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*Aviation Congestion and Delay: System-Wide and New
York-Area Issues*

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December 14, 2007

Abstract. This report discusses the causes of congestion and delay in the current context. It also discusses some technological and administrative mechanisms that might be employed to mitigate these problems. This discussion is followed by an overview of demand management (economic) remedies to congestion as they might be applied in an airport/airspace environment, and discusses the rather limited historical experience with the use of these mechanisms. Finally, the report concludes with a legal overview of how specific congestion remedies, in particular those involving aviation system pricing, might be applied and administered.

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Aviation Congestion and Delay: System-Wide and New York-Area Issues

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Summary

Aviation congestion and delay is an issue of long standing. Statistically, there was a significant increase in congestion and delay throughout the national aviation system in 2007. The situation has been especially noticeable at certain key airports, namely the New York region in general and John F. Kennedy International Airport (JFK) in particular. The Department of Transportation (DOT) and its operating agency, the Federal Aviation Administration (FAA), have promised to take actions aimed at reducing congestion and delay both in the short and long terms. In the short term, DOT is proposing to address the JFK situation through administrative and economic measures that would likely restrict or otherwise provide for the allocation of flights into the airport during specific periods of time.

In addition to the proposals likely to be made by DOT, there are other potential near-term fixes that can be considered to add system-wide capacity to the aviation system. These include, but are not limited to: airspace redesign, use of military airspace, and airspace flow control. Over the longer term the FAA is primarily relying on modernization of the air traffic control system through the Next Generation Air Transportation System (NGATS or NextGen) and the creation of new airport infrastructure to provide major reductions in aviation congestion and delay, although a recent FAA capacity needs study has concluded that these enhancements are needed immediately, especially in the New York region.

Congress has taken an interest in this issue as growing concerns over airline service have paralleled ongoing legislative action to reauthorize the activities of the FAA and the revenue mechanisms for funding the operations of the national airspace system. The Bush Administration, and especially Secretary of Transportation Peters, favor examining market mechanisms as a means to pay for infrastructure operations, maintenance, and development in all transportation modes. When the Administration submitted its proposals for FAA reauthorization in early 2007 (H.R. 1356/S. 1076), it included a pilot program to evaluate market-based mechanisms to relieve congestion at up to 16 airports. The FAA proposal was not adopted in either the House (H.R. 2881) or Senate (S. 1300) reauthorization bills still under consideration at the end of 2007, but the House bill contains provisions intended to help the FAA deal with congestion problems at specific airports.

Regulation of the national air transportation system is legally the domain of the federal government. The operation and ownership of airports, however, is provided primarily by regional, state and local entities. Neither the FAA nor the DOT have, to date, attempted to develop and impose a congestion pricing scheme on the local authorities. In the event that FAA should decide to make such an attempt, it appears that there are several legal issues that may arise. This report will be updated as warranted by DOT and congressional actions.

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Aviation congestion and delay is an issue of long standing. Statistically, there was a significant increase in congestion and delay throughout the national aviation system in 2007. The situation has been especially noticeable at certain key airports, namely the New York region in general and John F. Kennedy International Airport (JFK) in particular. The Department of Transportation (DOT) and its operating agency, the Federal Aviation Administration (FAA), have promised to take actions aimed at reducing congestion and delay both in the short and long terms. In the short term, DOT is proposing to address the JFK situation through administrative and economic measures that would likely restrict or otherwise provide for the allocation of flights into the airport during specific periods of time. More detail on DOT's plans is expected to be available in the latter half of December 2007.¹

In addition to the proposals likely to be made by DOT, there are other potential near-term fixes that can be considered to add system-wide capacity to the aviation system. These include, but are not limited to: airspace redesign, use of military airspace, and airspace flow control. Over the longer term the FAA is primarily relying on modernization of the air traffic control system through the Next Generation Air Transportation System (NGATS or NextGen) and the creation of new airport infrastructure to provide major reductions in aviation congestion and delay.

This report discusses the causes of congestion and delay in the current context. It also discusses some technological and administrative mechanisms that might be employed to mitigate these problems. This discussion is followed by an overview of demand management (economic) remedies to congestion as they might be applied in an airport/airspace environment, and discusses the rather limited historical experience with the use of these mechanisms. Finally, the report concludes with a legal overview of how specific congestion remedies, in particular those involving aviation system pricing, might be applied and administered.

Air Carrier Delay Trends

Over the past four years, system-wide airline passenger volumes have continued to grow, now surpassing pre-9/11 levels. Along with this growth, flight delays and cancellations have also increased, and statistics indicate that the percentage of flights delayed 15 minutes or more in 2007 may surpass the prior record set in 2000. The percentage of cancelled flights is also up, although not quite as high as the percentage of cancellations experienced in 1999, 2000, and 2001 (see **Figure 1**). Some also point out that delay statistics alone do not tell the whole story. This is because airlines have, in many cases, opted to lengthen scheduled flight times, particularly along heavily congested and frequently delayed routes.² A comparison of present day airline schedules to 1997 schedules found that published trip times are about 10% higher than they were 10 years ago.³ Additional schedule adjustments could be forthcoming and may further increase typical travel times, particularly in response to recent Administration announcements that it would consider operation of chronically delayed flights to constitute an “unfair and deceptive practice.”⁴

¹ Wall, Matthew L. & Belson, Ken. U.S. to Limit Flights at Kennedy. *The New York Times*. December 11, 2007. p. A31.

² See Scott McCartney, “Why Flights Are Getting Longer,” *The Wall Street Journal*, May 29, 2007, p. D1.

³ Ibid.

⁴ “White House Unveils Plan to Ease Holiday Travel Congestion,” Associated Press, November 15, 2007.

Despite airline schedule adjustments that have increased planned-for trip times, airline delays are still ticking upward. As a consequence of this increase in delays, combined with airline schedule padding and passengers factoring additional wait times at security screening checkpoints into their travel plans, airline passenger trips are getting longer on average and travelers often face more hassles. Consumer complaints and media coverage of air carrier service deficiencies and cases of extensively delayed flights have put the specific issue of air carrier flight delays in the spotlight during the summer of 2007. In response, the DOT has convened a task force consisting of senior management to assess persisting problems with airline delays and consumer service, and has convened a special aviation rulemaking committee (ARC), consisting of aviation stakeholders representing airlines, airports, general aviation users, and airline consumers, to specifically address delays and other airline service issues in the New York metropolitan area. Based on the findings and recommendations of these groups, which are expected before the end of calendar year 2007, the DOT intends to propose options to address and remedy airline delay and customer service problems.⁵ Congress has taken a particular interest in this issue as these growing concerns over airline service have paralleled ongoing legislative action to reauthorize the activities of the FAA and the revenue mechanisms for funding the operations of the national airspace system.

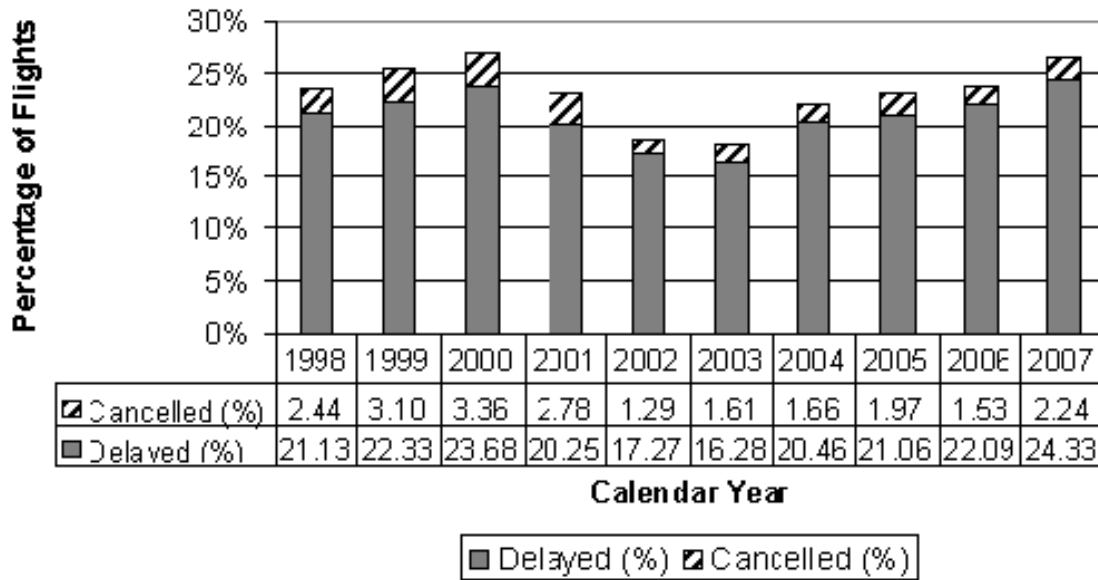
While there are broad concerns over aviation congestion and delay at many of the nation's busy airports, there is particular concern regarding airline service and performance at major airports in the New York metropolitan area where delay problems are the most acute. On-time arrival and departure statistics for the past two years compiled by the DOT's, Bureau of Transportation Statistics (BTS) have consistently ranked the three New York metropolitan area commercial passenger airports—Newark Liberty (EWR), John F. Kennedy International (JFK), and LaGuardia (LGA)—at or near the bottom of the list among the busiest 32 airports in the United States. From January 2007 through August 2007, about one out of every three flights arrived or departed more than fifteen minutes late at these airports. Between January 2002 and September 2007 at these three airports, arrival and departure delays were typically around one hour in length. At Newark Liberty Airport, where delays have consistently been the worst among busy U.S. airports, departure delays averaged 67 minutes and arrivals delays averaged 73 minutes over the time frame from September 2006 through September 2007.⁶ According to the FAA, over the summer of 2007, 44% of all air delays experienced throughout the United States occurred in the New York, New Jersey, and Philadelphia region.⁷ What's more, there was a dramatic increase in the percentage of flights cancelled at all three of these airports in 2007 compared to prior years. From January through September 2007, JFK saw 3.18% of its flights cancelled, LGA had 4.81% of its flights cancelled, and at EWR, 3.65% of scheduled passenger flights were cancelled. Not only are these cancellation rates much higher than previous years, but they are also considerably higher than the system-wide averages presented in **Figure 1**.

⁵ Remarks for the Honorable Mary Peters, Secretary of Transportation, Aviation Congestion Relief Plan, Media Briefing, Washington, DC, September 27, 2007.

⁶ The times represent the average (mean) delay for arrivals and departures among flights that were delayed 15 minutes or more.

