077, “Actions Needed To Minimize Long, On-Board Delays,” September 25, 2007.

### **Travel Between Airports Is Taking Longer Due to Growing Air and Ground Delays**

We examined the actual gate-to-gate times (i.e., the time it takes to travel between 2 airports) of 2,392 routes (i.e., city pairs) during the summer of 2000 through the summer of 2007. We found that nearly 63 percent of the routes experienced increases ranging from 1 minute to 30 minutes. Of these, 154 routes experienced increases of 10 minutes or more, affecting nearly 5 million passengers. We also found that over half of the increase in gate-to-gate times took place in the air (54 percent), with the remainder occurring on the ground during taxi-in (28 percent) and taxi-out (18 percent) times.

Figure 4 lists those eight routes with the largest increases in gate-to-gate times of 20 to 30 minutes. It is important to note that six of these routes included John F. Kennedy International Airport (JFK) as either the origin or destination airport. Several factors influenced the increase in gate-to-gate times; these factors were primarily driven by congestion-related system delays, both on ground and in the air. We found that over 50 percent of the gate-to-gate increase occurred en route.

**Figure 4. Routes With Largest Increases in Gate-to-Gate Times, Summer 2000 to 2007**



**Rising Flight Delays Are Leading to More Long, On-Board Delays**

Rising flight delays have also led to an increase in more on-board tarmac delays. In 2007, over 88,000 scheduled flights—affecting nearly 5.9 million passengers—experienced taxi-in and taxi-out times of 1 hour to 5 hours or longer. This is an increase of 69 percent (from 52,200 to 88,234) as compared to 2000 (see table 1).<sup>6</sup>

**Table 1. Number of Flights With Long, On-Board Tarmac Delays of 1 Hour to 5+ Hours, 2000 and 2007**

Time Period	2000	2007	% Change
1-2 Hrs.	44,701	78,903	76.51%
2-3 Hrs.	5,859	7,659	30.72%
3-4 Hrs.	1,255	1,377	9.72%
4-5 Hrs.	303	243	-19.80%
5 or > Hrs.	82	52	-36.59%
<b>Total:</b>	<b>52,200</b>	<b>88,234</b>	<b>69.03%</b>

Source: OIG analysis of BTS data

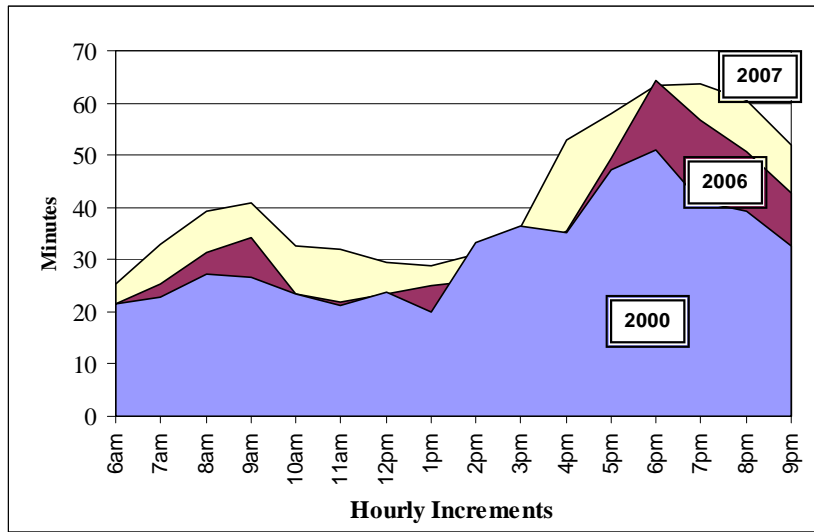
We also found that long, on-board, tarmac delays increased by 25 percent between the summers of 2006 and 2007, with even larger increases at some of the 15 airports we examined. For example, long, on-board, tarmac delays increased from 198 to 544 (175 percent) at Denver International Airport, from 3,483 to 6,441 (85 percent) at JFK, and from 815 to 1,489 (83 percent) at DFW.

Also of concern are the growing average taxi-out times at some of these airports. In July 25, 2000, we first reported on the rise in average taxi-out times at the New York area airports. In particular, we noted that if current projections held, average hourly taxi-out times “...for these airports could well surpass 1 hour in the next 10 years...”<sup>7</sup> In the summer of 2007, this occurred for at least one of these airports. As figure 5 illustrates below, JFK’s average hourly taxi-out times exceeded 1 hour for a large portion of the evening hours.

<sup>6</sup> The increase in the number of long on-board tarmac delays between 2000 and 2007 is partly due to changes in BTS reporting requirements, which resulted in many of the smaller carriers submitting their on-time performance data.

<sup>7</sup> OIG Report Number CR-2000-112 “Air Carrier Flight Delays and Cancellations,” July 25, 2000.

**Figure 5. JFK's Average Hourly Taxi-Out Times  
Summer 2000, 2006, and 2007**

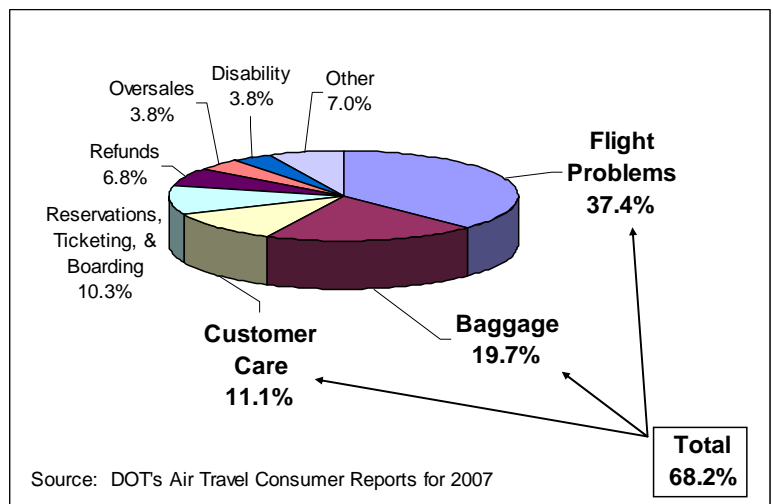


**Rising Flight Delays Are Also Leading to More Air Traveler Complaints**

Against this backdrop of increasing delays and cancellations, consumer complaints are also rising. Although customer complaints received by DOT in 2007 did not reach the levels reported in 2000 (23,381 in 2000 versus 10,937 in 2007), complaints in 2007 were at the highest levels since then—and nearly 70 percent higher than 2006 levels (6,436 to 10,937). In 2007, flight delays, cancellations, and misconnections represented 37.4 percent of all complaints.

Over the last several years, DOT ranked flight problems as the number one air traveler complaint, with baggage complaints and customer care<sup>8</sup> ranked as number two and number three, respectively. As shown in figure 6, data from 2007 show that these three types of complaints accounted for 68.2 percent of all complaints the Department received against U.S. airlines.

**Figure 6. Air Travel Consumer Complaints, 2007**



<sup>8</sup> Complaints such as poor employee attitude, refusal to provide assistance, unsatisfactory seating, and unsatisfactory food service are categorized as customer care complaints.



### ***Passengers' Flight Experiences Are Further Complicated by Capacity and Demand Matters***

Air travelers' dissatisfaction with flight problems, especially cancellations, is further compounded by reduced capacity and increased demand, which leads to fuller flights. Between 2000 and 2007, airlines have managed the growth in seat capacity to constrain costs.

- During that period, domestic available seat-miles rose by only 3.1 percent. Meanwhile, passenger ridership grew by a much larger 16.3 percent.
- The percent of seats occupied, or load factor, increased from 71 percent in 2000 to 80 percent in 2007—a rise of 9 points, with an unprecedented 86.1 percent in June 2007.
- Reduced capacity and higher load factors can also result in increased passenger inconvenience and dissatisfaction with customer service. With more seats filled, air carriers have fewer options to accommodate passengers from cancelled flights or those missing connections due to flight delays. This situation has been further compounded by the recent grounding of numerous passenger aircraft by American, Delta, Southwest, and United Airlines in the aftermath of growing maintenance concerns.

The following details our analysis, as requested by this Subcommittee, on the causes of last summer's severe flight delays and cancellations and actions needed to prevent recurrence and minimize the impact of delays on passengers.

