

**GAO**

Report to the Ranking Minority  
Member, Committee on Commerce,  
Science, and Transportation,  
U.S. Senate

December 2001

**NATIONAL  
AIRSPACE SYSTEM**

**Long-Term Capacity  
Planning Needed  
Despite Recent  
Reduction in Flight  
Delays**





G A O

Accountability \* Integrity \* Reliability

United States General Accounting Office  
Washington, DC 20548

December 14, 2001

The Honorable John McCain  
Ranking Minority Member  
Committee on Commerce,  
Science, and Transportation  
United States Senate

Dear Senator McCain:

In recent years, airline flight delays have been among the most vexing problems in the national transportation system. They reached unprecedented levels in 2000, when one flight in four was delayed. Although bad weather has historically been the main cause of delays, a growing reason has been the inability of the nation's air transport system to efficiently absorb all of the aircraft trying to use limited airspace or trying to take off or land at busy airports.

Recent events—most notably the terrorist attacks on buildings in New York City and Washington, D.C., using hijacked airliners, and the economic slowdown that preceded these attacks—have changed the extent of the delay problem, at least for the short term. With many airlines cutting their flights by 20 percent or more, the air transport system is having less difficulty absorbing the volume of flights. Whether the volume of flights will continue at these lowered levels is unknown. However, it is likely that a more robust economy and less public apprehension about flying will lead to renewed demands on the air transport system. If so, concerns about delays—and the actions being taken to address them—may once again command national attention.

Addressing delay problems requires action by several sectors of the aviation community because no single entity has the authority or ability to solve delay-related problems. The federal government, especially through the Federal Aviation Administration (FAA) and its parent agency, the Department of Transportation (DOT), plays a major role by operating the nation's air traffic control system, distributing federal funding for airports, and setting operating standards for commercial aircraft and airports. However, the nation's airports are primarily owned and operated by local units of government, so that decisions about such steps as expanding airport capacity are primarily local in nature. The nation's airlines also play a key role. Their business decisions have a strong effect on the volume and routing of flights, the type and size of aircraft used, and the

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degree to which aircraft are upgraded to take advantage of new technology.

You asked us to examine the aviation community's efforts to reduce delays. As agreed with your office, we focused our work on the following questions:

- What initiatives are planned or under way by the federal government, airlines, and airports to address flight delays?
- What effect are these initiatives likely to have on reducing delays?
- What other options are available to address delay problems?

Our work involved extensive consultation with various stakeholder groups in the aviation community, including airlines, airports, local governments, industry associations, employee organizations, federal regulatory agencies, and aviation researchers. We contacted officials from DOT, FAA, 8 major airlines, and 18 large airports that experience major congestion and delays to identify the main initiatives planned or under way to address congestion and delay problems. As we were conducting our work, FAA released a plan, called the Operational Evolution Plan, incorporating many of these initiatives, and we focused much of our remaining efforts on analyzing this plan. Our gathering of information and FAA's issuance of the Operational Evolution Plan both occurred before the September 11, 2001, terrorist attacks, and the initiatives that actually move forward as well as the plan itself are subject to change. To assess the likely impact that current and planned initiatives will have on reducing delays, we relied on the extensive body of work we have conducted on aviation over the past decade, the views of FAA and other stakeholders, and evaluations and studies conducted by other researchers. We used these same types of sources in identifying other measures for addressing delay problems. Appendix I explains our scope and methodology in more detail. Our work, which we conducted from October 2000 through October 2001, was done in accordance with generally accepted government auditing standards.

**Table 5: List of Potential Measures--Not in the OEP--to Reduce the Airport Capacity Gap**

<b>Measures</b>	<b>Brief explanation</b>
<b>Category 1: Adding airport infrastructure</b>	
Building new airports in metropolitan areas.	This measure involves new airports within metropolitan areas to provide additional capacity, especially where the existing airport has little expansion potential. This measure has recent limited use since only two major new airports--at Dallas-Fort Worth and Denver--have been built in large metropolitan areas since 1973.
Developing "wayports."	A network of 4 to 10 wayports across the nation, each located on the fringe of or outside of a major congested metropolitan area, would serve mainly as transfer points for passengers connecting to other locations but also as cargo, mail, and maintenance facilities. This measure has not been used.
Developing regional airports.	Existing regional airports located within 50 miles of metropolitan hubs would be developed to take advantage of unused system capacity. This measure has seen limited use around major hub airports. A system of regional airports exists in the Los Angeles area and is being contemplated at several airports surrounding Boston Logan Airport.
<b>Category 2: Managing demand</b>	
Adopting market-based approaches.	This measure involves setting airport landing fees to bring flight demand into line with available capacity. This approach could involve setting higher landing fees during peak traffic periods in an attempt to get airport users to use alternative airports, alter their flight schedules, or fly larger aircraft. This approach is not in place at any major U.S. airport, although it is being considered at La Guardia Airport.
Using administrative and regulatory approaches.	Government regulators, airlines, or airports would manage demand through (1) restrictions on the number of takeoffs and landings (slots) during peak traffic periods, (2) voluntary flight schedule adjustments to even out peak periods of demand, (3) restrictions on the use of smaller aircraft at busy airports, and (4) more flexible policies governing airport gate access and airlines' control over airport capital development projects. Two of these measures--slot control and voluntary schedule adjustments--are being used to a limited degree at a few U.S. airports, such as Newark (voluntary schedule adjustments) and New York's La Guardia and Kennedy airports (slot control).
<b>Category 3: Using ground transportation alternatives</b>	
Building high-speed, intercity ground transportation.	Building high-speed ground transportation (e.g., rail) between populous cities within 200 miles of each other may free up capacity at congested airports by reducing the air traffic demand at those locations. Such trains could travel at speeds of 200 mph or more. Technologically, high-speed rail has proven successful in Europe and Asia; efforts are under way in the United States to develop high-speed rail in several designated corridors.
Connecting nearby airports with high-speed ground transportation.	Using high-speed ground transportation to connect congested airports with underused airports nearby could accommodate passenger transfers within the current hub-and-spoke system. This measure has not been done in the United States.