⁷ Statement of Robert A. Sturgell, Acting Administrator, Testimony Before the House Committee on Transportation and Infrastructure, Subcommittee on Aviation, On Airline Delays and Consumer Issues, September 26, 2007.

Figure 1. Annual System-Wide Air Carrier Flight Delays and Cancellations (1998-2007)



Source: Bureau of Transportation Statistics.

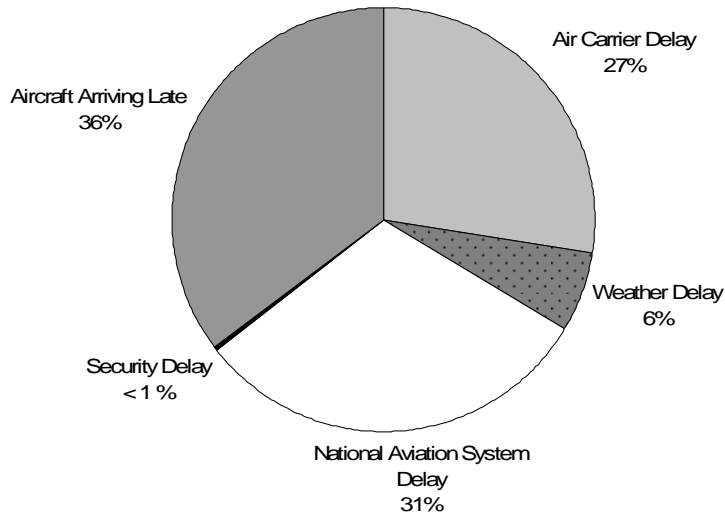
Note: Statistics for 2007 cover 1/07 through 9/07.

Causes of Air Carrier Delays

While many travelers perceive that delays are frequently associated with weather, actual delays directly attributable to severe weather conditions account for only a relatively small portion of total system-wide delays (about 6% of all air carrier delays from June 2003 through August 2007). Rather, delays are most readily attributable to a combination of the current system’s inability to cope with weather, congestion, and other factors affecting the efficient flow of traffic at major airports and along crowded airways. These types of delays, referred to as national aviation system delays, account for about 31% of all air carrier delays and are the types of delays that the DOT believes can be remedied through investment in new technologies and more efficient procedures for air traffic management. Other sources of delays include air carrier delays arising from maintenance difficulties and inefficiencies in air carrier operations which account for about one quarter (27%, to be exact) of all delays.

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Figure 2. Causes of Air Carrier Flight Delays
(June 2003-September 2007)



Source: CRS Analysis of Bureau of Transportation Statistics Delay Cause Summary Data.

Also, the cascading effects resulting from aircraft arriving late that cannot be turned around in time to maintain outbound flight schedules account for 36% of all flight delays. However, the root causes of initial schedule delays that produce these cascading delays throughout an operational day can be primarily traced back to system inefficiencies and air carrier scheduling inefficiencies and constraints. Despite heightened aviation security, security related delays have had a negligible impact (less than 1% of flight delays) on air carrier operations (see **Figure 2**).

Analysis of airline schedule delays and cancellations across the entire system, and more specifically at the three New York area airports, point to no one single cause, but rather a variety of potential contributing factors. These factors can be grouped into three broad categories:

- Airline Scheduling and Equipage
- Constraints on Airport and Air Traffic Control System Capacity; and
- Business Jets and Other High-Performance General Aviation Aircraft Operations

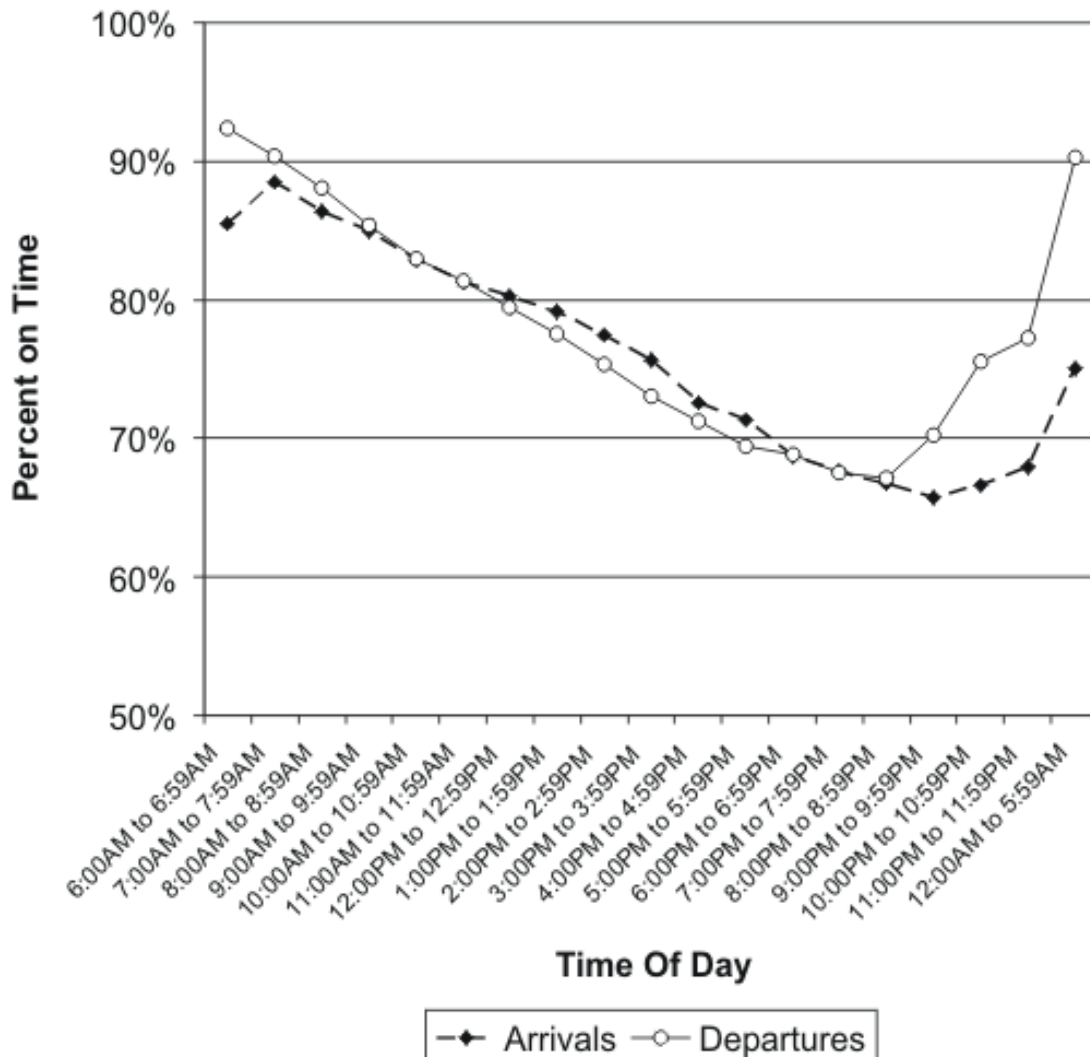
Airline Scheduling and Equipage

The single leading cause of delays is the cascading effects of aircraft arriving late. Examining the trends in flight delay causes since June 2003 reveals that the largest increase among delay factors is also late aircraft arriving. This may, in part, be an indicator of possible airline over-scheduling and/or increased fleet utilization. In recent years, efforts to cut operational cost at airlines have driven airlines to reduce turn times (i.e., the time aircraft spend parked at the gate being serviced between flights). These data suggest that either the airlines themselves, the airport infrastructure,

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the FAA air traffic management system, or some combination of these aviation system components cannot fully accommodate this increased operational tempo. The result is cascading delays as an operational day progresses. This is also evidenced in statistics showing an increase in delays as it gets later in the operational day (see **Figure 3**).

Figure 3. System-Wide Percent of Flights Arriving and Departing On Time as a Function of the Time of Day (2006 Data)



Source: CRS Analysis of Bureau of Transportation Statistics Airline On-Time Performance Data.

It seems somewhat paradoxical that the increased operations tempo can actually contribute to increased delays. To put this into perspective, it is useful to examine air carrier fleet trends. In 2000, mainline passenger airlines operated 4,488 jets compared to an estimated 3,886 in 2006. Over the same period, the number of aircraft operated by regional carriers, which are primarily smaller regional jets, grew from 2,274 in 2000 to an estimated 2,743 in 2006. Taking these two industry components together, the number of operating passenger aircraft declined from 6,762 in 2000 to an estimated 6,629 in 2006, roughly a 2% decrease. Looking solely at large jets, however, the trend is much more evident. Large jets in service have declined from 4,462 in 2000 to an

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estimated 3,827 in 2006, roughly a 14% decline. Whereas large jets made up about 66% of the total scheduled passenger service fleet in 2000, today large jets make up about 58%. In terms of the percentage of jet aircraft in airline operations, large jets made up about 88% of all jets used in scheduled passenger service in 2000, whereas in 2006, large jets comprised only 68% of all operating scheduled passenger jets. The trend over the past five years has clearly been toward reducing the number of large jets and increasing the number of smaller regional jets.⁸ So, not only are there fewer aircraft in service compared to 2000, but the aircraft that are being utilized are, on average, smaller in size and hold fewer passengers. As passenger demand for air travel continues to grow, these two trends can contribute to increased congestion and the need to sustain increased operations tempo to handle this growing passenger demand. With an increased operations tempo and utilization of smaller aircraft, there is greater demand for airport gates, so delays to one flight—say for weather or maintenance-related issues—can have cascading effects on other flights because of a lack of gate availability.