### **After-Action Analysis: Multiple Factors Contributed to the Rise in Summer 2007 Delays**

The record-breaking flight delays of 2007 were magnified last summer when flight delays and cancellations hit all-time highs at major airports nationwide. When the system is under stress it is usually affected by flight delays and cancellations—the chief underlying causes of customer dissatisfaction.

We found that on-time flight performance during the summer of 2007 deteriorated broadly from the already poor levels of 2006. Of the 55 airports tracked by FAA, the number of delayed flights increased at 51 airports, and the average length of delays increased at 52 airports. In contrast, the number of scheduled flights increased at only 33 of the airports. Table 2 compares increases in delays and cancellations in the summers of 2006 and 2007.

**Table 2. Increases in Flight Delays and Cancellations  
(Summer 2006 and Summer 2007)**

Notable Statistics	Summer 2006	Summer 2007	Percent Change
Scheduled Flights	1,986,654	2,014,279	+ 1%
Delayed Flights	539,0000	621,000	+15%
Airports With Delays > 30%	9	26	+ 189%
Average Length of Arrival Delays	56 minutes	60 minutes	+ 7%
Cancelled Flights	37,396	47,911	+ 28%

\* Comparison of June through August 2006 and 2007, as tracked by FAA at 55 airports.

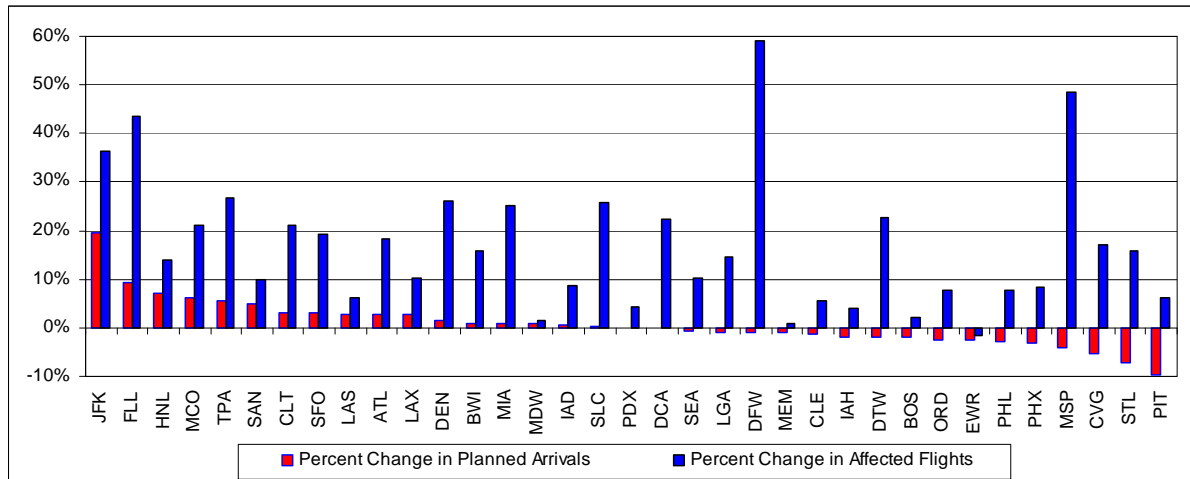
***The Number of Scheduled Flights Remained Relatively Flat Since 2006, With a Few Notable Exceptions***

On average, domestic passenger service (scheduled flights) remained steady over the last year. At the country’s largest airports, scheduled departures in the summer of 2007 were up by only 1 percent over the summer of 2006, remaining relatively unchanged at most of these airports. Notable exceptions occurred at JFK (up by 25 percent), San Diego International, Orlando International, San Francisco International (each up by 6 percent), and Pittsburgh International Airports, where scheduled departures declined by 11 percent.

While flight operations last summer were unchanged on a nationwide basis compared to 2006, a closer examination shows that the national average masked increased flight operations and delays at some airports. Conversely, delays were up at those airports that had no increase in flight operations (see figure 7 below).

For example, at JFK, flight operations were up by 20 percent last summer (an additional 9,700 scheduled flights) from the summer of 2006. Delays and cancellations were also up for the same period by 36 percent. In contrast, scheduled flights last summer at DFW were down by 1 percent from the summer of 2006, and the airport still experienced increased delays and cancellations by nearly 60 percent.

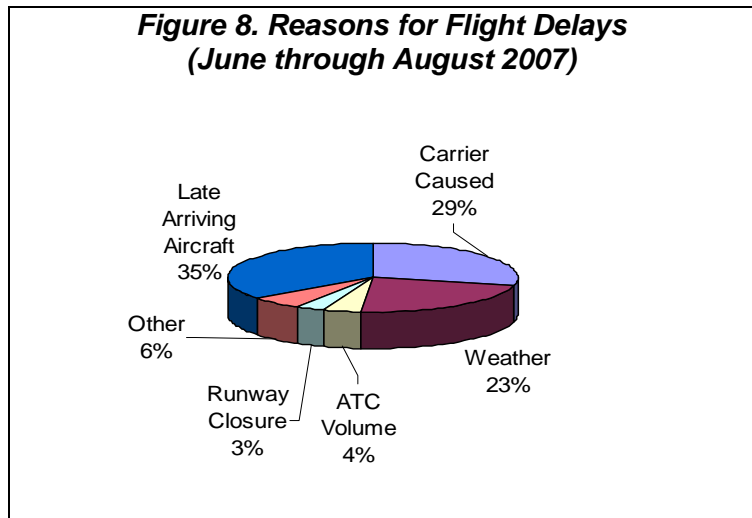
**Figure 7. Changes in Arrival Demand and Flight Delays and Cancellations, Summer 2006 versus 2007 (35 Operational Evolution Plan Airports)**



**Multiple Factors Contributed to Last Summer’s Flight Delays**

Last summer’s delays were driven by multiple factors. Some of these were uncontrollable by airlines (e.g., weather, air traffic control, and airport security). Some problems also stemmed from factors that were controllable by airlines, such as mechanical issues, crew availability, and holding for connections. Airlines also reported delays caused by late arriving aircraft—when the previous flight operated with the same aircraft arrives late, resulting in a ripple effect throughout the day. Figure 8 depicts the reasons for delays as reported by the airlines.

However, the causal categories that DOT’s Bureau of Transportation Statistics (BTS) uses to gather data from airlines are too broad to accurately portray delay types. For example, late arriving aircraft delays can be attributed to a single factor, such as severe weather conditions, or to a combination of factors, such as aircraft maintenance issues or ground holds. Also, the root cause of “carrier-caused delays” cannot be determined with any degree of precision because that information is not collected.



BTS needs to analyze the “late arriving aircraft” category to identify the factors driving these delays and allocate those factors across the other categories—carrier-caused, weather, the National Airspace System, and airport security—to assess the

primary cause of delays. This type of analysis could also help to determine the underlying causes of flight cancellations, but no agency currently conducts this analysis. Until this step is taken, the *root causes* of delays cannot be determined with any degree of precision.

### ***Causal Factors Impacting 15 Major Airports With the Largest Increases in Delays***

To more closely examine the situation of delays and cancellations during the summer of 2007, we reviewed 15 airports<sup>9</sup> that either experienced large deteriorations in on-time performance measures between the summers of 2006 and 2007 or were among the largest and most delayed airports in the country. Utilizing data reported by the airlines,<sup>9</sup> we identified causes of delays at these airports.

**System-Wide Effect of Prior Delays:** Delays are categorized as “late arriving aircraft” when the previous flight operated with the same aircraft arrives late, delaying that aircraft’s next flight. This categorization is non-specific because it does not address the root causes of the late arriving aircraft. Late arriving flight delays can be attributable to a single factor, such as severe weather conditions, or a combination of factors, such as aircraft maintenance issues, crew availability, or an air traffic control ground hold. When an aircraft is delayed early in the day, often its remaining flights scheduled in the day are all delayed.

Although carrier- and weather-caused delays were reported as the leading causes of delayed flights, the system-wide effect of those delays is far reaching. This “ripple effect” can then become the underlying cause of delays for other flights throughout the system, which are not directly experiencing carrier- or weather-caused delays. Late flights caused by previous delays in the system increased during the summer of 2007 to over one-third of all delayed flights. At the 15 airports reviewed, the “ripple effect” delayed 64,000 arriving aircraft last summer.