Source: GAO analysis of previous studies.

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potential. Barriers and potential legislative actions should be delineated for each measure.

- Collaboration and discussions—similar to the efforts made in formulating the OEP—on prospective measures with airlines, airports, and other key players in the aviation community.
- A blueprint for effectively addressing capacity issues and reducing delays in the nation's air transport system. This blueprint, which would be a guide for future development of the system, should focus on both short-term (less than 10 years) and long-term (10 to 40 years) measures needed and address the specific measures applicable for each critical location as a means for achieving a viable national system. Where necessary, this blueprint should also consider addressing aviation delay problems by using other modes of transportation, such as high-speed rail.
- An innovative investment strategy, which includes an analysis of potential incentives that the federal government can bring to bear to encourage aviation stakeholders to adopt measures identified in the blueprint. Consideration should be given to financial incentives, such as targeting more funds to certain kinds of projects or types of airports, as well as incentives that would involve modification of existing regulatory and administrative requirements, such as allowing changes in the methods of determining landing fees.

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## Agency Comments and Our Evaluation

We provided a draft of this report to DOT and FAA for their review and comment. The two agencies generally concurred with the facts presented in the draft report. They provided some technical clarifications, which we have incorporated into this report where appropriate.

Neither agency specifically commented on the draft report's conclusions and recommendations; for the most part, they did not discuss the additional measures that we recommended for consideration in developing a blueprint for future capacity enhancement. FAA did provide comments on one of the measures—the wayport concept. FAA said a panel of DOT and FAA experts had examined the near-term benefits of the wayport concept in the late 1980s. The panel concluded in 1990 that wayports would provide little or no benefit at the time because new hubs were not needed and airlines would be unwilling to use them. In its response, FAA also noted that airlines jealously guard their transfer functions and have ambitious expansion plans at their current hubs to meet future demand. Because wayports would mainly be transfer points

*Near term  
5 years*

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for passengers, FAA said, the absence of originating passengers would lead to relatively low concessions and would mean airports would have to charge higher landing fees and rents to remain fiscally sound.

As we indicated in this report, we remain impartial as to which measures are the best ones to adopt in any long-term plan for the air transport system. However, we are concerned that FAA's response misses a key point: in the long term, a successful strategy requires a careful look at measures other than expanding current hubs. Because so many key airports are severely restricted in their ability to add runways, other options must figure into long-term plans, even if they appear to have little merit in the short term. The panel may or may not have been correct in deciding that wayports were not desirable in 1990, but since then, dramatic changes have occurred in the system, such as rapidly escalating costs for and increasing local opposition to new runway construction at crowded hub airports. In addition, the rapid growth of regional airlines, regional jets, passenger enplanements, and cargo and express mail services have changed the aviation environment. In light of these changes and the conditions and circumstances that are likely to exist in the air transport system in the next 40 years and beyond, we believe all of these measures, including wayports, deserve a fresh look.

The judgments and decisions that are eventually rendered about these measures also need to be rooted in an in-depth, data-rich analysis. In this regard, FAA's current position about wayports appears lacking. For example, FAA has performed no quantitative analyses or conceptual modeling to support its conclusion about the impact of wayports on airport revenues and fees and airline competitiveness. In the years since the DOT/FAA panel examined the wayport concept, three major studies performed by reputable aviation experts outside FAA have concluded that wayports merit further study. Like us, these experts have not endorsed wayports but have called for developing more detailed information to make a sound decision. In the end, developing a meaningful blueprint to enhance capacity for the 21<sup>st</sup> century will require an expansive vision, a clear understanding of the realities facing the air transport system, and a sound evaluative approach that considers a broad range of possible solutions.

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As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 7 days after the date of this report. At that time, we will send copies of the report to the Secretary of Transportation; the Administrator, Federal Aviation