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Subcommittee on Transportation and Related Agencies,
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Flight Delays and Cancellations
Federal Aviation Administration

Statement of

The Honorable Kenneth M. Mead

Inspector General

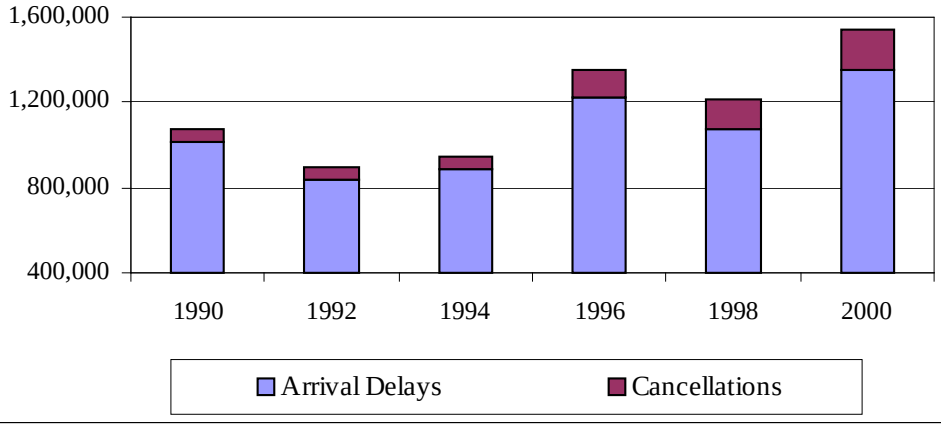
U.S. Department of Transportation

Mr. Chairman and Members of the Committee:

We appreciate the opportunity to discuss flight delays and cancellations and the implications for airline customer service. Today, I would like to address the following issues: (1) the growing severity of delays and cancellations; (2) the factors that will influence future conditions, and (3) the need for both long-term and short-term remedies to address delay problems.

Flight delays and cancellations as well as consumer dissatisfaction with the airlines are at an all-time high in this Nation. Arrival delays alone were up approximately 33 percent (from 1,019,363 to 1,355,176) between 1990 and 2000 (see Figure 1).[1] Cancellations rose at even a higher rate of 257 percent (from 52,458 to 187,317) during this same time period. Since 1990, the number of air travelers also increased nearly 43 percent (from 495 to 706 million), and according to Federal Aviation Administration (FAA) forecasts will exceed 1 billion by 2010.

Figure 1: Growth in Arrival Delays and Cancellations 1990 to 2000 (BTS Data)



The combination of burgeoning demand and limited capacity have resulted in widespread customer dissatisfaction with air travel—which FAA, airlines, and airports all have a role in addressing. In our recently completed audit of Airline Customer Service Commitment (Commitment),[2] we found that the airlines had made significant investment and progress toward meeting the Commitment. We also found, however, that the Commitment does not directly address the root causes of customer dissatisfaction, extensive flight delays, flight cancellations, and

[1] Data for 1992 through 2000 cover 10 major airlines. The 1990 data include two additional airlines that ceased operations in 1991 (Eastern and Pan Am).

[2] Final Report on Airline Customer Service Commitment (AV-2001-020), February 12, 2001.

baggage not showing up with the passenger. The number of consumer complaints received by the Department of Transportation (DOT) about the airlines increased 14 percent (from 20,438 to 23,381) between 1999 and 2000, with 40 percent of those complaints attributable to flight delays and cancellations.

Airline Delays and Cancellations Continue to Become More Severe

- In 2000, more than one in four flights (27.5 percent) were delayed; canceled; or diverted, which affected approximately 163 million passengers. Over 36 percent of these delays related to flights arriving at 10 airports. Figure 2 identifies the 10 airports in 2000 with the most delays and cancellations, as well as changes from the prior year.

Figure 2. Ten Airports with Most Arrival Delays and Cancellations (BTS Data)

Arrival Delays

No.	Airport	2000	1999	% Change
1	O'Hare	87,939	69,876	26%
2	Los Angeles	62,444	43,448	44%
3	Atlanta	55,970	60,673	-8%
4	Phoenix	48,449	38,262	27%
5	San Francisco	45,299	35,773	27%
6	Dallas/Ft. Worth	44,066	40,812	8%
7	Denver	39,080	24,121	62%
8	Las Vegas	38,351	28,353	35%
9	LaGuardia	36,557	25,123	46%
10	St. Louis	33,795	29,557	14%

Cancellations

No.	Airport	2000	1999	% Change
1	O'Hare	19,318	15,985	21%
2	Atlanta	9,278	6,859	35%
3	Dallas/Ft. Worth	8,810	7,153	23%
4	Los Angeles	8,120	5,595	45%
5	Boston	7,690	6,260	23%
6	LaGuardia	7,591	5,474	39%
7	San Francisco	7,177	5,210	38%
8	Philadelphia	6,442	5,683	13%
9	Newark	6,330	5,764	10%
10	Phoenix	5,050	2,651	90%

- Of those flights arriving late in 2000, the average delay exceeded 52 minutes.