**Carrier-Caused Delays:** Carrier-caused delays were reported as the number one cause of delays at 5 of the 15 airports we reviewed last summer—Denver, Ft. Lauderdale, Miami, Minneapolis, and Tampa. Details were not available to identify the specific carrier issues, such as mechanical, aircraft servicing, or gate availability problems. However, we did determine that shortages of cockpit crew members led to more than 1,000 cancellations at Northwest Airlines last June.

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<sup>9</sup> The 15 airports examined include Chicago O’Hare International, Dallas-Fort Worth International, Dallas Love Field, Denver International, Fort Lauderdale International, Hartsfield-Jackson Atlanta International, Houston George H. Bush Intercontinental, John F. Kennedy International, LaGuardia, Miami International, Minneapolis-St. Paul International, Newark Liberty International, Philadelphia International, Ronald Reagan Washington National, and Tampa International.

**Weather Conditions:** Weather is categorized as either severe or operable. We used FAA data to compare the impact of weather on flight operations for the summers of 2006 and 2007 and found no appreciable change in the national weather between these periods.

While 23 percent of arrival delays across the country were attributable to weather during summer 2007, we found that weather had either no or minor impact on operations for 52 of 90 days. Even on days when weather was reported as having no or minor impact, airlines still could only achieve an average on-time performance of 74 percent.<sup>10</sup>

On days with higher levels (over 10 percent) of severely or moderately affected operations, arrival delays were only 30 percent greater than on days where weather had no or minor impact. However, on days with severe and moderate weather impact, average daily cancellations were twice as high as on days where weather had no or minor impact. Some airports did see selected periods of worsened weather last summer.

At the majority of the 15 airports we reviewed, the severity of weather impacting flight operations did not decline appreciably between the summers of 2006 and 2007. Nonetheless, airlines at those airports reported that weather was the leading, direct cause of delays (32 percent). The apparent conflict is answered by considering that as schedules increasingly exceed capacity, even in good weather, the slightest degradation in weather conditions can disproportionately affect on-time performance.

While extreme weather conditions can significantly delay or prevent the operation of a flight, extreme weather only accounted for 4 percent of delays in summer 2007 at the 15 airports examined. However, we did find that extreme weather was a significant cause of delays (1,300) and cancellations (1,100) at DFW in June 2007.

**Nation-Wide Airspace Congestion:** While many airports and their surrounding airspace have adequate capacity, other locations reached their saturation points, including air corridors connecting New York, Chicago, and Atlanta, accounting for more than 50 percent of flight delays system-wide. The biggest airspace bottlenecks this past summer were at the three major New York area airports and the surrounding airspace, accounting for more than one-third of the flight delays system-wide.

**Airline Scheduling and Airport Capacity:** In 2007, airlines scheduled flights above airport capacity to handle demand, and this contributed significantly to delays at specific airports. Our analysis of the 15 airports examined showed that during summer 2007, 6 had flights scheduled either at or over capacity at optimum weather conditions. Combined, airlines scheduled flights above the average optimum capacity

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<sup>10</sup> Consists of days where FAA reports of the combined “none” or “minor” weather impacts on flight operations equaled or exceeded 90 percent of each day’s operations for the group of 55 airports tracked by FAA.

at key airports such as JFK, LaGuardia, Newark Liberty, Philadelphia, Chicago O'Hare, and Ronald Reagan Washington-National.

In summer 2007 at Chicago O'Hare, there was evidence of some peaking beyond optimum weather conditions in the morning hours, and again, later in the afternoon. The problems with over-scheduling are exacerbated when scheduled flights exceed optimum airport capacity in poor weather conditions (i.e., when Instrument Flight Rules take effect) throughout most of the day.

For example, in one 15-minute period at Chicago O'Hare International Airport, we found that over 45 flights were scheduled to depart—nearly double the average departure capacity of the airport at that time. There were 2 other 15-minute time periods when 35 or more flights were scheduled to depart in one 15-minute period.

When airports are over-scheduled during peak hours, even small increases in flight operations can have a disproportionately larger impact on flight delays, as was the case in the New York region. For example, as flight operations expanded at JFK over the last several years, delays increased at that airport and at LaGuardia and Newark.

Scheduled flights at JFK increased by 21,000 between the summers of 2006 and 2007, and delays and cancellations at all three New York airports increased by 40,000 for the same period. When weather or other disruptions at these airports do occur, they can disproportionately impact on-time performance and cause longer recovery time for airports.

**Spacing of Aircraft on Final Approach:** While problems are traceable to increased operations, “excessive spacing” on final approach was also a factor in the New York area. In its December 2007 report, the New York Aviation Rulemaking Committee (ARC) reported that spacing between aircraft on final approach has been steadily increasing beyond limits needed for safety, which contributed significantly to arrival delays at the JFK, LaGuardia, and Newark airports.

Because of additional spacing, well-established, predictable airport acceptance rates became unreliable. This resulted in increased probability of go-arounds, no-notice holdings, increased vectoring, and sector overload. FAA recognizes the importance of the problem but has not quantified the impact on last summer's delays.

***Outlook for Summer 2008: Near-Term Solutions Are Urgently Needed To Mitigate Congestion***

Whether or not delays this summer will reach the extreme levels of last year depends on several factors. These include weather conditions, impacts of a softening economy and higher fuel prices on the industry, major airlines' efforts to reduce capacity (by taking aircraft out of service), and the effectiveness of initiatives planned or underway

at already congested airports. We note that three airlines have ceased operations in the last 2 weeks.

Our analysis shows that there are several airports to watch closely this summer because of severe peaking during part of the day.

We examined the published airline schedules for the 15 airports reviewed to identify where the potential exists for continued or new problems this summer. We compared those schedules, in 15-minute increments, with the average capacity in optimum weather conditions and under instrument flight conditions for each airport. If the level of demand shown in the schedules and in the FAA-approved operations materializes this summer, we see the potential for continued or increased delays at the following airports:

- **Minneapolis-St. Paul:** Unlike last year's crew and runway problems, this summer's schedules show new, severe peaking throughout the day, pointing to a potential repeat of high delay levels. For example, Northwest Airlines has 56 departures scheduled in one 15-minute period—nearly 3 times the average departure capacity of the airport for that time.
- **Chicago O'Hare and New York LaGuardia:** The summer 2008 schedules at these two airports show more peaking in excess of optimum capacity than last summer, indicating the potential for worsened delay conditions.
- **JFK and Newark Liberty:** There is a potential for continued delay problems at these airports this summer. FAA's caps on operations at these airports are below the level of operations that airlines wanted to operate this summer. However, we found that the FAA-approved operations for this summer represent an increase in flights of 8.9 percent at JFK and 4.6 percent at Newark Liberty over last year's levels with more time-of-day peaking at both airports.

On a more positive note, published schedules for Ronald Reagan Washington National Airport show less peaking above capacity for summer 2008, which could help reduce delays at that airport.

## **Actions Needed in 2008 and 2009 To Mitigate Congestion**

The long-term solution to customer dissatisfaction with air travel and reducing delays depends largely on expanding capacity through the Next Generation Air Traffic Management System (NextGen), which is targeted for 2025. Although FAA is exploring ways to accelerate NextGen, much work remains to set realistic expectations for when its capacity-enhancing capabilities can be delivered. Therefore, it will be important to keep efforts on track that show promise for enhancing capacity over the next 5 years. These efforts include new airport infrastructure projects at six airports, new procedure development, and airspace redesign efforts.

### ***Ongoing Efforts To Enhance Efficiency and Better Manage Delays***

Since last spring, DOT, FAA, and various stakeholders have identified a wide range of initiatives to reduce delays in the near-, mid- and long-term, particularly in the New York area. Specifically, the ARC recommended over 77 initiatives, and FAA organized these into 3 categories: 26 short-term initiatives that can be completed within 12 months, 7 mid-term initiatives that can be completed by the end of fiscal year 2009, and 44 long-term initiatives with completion dates still to be determined.