The shift toward using smaller aircraft has been a major contributor to the increased traffic at the three New York metropolitan area airports. For example, a comparison of August 2002 airline schedules to August 2007 schedules found that, over the past five years, there has been a 128% increase in the use of aircraft with fewer than 100 seats and an increase of 120% in flights using aircraft with 100 to 200 seats at JFK. Over that same time period, flights at JFK utilizing aircraft with more than 200 seats declined by 12%. This illustrates a dramatic shift in the type and scale of operations at JFK, which has long been regarded as a key origin and destination for international flight operations with widebody aircraft historically making up a sizable portion of the flight activity at the airport. The situation has been similar but somewhat less pronounced at LGA and EWR. Over the past five years, LGA experienced a 49% jump in scheduled flights of aircraft with fewer than 100 seats, but about a 8% decline in operations using aircraft with more than 100 seats. At EWR the shift hasn't been quite as dramatic, but is nonetheless still considerable. Over the past five years, utilization of aircraft with fewer than 100 seats at EWR has increased by almost 34%, while there has been relatively little change in the number of flights using aircraft with more than 100 seats, based on the comparison of August 2002 and August 2007 flight schedules.⁹

In addition to this increased operations tempo using smaller aircraft, a variety of other factors may influence airline scheduling practices, some of which may run counter to initiatives for reducing congestion and delay. For example, current LGA slot rules impose “use it or lose it” conditions on the airlines. Airlines have responded by continuing to operate unprofitable flights rather than concede these coveted slots to their competitors. For example, in June 2007, it was reported that there were three unprofitable markets, comprising a total of 13 daily flights, operating at LGA.¹⁰ While utilizing large aircraft with high load factors (high percentages of filled seats) would be best for optimizing limited available capacity at congested airports like LGA, reviews of airline scheduling practices indicate that continued use of smaller aircraft operating routes which generate low load factors leads to sub-optimal utilization in scheduling. Rationales for such strategies among the airlines include offering consumers greater flexibility in

⁸ See Federal Aviation Administration, *FAA Aerospace Forecasts (Fiscal Years 2007–2020)*, Washington, DC: Federal Aviation Administration, Aviation Policy and Plans.

⁹ David Hughes, “N.Y.’s Delay Donnybrook,” *Aviation Week & Space Technology*, July 30, 2007, pp. 40-42.

¹⁰ George L. Donahue, *Optimum Fleet Utilization Under Congestion Management at NY LGA*, presented at the Workshop on Allocation and Exchange of Airport Access Rights, The Aspen Institute, Wye River Conference Center, Queenstown, MD, June 6-8, 2007.

scheduling and serving smaller communities in order to capture or control greater market share at capacity constrained airports. There are also political considerations and incentives in place to maintain service to smaller communities, for example through Essential Air Service (EAS) subsidies. Due to intense competition for market share at high density airports, including the New York area airports, airlines have no particular incentives to reduce or otherwise modify flight schedules. While chronic delays and customer dissatisfaction would appear to provide some impetus for airlines to take action, each airline individually faces a “prisoner’s dilemma,” because they fear that if they reduce schedules or shift flights to off-peak periods, their competitors could gain an advantage by filling in any schedule openings this might create.¹¹

Constraints on Airport and Air Traffic Control System Capacity

The aviation system in the United States suffers from the fact that flight operations are highly concentrated at a relatively small number of airports. The 35 busiest airports in the United States handle about 75 percent of all airline passengers. This is largely because demand for air travel is highly concentrated within the country’s major metropolitan regions. The New York area, being the most highly populated metropolitan region, generates a demand for air travel that significantly strains available capacity. This strain on capacity is not limited to commercial airline travel, as it also extends to demand for access to airports and airspace by corporate and private jets and fractionally-owned and chartered aircraft. The major New York area airports, as well as general aviation reliever airports in the area, have limited options for expansion. An updated FAA/MITRE Corporation study of capacity needs in the national airspace system released in May 2007 concluded that “[a]dditional capacity within the New York Metropolitan Area is needed.”¹² While this conclusion may now seem obvious even to casual observers, the FAA was slow to reach this conclusion and the original capacity needs study released in 2004 did not identify the New York metropolitan area as immediately needing additional capacity.

Many regard Stewart International Airport (SWF), a converted military airbase located about 55 miles north of Manhattan, as potentially providing needed capacity to this region, although the FAA’s capacity needs study concedes that “it is too early to determine whether [NY/NJ Port Authority acquisition of SWF] will offset the need for additional capacity enhancements.”¹³ Distance from Manhattan and lack of ground transportation infrastructure are two potential challenges for making effective use of SWF to relieve congestion at the three major New York area airports, yet many remain hopeful since options to otherwise expand capacity in the region appear quite limited.

While the focus of current media attention and policy debate has been on congestion and delay in the New York metropolitan area, this region is not alone in its need for additional airport and airspace capacity. The FAA/MITRE Corporation 2007 capacity needs study identified 14 airports and eight metropolitan regions that will need additional capacity beyond that anticipated from ongoing and planned airport expansion projects over the next 17 years.¹⁴ Since further airport

¹¹ Ibid. In game theory, the “prisoner’s dilemma” refers to a competitive game scenario in which players can collectively gain more by cooperating, but typically compete instead to serve their own self-interests based on their perception that the other player(s) will also compete rather than cooperate.

¹² Federal Aviation Administration and the MITRE Corporation, *Capacity Needs in the National Airspace System, 2007-2026*, May, 2007, p. 14.

¹³ Ibid., p. 18.

¹⁴ Ibid.

expansion is a limited option, experts are focusing heavily on looking at ways to overcome technical and procedural constraints on airspace design and utilization in congested areas.

Airspace in congested metropolitan areas is largely constrained by air traffic controller workload and safety considerations. Emerging technologies to improve the accuracy of aircraft navigation and surveillance by primarily relying on precision satellite-based navigation capabilities, thereby allowing more efficient utilization of airspace and greater flexibility in routing flights, are a key component of the Next Generation Air Transportation System (NGATS) Concept of Operations (CONOPS).¹⁵ However, even if systems development and acquisition is kept on schedule, this future air traffic control system will not be fully operational for another 17 years. In the meantime, the FAA has sought to improve the efficiency of the current air traffic system through airspace redesign initiatives and procedural changes using currently available technologies. For example, in 2001 the FAA implemented its “National Choke Point Initiative” to reduce airspace bottlenecks at several points in the Eastern United States, including in the airspace serving the New York metropolitan airports. This initiative included procedural changes and adding new air traffic control sectors to better distribute controller workload. It was reported that these initiatives had the effect of reducing delays by 20%.¹⁶ Also, the recently approved NY/NJ/PHL Airspace Redesign is an initiative to specifically restructure airspace and air traffic flows in the New York and Philadelphia regions to improve efficiency and reduce delays. According to the FAA, this redesign initiative could also reduce delays by 20%.¹⁷ These initiatives have been combined with procedural measures, such as ground delays and airspace flow programs as well as the implementation of various decision-aiding tools to assist in air traffic management. These approaches are largely regarded as tactical stopgap measures to mitigate delay conditions, but are not seen by themselves as complete long term solutions for reducing delays as traffic volumes continue to increase.

Despite some success in reducing delays through these initiatives, traffic growth is having the effect of offsetting many of the gains achieved by taking these steps to improve system efficiency. FAA airspace initiatives in the New York area appear to be having a difficult time keeping up with the growth in demand for air travel in this region. Aviation experts largely agree that a comprehensive systems-based approach to implementing new technologies and flight procedures is needed to most effectively address capacity needs and reduce delays across the national airspace system, particularly in the New York metropolitan region airspace, where chronic delays are symptomatic of constrained airport and airspace capacity.

The airline industry in particular is advocating for the FAA to take steps to maximize the utilization of airport and airspace capacity in the New York metropolitan region, arguing that demand-management strategies are, in their opinion, not necessary.¹⁸ The Air Transport Association (ATA) has specifically called for establishing a New York area air traffic delay management “czar” to coordinate delay-reduction initiatives, and involving air carriers and other

¹⁵ Joint Planning and Development Office, *Concept of Operations for the Next Generation Air Transportation System*, Version 2.0, June 13, 2007.

¹⁶ Testimony of Ruth E. Marlin, Executive Vice President, National Air Traffic Controllers Association Before the U.S. House of Representatives Committee on Transportation & Infrastructure, Subcommittee on Aviation, on the Status of the Air Traffic Controller Workforce, June 15, 2004.

¹⁷ Remarks for Robert A. Sturgell, Acting Administrator, Federal Aviation Administration, Aviation Congestion Relief Media Briefing, Washington, DC, September 27, 2007.

¹⁸ Air Transport Association, Letter to the Honorable Mary Peters, Secretary, U.S. Department of Transportation, Washington, DC, September 14, 2007.

airspace users in discussions to identify near-term operational and procedural measures to address system inefficiencies. While the work of the special ARC announced by the DOT would appear to serve this purpose, it remains unclear what specific solutions this committee may be able to offer that can improve system efficiency beyond what has already been tried and implemented under the ongoing NY/NJ/PHL airspace redesign and other airspace and operational initiatives, such as ground delay and airspace flow management programs that are currently in place. Any further initiatives not yet implemented may only be able to offer smaller marginal improvements toward increasing system efficiencies and reducing delays. Therefore, despite opposition from the airline industry, many academic experts believe that a variety of demand-management or market-based approaches for addressing congestion and delay at various high-density or capacity constrained airports, including the three commercial passenger airports serving the New York metropolitan area may need to be considered in the near term.¹⁹

Business Jets and Other High-Performance General Aviation Aircraft Operations

The role that business jets and other high-performance general aviation aircraft play in air traffic system congestion and air carrier delays remains both debatable and highly contentious. At busy air carrier airports, general aviation makes up a relatively small percentage of flight operations. According to the FAA FY2005 Cost Allocation Report, general aviation aircraft and fractionally-owned aircraft accounted for less than 4% of all aircraft operations at large hub airports in FY2005.²⁰ In FY2005, general aviation made up 2.7% of the traffic at LGA, 3.2% of the traffic at EWR, and 2.0% of the traffic at JFK.²¹

The airlines, however, have argued that general aviation operations in terminal airspace and along the busiest en route corridors place a considerable strain on system capacity, pointing out that the number of private jet aircraft operating in U.S. airspace has grown from about 1,800 in 1970 to almost 18,000 today.²² The airlines argue that “[t]he proliferation of these aircraft, in addition to the unprecedented growth of the business aviation sector, has been the primary factor in the increased workload for FAA.”²³ In the New York area, there is some evidence of the additional demand for air traffic services from general aviation. At Teterboro Airport (TEB) in Teterboro, NJ—a major GA reliever for the New York area—total operations counts have remained flat over the thirty years from 1976 to 2006 (the data actually show a slight decline of 2.3% in total operations for TEB). Over the same period, however, the number of instrument operations have increased threefold (306.3% increase in 2006 compared to 1976 levels). Whether and to what extent this increased general aviation utilization of air traffic services is affecting airline operations and contributing to delays at nearby airports has not been conclusively determined, but it remains a specific point of contention among the airlines and general aviation interest groups such as the National Business Aviation Association (NBAA). Since high-performance general aviation aircraft typically do not make up a large percentage of the air traffic flying directly to and

¹⁹ See NEXTOR: The National Center of Excellence for Aviation Operations, *Allocation and Exchange of Airport Access Rights*, Workshop held at the Aspen Institute, Wye River Conference Center, Queenstown, MD, June 6-8, 2007, available at <http://www.isr.umd.edu/airworkshop/>.