- The number of flights chronically delayed and/or canceled[3] increased 340 percent (from 55,179 to 242,803) between 1995 and 2000. Likewise, the number of unique flight numbers associated with these chronic delays and cancellations increased nearly 144 percent (from 4,400 to 10,717) during this same period.

[3] Under our definition, which differs slightly from the Bureau of Transportation Statistics (BTS), chronically delayed and/or canceled flights are those regularly scheduled flights (e.g., Chicago to Miami) that arrived at least 30 minutes later than scheduled and/or were canceled at least 40 percent of the time during a single calendar month.

- Among the top 10 airlines, United and US Airways accounted for over 50 percent (123,145 of 242,803) of the total number of chronically delayed flights in 2000. Figure 3 shows the number of chronically delayed flights by airline and airport for 2000.

Figure 3. Chronically Delayed (30+ Minutes) and Canceled Flights by Airline and Airport (BTS Data)

No.	Airline	Number of Impacted Flights
1	United	90,187
2	US Airways	32,958
3	American	29,996
4	Southwest	26,095
5	Delta	22,271
6	Northwest	10,759
7	America West	10,561
8	Continental	8,897
9	Alaska	6,717
10	Trans World	4,362
	Total	**242,803**

No.	Airport	Number of Impacted Flights
1	O'Hare	30,466
2	LaGuardia	18,154
3	San Francisco	17,184
4	Los Angeles	12,905
5	Boston	9,544
6	Newark	8,905
7	Denver	7,824
8	Philadelphia	7,820
9	Atlanta	6,618
10	Phoenix	6,450
	Total	**125,870**

- Flights experiencing taxi-out times of 1 hour or more increased nearly 13 percent (from 40,789 to 45,993) between 1999 and 2000. Since 1995, the number of flights experiencing taxi-out times greater than 1 hour increased by 165 percent (from 17,331 to 45,993). Flights with taxi-out times of 2, 3, and 4 hours increased at even higher rates of 217, 289, and 341 percent, respectively, during this same period.

- To compensate for longer ground and air times, the 10 major airlines have increased their flight schedules on approximately 83 percent (1,794 of 2,167) of their major domestic routes between 1988 and 2000.

Future Outlook for Delays and Cancellations Contingent on Multiple Factors

As we move into the new year, the question before us is whether the current state of air travel in the U.S. will improve or whether past trends will continue. For the coming summer, the answer depends on several key factors, including weather conditions; mounting labor disputes within the airline industry, how existing capacity is managed at already congested airports—especially during peak periods of demand; and the impact of a softening economy on air traffic demand.

Anecdotal information from several airlines showing a reduction in advance bookings over last year could be an early indication that travel volumes may be lower this spring and summer, which would relieve some of the pressure on the system. They could, however, merely reflect consumers' fears that labor actions may cause service disruptions, and consumers are choosing to wait and see where the problems develop before booking reservations.

Barring good weather and/or a significant downturn in air traffic due to a softening economy, we have only a few months left to identify needed solutions and to act on them before the heavy summer travel season begins. One area in particular that may have a significant effect on summer air travel is labor disputes at four major airlines. As many travelers experienced last year, airline labor problems, combined with poor weather and increased airline scheduling, were major factors behind the growth in delays and cancellations.

Short-Term and Long-Term Solutions Are Needed

The solution to the growing problem of delays and resulting consumer concern over air travel will require a combination of long-term, intermediate, and short-term actions. Ultimately, long term solutions are needed in the form of new air traffic control technology (ATC), airspace redesign, and infrastructure improvements including airport expansion. These approaches, however, vary as to the amount of relief that can be gained in the short term (over the next 1 to 2 years), the intermediate term (4 to 5 years), and the long term (8 to 10 years). For the solutions designed to improve capacity, such as new runways; airspace redesign; or ATC technology, we can expect only limited or no bottom line relief over the next few years.

In the more immediate term, however, the airlines can do a great deal to help minimize the impact of flight delays and cancellations on air travelers—especially in the areas of scheduling and operations. Because air travelers in 2000 stood a greater than one in four chance of their flights being delayed or canceled, we believe the airlines should go further and address steps they are taking on matters within their control to reduce delays, the number of chronically late or canceled flights, and the amount of checked baggage that does not show up with the passenger upon arrival.

While longer range solutions are pursued, some immediate actions can and should be taken to alleviate some of the problems in the short term. Spring/summer 2001 is rapidly approaching and if operational factors, including passenger loads and flight scheduling, do not change, the disruptions and inconveniences to the traveling public will be a repeat of last year. The following are options for short-term actions.

- **Establish Uniform System for Tracking Delays, Cancellations, and Their Causes.** DOT's ability to address delays and cancellations is significantly handicapped by the lack of a uniform system for tracking delays, cancellations, and their causes. This has led to misleading and inconsistent data.

  An example of the confusion that can result from the varying methodologies used by BTS and FAA to count delays occurred last week when, on the same day, two different publications simultaneously reported worsening and improving delay records. On March 9, Aviation Daily, using data from the Federal Aviation Administration, reported that there were 1,964 more delays in January 2001 than in January 2000. The Washington Post, using BTS data, reported that the percentage of flights arriving on-time had improved (i.e., reduced delays and cancellations) for the 10 major airlines over the same period. A Secretarial-level task force made recommendations to improve the reporting process; now, follow through is needed and timeframes for implementation must be established.