The 26 short-term initiatives are primarily procedural initiatives, such as re-routing arrival and departure routes and reducing excessive spacing of aircraft on final approach into the New York area airports. According to FAA, eight of the short-term initiatives are already in place, such as utilizing multiple runways at JFK to improve throughput. Overall, FAA plans to have all the short-term initiatives in place by year end. FAA also hopes to have as many as these initiatives in place as possible by this summer, as they may directly reduce delays.

The 51 mid- and long-term initiatives primarily consist of technological and capital infrastructure efforts, such as installing the new Airport Surveillance Detection Equipment-Model X (ASDE-X) ground surveillance systems at Newark and JFK, improving taxiways at JFK, and adding NextGen automation systems.

DOT and FAA also proposed amendments to the Department's policy regarding airport rates and charges. The amendments are intended to allow operators at congested airports flexibility when varying charges based on the time of day and air traffic volume and when including the cost of projects designed to expand capacity in the new landing fees.

It is important to note that ongoing and planned initiatives are not intended to significantly boost capacity but rather to enhance efficiency and better manage delays. While capping hourly operations at JFK and Newark may alleviate the over-scheduling at peak times, history shows that caps do not necessarily translate into a significant reduction in delays or an increase in airline on-time performance. For example, flight caps at Chicago O'Hare have been in place since 2004, and although delays have stabilized, they still occur at about 25 percent annually, with a delay rate of 31 percent last summer.

### ***Near-Term Solutions Are Urgently Needed***

With this in mind, we see several near-term actions that are needed to reduce congestion and delays. Specifically:

- **Making Better Use of "Special-Use Airspace:"** FAA needs to negotiate a plan with the Department of Defense (DOD) for use of special-use airspace to open up additional lanes of traffic at specific chokepoints this summer.



Before the Thanksgiving and Christmas holiday travel periods last year, DOT worked with DOD to open up special-use airspace along the east and west coasts to help mitigate delays during these heavy traffic periods. This effort proved to be effective in reducing delays. Special-use airspace is often inactive (i.e., not utilized for military purposes), thus offering potential options for more direct routing of civilian flights and additional paths to alleviate airspace congestion. Industry groups noted that “repeatable procedures” need to be developed to enhance coordination between military managers of special-use airspace on each coast and at FAA’s command center during periods of severe weather.

- **Continuing to Address Concerns and Excessive Spacing on Final Approach and Enhancing Controller Productivity:** FAA needs to continue to address concerns about controller productivity and excessive spacing on final approach as it trains large numbers of new controllers. Air Traffic Organization officials commented that concerns about excessive spacing extends beyond New York facilities. FAA developed a new tool to help monitor spacing and embarked upon educational efforts for controllers in both the en route and terminal lines of business. FAA is also developing new performance measures and policies to ensure efficiency without jeopardizing safety. We will continue to monitor these efforts.
- **Expanding FAA’s Airspace Flow Program:** FAA needs to further expand the number of its Airspace Flow Program locations—locations chosen for their combination of heavy traffic and frequent bad weather—to help reduce delays. This program gives airlines the option of flying longer routes to safely maneuver around storms and has successfully reduced delays. The program, which is managed by FAA’s command center, should also be utilized in heavy traffic conditions to space en route traffic to create gaps, thereby enabling ground-delayed traffic to depart more quickly.
- **Updating Capacity Benchmarks:** An important first step in addressing the delay problem in the 2000 timeframe was to develop a set of “capacity benchmarks” for the Nation’s top 30 airports. However, FAA has not published updated capacity benchmarks since 2004.

As we have noted in the past, establishing benchmarks is critical to understanding airline scheduling practices and what relief can be expected from technology and new runways. At the very least, benchmarks provide a common framework for understanding what maximum arrival and departure rates can physically be handled at the busiest airports under good and poor weather conditions, by time of day. Given the projected demand, FAA needs to update the benchmarks.

- **Keeping Planned Airport Infrastructure and Airspace Projects on Track:** FAA reports that new runways provide the largest increases in capacity.

Currently, runway projects at five airports (including projects at Washington Dulles and Chicago O'Hare) are planned to be built by 2012. History shows that airspace changes are vital for realizing benefits from new runway projects and can enhance the flow of air travel even without new airport infrastructure.

- **Monitoring Airline Scheduling Practices:** The airlines should make every attempt possible to level out the arrival and departure banks at their large-hub airports to create more manageable flight operations at peak times at these airports.

Since the airline industry is opposed to the Department's proposal to allow the Nation's busiest airports to charge higher landing fees during peak travel times, as an alternative, the airlines should voluntarily reduce peak scheduling. Airlines have successfully conducted re-scheduling (i.e., de-peaking) at hub airports in the past. Following the summer of 2000, several major airlines voluntarily adjusted their flight schedules in early 2001, which helped to reduce congestion and delays at several major airports. It is time for the airlines to again consider adjusting their schedules to disperse flights from peak periods of demand to less congested periods.

For the 15 airports reviewed, we examined the published flight schedules for this summer to identify where airlines have scheduled more flights than the airports are capable of handling without delays. Without further adjustments to arrival and departure levels during peak periods, we see the potential for ongoing delay problems for the summer of 2008 at the three New York airports—JFK, Newark Liberty, and LaGuardia—along with Chicago O'Hare and Minneapolis. Delays at any one of these airports will have a "ripple effect" across the National Airspace System.

As we have noted in the past, BTS should perform an analysis of the Official Airline Guide schedule for all carriers (majors, nationals, regional, commuters, and small air carriers) to determine what, if any, changes in air carrier schedules have occurred and how they have contributed to the reduction in flight delays so far this year. This effort should be reconvened before this summer.

- **Expanding the Parameters for Targeting Chronically Delayed or Cancelled Flights:** In May 2007, DOT's Office of Aviation Enforcement and Proceedings initiated an industry-wide investigation of airlines' chronically delayed flights and took enforcement action against carriers for any flights that were chronically delayed. This is an important step forward.

Currently, DOT considers a flight to be chronically delayed if it operates more than 15 minutes late, more than 70 percent of the time in any calendar quarter. However, these parameters need expanding. DOT's current parameters identify

less than 200 regularly scheduled flights<sup>11</sup> per quarter as chronically late and, therefore, do not accurately portray the magnitude of chronically delayed flights.

We found that expanding the parameters to:

- 30 minutes late or more, 50 percent or more of the time, results in a total of 2,789 regularly scheduled flights that were chronically delayed.
- 30 minutes late or more, 40 percent or more of the time, results in a total of 5,369 regularly scheduled flights that were chronically delayed.

Targeting so few flights when delays and related passenger complaints continue to rise does not send a message to the airlines that delayed flights, especially chronically delayed flights, will not be tolerated.

- **Improving Airside Procedures:** The airports, in collaboration with FAA, need to work on procedural improvements, such as more efficient use of taxi-ways and runways. In its December 2007 “Flight Delay Task Force Report,” the Port Authority of New York and New Jersey identified “improvements to ground traffic movement” as one near-term recommendation to minimize delays at the JFK, LaGuardia, and Newark Liberty airports. Improvements to ground movement enable aircraft to taxi more quickly and safely between runways and terminals.

FAA is exploring ways to accelerate deployment of ASDE-X technology at JFK to improve surface operations. However, we note that ASDE-X was designed as runway safety technology—not a surface management system and, therefore, software modifications will be required. Once experience is gained, FAA should consider expanding this capability to other locations.

- **Following Through on Conducting Incident Investigations:** In our September 25, 2007, report, we recommended that DOT’s Office of General Counsel—in collaboration with FAA, airlines, and airports—review incidents involving long, on-board ground delays and their causes; identify trends and patterns of such events; and implement workable solutions for mitigating extraordinary flight disruptions. To address this recommendation, DOT assigned this responsibility to the national task force on contingency planning. Since the national task force’s initial meeting on February 26, 2008, there have been several missed opportunities to investigate incidents involving long, on-board delays.
- **Analyzing Causes of Delays and Cancellations:** To accurately assess the primary cause of delays, BTS needs to analyze the “late arriving aircraft” category to identify the driving factors of delays and allocate those factors across the other

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<sup>11</sup> A regularly scheduled flight is a flight segment representing a city pair (e.g., Chicago to Miami).

categories—carrier-caused, weather conditions, the National Airspace System, and security. This type of analysis should also be done for flight cancellations, but no agency currently conducts this analysis. Until this step is completed, the *root causes* of delays cannot be determined with any degree of precision.