²⁰ Federal Aviation Administration, *FY2005 Cost Allocation Report*, January 2007.

²¹ Federal Aviation Administration, *Terminal Area Forecast (TAF)*, available at <http://aspm.faa.gov/main/taf.asp>.

²² See “Corporate Jets Clog America’s Skies,” at http://www.smartskies.org/LearningCenter/atc_users/.

²³ Ibid.

from capacity constrained commercial airports, their impact on flight delays could most likely be addressed through airspace redesign and new technologies and procedures for air traffic management.

Some Possible Near-Term Remedies for Reducing Air Traffic Congestion and Mitigating Delays

A variety of options for reducing air traffic congestion and minimizing airline delays are under consideration. While most aviation industry experts believe that the largest gains can be achieved in the long term through investment in Next Generation Air Transportation System (NGATS or NextGen) technologies, the current situation is prompting many in government and the aviation industry to seek out near-term fixes to address congestion and delay, especially in the New York area. A variety of near-term options are under consideration including phasing-in airspace redesign plans in the New York/New Jersey/Philadelphia region; opening military airspace to civilian flights under certain conditions; implementing ground delay programs, airspace flow control programs, and other congestion management tools to improve the flow of air traffic; phasing-in technology and procedural changes to reduce aircraft separation and improve airspace utilization; and possibly improving airline schedule optimization at high density airports by utilizing larger aircraft, a practice known in the industry as upgauging.

Airspace Redesign

As mentioned earlier, the FAA recently finalized its plans for redesigning airspace in the New York, New Jersey, and Philadelphia areas (the NY/NJ/PHL Airspace Redesign). In the near future, the FAA will begin implementing this plan which is touted to more efficiently use airspace and runways at the New York area airports and at Philadelphia International Airport (PHL). The plan includes greater use of fanned departure headings and parallel arrivals, as well as greater flexibility in traffic flows to handle severe weather conditions. The FAA anticipates that implementation of the NY/NJ/PHL Airspace Redesign will cut delays by a cumulative total of 200,000 hours annually, resulting in a savings of \$248 million annually in airline operating costs, plus another \$37 million annually because of the increased flexibility during severe weather.²⁴ These redesign initiatives probably offer the greatest near-term potential for reducing delays at the New York area airports without curtailing or otherwise modifying airline schedules.

Opening of Military Airspace to Civilian Air Traffic

Currently, the FAA negotiates in real-time with the DOD to open up airspace to civilian traffic on an as-needed basis, such as to detour flights around thunderstorms.²⁵ However, prior to the 2007 Thanksgiving holiday travel period, President Bush announced a plan to open military airspace along the east coast to airline flights during a five day period from the day before Thanksgiving through the Sunday after Thanksgiving. During this time, the FAA established two additional east

²⁴ Statement of Robert A. Sturgell, Acting Administrator, Testimony Before the House Committee on Transportation and Infrastructure, Subcommittee on Aviation, On Airline Delays and Consumer Issues, September 26, 2007.

²⁵ Madhu Unnikrishnan, "DOT: Military Airspace Opened For Thanksgiving." *Aviation Daily*, November 16, 2007.

coast flight paths, dubbed the “Thanksgiving express lane” by Administration officials.²⁶ This prearranged opening of military airspace over the entire Thanksgiving weekend was touted by some as an “unprecedented step”²⁷ while dismissed by others as giving “[air traffic] controllers a power they already have and have used for years,”²⁸ namely the authority to utilize military airspace during holiday periods when the military is typically not training. The Air Transport Association (ATA) described the utilization of military airspace over this period as being moderate, ranging between 10 to 40 aircraft per hour being routed along these temporary flight paths.²⁹ Whether the use of this airspace helped reduce or mitigate delays is hard to say, particularly at the New York area airports where delays over the 2007 Thanksgiving holiday were largely attributed to low ceilings and reduced visibility which impacted arrival and departure spacing. In the past, use of military airspace has been on more of a case-by-case basis, such as to reroute traffic around weather, leading some to consider whether more extensive use of military airspace along the east coast could be a possible fix for airspace congestion and resulting delays.

Experts have mixed opinions regarding the degree to which more extensive use of military airspace can relieve airspace congestion and mitigate delays, especially if military airspace is opened only for sporadic, temporary intervals. This is because the FAA’s airway structure and arrival and departure routes along the east coast have been designed in coordination with the DOD taking into consideration those areas carved out for military use. Turning on and off civilian flight activity through these areas would require continued close coordination between the FAA and the DOD, and this is not something that the relatively rigid current airspace structure and procedures were specifically designed for. Military airspace, however, is often inactive (that is, not utilized for any military purpose), thus offering potential options for more direct routing of civilian flights and additional flight paths to alleviate airspace congestion. The difficulty is knowing when military airspace will be inactive and could be made available for civilian use. Better coordination of airspace scheduling between the DOD and the FAA could potentially open additional routes and give air traffic controllers greater flexibility in routing flights during certain periods of the day, particularly as more and more aircraft are allowed to utilize direct routing capabilities relying on satellite-based navigation and are thus not as dependent on the rigid legacy airway structure. Nonetheless, most concede that the overall impact of such actions would likely be relatively small, although perhaps not insignificant, because they do not address the primary issue of airport capacity constraints at the busiest airports along the east coast.

Ground Delay and Airspace Flow Programs and Other Congestion Management Tools

A variety of decision aiding tools to help airspace managers and air traffic controllers better optimize the utilization of airspace and minimize the disruption caused by significant weather and other events have been developed and are being continually refined. One approach has been to implement ground delays at origin airports for specific destination airports, like LGA, to better meter the flow of arrivals, thereby reducing arrival delays and the additional congestion of

²⁶ Holly Rosenkrantz and John Hughes, “Bush to Open More Airspace to Cut Holiday Trip Delays,” *Bloomberg*, November 15, 2007.

²⁷ *Ibid.*

²⁸ James Fallows, “Thankfulness is Great, But What Is the NYT Thinking?,” *The Atlantic.com*, November 22, 2007.

²⁹ Air Transport Association, *ATA 2007 Thanksgiving Holiday Operational Earlier Updates*, November 17-27, 2007, Washington, DC: Air Transport Association.

already crowded airspace that this may cause. In addition, airspace flow programs (AFPs) have been used to limit congestion in specific airspace sectors. Ground delays and AFPs can also be imposed on general aviation aircraft to limit their disruption of traffic flows to and from major airports that could trigger delays. Other decision-aiding tools that the FAA has developed for improving efficient utilization of airspace include the flight schedule monitor (FSM), for managing ground delays and airspace flow implementation, and the flight schedule analyzer (FSA), used to assess the effectiveness of ground delay and airspace flow procedures thereby allowing incremental improvements. Also the traffic management advisor (TMA) aids controllers in optimizing arrival sequences into major airports, and an adaptive compression program can aid in identifying controllers and reallocating slots that might otherwise go unused.³⁰ The FAA has also relied on collaborative decision making tools and operational “playbooks” for minimizing disruptions and delays caused by severe weather and other factors. Improving upon these various operational tools and techniques for optimizing air traffic flows and airspace utilization is an ongoing FAA initiative. However, there is concern that without accompanying technological advances in navigation and surveillance capabilities, these efforts will yield diminishing marginal improvements in delay reduction.

Technology and Procedural Changes

Airport traffic is constrained or “metered” at several points in the aviation system. On the airport itself, aircraft are constrained by the number of available gates, and arrivals and departures are metered by runway occupancy and arrival and departure spacing requirements. In the air, specific entry and exit points into and out of terminal airspace, referred to as gates, also constrict traffic flows in congested areas, and aircraft separation requirements impose limits on air traffic density. Technology to improve navigation and surveillance accuracy is seen as a long-term solution to safely increase traffic density and increase the flexibility of airspace utilization in congested terminal airspace and along busy routes. While the FAA has offered that the Next Generation Air Transportation System (NGATS or NextGen) provides a great hope for alleviating airspace capacity constraints and system delays, even if the system development stays on schedule, it will not, as mentioned earlier, be fully implemented for another 17 years.

By exploiting the improved navigational precision of aircraft satellite-based navigation systems using required navigation performance (RNP) and area navigation (RNAV) procedures, the FAA and airline operators can achieve better utilization of airspace, thereby increasing system capacity and potentially reducing delays. Examples include increased numbers of fanned departure headings to increase airspace utilization for departures, more closely spaced approaches to parallel runways, increased use of direct routing capabilities, and greater flexibility for routing aircraft around weather systems. These capabilities demonstrate how emerging satellite-based technologies have the potential to create opportunities for procedural changes that can significantly improve system efficiency, thereby potentially reducing delays. At the New York area airports and at PHL, RNAV/RNP arrivals and departures have recently been made available on a limited basis, and it is anticipated that they will be utilized to a much greater extent as implementation of the NY/NJ/PHL Airspace Redesign progresses.

³⁰ Statement of Robert A. Sturgell, Acting Administrator, Testimony Before the House Committee on Transportation and Infrastructure, Subcommittee on Aviation, On Airline Delays and Consumer Issues, September 26, 2007.

Airline Upgauging

Another option for reducing congestion is to provide service using smaller numbers of larger aircraft. The selection of larger aircraft is referred to in the airline industry as upgauging. By upgauging aircraft in combination with schedule reductions, airlines could serve the same number of passengers with fewer flights. The airline trend in recent years, however, has been to “downgauge” rather than upgauge. This has been a particularly prevalent trend over the past five years as airlines have sought ways to increase load factor (the ratio of seats filled with revenue paying customers to total available seats) and reduce operating costs in a highly competitive market. At airports where there is significant competition, airlines have also sought to provide customers with the greatest amount of scheduling flexibility, offering more frequent flights, typically on smaller aircraft to keep load factors high and operations profitable. Without any particular incentives for upgauging, airlines are likely to be reluctant to do so on their own accord for fear that, by offering fewer flights to customers, they would be put at a competitive disadvantage. Airlines are also faced with the task of optimizing fleet composition in a manner that serves a broad array of markets in the most cost effective manner. So, while upgauging aircraft to serve highly competitive markets may help alleviate congestion and delay problems at specific airports, these larger aircraft may not be the best options for a particular airline’s overall route structure. Determining an airlines optimum fleet mix is a complex task for airlines that serve a wide variety of markets, so simply upgauging aircraft serving capacity constrained airports may not necessarily be in the best interests of the airlines.