- **Finalize and Issue Capacity Benchmarks.** An important first step in addressing the delay problem is to develop a set of "capacity benchmarks" for the Nation's top 30 airports. Capacity benchmarks are defined as the maximum number of flights an airport can routinely handle in an hour. 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 will 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. To date, FAA has made significant progress in developing the benchmarks and anticipates issuing them later this month.

- **Revise Airline Scheduling.** The airlines should make scheduling changes taking into account the benchmarks established for the top 30 airports, and data related to chronically delayed and canceled flights. If this self-discipline is not successful, the pros and cons of additional steps should be weighed. These steps could include congestion pricing or administrative allocations of capacity such as slot lotteries or scheduling committees under antitrust supervision.

- **Disclose Flight Delay and Cancellation Performance.** Airlines should disclose to customers, at the time of booking and without being asked, the prior month's on-time performance rate for those flights that have been consistently delayed (i.e., 30 minutes or more) and/or canceled 40 percent or more of the time.

- **Explore Accelerating the Development and Implementation of the Local Area Augmentation System (LAAS).** LAAS augments the Department of Defense's Global Positioning System for civil aviation and will provide all-weather approach and landing capability to airports. FAA plans to have LAAS operational by the end of 2002 (for Category I service). FAA should assess technical and programmatic risks to determine whether it is indeed feasible to accelerate LAAS implementation.

- **Focus on Airspace Redesign Efforts and System Choke Points.** Benefits from airspace redesign efforts are expected to be incremental in the near term. FAA has initiated efforts to address seven air traffic control choke points, all of which are east of the Mississippi River. To date, 11 of 21 planned action items have been completed. FAA needs to complete the remaining 10 action items, which include assessing staffing levels for some facilities, examining the need for new ATC sectors, and exploring ways to exchange radar data with Canada to assist in the rerouting of aircraft.

- **Complete Ongoing Airport Expansion Projects**. The largest capacity increases come from building new airports and runways. According to FAA, there are currently 14 new runway projects either planned or under construction at the 30 largest airports that are expected to be completed in the next 7 years. Those airports include: Atlanta, Boston, Charlotte, Cincinnati, Dallas/Ft. Worth, Denver, Detroit, Dulles, Houston, Orlando, Miami, Minneapolis, Seattle, and St. Louis.

  Nevertheless, various parties provided us with different projected completion dates for these new runways. Given the importance of new runways to the NAS, the milestones for these projects need to be clarified and DOT, FAA, and the airports need to do everything they can to ensure these milestones are met and the projects completed on time.

Flight Delays and Cancellations

Flight delays and cancellations are key indicators for measuring the health of the National Aviation System (NAS). These indicators highlight growing problems that require immediate attention.

- In 2000, more than one in four flights (27.5 percent) were delayed, canceled, or diverted, affecting approximately 163 million passengers.

- Bureau of Transportation Statistics (BTS) data show arrival delays increased 30 percent (from 1,039,250 to 1,355,176) between 1995 and 2000.[4] Likewise, the Federal Aviation Administration (FAA) reported that delays increased 90 percent (from 236,802 to 450,289).[5] Flight cancellations grew at an even faster pace during this same period, increasing 104 percent (from 91,905 to 187,317).

- Over the last year, BTS data indicated an increase of nearly 18 percent (from 1,152,725 to 1,355,176) in arrival delays. Likewise, FAA reported an increase of over 20 percent (from 374,116 to 450,289) in delays. Flight cancellations

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[4] Airlines that account for at least 1 percent of domestic scheduled passenger revenues submit monthly reports to BTS, which are used, among other things, to determine the percentage of flights departing and arriving on time by airport. BTS counts a flight as on time if it departed or arrived within 15 minutes of scheduled gate departure (aircraft parking brake released) and arrival (aircraft parking brake set).

[5] FAA collects data on flight delays via the Operations Network (OPSNET). FAA personnel manually record aircraft that were delayed for 15 minutes or more after coming under FAA's control, i.e., the pilot's request to taxi-out.

also increased, rising over 21 percent (from 154,311 to 187,317) between 1999 and 2000.

- Not only are there more delays, but those occurring are longer. Of those flights arriving late, the average delay exceeded 52 minutes in 2000.

- Most delays occur on the ground. Based on FAA data, approximately 84 percent of total delay time during 2000 occurred during gate departure (50 percent), taxi-out (26 percent), and taxi-in (8 percent). These numbers are comparable to FAA's findings in 1999.[6]

- Based on BTS data for the 30 largest U.S. airports, the number of flights experiencing taxi-out times of 1 hour or more increased 165 percent (from 17,331 to 45,993) between 1995 and 2000. Flights with taxi-out times of 2, 3, and 4 hours increased at even higher rates of 217, 289, and 341 percent, respectively, during this same period.