The record-breaking flight delays and cancellations of last summer underscore the degree to which passengers are inconvenienced when traveling by air. The traveling public knows the aviation system needs improvement, and actions are needed by the airlines, airports, FAA and DOT if consumer confidence is to be restored.

As we testified in September 2007,<sup>12</sup> DOT should take a more active role in overseeing customer service issues, and there are actions that it, the airlines, and airports can undertake immediately to do so. Many of the actions are not new and date back to recommendations in our 2001 report, which were directed at delay and cancellation problems—key drivers of customer dissatisfaction with airlines. The following is an assessment of DOT's, FAA's, the airlines', and airports' progress in implementing the actions outlined in our September 2007 testimony before the House Subcommittee on Aviation.

## **DOT, the Airlines, and Airports Have Progressed Toward Improved Customer Service, but Much Work Remains**

Since we last testified, DOT, the airlines, and airports have begun initiatives to address the action items we outlined at that hearing. Specifically, these actions are in response to outstanding recommendations to improve airline customer service and minimize long, on-board delays (see figure 9).

### ***Departmental Efforts***

In our September 2007 report, we made a series of recommendations to the Secretary of Transportation to improve the accountability, enforcement, and protection afforded to air travelers. One such recommendation requires each certificated and commuter airline that provides domestic scheduled service using any aircraft with more than 30 passenger seats to: (a) define what constitutes an extended period of time, (b) set a time-limit on delay

***Figure 9. Actions Outlined in September 2007 To Improve Airline Customer Service and Minimize Long, On-Board Delays***

We recommended that:

- DOT conduct incident investigations involving long, on-board delays.
- DOT's Enforcement Office oversee the airlines' policies for dealing with long, on-board delays.
- BTS implement the necessary changes in the airlines' on-time performance reporting to capture all long, on-board delays.
- Airlines clarify terms in their contingency plans.
- Airlines establish specific targets for reducing chronically delayed or cancelled flights.
- Airlines disclose on-time flight performance.
- Airlines resume efforts to self-audit customer service plans.
- Airlines reconvene the contingency planning task force.
- Airports implement processes for monitoring lengthy delays.

<sup>12</sup> OIG Testimony Number CC-2007-099 "Actions Needed To Improve Airline Customer Service and Minimize Long, On-Board Delays," September 26, 2007.

durations before deplaning passengers, and (c) incorporate such policies in its contract of carriage<sup>13</sup> and post on its Internet site.

The Department has begun addressing our recommendations by using its regulatory authority to issue rulemakings and to establish Federal advisory committees. However, most of the initiatives the Department is proposing will not be in place by this summer.

### *Actions Initiated Under Rulemaking*

DOT has initiated actions to address each recommendation (10 recommendations in total) using two rulemakings as the primary vehicle to enhance airline passenger protections.

**BTS Rulemaking Issued in November 2007:** BTS issued a rulemaking proposing to collect additional data elements when flights are cancelled, diverted, or returned to the gate. The additional proposed data elements would fill in data gaps, thereby providing a more accurate portrayal of on-ground delays. *BTS expects to issue its final rule in August 2008, with October 1, 2008, as the effective date of the airlines' new reporting requirements.*

Delay statistics that airlines are reporting to BTS do not accurately portray the magnitude of long, on-board delays because (1) if a flight taxis out, sits for hours, and then taxis back in and is cancelled, the delay is not recorded and (2) if a flight is diverted to an airport other than the destination airport and sits on the tarmac for an extended period of time, the flight is not recorded in delay statistics.

Also, airlines are not required to report gate departure times when a flight is later cancelled. So, there is no record of how long a flight remains at the gate or sits on the tarmac before it is cancelled. This is true for flights with lengthy delays at the originating airport that are later cancelled. This was the case with some JetBlue Airways flights at JFK on February 14, 2007. On that day, JetBlue's JFK operations suffered when severe weather hit the northeastern United States, leading to 355 cancellations; 6 diversions; and 26 on-board delays exceeding 4 hours on flights that were later cancelled.

It is also true for flights with lengthy delays at airports where flights were diverted and then cancelled, such as some of the American Airlines flights diverted to Austin-Bergstrom International Airport on December 29, 2006. On that day, American's operations at DFW were severely affected by unprecedented weather; this led to 654 flight cancellations, 124 diversions, and 44 on-board delays exceeding 4 hours.

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<sup>13</sup> A contract of carriage is the document air carriers use to specify legal obligations to passengers. Each air carrier must provide a copy of its contract of carriage free of charge upon request. The contract of carriage is also available for public inspection at airports and ticket offices.

The diversions to Austin-Bergstrom generated substantial interest because some of the lengthiest on-board delays occurred at that airport—in one case for over 9 hours.

**DOT Rulemaking Issued in November 2007:** DOT issued a rulemaking seeking comments on whether the Department should adopt a rule to enhance airline passenger protections that would require airlines to:

- *Adopt contingency plans for lengthy tarmac delays and incorporate them in their contracts of carriage.* Each plan would require, among other things, the maximum tarmac delay that the airline will permit; the amount of time on the tarmac that triggers the plan's execution; a plan to meet passengers' essential needs, such as food, water, and lavatory facilities; and assurance that the plan has been coordinated with the airport operator.
- *Respond to consumer problems.* Each airline would be required to designate a consumer advocate who resides at the airline's system operations center and at each airport dispatch. The consumer advocate would be part of the team that is responsible for monitoring the impact of flight delays, cancellations, and long, on-board delays and would provide input on decisions concerning which flights are cancelled and which flights are subject to long, on-board delays. The advocate would also be required to respond to each passenger complaint within 30 days.
- *Publish delay data on their Internet sites.* Each airline would be required to report its prior month's on-time performance to include the percentage of on-time arrivals and arrivals more than 30 minutes late, flights that were late more than 50 percent of the time, and percentage of cancellations. Currently, the airlines are required to disclose on-time performance only upon request from customers. To date, only 5 of 12 ATA airlines report on-time performance on their Internet sites. Given the ease of availability of this information to the airlines, we continue to recommend that the airlines post on-time flight performance information on their Internet sites and make it available through their telephone reservation systems and without prompting.
- *Publish complaint data.* Each airline would be required to disclose on its Internet sites the number of complaints received regarding tarmac delays, missed connections, and failures to meet passengers' essential needs affected by delayed or cancelled flights.
- *Report on-time performance for international flights.* Currently, U.S. airlines that account for at least 1 percent of the domestic scheduled passenger revenue are only required to report on-time performance for domestic flights. This provision would require those airlines to report on-time performance for international flights to and from the United States. This provision would also require the largest foreign airlines to report on-time performance for their flights to and from the United States.

- *Audit their compliance with their customer service plans.* This provision dates back to a recommendation we made in our 2001 report. The ATA airlines agreed to establish quality assurance and performance measurement systems and conduct internal audits to measure compliance with the Commitment provisions and customer service plans. Only a few ATA airlines have them in place today.

The rule also would declare the operation of flights that remain chronically delayed to be an unfair and deceptive practice and unfair method of competition, as we recommended in our November 2006 report.<sup>14</sup> In that report, we noted that another option for curbing congestion is for DOT to investigate unrealistic scheduling of flights by any air carrier. These flights are referred to as “chronically delayed.” When we issued our report, we reported that for 2005, there were 15,640 unique flight numbers (215,016 individual flights) that were chronically delayed or cancelled, affecting an estimated 16 million passengers. For 2007, several of those numbers increased significantly—there were 10,935 unique flight numbers (291,547 individual flights) that were chronically delayed or cancelled, affecting an estimated 19.4 million passengers.

DOT’s view at that time was that the flights that are chronically delayed are mostly due to reasons beyond the air carriers’ control—mostly weather but also congestion. As a result, in DOT’s view, a successful enforcement action for unrealistic scheduling would be difficult at best. Nevertheless, we recommended that DOT revisit its current position on chronic delays and cancellations and take enforcement actions against air carriers that consistently advertise flight schedules that are unrealistic, regardless of the reason. In May 2007, DOT’s Office of Aviation Enforcement and Proceedings initiated an industry-wide investigation of airlines’ chronically delayed flights and took enforcement action against carriers for any flight that was “chronically delayed”<sup>15</sup> and was not corrected by the second calendar quarter thereafter.