Demand Management: Slot Controls and Congestion Pricing

Demand management is a somewhat broad term that suggests that capacity, hence congestion, can be controlled using administrative or economic mechanisms, or a combination of the two. Historically, aviation usage of the term demand management is associated with airport slot controls and the allocation of slots. Over the last 4 decades slot controls have been imposed using both administrative and economic measures at 4 airports in the United States. During this period, as will be discussed below, there were attempts to create a market for slots, but these markets have never lived up to the expectations of their proponents.

Congestion pricing, the focus of several policy statements by Secretary of Transportation Mary Peters, can be viewed as a form of demand management that tries to use pricing techniques to effect desired results in reducing congestion.³¹ Congestion pricing can be imposed at the airport level, for example, as part of, or as an adjunct to, landing fees. As will be discussed, there is some limited experience with the use of these mechanisms in the United States and in the United Kingdom (UK). Congestion pricing could also be applied to air traffic control (ATC) activities, though to date this mechanism has not been specifically applied in the United States or elsewhere.

The use of demand management techniques to ration finite amounts of transportation infrastructure has long been supported by economists. Americans, however, appear to have an aversion to tolls and the other transportation pricing mechanisms that are the stock and trade of demand management practice. Roads in this nation, for example, are provided largely as free

³¹ “White House Confirms Airline Scheduling Meetings for JFK.” *Aviation Daily*. September 28, 2007. p. 1.

goods, especially in the minds of drivers who believe they pay for roads sufficiently through taxes at the gas pump. This same framework also exists in the aviation world, with the airline ticket tax and associated taxes serving as a proxy for the highway fuels tax. Broadly based taxes, such as fuel taxes, however, are viewed by economists as proxies for user fees rather than as true user fees. As a result, taxes are generally seen as a relatively poor mechanism for pricing infrastructure. Nonetheless some observers, find it rather remarkable that a nation that differentiates access to many of its infrastructure systems on a price basis, e.g. telecommunications peak period pricing, has no comparable mechanism that differentiates for use of the national aviation system.

Congestion pricing is normally opposed by many groups in the aviation community. Historically, the groups most vociferous in their objections to this mechanism are regional airlines, business aircraft operators, and general aviation aircraft operators. All of these groups believe that congestion pricing could be used to discriminate against them and will have the effect of reserving what are publicly supplied assets—airports and ATC—for large airlines. It should be pointed out that the airline industry has also objected to certain demand management proposals and is objecting to the imposition of congestion pricing at JFK.³² Residents of small and medium sized communities, primarily served by regional airlines, are also concerned that congestion pricing will price them out of major airports and further limit their access to the national aviation system.

Slot Controls

Well publicized capacity and delay problems in the late 1960s played an important role in the congressional debates that led to passage of the Airport and Airway Development and Revenue Acts of 1970 (P.L. 91-258, 1970 Act). The 1970 Act is seen as a milestone in that it created a programmatic framework for the modernization of the National ATC and airport systems, and provided a funding mechanism to pay for many of the needed upgrades—the airport and airway trust fund.

By the end of the 1960s, stories about delays at major airports were a staple of the evening television news and front page articles in major newspapers. Beginning in 1968 the FAA chose to intervene by instituting capacity controls at four airports: Chicago O’Hare (ORD); New York Kennedy (JFK); New York LaGuardia (LGA); and Washington Reagan National (DCA).³³ The high density rule (HDR), as it was known, instituted controls by allocating slots (takeoffs or landings) amongst the incumbent airlines serving each airport. When the slot controls were implemented there was some hope that they could be removed at some not too distant point in time. Instead, the controls would last for over 3 decades. The slot controls system, which was modified on several occasions over the years, probably did constrain excessive growth in congestion at the 4 airports, but it did not eliminate it.³⁴

From 1968 until 1986 the allocation of slots was primarily handled by a scheduling committee at each airport made up largely by representatives of the incumbent airlines. The scheduling

³² Schofield, Adrian. “Debate Over JFK Delays Sparks Talk of Congestion Pricing.” *Aviation Week*. October 29, 2007.

³³ Newark Airport was briefly subject to FAA slot controls as well.

³⁴ For a more detailed description of the history and origin of slot controls, see Gleimer, Eileen M. “Slot Regulation At High Density Airports: How Did We Get Here And Where Are We Going?” *Journal of Air Law and Commerce*. V. 61. May -June 1996. p. 877-931.

committees essentially allocated slots amongst themselves on a voluntary basis. This somewhat cozy arrangement was viewed by many as a major restraint on competition. Not surprisingly the scheduling committees failed to provide many slots to the “new entrant” airlines being created in the wake of airline deregulation in 1978. To the extent that new entrants did get slot awards they were provided through intervention by the FAA.

In 1986 an attempt was made to use market forces to open up some of the slots at the airports. This so called “buy/sell” rule allowed incumbent airlines the right to buy or sell slots in a secondary market. To insure that incumbent airlines actually gave up their slots the FAA established minimum use rule for slots. If the slot was not used over a period of time the airline was supposed to lose control over it and return it to the FAA. In reality the system proved far less useful than hoped.³⁵ Incumbent airlines proved largely unwilling to give up what they regarded as a controlled asset, especially to would-be competitors. Sales of slots, did occur, sometimes as a result of an airline merger, restructuring, etc., but largely in a way that led to even greater control of the HDR airports by major airlines.³⁶

By the end of the 1990s it was clear that slot markets had not worked as hoped. FAA intervention over the slot control period, mostly through the award of exemption authority for certain airlines to provide certain types of services, also was seen as having only limited positive impact on competition at the HDR airports. In the end, it was this concern about a lack of competition that led Congress to legislate a phase out of slot controls at all but Washington Reagan National, as part of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR-21, P.L. 106-181).

AIR-21 called for a all slot controls to be eliminated at Chicago O’Hare by July 2002, and controls at New York airports were to end January 1, 2007. The law also provided certain exemptions from these deadlines for certain types of aircraft. The first consequences of this phase out occurred at LaGuardia in 2000 when airlines took advantage of small regional jet exemptions provided for in AIR-21 and rapidly initiated a large number of new flights to and from the airport. This jump in regional jet traffic was somewhat unexpected and the FAA was forced to impose a moratorium on new service in September 2000. The events of September 11th temporarily alleviated what was then viewed as a growing problem, but the problem returned and capacity controls were reintroduced by the FAA.

At Chicago O’Hare, the FAA has been able to manage capacity since slot controls were eliminated only by seeking voluntary reductions in scheduled traffic from the incumbent airlines, primarily American and United. In late summer 2006, the FAA adopted a rule that limits operations at the airport until new airport capacity becomes available, which is expected to occur in 2009.

Unlike LaGuardia and O’Hare, JFK did not see the same rapid growth in traffic after passage of AIR-21. For part of this period this was a result of decreases in overall traffic after September 11, 2001. In the last couple of years, however, there has been a major increase in traffic at JFK to the point that the FAA is now seeking to implement some sort of capacity controls at the airport.

³⁵ Berardino, Frank. “History of the Slot Exchange Market in the US and Some Implications.” Presentation at Nextor Workshop on Allocation and Exchange of Airport Access Rights. June 6, 2007. http://nextor.org/Conferences/200706_Airport_Access_Rights/Berardino.pdf.

³⁶ Ibid. p. 10.

Options being explored include voluntary rescheduling actions on the part of the airlines or implementation of peak period and/or congestion pricing.

At the time of this writing the FAA seems intent on limiting JFK flights on a per hour basis.³⁷ The FAA will attempt to meet this goal by asking individual airlines to limit their service at the airport accordingly, but apparently will not allow the airlines to meet to discuss flight scheduling en masse. Longer term, however, the FAA still seems to be focused on creating a congestion pricing scheme to allocate capacity at the airport.³⁸

Antitrust Immunity

On a few occasions over the last three decades, the now sunset Civil Aeronautics Board and later the DOT gave airlines limited antitrust immunity in order to discuss and coordinate schedules. Each of these grants was temporary in nature and related to specific events in the aviation industry, such as the aftereffects of the 1981 air traffic controllers strike. In early 2001, after the aviation system experienced massive delays in 2000, Congress was considering legislation (H.R. 1407 and S. 633) that would have allowed airlines to ask the Secretary of Transportation for authority to discuss schedules when scheduled traffic exceeded airport capacity and gave the Secretary the authority to approve the resulting agreements. The authors of these bills viewed the provisions as a short term solution to existing capacity problems, which they hoped would be alleviated over time by the creation of new airport and ATC capacity. The events of September 11, however, would abrogate the need for this legislation at that time.

Early in 2007 concern about congestion at LGA and other airports caused the Bush Administration and the House Committee on Transportation and Infrastructure to include provisions in FAA reauthorization legislation under consideration at that time, H.R. 1356/S. 1076 and H.R. 2881, respectively, to deal with this issue. The Bush Administration approach seeks to study congestion pricing, which will be discussed subsequently. H.R. 2881, however, contains a provision which implies a process that seems similar in some respects to a limited grant of antitrust immunity. In Section 422, the FAA Administrator is given the authority to seek a voluntary meeting of air carriers at a congested airport for the purposes of schedule reduction. If this meeting is unsuccessful, the Administrator is given the authority to facilitate schedule reduction as he/she sees fit.

A similar conversation has now begun in conjunction with the JFK situation. Several parties have called on the FAA to be more active in schedule coordination. For the moment, the FAA has not sought antitrust immunity and is meeting with air carriers one at a time in an attempt to reduce flights into the airport next year.³⁹ Should this effort fail to achieve its desired results, it is quite possible that the various parties to the scheduling debate might ask for a process that includes at least some form of antitrust immunity. In 2001, there was considerable concern from some observers that antitrust-created scheduling committees or mechanisms would be unable to avoid competitive issues that might lead to industry collusion on items such as service and fares. There also were concerns that scheduling committees, like those used at HDR airports, might become a semi-permanent and anti-competitive feature of the industry.

³⁷ "FAA Looks to Cap JFK Flights at 80-81 Per Hour." *Aviation Daily*. October 22, 2007. p. 2.

³⁸ *Ibid*.

³⁹ "FAA Begins JFK Scheduling Talks, But Airlines Slam Flight Cuts." *Aviation Daily*. October 24, 2007. p. 1.