Number of Flights with Taxi-Out Times of 1 to 5+ Hours, 1995-2000 (BTS Data)

Time Period	1995	2000	% Change
1-2 Hrs.	15,220	39,019	156%
2-3 Hrs.	1,697	5,376	217%
3-4 Hrs.	313	1,219	289%
4-5 Hrs.	68	300	341%
5 or > Hrs.	33	79	139%
Total:	17,331	45,993	165%

- Flights experiencing taxi-out times of 1 hour or more increased nearly 13 percent (from 40,789 to 45,993) between 1999 and 2000. Of those flights

[6] Based on data obtained from FAA's Consolidated Operations and Delay Analysis System for 55 major U.S. airports.

with taxi-out times of 2, 3, 4, and 5 hours or greater, the largest percentage increase occurred in the 5+ hour category, which more than doubled (from 30 to 79).

- To compensate for longer ground and air times, the 10 major airlines have increased their flight schedules on approximately 83 percent (1,794 of 2,167) of their major domestic routes between 1988 and 2000, ranging from 1 to 26 minutes.

Chronically Delayed or Canceled Flights

A frustrating experience for air travelers occurs when flights arrive late and/or are canceled month after month. According to BTS, chronically delayed and/or canceled flights are those *regularly scheduled flights* that, at least 80 percent of the time, arrived at least 15 minutes later than scheduled and/or were canceled during *a single calendar month.* Our analysis of BTS data found that travelers, last year, experienced far more of these chronically delayed and/or canceled flights than any of the prior 3 years we examined. The number of flights delayed and/or canceled at least 80 percent of the time increased from 8,348 to 40,868 (390 percent) between 1999 and 2000.[7]

[7] Our intent is not to attribute the cause of the delays or cancellations associated with these flights to the airlines, but to highlight the extent to which such flights are occurring.

In an effort to better demonstrate the impact of chronically delayed and/or canceled flights on air travelers during 2000, we increased the amount of the arrival delay to 30 minutes or more, from the BTS standard of 15 minutes. We also applied a 40-percent threshold instead of the 80 percent used by BTS. Using BTS data, we identified all scheduled flights that, when grouped by individual flight number, were delayed and/or canceled at least 40 percent of the time during a single calendar month. Using our criteria, we identified:

- Over 240,000 scheduled flights (representing 10,717 individual flight numbers affecting approximately 25 million passengers) that were consistently delayed and/or canceled 40 percent of the time.

- Over 2,300 of the 10,717 individual flight numbers[8] were regularly delayed and/or canceled at least 40 percent of the time for periods of 3 months or more in 2000. In comparison, only 229 of 4,400 individual flight numbers were so affected in 1995.

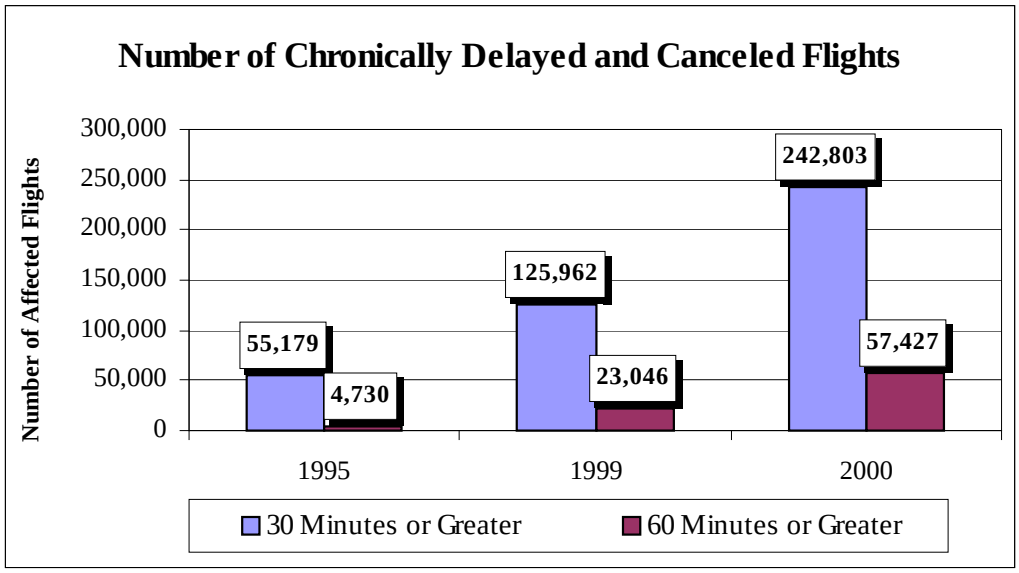
Individual Flight Numbers Associated with Chronically Delayed and Canceled Flights (30+ Minutes)

Number of Months	1995	2000	# Change
9 to 12 Months	0	63	+63
6 to 8 Months	10	368	+358
3 to 5 Months	219	1,887	+1,668
1 to 2 Months	4,171	8,399	+4,228
Total:	4,400	10,717	+6,317

[8] For example, one airline's flight with daily non-stop service between Washington, D.C., and Tampa, Florida, was delayed and/or canceled at least 40 percent of the time each month for 7 months in 2000. During July 2000, the flight was delayed and/or canceled 80 percent of the time (i.e., 25 of 31 scheduled flights).

- When the arrival delay was expanded to 1 hour, we identified more than 57,000 scheduled flights (representing 3,837 individual flight numbers affecting approximately 6 million passengers) that were consistently delayed and/or canceled at least 40 percent of the time in 2000.