### *Actions Initiated Under the Federal Advisory Committee Act*

As we recommended, DOT established a national task force of individuals who represent a cross-section of government agencies, airlines, airports, consumer groups to develop model contingency plans for minimizing the impact of long, on-board delays.

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<sup>14</sup> OIG Report Number AV-2007-012, “Follow-Up Review: Performance of U.S. Airlines in Implementing Selected Provisions of the Airline Customer Service Commitment,” November 21, 2006.

<sup>15</sup> DOT defines a chronically delayed flight as a flight that operates at least 45 times over calendar quarter and is late more than 70 percent of the time by 15 minutes or more.

The task force will undertake the following initiatives:

- Develop model contingency plans for minimizing the impact of lengthy tarmac delays.
- Be responsible for reviewing incidents involving long, on-board delays and their causes; identify trends and patterns of such events; and recommend workable solutions for mitigating the passenger impact of extraordinary flight disruptions.
- Review existing airline and airport contingency plans identifying best practices for extended tarmac delays.
- Report the results of its efforts and a description of the model contingency plan developed to the Secretary.

The task force held a kick-off meeting on February 26, 2008, with a second meeting planned for April 29, 2008. At the February 26 meeting, Office of Inspector General staff presented their perspectives on actions needed to minimize long, on-board delays. Two working groups were established—one on passenger needs and the other on delay causes—with reports to be presented at the April 29 meeting.

The Department has moved quickly to address our recommendations. While it is too soon to evaluate the effectiveness of these ongoing initiatives, they all have merit and, if properly executed, should help in mitigating long, on-board delays. However, most of the initiatives will not be in place by this summer. Also, recommendations from the national task force to the Secretary are scheduled for submission in August 2008, when summer air travel is in decline. Therefore, the airlines and airports must follow through on their plans to reduce delays and improve airline customer service—without waiting for the outcome of the rulemakings or the national taskforce’s recommendations.

***The Airlines Have Begun Their Own Customer Service Initiatives, but Further Actions Are Needed***

At the September 2007 hearing, we testified that many of the actions to improve airline customer service and minimize long, on-board delays are not new and date back to recommendations in our 2001 report, which were directed at delay and cancellation problems—key drivers of customer dissatisfaction with airlines. As we emphasized at that hearing—the key for each of these actions is execution. We conducted a follow-up examination on progress made to implement these actions. We found, for the most part, that the airlines under review have begun initiatives to improve air travelers’ experiences, but more action is needed. The following summarizes the Air Transport Association (ATA) member-airlines’ progress to date in response to our recommendations.



**Clarify Terms in Airlines’ Contingency Plans.** In examining the ATA member-airlines’ contingency plans, we found that:

- Eleven of 12 ATA member airlines have defined “an extended period of time” for meeting passengers’ essential needs during long, on-board delays. Two airlines consider this internal policy not publicly available, three have incorporated it into their customer service plans and placed it on their Internet sites, and six have incorporated it into their contracts of carriage—only then does it become legally enforceable by the customer against the airline.

The trigger thresholds for meeting passengers’ essential needs vary from a half-hour to 2 hours on arrival and from 1.5 hours to 3 hours on departure. We think it is unlikely that passengers’ definition of an extended period of will vary depending upon which airline they are flying. We are still of the view that a consistent policy across the airlines would be helpful to passengers.

- Eleven of the 12 ATA airlines have now set a time limit on delay durations before deplaning passengers or elevating the situation to senior operational managers for resolution. Three airlines consider this as an internal policy, only one has incorporated it into its customer service plan, and seven have incorporated this into their contracts of carriage. The trigger thresholds for deplaning passengers vary from a half-hour to 5 hours on arrival and 1 hour to 5 hours on departure (see table 3).

**Table 3. Selected Airlines’ Terms and Conditions  
for Handling Long, On-Board Delays**

Airline	Definition of Extended Period of Time Stated in Customer Service Plans and/or Contracts of Carriage	Time to Deplane Stated in Customer Service Plans and/or Contracts of Carriage and/or by Internal Policy (I)
Alaska	90 Minutes	2 Hours for Arrivals
Aloha	None	None
American	2 Hours	4 Hours(I)
Continental	2 Hours	2 Hours for Arrivals 4 Hours for Departures
Delta	1 Hour for Arrivals 2 Hours for Departures	At 1 Hour Elevate Up* (Arrivals) At 2 Hours Elevate Up* (Departures)
Hawaiian	2 Hours	2 Hours
JetBlue	1 Hour	5 Hours
Midwest	30 Minutes for Arrivals 1 Hour for Departures	30 Minutes for Arrivals (I) 1 Hour for Departures (I)
Northwest	1 Hour for Arrivals 3 Hours for Departures	1 Hour for Arrivals (I) 3 Hours for Departures (I)
Southwest	2 Hours	2 Hours
United	2 Hours	90 Minutes for Arrivals 4 hours for Departures
US Airways	1 Hour	At 3 Hours Elevate Up*

\* Point in time when situation is elevated to senior management for a decisive action.

**Establish Specific Targets for Reducing Chronically Delayed or Cancelled Flights.** Between 2000 and 2007, the number of chronically delayed flights has increased nearly 27 percent (from 229,961 to 291,547). Likewise, the number of unique flight numbers that are chronically delayed month after month has also increased, with those delayed 6 months or longer increasing nearly 57 percent (380 to 595) over this time period. Overall, 19.4 million passengers were impacted by chronically delayed flights in 2007.

In 2001, and in subsequent reports, we recommended that the airlines establish specific targets for reducing chronically delayed or cancelled flights. To date, we found:

- Nine of the 12 airlines monitor chronically delayed or cancelled flights based on BTS criteria.
- Four of the 12 airlines have established a “zero tolerance” target for reducing chronically delayed and cancelled flights.
- Only three of the four airlines publish any information about chronically delayed flights and how they handle them in their customer service plans—a lost opportunity to educate the public on the efforts the airlines are taking to reduce delays.

The following examples are ways in which airlines can reduce chronically delayed flights.

- Increasing the block times (often referred to as “padding the schedule”) of the flight. This is generally not a good idea for economic reasons—increased block time can result in fewer flights segments for each aircraft for each operating day resulting in lost revenue.
- Pairing entire flight crews together throughout a day to minimize potential disruptions generated by separating aircraft and crew.
- Working with FAA to find alternative departure routings especially for flights departing from the New York area.

**Disclose On-Time Flight Performance at Time of Booking Without Prompting and On Internet Sites.** None of the 12 ATA airlines have completely satisfied our recommendation to disclose on-time flight performance at time of booking without prompting and post it on their Internet sites. We found that:

- Nine of the 12 airlines will disclose the prior month’s on-time flight performance upon request only. We tested five of the airlines’ compliance with providing the performance data upon request through their reservations agents and they were in compliance.

- Only 5 of 12 ATA airlines are placing the flights' prior month, on-time performance on their Internet sites. In this case, several airlines are awaiting the final outcome of the Department's proposed rulemaking on this matter.

**Resume Efforts To Self-Audit Customer Service Plans.** We recommended in 2001, and in subsequent reports, that the airlines establish quality assurance and performance measurement systems and conduct internal audits to measure compliance with the Commitment provisions and customer service plans. To date, only 5 of the 12 airlines are still performing self-audits of the Commitment's provisions, while others have a self-audit system that does not include all the Commitment provisions. These airlines may be awaiting the outcome of the Department's rule on this matter. In its rule, the Department proposes to require that airlines establish quality assurance and performance measure systems and conduct internal audits to measure compliance with the Commitment provisions. It is our view that there is nothing in the Department's rule to prevent the airlines from self-policing themselves, just as they had promised to do back in 2001.

While some airlines are making a concerted effort to improve the passenger experience, others are not willing to formally promise all their Commitment provisions and associated customer service policies in their contracts of carriage or customer service plans. It is still our opinion that the airlines need to publish their promises to customers in writing regarding long, on-board delays. This would hold the airlines to a higher standard and clearly demonstrate that they take customer service matters very seriously.