Congestion Pricing/Peak Period Pricing

In concept the idea of congestion pricing is quite simple, for example, it may consist of modified landing and/or air navigation fees to change behavior in a way that uses the market to allocate available infrastructure. It is the application of the concept in the aviation sector that has proved difficult. To a large extent the difficulty arises because airport runways and air navigation (ATC) services within the United States are normally provided by the public sector and are regarded as public goods. Compounding this problem is the fact that airports are usually local and/or regional monopolies, while ATC services are provided by a national monopoly (such as the FAA in the U.S. context). Pricing in the public sector is, therefore, not focused on creating a profit as it would be for a private firm, but rather on providing for cost recovery or some other publically determined goal. Hence, the forces that routinely set prices in a competitive marketplace are largely absent.

The concept of congestion pricing predates the invention of the airplane. Tolling, which in certain instances is a form of congestion pricing, has been around for centuries. Over the last several decades there has been considerable research on the usefulness and application of congestion pricing mechanisms to transportation infrastructure worldwide. Most of this research, however, has focused on surface transportation. In the surface transportation world, there is a large and growing body of academic literature on the subject. The similar conversation in the aviation world is much more limited in scope, with research on the subject being done by a comparatively small number of individuals and groups. And, in fact, several of the authors of studies on aviation pricing are doing so based, at least in part, on their research on surface transportation pricing issues.

The Bush Administration, and especially Secretary of Transportation Peters, favor market mechanisms for infrastructure development and maintenance in all transportation modes.⁴⁰ It was, therefore, not a surprise that the Administration made a review of congestion pricing part of its proposal for FAA reauthorization in early 2007, H.R. 1356/S. 1076. The FAA proposal seeks to establish a pilot program to evaluate market-based mechanisms to relieve congestion at up to 16 airports (including LGA, which was the subject of a separate provision). The FAA proposal was not adopted in either the House (H.R. 2881) or Senate (S. 1300) reauthorization bills still under consideration at the end of 2007.

Aviation Infrastructure Pricing

Airports in the United States currently charge landing fees based on aircraft weight. These are generally fixed and do not vary over the time of day. With a couple of small exceptions, there is no correlation between the landing fee and congestion, although there may be some correlation between fee levels and infrastructure needs at the airport. Typically, in the absence of specific infrastructure needs, airport landing fees are determined on the basis of the historical/administrative costs associated with the airport's provision of service to the airlines and its own operating cost requirements. While landing fees are an important source of revenue for most airports, they are not the only source. And at many airports landing fees are not even the majority source of airport income. At very large airports, for example, the airport may receive far

⁴⁰ "Transportation Congestion Pricing Would Ease Problems at Airports, on Highways, Peters Tells Panel." *Daily Report for Executives*. BNA, Inc. No. 202. October 19, 2007. p. A-9.

more income from concession fees than it does from landing fees and other airside related activities.

U.S. and Non-U.S. Experience With Congestion Pricing

Congestion pricing is an idea that has not yet come to fruition in the aviation world for a variety of reasons, some of which will be discussed below. As a result, the body of experience with congestion pricing is quite limited, having been applied in some form only at New York's and Boston's major air carrier airports, and at London Heathrow (LHR) airport in the United Kingdom (UK). In no case can the application of these fees be viewed as having been entirely successful from the perspective of congestion pricing theory. And in no case can any of these examples be viewed as having created a system that would meet the theoretical definition of true congestion pricing. Each of these experiences is discussed briefly below.⁴¹

New York

In 1968, the Port Authority of New York and New Jersey (Port Authority) instituted a \$25 fee/surcharge on all aircraft operations for aircraft with 25 seats or less during peak hours at the three air carrier airports it operated.⁴² The specific intent of this first known instance of peak period pricing in the United States was to reduce GA operations at the three airports. The hope was that GA operations, especially those using LGA, would move to Teterboro Airport (TEB), which was also operated by the Port Authority and had no scheduled air service. No additional fees were to be imposed on GA aircraft that chose to use TEB as a substitute. Not coincidentally, this action took place during the same time period that saw the implementation of the HDR slot controls discussed earlier.

GA interests attempted to overturn these surcharges in the federal courts but were ultimately unsuccessful in doing so.⁴³ The Court found that the intent of the surcharge was reasonable and that the Port Authority had not discriminated against GA. In part, this was because the Court held that TEB provided a reasonable alternative for GA aircraft that wished to avoid the surcharge. The peak period surcharge system at LGA remains in place today.

The peak period pricing system using landing fee surcharges was successful in moving the majority of GA traffic out of LGA and into TEB. In this respect, the Port Authority experience can be viewed as having been successful. It should, however, be recognized that the goals of the surcharge were modest when compared to the peak period pricing regimes promoted by economic theorists. Hence, it would be difficult to draw on this experience as a guide to how peak period surcharges might affect the movement of airline traffic in the context of the ongoing FAA/DOT slot allocation investigation at JFK.

⁴¹ For more detailed information on each example see Schank, Joshua L. "Solving airside airport congestion: Why peak runway pricing is not working." *Journal of Air Transport Management*. Vol. 11. Elsevier Ltd. 2005. p. 417-425.

⁴² Exemptions were provided for air taxis at JFK and EWR.

⁴³ Schank. p. 420.

Boston

Some would argue that Boston Logan's 1988 attempt at using pricing to modify airport traffic flow was not, in fact, an example of congestion pricing, *per se*. The Program for Airfield Capacity Efficiency (PACE) changed the landing fee structure at the airport by moving away from a strictly weight-based fee and instead creating a base fee unrelated to weight for all aircraft landings with an additional weight-based fee. The net effect of this system was to significantly raise the landing fees paid by GA aircraft and smaller commuter/regional airline aircraft as compared to those now paid by larger airline operated aircraft. Massport, the state agency operating the airport, believed that this pricing system would reduce congestion by providing an incentive for airlines to schedule fewer flights during the day using larger aircraft and cause GA and other aircraft to fly to other Boston area airports. In short, Massport was attempting to use landing fees as an upgating strategy.

GA and the commuter/regional airlines faced with higher fees mounted a legal challenge to the PACE program. The complicated legal battle that ensued is discussed in more detail later in this report. For the purposes of this discussion only the result of that process is addressed. The final decision in the case was made by an Administrative Law Judge (ALJ) at DOT who decided that the PACE program discriminated against GA and commuter/regional airlines for several reasons.⁴⁴ Important among these was the lack of an acceptable alternative airport for the users being charged the higher fees. Interestingly, however, the ALJ specifically protected the right of the airport to adopt a landing fee system different from the weight based system in place at a later date.

There is nothing inherently sacrosanct about weight-based fees, and nothing in the law that precludes Massport from changing its method of cost allocation.⁴⁵

As a result of the court action, the PACE program was only in place for six months and it is not clear that the reduction in flights during that period can be specifically attributed to the PACE program.⁴⁶ In the intervening years Massport has adopted, but not implemented, a peak period surcharge methodology that it believes complies with DOT's requirements. The surcharge itself will only be implemented when traffic delays reach predetermined levels.

London

London Heathrow (LHR) is one of the world's most congested airports. In an attempt to modify traffic flows it has imposed a peak period pricing regime since 1972. At that time the airport created a new landing fee structure that included flight length, passenger load, time-of-day and weight-based elements. The fees also were related to the individual airline's ability to pay the fee. Over time the specific elements of the LHR fee structure have evolved. For example, after numerous protests by international carriers the distance related portion of the fee was eliminated in 1978. To the chagrin of all air carriers at LHR the British Airports Authority (BAA) which operated the airport responded by dramatically raising the fixed element of the fee so that many air carriers actually ended up paying higher fees than they had previously.

⁴⁴ Leo, Flavio. "Boston Logan International Airport's Peak Period Surcharge Regulation-Overview." Power Point Presentation. June 6-8, 2007. Can be found at http://nextor.org/Conferences/200706_Airport_Access_Rights/Leo.pdf.

⁴⁵ Ibid.

⁴⁶ Ibid.

BAA was a public entity in the 1970s when the peak period fees were implemented. Since 1987 it has been a private firm. In the late 1980s, U.S. air carriers upset over the complicated and high landing fees at LHR, successfully sought international arbitration over the fees. The findings of that process concurred with the U.S. air carrier view and BAA was required to reach a financial settlement with the carriers.⁴⁷ Irrespective of the U.S. air carrier experience, other elements of the landing fee structure have continued to change, but the single constant over time has been a consistent increase in the landing fees.

LHR is a heavily congested slot controlled airport with much of the capacity (slots) at the airport reserved as a result of international aviation agreements. Therefore, there are other mechanisms in place at the airport besides peak period pricing that allocate capacity to some degree. Airline access to LHR is one of the most sought after commodities in the world of aviation. It is, therefore, an airport that nearly all international airlines regard as a desirable destination, regardless of the high landing fees and other costs associated with its use. Not surprisingly, major airlines have continued to seek additional service opportunities at the airport. This has not been the case for commuter/regional airline service that has largely moved to alternative London airports such as Stansted.⁴⁸

Most observers would suggest that the London example is the closest to true congestion pricing and has had some of the types of results that one might theoretically expect from its application. The reality, however, is that LHR's peak period fees have never really created a market-based allocation of traffic amongst major airlines. This is due primarily to the desirability of LHR as a destination. Regardless of the high fees at the airport, airlines appear to have been able to transfer all of the costs associated with the peak period pricing regime to their passengers through higher fares. Interestingly, congestion is such at LHR that there is no longer a true peak period and the landing fees have been modified to recognize this reality.

Issues

There are a number of issues that will need to be considered as part of any consideration of congestion pricing. Each of these issues is potentially contentious. What follows is a brief discussion of several of these issues.

Fee Setting

Although there are other airport related charges that might be modified or created to effect congestion pricing at an airport, experience to date clearly shows a preference for using landing fees as the principal mechanism for price setting. In the United States, the setting of landing fees has been the domain of the airport operator. The legal discussion that follows this section will show that landing fees can be challenged on various grounds, but nonetheless airports have wide discretion in setting these fees so long as they do not discriminate against specific users and the methodology employed in setting the fees is considered fair. As a result, airport operators might contend and have, in the past, argued that they should determine the pricing policy to be used. Airport proponents might also argue that they can also effect the rationing of airport capacity by imposing fees on other types of airport airside infrastructure such as terminal gates.

⁴⁷ Schank, p. 423.

⁴⁸ Ibid.

Although most of the discussion to date about congestion pricing has been focused on the use of a specific airport, or groups of airports, it is possible to consider congestion pricing of the airspace in the proximity of the airport or region as an alternate pricing mechanism. In this instance a user fee might be set by the FAA for access to an airport's related airspace. TRACON (terminal radar approach control)-related user fees were part of the FAA's 2007 reauthorization proposal (H.R. 1356/S. 1076). These proposed fees were not seen as congestion pricing fees, however, but rather as a cost recovery mechanism.