The following figure illustrates the rapid growth in the number of chronically delayed and canceled flights between 1995 and 2000.



We also found that nearly 83 percent of those flights chronically delayed for 1 hour or more occurred at the 30 largest airports, with O'Hare—at 9,900—experiencing by far the highest number of any airport in 2000. Other airports with high numbers of chronically delayed (1 hour or more) and canceled flights included: LaGuardia (6,135), San Francisco (4,911), Newark (2,817), Boston (2,781), Los Angeles (2,723), and Philadelphia (2,522).

While the cause of these delays and cancellations is unclear due to the lack of a common reporting system, the repetitive nature of these delays needs to be addressed. Especially for those flights that are delayed or canceled 3 or more consecutive months, the airlines need to consider various remedial actions, including adjusting published flight schedules to more accurately reflect experienced arrival times. Moreover, as we recommended in our Final Report on Airline Customer Service Commitment, both DOT and the airlines need to provide consumers with information on chronically delayed and canceled flights through existing web sites and on-line publications, or at the time of booking without being asked.

Future Outlook for Delays and Cancellations Contingent on Multiple Factors

As we approach the busy summer travel season, the question before us is whether the current state of air travel in the United States will improve or whether past trends will continue. The answer depends a lot on several key factors, including weather conditions, mounting labor disputes within the airline industry, the impact of a softening economy on air traffic demand, and how existing capacity is managed at already congested airports.

Barring good weather and/or a significant downturn in air traffic due to a softening economy, one area that may have a significant affect on summer air travel is labor disputes at four major airlines. The airlines and associated labor groups include:

American (flight attendants), Delta (pilots), Northwest (mechanics), and United (flight attendants and mechanics). Such labor problems have resulted in significant numbers of delays and cancellations in past years. For example, in 1998, Northwest canceled over 29,000 flights due to labor problems, representing over 20 percent of all cancellations reported by the 10 major airlines that year.

Solutions to the Delay Problem Rests on a Multifaceted Approach

The solution to the growing problem of delays and resulting consumer concern over air travel will require a combination of long-term, intermediate, and short-term actions. Ultimately, long-term solutions are needed in the form of new air traffic control technology (ATC); airspace redesign; and infrastructure improvements, including airport expansion. These approaches, however, vary as to the amount of relief that can be gained in the short-term (over the next 1 to 2 years), the intermediate term (4 to 5 years), and the long-term (8 to 10 years). For the solutions designed to improve capacity, such as new runways; airspace redesign; or ATC technology, we can expect only limited or no bottom line relief over the next few years.

Air Traffic Control Modernization and Anticipated Benefits

Under the framework of AIR-21 (Public Law 106-181, April 5, 2000), FAA will invest about $8.6 billion on various modernization initiatives between 2001 and

2003. Yet, a large portion of FAA's ongoing modernization effort is geared toward improving safety and reliability—not toward enhancing capacity. Key efforts to enhance the overall *reliability* of the NAS include the Standard Terminal Automation Replacement System, the Display System Replacement, and the Host Replacement, which account for $3 billion. There have been some successes with these efforts, and much of the hardware at the Nation's 20 domestic en route centers is new.

To enhance capacity, FAA is funding several initiatives, principally Free Flight Phase 1 and new satellite-based communications, navigation, and surveillance systems. While most agree that the benefits from these technologies will be substantial, the nature of the benefits from these new systems—individually or collectively—have not been conclusively quantified. As we noted last year,[9] it is important for FAA to clarify the impact of its investments in new technologies on enhancing capacity, given the anticipated growth in air travel in the years ahead. (See attachment for anticipated benefits of selected FAA technology initiatives.)

FAA's Free Flight Phase 1 initiative, with an estimated cost of over $700 million, is composed of new information exchange systems (that link FAA and airline facilities) and new automated controller tools. While Free Flight Phase 1 will provide incremental improvements in capacity at selected locations, it should not

[9] Inspector General's Statement before the Committee on Commerce, Science, and Transportation, U.S. Senate, "Flight Delays and Cancellations," September 14, 2000.

be viewed as a magic bullet. FAA anticipates the effort will enhance capacity by 5 to 10 percent. For example, pFAST[10] (which helps sequence aircraft for arrival) is helping controllers to land about 1 to 2 additional aircraft during each 30-minute peak rush period at Dallas-Fort Worth when it is in use.[11] FAA reports that that *total throughput* (arrivals and departures) at Dallas-Fort Worth increased between 3 to 6 flights during these peak periods.

It is important to note that the benefits accrued from pFAST at Dallas-Fort Worth in increasing airport capacity might not be replicated in a similar fashion at other airports. Specifically, Dallas-Fort Worth Airport has certain characteristics—seven runways, four of which are parallel—that play to pFAST's strengths for sequencing aircraft. Airports with different characteristics (e.g., airspace complexity, traffic volume and mix, and number and configuration of runways) may not realize the same level of benefits from pFAST.[12]

Moreover, FAA's recent experience with Free Flight Phase 1 technologies in the airspace surrounding the Dallas/Fort Worth airport has shown that when incremental improvements are made, demand quickly fills the additional capacity.