***Airports Are More Involved in Contingency Planning for Extraordinary Events, but Further Action Is Needed***

Since we last testified, airports have moved out with initiatives to mitigate long, on-board delays and minimize passenger discomfort, but more is still needed. Airports have taken several actions since September 2007 to address these matters, such as convening a task force to address flight delays and customer service issues. However, individual airports can do more to enhance passengers' experiences, especially during extraordinary flight disruptions.

***Convening a Task Force and Workshops Among Stakeholders To Address Flight Delays and Customer Service Issues in the New York Area***

In our prior testimony, we reported that the Port Authority of New York and New Jersey convened a task force in July 2007 composed of Port Authority staff, airline executives, Federal, state, and city government officials, and other industry stakeholders in the region's aviation system to focus on the burgeoning problem of flight delays, including initiatives to improve the passenger experience when delays occur.

The task force issued its report on December 6, 2007, identifying a total of 96 recommendations to enhance capacity, reduce delays, and improve customer service for the region's three major airports—JFK, LaGuardia, and Newark Liberty. Nineteen of the recommendations address improving customer service through better communication with passengers and coordination among airlines, airports, and the various service providers.

Key customer service recommendations include:

- Establishing a baseline maximum time for a plane to sit on tarmac before the Port Authority must be notified to prepare support services.
- Creating an “early warning” system to inform passengers of delay before arrival at the airport terminal.
- Providing delayed passengers with information on alternate flights and transportation to allow sooner arrival at their final destination.

The task force intends to meet in early this summer to assess the implementation status of the recommendations in its report.

#### *Convening Workshops Composed of Vested Stakeholders To Address Contingency Planning for Extraordinary Flight Disruptions*

Two workshops were convened—one sponsored by DFW and the other sponsored by Airports Council International-North America (ACI)—to identify best practices for contingency planning during extraordinary flight disruptions. A cross-section of airports, airlines, government agencies, and industry vendors attended the workshops. Highlights from the workshop action items include the following:

- Identified and explored the causes of the public's concern that airports and airlines lack awareness of or fail to adequately prepare for Irregular Operations as they continue to take proactive measures to address customer needs.
- Acknowledged that better communication, collaboration, and coordination between all stakeholders (the airlines, airports, the Transportation Security Administration and FAA)—before and during an event—will dramatically improve the level of customer service to passengers.

Breakout sessions were held to, among other things, identify a “tool box” of templates, best practices, and communication plans for dealing with flight disruptions and passenger care.

#### *Monitoring Tarmac Delays and Assisting Airlines During Flight Disruptions*

In our last testimony, it was our view then, as it is now, that large- and medium-hub airport operators should establish and implement a process for monitoring and

mitigating long, on-board delays that involves contacting the airline to request a plan of action after an aircraft has remained for 2 hours on the tarmac. Absent any airline policy, the airport operators should work with airlines to establish policies for deplaning passengers and ensure that these policies are adhered to.

In support of our view, on January 7, 2008, Secretary Peters, sent letters to the Presidents of ACI and the American Association of Airport Executives “urging them and their members to take immediate steps to address our recommendation if they have not already done so.”

Since then, we found that the ACI member-airports selected for review are, to some degree, getting more involved in contingency planning for extraordinary events. For example, of the 20 airports we reviewed:

- Four currently do not have a process for monitoring extended ground delays.
- Only three have established policies and procedures to proactively monitor and minimize the impact of long, on-board delays that involves contacting the airline to request a plan of action after an aircraft has remained on the tarmac for 1 hour to 2 hours.
- The remaining 13 monitor delays as part of their normal operations but do not have formalized, written policies outlining the monitoring procedures and/or timeframes for taking action.

Also, 8 of the 20 airports have either refined their existing policies or established new policies to identify the resources and procedures needed to, upon request, assist airlines in extended ground delays, such as identifying remote areas for parking aircraft when gates are not available and methods to transport passengers from remote parking areas to the terminal.

### *Investigating Incidents of Extended Delays To Identify Causal Factors and Mitigate Future Occurrences*

Following an extraordinary flight disruption event, airports conduct post-incident investigations on what contingency planning procedures work well during the event, and what did not. Of the 20 airports we reviewed:

- Fourteen conduct investigations of long, on-board flight delays.
- Twelve of the 14 airports’ investigations include a debriefing after the event with all involved stakeholders.
- Six either do not or rarely investigate long, on-board flight delays. This is sometimes contingent on whether the airport is the possible cause of the delays. Four of those six airports do not consider it necessary to investigate long, on-board flight delays because they seldom occur at their airports.

To minimize or mitigate future occurrences, airports have implemented solutions, ranging from continuous monitoring of a long, on-board flight delay until resolved to purchasing specialized equipment to better manage and prevent long, on-board flight delays. The criteria to trigger an airport investigation vary among the airports and can range from a 2- to 4-hour delay or the mere occurrence of any irregular or extraordinary event. Airports indicated that weather and flight diversions were the primary causes of long, on-board flight delays.

It is encouraging to see that some airport operators are becoming more involved in mitigating long, on-board delays. However, as passenger traffic continues to grow, airports will need to become more proactive in dealing with long, on-board delays, especially those airports with limited airfield or gate capacity.

The following pages contain textual versions of the graphs and charts contained in this document. These pages were not a part of the original document but have been added here to accommodate assistive technology.

**Status Report on Actions Underway To Address Flight Delays  
and Improve Airline Customer Service**

**Section 508 Compliant Presentation**

**Figure 2. Percent of Flights Arriving Late and Cancelled for Years 2000 to 2007**

Years	Percent of Scheduled Flights
2000	28 percent were late or cancelled.
2001	24 percent were late or cancelled.
2002	19 percent were late or cancelled.
2003	20 percent were late or cancelled.
2004	24 percent were late or cancelled.
2005	25 percent were late or cancelled.
2006	26 percent were late or cancelled.
2007	29 percent were late or cancelled.

**Figure 3. Average Length of Arrival Delays for Years 2000 to 2007**

Years	Average Length of Arrival Delays
2000	51 minutes
2001	49 minutes
2002	46 minutes
2003	48 minutes
2004	51 minutes
2005	52 minutes
2006	53 minutes
2007	56 minutes

**Figure 4. Routes With Largest Increases in Gate-to-Gate Times, Summer 2000 to 2007**

- Honolulu, Hawaii to Newark, New Jersey: 30.01 minutes (Note: 30 minute increase over 7 years)
- John F. Kennedy Airport, New York to Seattle, Washington: 24.17 minutes
- Las Vegas, Nevada to John F. Kennedy Airport, New York: 23.44 minutes
- John F. Kennedy Airport, New York to Las Vegas, Nevada: 22.27 minutes
- John F. Kennedy Airport, New York to Salt Lake City, Utah: 22.09 minutes
- Atlanta, Georgia to John F. Kennedy Airport, New York: 21.91 minutes
- John F. Kennedy Airport, New York to Orlando, Florida: 21.65 minutes
- Anchorage, Alaska to Houston, Texas: 21.28 minutes



- Medford, Oregon to San Francisco, California: 20.91 minutes

**Table 1. Number of Flights With Long, On-Board Tarmac Delays of 1 Hour to 5 Hours or Longer, Years 2000 and 2007**

- In 2000, there were 44,701 flights with on-board, tarmac delays of 1 to 2 hours. In 2007, there were 78,903. This represents a 76.51 percent increase.
- In 2000, there were 5,859 flights with on-board, tarmac delays of 2 to 3 hours. In 2007, there were 7,659. This represents a 30.72 percent increase.
- In 2000, there were 1,255 flights with on-board, tarmac delays of 3 to 4 hours. In 2007, there were 1,377. This represents a 9.72 percent increase.
- In 2000, there were 303 flights with on-board, tarmac delays of 4 to 5 hours. In 2007, there were 243. This represents a 19.80 percent decrease.
- In 2000, there were 82 flights with on-board, tarmac delays of 5 hours or longer. In 2007, there were 52. This represents a 36.59 percent decrease.

The total number of flights with long, on-board tarmac delays of 1 hour to 5 hours or longer for 2000 was 52,200. The total number of flights with long, on-board tarmac delays of 1 hour to 5 hours or longer for 2007 was 88,234. This represents a 69.03 percent increase.