Fee Setting and Use Issues

Two important issues that will be raised in any congestion pricing environment are the related questions of what kinds of outcomes the fees are to achieve and how any money collected is to be used. If the goal is true congestion relief the fees might have to be set quite high in order to prompt airlines to make schedule changes. One possible result of high fees, however, is that certain user groups such as regional airlines providing Essential Air Service (EAS) or other services to smaller communities might be priced out of specific markets. This result, and other similar types of exclusions, could be at odds with the existing public policy goal of providing broad access to the national aviation system.

How collected fees might be used also has potential implications that could determine whether or not congestion fees would enjoy public and/or airline industry acceptance. For example, the use of landing fees to fund the operating costs of an airport and to pay for the creation of airport infrastructure is broadly accepted as an appropriate use for these funds. This might not be the case if fees were instead designated for U.S. Treasury General Funds without any specific designation for aviation purposes.⁴⁹

Also in question is how congestion fees might affect airline fares at an individual airport. Airlines ultimately transfer their costs to their passengers. It is well understood that airline fares to and from airports where a single air carrier dominates the market are higher than they are at airports with high levels of competition. Congestion fees could result in greater concentration at certain airports giving air carriers with the majority of service at an airport significant new market pricing power. Unknown is whether congestion fees could result in high airline fares leading to public unhappiness with the resultant capacity rationing system. This especially would be the case in markets where substitute airports and/or other transportation alternatives were lacking. On the other hand, if high fees did result in significant reductions in air carrier delay and improved flight reliability, the public might accept the higher fares.

Alternative Fee Mechanisms

Since the HDR process was first implemented there have been numerous attempts to create market forces for their allocation. As discussed earlier, most of these attempts were seen as not having fully served their intended purposes. Some researchers, however, have suggested that these airport-centric mechanisms have not embraced the market sufficiently and that slot-related charges are still a viable option for the allocation of airport and airspace capacity.

⁴⁹ For a further discussion of some of the issues associated with this issue, see Plavin, Z. David. "Using the Revenues from Airport Pricing." Policy Brief No. 68. The Reason Foundation. November 2007. 12 p.

An approach suggested by some researchers is the slot auction. In one instance the researchers suggest a multi-level auction process to allocate capacity at congested airports using long-term leases of slots at congested airports (one year or so), with a secondary market that allows airlines to trade these leases, and an additional market that allows airlines to trade these resources amongst themselves on a day-to-day basis.⁵⁰ In this particular instance the market would likely be run by the FAA with funds derived from the slot auctions reserved for airspace infrastructure improvements. The researchers recognize a significant number of issues that might arise from this process, but believe it could be a useful mechanism for the allocation of capacity.⁵¹

Legal Issues

The consideration and potential imposition of congestion pricing or other related mechanisms at airports raises numerous legal issues and highlights a long-standing tension in aviation law between federal uniformity and supremacy over airspace and air safety concerns on the one hand, and local control over airports and ground facilities on the other. This tension, in addition to legal issues related to the ability of airports to use congestion pricing or similar mechanisms in conjunction with the federal financial support received through programs such as the Airport Improvement Program (AIP), may have a significant impact on the type of mechanism suggested and considered.

As noted earlier, it appears that the legal issues related to congestion pricing mechanisms have been primarily identified by the two local airport authorities, who sought to impose such systems over the legal objections, generally on preemption grounds, of the FAA and other adversely affected parties. To date, the FAA has not suggested the imposition of a federal congestion pricing mechanism on local airports. As a result, it is unclear precisely what, if any, legal issues may arise should the situation reverse itself and congestion pricing become a federal mandate as opposed to a local solution seeking federal approval.

This section of the report will proceed as follows. First, it will review and survey the current laws that govern airports, including the federal preemption statute as well as several other federal laws that constrain what local airports are permitted to do with fees charged and money granted by federal programs such as the AIP. Second, the report will discuss current law as it relates to airport's proprietary powers. In other words, given the federal statutory structure, what authority, if any, is left to the local governments and airport authorities with respect to implementing congestion pricing mechanisms? Third, the report will review the two previous examples of alternative pricing mechanisms proposed by local airport authorities, both of which resulted in federal litigation. The first, in 1969, at New York's LaGuardia Airport, was approved by the federal court, while the second, at Boston's Logan Airport, was rejected by the reviewing court. Finally, this section will discuss some of the legal issues that may arise should the FAA attempt to offer congestion pricing as a federal mandate. These may include such issues as whether the FAA has the proper statutory authority and whether laws related to the financing and use of funds by airports may need to be adjusted or amended.

⁵⁰ Ball, Michael, Donohue, George, and Hoffman, Karla. Auctions for the Safe, Efficient and Equitable Allocation of Airspace System Resources. Found in Cramton, P., Y. Shoham and R. Steinberg, eds. *Combined Auctions*, MIT Press, Cambridge, Chapter 22, p 507-538. 2006.

⁵¹ Ibid.

Federal Aviation Laws

Since the passage of the Civil Aeronautics Act in 1938 (CAA),⁵² the federal government has worked to establish a coherent national aviation policy that places the primary responsibility for regulating the air transportation system with federal agencies, while at the same time attempting to retain local control over certain ground-related elements, including monitoring of noise, land-use, and zoning. The CAA set forth, *inter alia*, the encouragement and development of the air transportation system, the regulation of air transportation to assure a high degree of safety and sound economic conditions, and the promotion of efficient service by air carriers without unfair competitive practices or unjust discrimination.⁵³ Although replaced in 1958 by the Federal Aviation Act,⁵⁴ the general policy language has largely been retained and the federal government has continued to assert primary control over much of the aviation sector, especially with respect to airspace, safety, and discrimination related issues. In addition, the Federal Aviation Act included a specific preemption provision that prohibits state and local authorities, including airport authorities, from enacting and enforcing laws related to airline “price, route, or service.”⁵⁵ Moreover, the statutory language expressly preserves state and local authority with respect to an airport’s “proprietary powers,” which will be discussed in more detail below.⁵⁶ Finally, it should be noted that most economic regulation of the aviation sector was eliminated by the adoption of the Airline Deregulation Act of 1978.⁵⁷

With respect to airspace, current law clearly establishes that it is the federal government that controls the sovereignty of U.S. airspace.⁵⁸ Specifically, the Federal Aviation Administration (FAA) is charged with “develop[ing] plans and policy for the use of the navigable airspace and assign[ing] by regulation or order the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace.”⁵⁹ Statutes such as these are generally considered “field preemption” statutes or instances where Congress, by the nature of its action, can claim to have preempted or occupied an entire area of the law. Generally, the Supreme Court has found field preemption in two types of situations: (1) where “the scheme of federal regulation is sufficiently comprehensive to make reasonable the inference that Congress ‘left no room’ for supplementary state regulation;”⁶⁰ or (2) “where the field is one in which ‘the federal interest is so dominant that the federal system will be assumed to preclude enforcement of state laws on the same subject.’”⁶¹ As a result of these statutes, the states and other political subdivisions such as local governments

⁵² Civil Aeronautics Act of 1938, P.L. 75-706, 52 Stat. 973 (1938).

⁵³ *See id.*

⁵⁴ Federal Aviation Act of 1958, P.L. 85-726, 72 Stat. 731 (1958).

⁵⁵ *Id.* at § 105 (codified as amended at 49 U.S.C. § 41713(b)(1) (2000)).

⁵⁶ 49 U.S.C. § 41713(b)(3) (2000).

⁵⁷ Airline Deregulation Act of 1978, P.L. 95-504, 92 Stat 1705 (1978).

⁵⁸ *See id.* at § 307 (codified as amended at 49 U.S.C. § 40103(a)(1) (2000) (stating that “[t]he United States Government has exclusive sovereignty of airspace of the United States”).

⁵⁹ Department of Transportation Act of 1966, P.L. 89—670, § 6(c)(1), 80 Stat. 938 (1966) (codified as amended at 49 U.S.C. § 40103(b)(1) (2000)).

⁶⁰ *Hillsborough County v. Automated Med. Lab., Inc.*, 471 U.S. 707, 713 (1985) (quoting *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230 (1947)).

⁶¹ *Id.* (quoting *Rice*, 331 U.S. at 230).

and airport authorities have had limited ability to adopt measures and policies that interfere with the federal government's ability to control airspace and other aviation related issues.⁶²

In addition to the federal preemption statutes, local governments and airport authorities are also limited by federal law with respect to their ability to raise and spend specific fees and taxes. For example, taxes and other charges imposed by local governments or airport authorities for use of the facility are generally prohibited by the Anti-Head Tax Act of 1973.⁶³ Moreover, the Anti-Head Tax Act prohibits state and/or local governments, and airport authorities from taking other actions that "unreasonably burden and discriminate against interstate commerce."⁶⁴

The acceptance of federal funding, specifically those awarded out of the Airport Improvement Fund (AIP), also restricts local authority with respect to aviation issues. Specifically, as a condition of receiving AIP grant funds, an airport must provide access to its facilities on a reasonable basis and without discrimination, and must also charge airlines similar prices for similar use.⁶⁵ Furthermore, the statute requires that airports accepting AIP funds must undertake efforts to ensure that its rate structure makes the facility "as self-sustaining as possible."⁶⁶

Airport's Proprietary Powers

In *City of Burbank v. Lockheed Air Terminal, Inc.*,⁶⁷ the Supreme Court, in an opinion by Justice Douglas, established what has become known as the "proprietor exception" to the general federal preemption of local authority with respect to aviation law. In creating this exception, which reserves some authority for local governments and airport authorities, Justice Douglas appeared to draw a distinction between municipalities exercising control as proprietors and municipalities exercising police powers in a way that conflicts with federal law.⁶⁸

Since *City of Burbank*, the lower federal courts have generally held that "an airport proprietor can issue only 'reasonable, nonarbitrary, and nondiscriminatory rules that advance the local interest.'"⁶⁹ While under this standard courts have upheld regulations aimed at monitoring noise levels,⁷⁰ addressing environmental concerns,⁷¹ and managing ground congestion,⁷² there appears

⁶² See generally, Luis G. Zambrano, *Balancing the Rights of Landowners with the Needs of Airports: The Continuing Battle Over Noise*, 66 J. AIR L. & COMM. 445 (2001); see also Ann T. Field & Frances K Davis, *Can the Legal Eagles Use the Ageless Preemption Doctrine to Keep American Aviators Soaring Above the Clouds and into the Twenty-First Century?*, 62 J. AIR L. & COMM. 315 (1997).