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[10] The National Aeronautics and Space Administration pioneered pFAST for transitioning aircraft from en route to terminal airspace. It provides controllers with suggested sequences for landing aircraft and runway assignments.

[11] It should be noted that the prototype could not be used during periods of severe weather.

[12] For example, the impact of pFAST on increasing capacity at LaGuardia or National is likely to be lower than at Dallas-Fort Worth, because both airports have fewer runways than Dallas-Fort Worth, and neither has parallel runways.

These small improvements in capacity when coupled with unconstrained demand could actually lead to additional delays.

Long-term solutions, including new communication, navigation, and surveillance technologies, offer the potential for more flexible routes and closer spacing of aircraft. These efforts include transitioning to satellite navigation (i.e., Wide Area Augmentation System and Local Area Augmentation System) and Controller-Pilot Data Link Communications. FAA is pursuing data link communications, which is analogous to electronic mail for controllers and pilots, to ease (among other things) radio frequency congestion.[13] The implications to enhancing capacity of radio frequency congestion—and potential solutions—is a complex issue that warrants much closer attention.

Airport Infrastructure

While new technology has potential, the largest increase in capacity will come from building new ground infrastructure—new airports and runways. For example, according to FAA, Phoenix's recent addition of a third runway resulted in a 36-percent increase in capacity (during good weather conditions). With new ATC technology (satellite-based systems and new cockpit displays) and procedural improvements, FAA anticipates increasing this airport's capacity by

[13] Audit Report No. AV-1999-057, FAA's Progress and Plans for Implementing Data Link for Controllers and Pilots, February 24, 1999.

another 4 percent. Again, we note that benefits of new technology is dependent on many site-specific factors, such as the number and configuration of runways as well as the makeup of the surrounding airspace.

Funding for airport infrastructure is not the problem. AIR-21 will provide FAA with almost $10 billion for airport projects from fiscal year 2001 through 2003 and it authorized increases in Passenger Facility Charges. Nevertheless, concerns abound about the time and processes required to secure environmental and noise clearances for airport infrastructure projects.[14] According to FAA, 14 of the 30 largest airports are in various stages of adding new runways, with most of these not being completed for another 3 to 7 years. Overall, only 6 new runways were built at the 30 airports over the last decade. As we noted earlier this year, the Department has an opportunity here to provide leadership on how to move major infrastructure projects forward more expeditiously, while respecting the letter and intent of environmental law.

Airline Scheduling and Operations

In the more immediate term, however, the airlines can do a great deal to help minimize the impact of flight delays and cancellations on air travelers—especially

[14] AIR-21 requires DOT to conduct a study of Federal environmental requirements related to the planning and approval of airport improvement projects. The study will assess: (1) the current level of coordination among Federal and state organizations, (2) the role of public involvement, (3) staffing and resources associated with conducting environmental reviews, and (4) the time line for conducting reviews. This report is expected in the next month or so.

in the areas of scheduling and operations. In our recently completed audit, we found the airlines were making progress toward meeting their Customer Service Commitment and that the Commitment has been a plus for air travelers on a number of important fronts. The voluntary Commitment to customer service and the circumstances under which it was entered into are noteworthy because, based on our observations, it prompted the airlines to take the matter of improving customer service more seriously.

However, the airlines' progress over the past year is often obscured when the traveling public experiences widespread delays and cancellations. We found the customer service areas most in need of improvement are for those provisions that trigger when there are delays and cancellations. One such provision is to keep customers informed of delays and cancellations, another promises to meet customers' "essential" needs during "extended" on-aircraft delays, and another commits to making reasonable efforts to return delayed or mishandled checked baggage within 24 hours.

The evidence shows significant investment and progress by the airlines toward meeting these commitments, and improvement is evident since our Interim Report.[15] Still, there are persistent problems. We frequently found, among other

[15] Audit Report No. AV-2000-102 (dated June 27, 2000).

matters, untimely, incomplete, or unreliable reports to passengers about flight status, delays, and cancellations as follows.

- In 21 percent of our observations of nearly 550 flight delays nationwide, the flight information display system showed the flight as on time when, in fact, the flight had been delayed for more than 20 minutes. Timely announcements about the status of the delays were made in the gate areas 66 percent of the time. When status announcements were made, the information provided about the delay or cancellation was adequate about 57 percent of the time. Performance varied by airline, with Hubs generally performing better than non-Hub locations.

- During our testing, baggage that did not show up with the passenger was delivered within 24 hours 58 to 91 percent of the time. Again, performance among the airlines varied.

- All airlines have taken steps to accommodate passengers' "essential" needs during "extended" on-aircraft delays. However, we found that the airlines differ in what qualifies as an "extended" delay. The trigger thresholds for this provision vary from 45 minutes to 3 hours. We think it is unlikely that a passenger's definition of an "extended" on-aircraft delay will vary depending upon which air carrier they are flying.

Since air travelers in 2000 stood a greater than one in four chance of their flight being delayed, canceled, or diverted, we believe the airlines should go further and address steps they are taking on matters within their control to reduce delays, the number of chronically delayed and/or canceled flights, and the amount of checked baggage that does not show up with the passenger upon arrival. In particular, the airlines should make scheduling changes, taking into account the benchmarks established for the top 30 airports and data related to chronically delayed and canceled flights. If this self-discipline is not successful, the pros and cons of additional steps should be weighed.