Source: OIG analysis based on Bureau of Transportation Statistics data

**Table 2. Increases in Flight Delays and Cancellations, Summer 2006 and Summer 2007**

<b>Notable Statistics</b>	<b>Summer 2006</b>	<b>Summer 2007</b>	<b>Percent Change</b>
Number of Scheduled Flights	1,986,654 in summer 2006	2,014,279 in summer 2007	Represents a 1-percent increase
Number of Delayed Flights	539,000 in summer 2006	621,000 in summer 2007	Represents a 15-percent increase
Number of Airports With Delays Flights greater than 30 percent	9 in summer 2006	26 in summer 2007	Represents a 189-percent increase
Average Length of Arrival Delays	56 minutes in summer 2006	60 minutes in summer 2007	Represents a 7-percent increase
Number of Cancelled Flights	37,396 in summer 2006	47,911 in summer 2007	Represents a 28-percent increase

**Figure 5. JFK's Average Hourly Taxi-Out Times Summer 2000, 2006, and 2007**

Hour Increments	2000 (Minutes)	2006 (Minutes)	2007 (Minutes)
Average taxi-out time at 6am	21.5 minutes in 2000	21.7 minutes in 2006	25.4 minutes in 2007
Average taxi-out time at 7am	22.7 minutes in 2000	25.4 minutes in 2006	33.1 minutes in 2007
Average taxi-out time at 8am	27.2 minutes in 2000	31.5 minutes in 2006	39.4 minutes in 2007
Average taxi-out time at 9am	26.7 minutes in 2000	34.2 minutes in 2006	40.9 minutes in 2007
Average taxi-out time at 10am	23.5 minutes in 2000	23.5 minutes in 2006	32.7 minutes in 2007
Average taxi-out time at 11am	21.1 minutes in 2000	21.8 minutes in 2006	32.0 minutes in 2007
Average taxi-out time at 12pm	23.8 minutes in 2000	23.4 minutes in 2006	29.3 minutes in 2007
Average taxi-out time at 1pm	19.8 minutes in 2000	25.1 minutes in 2006	28.9 minutes in 2007
Average taxi-out time at 2pm	33.3 minutes in 2000	25.8 minutes in 2006	31.1 minutes in 2007
Average taxi-out time at 3pm	36.5 minutes in 2000	30.7 minutes in 2006	36.1 minutes in 2007
Average taxi-out time at 4pm	35.2 minutes in 2000	35.5 minutes in 2006	52.9 minutes in 2007
Average taxi-out time at 5pm	47.0 minutes in 2000	49.4 minutes in 2006	57.8 minutes in 2007
Average taxi-out time at 6pm	50.9 minutes in 2000	64.4 minutes in 2006	63.3 minutes in 2007
Average taxi-out time at 7pm	41.1 minutes in 2000	56.8 minutes in 2006	63.7 minutes in 2007
Average taxi-out time at 8pm	39.2 minutes in 2000	50.8 minutes in 2006	60.5 minutes in 2007
Average taxi-out time at 9pm	32.5 minutes in 2000	42.9 minutes in 2006	52.1 minutes in 2007

**Figure 6. Air Travel Consumer Complaints, 2007**

- 37.4 percent of complaints were related to flight problems.
- 19.7 percent of complaints were related to baggage.
- 11.1 percent of complaints were related to customer care. (Note: complaints related to flight problems, baggage, and customer care represented 68.2 percent of all complaints in 2007.)
- 10.3 percent of complaints were related to reservations, ticketing and boarding.
- 6.8 percent of complaints were related to refunds.
- 3.8 percent of complaints were related to oversales.
- 3.8 percent of complaints were related to disability.
- 7.0 percent of complaints were related to other issues.

Source: Department of Transportation's Air Travel Consumer Reports for 2007

**Figure 7: Changes in Arrival Demand and Flight Delays and Cancellations, Summer 2006 versus 2007 (35 Operational Evolutionary Plan Airports)**

Airport	Percent Change in Planned Arrivals	Percent Change in Affected Flights
New York Kennedy	Percent Change in Planned Arrivals: 20 percent	Percent Change in Affected Flights: 36 percent
Fort Lauderdale	Percent Change in Planned Arrivals: 9 percent	Percent Change in Affected Flights: 43 percent
Honolulu	Percent Change in Planned Arrivals: 7 percent	Percent Change in Affected Flights: 14 percent
Orlando	Percent Change in Planned Arrivals: 6 percent	Percent Change in Affected Flights: 21 percent
Tampa	Percent Change in Planned Arrivals: 5 percent	Percent Change in Affected Flights: 27 percent
San Diego	Percent Change in Planned Arrivals: 5 percent	Percent Change in Affected Flights: 10 percent
Charlotte	Percent Change in Planned Arrivals: 3 percent	Percent Change in Affected Flights: 21 percent
San Francisco	Percent Change in Planned Arrivals: 3 percent	Percent Change in Affected Flights: 19 percent
Las Vegas	Percent Change in Planned Arrivals: 3 percent	Percent Change in Affected Flights: 6 percent
Atlanta	Percent Change in Planned Arrivals: 3 percent	Percent Change in Affected Flights: 18 percent
Los Angeles	Percent Change in Planned Arrivals: 3 percent	Percent Change in Affected Flights: 10 percent
Denver	Percent Change in Planned Arrivals: 2 percent	Percent Change in Affected Flights: 26 percent
Baltimore - Washington	Percent Change in Planned Arrivals: 1 percent	Percent Change in Affected Flights: 16 percent
Miami	Percent Change in Planned Arrivals: 1 percent	Percent Change in Affected Flights: 25 percent

Chicago Midway	Percent Change in Planned Arrivals: 1 percent	Percent Change in Affected Flights: 2 percent
Washington - Dulles	Percent Change in Planned Arrivals: 1 percent	Percent Change in Affected Flights: 9 percent
Salt lake City	Percent Change in Planned Arrivals: 0 percent	Percent Change in Affected Flights: 26 percent
Portland	Percent Change in Planned Arrivals: 0 percent	Percent Change in Affected Flights: 4 percent
Washington - Reagan	Percent Change in Planned Arrivals: 0 percent	Percent Change in Affected Flights: 22 percent
Seattle-Tacoma	Percent Change in Planned Arrivals: -1 percent	Percent Change in Affected Flights: 10 percent
New York LaGuardia	Percent Change in Planned Arrivals: -1 percent	Percent Change in Affected Flights: 14 percent
Dallas-Fort Worth	Percent Change in Planned Arrivals: -1 percent	Percent Change in Affected Flights: 59 percent
Memphis	Percent Change in Planned Arrivals: -1 percent	Percent Change in Affected Flights: 1 percent
Cleveland	Percent Change in Planned Arrivals: -1 percent	Percent Change in Affected Flights: 6 percent
Houston-George Bush	Percent Change in Planned Arrivals: -2 percent	Percent Change in Affected Flights: 4 percent
Detroit	Percent Change in Planned Arrivals: -2 percent	Percent Change in Affected Flights: 23 percent
Boston	Percent Change in Planned Arrivals: -2 percent	Percent Change in Affected Flights: 2 percent
Chicago - O'Hare	Percent Change in Planned Arrivals: -3 percent	Percent Change in Affected Flights: 8 percent
Newark	Percent Change in Planned Arrivals: -3 percent	Percent Change in Affected Flights: -2 percent
Philadelphia	Percent Change in Planned Arrivals: -3 percent	Percent Change in Affected Flights: 8 percent

Phoenix	Percent Change in Planned Arrivals: -3 percent	Percent Change in Affected Flights: 8 percent
Minneapolis-St. Paul	Percent Change in Planned Arrivals: -4 percent	Percent Change in Affected Flights: 49 percent
Cincinnati	Percent Change in Planned Arrivals: -5 percent	Percent Change in Affected Flights: 17 percent
St. Louis	Percent Change in Planned Arrivals: -7 percent	Percent Change in Affected Flights: 16 percent
Pittsburgh	Percent Change in Planned Arrivals: -10 percent	Percent Change in Affected Flights: 6 percent

**Figure 8. Reasons for Flight Delays (June through August 2007)**

Reasons for Flight Delay	Percentage
Late Arriving Aircraft	35 percent
Carrier Caused	29 percent
Weather	23 percent
Air Traffic Control Volume	4 percent
Runway Closure	3 percent
Other	6 percent