In particular, the Department is reviewing a number of market-based and administrative options for managing demand at some of the most congested airports. Some of the questions being debated include whether airline scheduling discussions for specific airports should be permitted under antitrust supervision, whether peak-hour pricing (if legal) will provide meaningful relief, and whether implementing a lottery for airport usage (such as New York's LaGuardia) will work. For those airports in which adding a new runway is not an option, demand management may become more and more of a reality in the coming years.

Status of Departmental Efforts to Address Delays

Over the past year, the Office of Inspector General made three recommendations to the Secretary of Transportation and the Federal Aviation Administration that

were directed at the delay; cancellation; and capacity problems, which are key drivers of customer dissatisfaction with airlines. The recommendations are stated below.

- **Establish and implement a uniform system for tracking delays, cancellations, and their causes.** In our July 25, 2000 audit report on flight delays and cancellations, we found that FAA and BTS use very different methodologies for determining flight delays.[16] These differences can lead to somewhat confusing results. For example, FAA collects data on flight delays via the Operations Network (OPSNET). OPSNET data come from FAA personnel who manually record aircraft that were delayed by 15 minutes or more after coming under FAA's control, i.e., the pilot's request to taxi-out. As such, an aircraft could wait an hour or more at the gate or ramp area before requesting clearance to taxi. So long as the flight, once under FAA's control, took off within 15 minutes of the airport's standard taxi-out time, the flight would be considered an on-time departure.

  Conversely, the major airlines submit monthly flight data to BTS. According to BTS, a flight is counted as "on time" if it departed or arrived within 15 minutes of scheduled gate departure or arrival times shown in the airline's

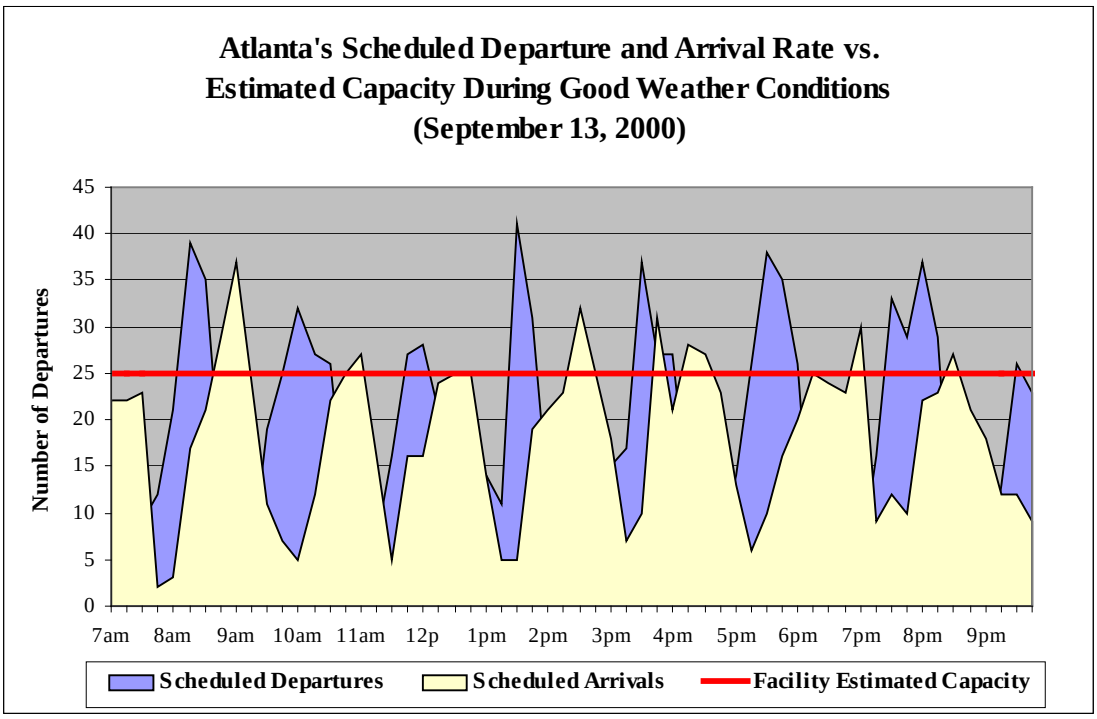
[16] A key reason for differing data maintained by FAA and BTS is in how each uses the information it collects. For FAA, delay information serves to measure system-wide ATC performance as well as to identify areas for improvement. For BTS, measuring delays (and subsequent ranking of the major airlines by on-time arrival performance) serves as a source of air travel information to consumers and helps to ensure more accurate reporting of flight schedules by the airlines.

reservation system. Using this definition, an aircraft could wait an hour or more on the airport taxiway for takeoff and be reported by BTS as having departed on time if it left the gate within 15 minutes of its scheduled departure.

In the final months of the prior Administration, a Task Force appointed by the prior Secretary made recommendations aimed at establishing a uniform system for tracking delays, cancellations, and their causes. The Department, however, does not anticipate completing the Task Force's recommendations—which will require rulemaking—until sometime in 2002. Yet, without consistent data, examination of the causes of delays and cancellations and identifying effective solutions will remain problematic.

- **Develop capacity benchmarks for the Nation's top 30 airports. This will provide a common framework for understanding what maximum arrival and departure rate can physically be accommodated by airport, by time of day under optimum conditions.** A set of capacity benchmarks is essential in understanding the impact of air carrier scheduling practices and what relief can realistically be provided by new technology, revised air traffic control procedures, new runways, and related airport infrastructure. Over the last few months, FAA has made substantial progress in developing the benchmarks and anticipates issuing them later this month.

  One of the airports for which FAA has established benchmarks is Atlanta. As the figure below demonstrates, Atlanta's scheduled departures and arrivals on



September 13, 2000 frequently exceeded the airport's estimated capacity, especially during peak periods of airport operation.[17] Moreover, although a good weather day, the major airlines reported 83 departure delays and 86 arrival delays at Atlanta on September 13, 2000. FAA also reported nine delays, all of which were attributed to excess volume.

As part of our follow on audit of flight delays and cancellations, we will be examining FAA's benchmarks to see what they tell us about the aviation system with respect to airport capacity and airline scheduling practices.

[17] FAA's estimated capacity benchmarks for Atlanta during good weather conditions is 25 departures and arrivals per 15-minute increment. This rate drops to 19.5 departures and arrivals every 15 minutes during poor weather conditions.

- **Develop a strategic plan for addressing capacity shortfalls in the immediate, intermediate, and long term**. These three points in time are important because the new runways or airports or air traffic control technology that may be in place 2, 5, or 10 years from now hold promise for the future, but offer limited or no bottom-line relief in the immediate term. Actions that are necessary in the short term may become unnecessary in the longer term with the addition of, for example, new runways. An immediate issue is scheduling, flights, at peak travel times, beyond the established physical capacity of the airport and air traffic control system under optimum conditions. The dilemma an individual airline faces is if it takes action and reduces flights, is that its competitors may add additional flights, thereby providing no relief at all.

  One on-going effort being undertaken by FAA involves the development of the NAS Operational Evolution Plan (OEP). The goals of this effort are to: (1) describe the operational evolution of the NAS as it related to increasing capacity while maintaining safety, (2) devise a set of credible initiatives that focus the aviation community on solutions for the 2000-2010 timeframe, and (3) link these initiatives to a timetable and specific activities. On January 23, 2001, FAA held an industry day to present and explain the plan. Over the next 2 months, FAA will continue to refine the plan based on input from the aviation community. We will closely monitor FAA efforts on the OEP and other efforts aimed at improving capacity.

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

Anticipated Benefits of Selected FAA Technology Initiatives

Program	Schedule & Cost	Anticipated Benefits
Local Area Augmentation System (LAAS): Relies on GPS to provide all weather approach, landing, and surface navigation capabilities	LAAS is being developed through two Government/Industry partnerships and is expected to be operational by the end of 2002. ($720 million)	LAAS will augment GPS to provide all weather precision approach capability (Category I, II, and III services) to airports. It can also provide the airport surface navigation signals needed for precise taxing in low-visibility conditions. *Airspace users must equip with new avionics to obtain benefits.*
Automatic Dependent Surveillance – Broadcast (ADS-B): Relies on GPS to broadcast the position of an aircraft to other properly equipped aircraft.	ADS-B is being developed under FAA's Safe Flight 21 Initiative. ($200 million for prototype efforts—*costs to implement ADS-B NAS-wide is substantial but uncertain*.)	ADS-B is useful for areas where radar coverage is limited or non-existent. ADS-B, when coupled with moving map displays, has potential for preventing accidents on runways. It also has potential for enhancing operations in poor weather and for reducing separation between aircraft (assuming all aircraft are equipped). *Airspace users must equip with new avionics to obtain benefit.*
Free Flight Phase 1 (FFP1): Composed of new information exchange systems and automated controller tools (Center TRACON Automation System and Conflict Probe).	Limited Deployment is planned for completion by the end of 2002. ($722 million for limited deployment—*costs for NAS-wide deployment is substantial but uncertain*.)	New controller tools will provide incremental capacity enhancements—extent and nature of benefits will vary by location. FAA will not have a firm handle on benefits until 2002, when systems are deployed. FAA estimates that new automated controller tools can provide 5-10 percent increase in capacity.
Controller-Pilot Data Link Communications (CPDLC): A new way for pilots and controllers to communicate that is analogous to EMAIL.	Limited deployment is planned for 2002. Current cost estimate of $166 million is for initial steps—*cost to implement additional data link capabilities is uncertain.*	Data link is an *enabling technology* for Free Flight and will enhance communication between controllers and pilots. It will allow controllers to communicate with more aircraft, which, in turn, could allow them to handle more aircraft. *Airspace users must equip with new avionics to obtain benefits from data link communications.*
Integrated Terminal Weather System (ITWS): provides detection and short-term weather predictions of airport conditions.	Initial site implementation is planned for 2002. ($276.1 million for 37 sites.)	ITWS has important capacity benefits because it improves the timing of runway openings and closings due to severe weather. This is very valuable for large hub airports—*benefits are substantial but will vary by site.*