⁶³ Anti-Head Tax Act of 1973, P.L. 93-44 § 7(a), 87 Stat. 90 (1973) (codified as amended at 49 U.S.C. § 40116(b) (2000) (expressly prohibiting "a State, a political subdivision of a State, and any person that has purchased or leased an airport" from levying or collecting "a tax, fee, head charge, or other charge on: (1) an individual traveling in air commerce; (2) the transportation of an individual traveling in air commerce; (3) the sale of air transportation; or (4) the gross receipts from that air commerce or transportation.").

⁶⁴ *Id.* (codified as amended at 49 U.S.C. § 40116(d)(2)(A) (2000)).

⁶⁵ See Airport and Airway Improvement Act of 1982, P.L. 97-248 §§ 503(a)(6), 505(b)(2), 509(b)(1)(E), 511(a)(1)(B), 96 Stat. 673-87 (1982) (codified as amended at 49 U.S.C. § 47107(a)(2)(A)-(B) (2000)).

⁶⁶ *Id.* (codified as amended at 49 U.S.C. 47107(a)(13)(A) (stating that "the airport owner or operator will maintain a schedule of charges for use of facilities and services at the airport ... that will make the airport as self-sustaining as possible under the circumstances existing at the airport, including volume of traffic and economy of collection.").

⁶⁷ 411 U.S. 624, 626 (1973).

⁶⁸ See *id.* at 635 n. 14.

⁶⁹ See *American Airlines v. Dep't of Transp.*, 202 F.3d 788, 806 (5th Cir. 2000).

⁷⁰ See *Santa Monica Airport Ass'n v. City of Santa Monica*, 659 F.2d 100, 104 (9th Cir. 1981); (limiting the permissible (continued...))

to be no justification for a broad grant of proprietary power. In 2000, the Fifth Circuit rejected an interpretation of the proprietor exception that would have permitted an airport owner to “allocate traffic between two airports so as to preserve the short-haul nature of one facility.”⁷³ It is worth noting, however, that in the same Fifth Circuit Court of Appeals decision, which involved the now-repealed “Wright Amendment,” the court did note a willingness to review the exercise of proprietary powers with respect to advancing previously unrecognized local interests, but not in this particular case.⁷⁴ As none of these rulings appear to have addressed the issue of congestion pricing, it is at best unclear whether such authority is permissible or within the so-called “proprietor exemption.”

Previous Attempts to Impose “Congestion Pricing” Mechanisms

As previously mentioned, there have been two attempts at imposing fee mechanisms that might be considered “congestion pricing” broadly defined. These attempts both emanated from the local airport authorities and were met with resistance from adversely affected interests and, in the case of Boston’s Logan International, from the FAA, primarily on federal preemption grounds. We will discuss each attempt in turn.

New York’s LaGuardia Airport

In 1968, the Port Authority of New York and New Jersey, which operates four airports in and around New York City (LaGuardia (LGA), John F. Kennedy International (JFK), Newark Liberty International (EWR), and Teterboro (TEB)), sought—“for the purpose of relieving congestion and achieving the maximum efficient operation at the airports”—to impose a \$25 minimum charge for landing during peak hours.⁷⁵ The fee applied to any aircraft that took off or landed during the peak hours and had a seating configuration of less than 25 passengers.⁷⁶ The fee applies at the three major Port Authority air-carrier airports, LaGuardia, JFK, and Newark, but not at Teterboro Airport. A lawsuit was brought on the grounds that the so-called “take-off” fees impermissibly discriminated in favor of commercial airlines and against general aviation interests.

Plaintiffs argued, *inter alia*, that the FAA is vested with the sole authority to regulate and control the national airspace and, therefore, the Port Authority violated federal law in imposing the \$25 “take-off” fee.⁷⁷ In addition to the preemption argument, plaintiffs argued first that the FAA is required by law to expressly approve of the Port Authority’s regulations, or at a minimum is

(...continued)

subject matter of local regulations to “aircraft noise and other environmental concerns at the local level”); *see also British Airways v. Port Authority of New York*, 558 F.2d 75, 84 (2d Cir. 1977) (stating that a proprietor “is vested only with the power to promulgate reasonable, non-arbitrary and non-discriminatory regulations that establish acceptable noise levels for the airport and its immediate environs”).

⁷¹ *See National Helicopter Corp. of America*, 137 F.3d 81, 88-89 (2d Cir. 1998).

⁷² *See Western Air Lines v. Port Authority of New York and New Jersey*, 658 F. Supp. 925, 958 (S.D.N.Y. 1986).

⁷³ *See American Airlines*, 202 F.3d at 807.

⁷⁴ *Id.* at 808.

⁷⁵ *See Aircraft Owners and Pilots Ass’n, v. Port Authority of New York*, 305 F.Supp. 93, 98 (D.C.N.Y. 1968).

⁷⁶ *Id.* According to the court, the fee apparently had two exceptions, one for helicopters and the other for air taxis operating pursuant to Port Authority permits. *See id.*

⁷⁷ *See id.* at 104.

required to conform their compatibility with grant and other aid agreements.⁷⁸ Second, according to the plaintiffs, “Teterboro is not a reasonably convenient nor adequate facility as an alternate to the three major New York airports” and, therefore, the diversion of general aviation to Teterboro would result in a practical exclusion from the New York area airports. Finally, the plaintiffs asserted a variety of non-legal or policy arguments against the proposal. These arguments included that it would be ineffective to remedy the airport situation, which was due to over-scheduling by commercial airlines and not general aviation,⁷⁹ that diversion would not resolve the disparity between airport capacity and demand,⁸⁰ and that the record indicated that the commercial airlines were intimately involved in the proposal and even offered to subsidize ground transportation from Teterboro to provide further incentive for moving general aviation away from the other airports.⁸¹

In response to the preemption argument, the court first noted that there exists room “for the operation of Port Authority Regulations which have the effect of curtailing activities not forbidden by federal regulation.”⁸² As a result, according to the court, nothing in the proposed Port Authority regulations “runs counter to the FAA regulation in the sense that it seeks to authorize conduct which the federal regulation prohibits or requires the cessation of a practice required by federal regulation.”⁸³ In response to the argument that the FAA was required to approve the Port Authority regulations, the court held that there was enough evidence on the record to indicate that there was no “inherent incompatibility” with federal law.⁸⁴ Next, the court addressed the argument that Teterboro is not “reasonably convenient” to New York City. The court held that Teterboro is “not a nil facility or a purgatorial alternative” and, thus, does provide a valid basis for limiting the Port Authority’s attempts to relieve the region’s congestion.⁸⁵ With respect to the other arguments raised by the plaintiffs, the court found no facts relevant to the dispute and entered judgment in favor of the defendants, thereby allowing the fees to go into effect.⁸⁶

Boston’s Logan International Airport

In 1989, the First Circuit Court of Appeals decided *New England Legal Foundation v. Massachusetts Port Authority*,⁸⁷ which addressed the validity of the landing fee scheme implemented by the Massachusetts Port Authority (Massport) as part of a multi-phased “Program for Airport Capacity Efficiency (PACE).”⁸⁸ The fees at issue were to be a combination of a flat-rate landing fee of \$91.78 plus a weight-based fee of \$0.5417 per 1000 pounds.⁸⁹

⁷⁸ *See id.* at 107.

⁷⁹ *See id.* at 108.

⁸⁰ *See id.* at 109.

⁸¹ *See id.* at 109.

⁸² *Id.* at 105.

⁸³ *Id.*

⁸⁴ *Id.* at 107-08.

⁸⁵ *Id.* at 108.

⁸⁶ *Id.* at 109.

⁸⁷ 883 F.2d 157 (1st Cir. 1989).

⁸⁸ *Id.* at 158.

⁸⁹ *Id.* at 159.

Several groups that opposed the new landing fee structure filed an administrative complaint with the FAA alleging that the fees were invalid because they were not “fair and reasonable” and they discriminated against smaller aircraft.⁹⁰ The Secretary of the Department of Transportation (DOT) agreed to review the complaint and commenced an investigation and requested that Massport suspend implementation of PACE.⁹¹ Massport declined and indicated that it would implement the new fees on July 1, 1988. While the FAA investigation was pending, a separate group filed suit in federal court seeking declaratory and injunctive relief preventing Massport from implementing the PACE landing fees.⁹² In addition, the opposition groups who had sought administrative relief also filed suits in federal court. All three lawsuits contained similar allegations and were consolidated. The suits alleged that by shifting the cost burden of the landing fees from the larger aircraft to the smaller, the new method conflicts with various federal statutes that regulate the national airspace and were therefore preempted.⁹³ The fees were also alleged to be constitutionally invalid not only because by placing an undue burden on interstate commerce they violated the Commerce Clause,⁹⁴ but also because they discriminated illegally against small aircraft in contravention of the Equal Protection and Due Process Clauses of the Fourteenth Amendment.⁹⁵

The district court, ruling orally from the bench, found in favor of Massport. On the question of preemption, the court found that there was no preemption because Congress, in passing the Airline Deregulation Act of 1978,⁹⁶ intended the proprietor to set the landing fees.⁹⁷ With respect to allegations of unreasonableness, the court found that the fees were reasonable because they were fixed “according to [a] uniform, fair and practical standard ... [and were] non-excessive in comparison with the governmental benefit conferred” and were “relevant to the operation of the airport ... and fairly consonant with the cost incurred.”⁹⁸ Finally, regarding the alleged discriminatory effect, the court held that “because the objectives of the airport to reduce congestion and delay are rationally related to legitimate governmental interest ... [the fees]

⁹⁰ Opponents included the National Business Aircraft Association, the Aircraft Owners and Pilots Association and the Regional Airline Association. *See id.* at 160.

⁹¹ *See id.*

⁹² The New England Legal Foundation filed the suit on behalf of itself as well as the Associated Industries of Vermont, Eastern Air Charter, Inc., Montair Flight Service, Inc., Ferns Flying Service, Inc., Emerson Aviation, and two business entities that owned small aircraft using Logan’s facilities. *Id.* at 160-61.

⁹³ The three statutes cited were the Federal Aviation Act of 1958, the Federal Anti-Head Tax Act, and the Airport and Airway Improvement Act of 1982. *Id.* at 161.

⁹⁴ U.S. CONST. Art. 1, § 8, cl. 3.

⁹⁵ U.S. CONST. Amend. XIV. It should be noted that the Department of Justice, representing the Department of Transportation (DOT), filed an *amicus curiae* brief indicating its interest in the case and suggesting that if the court could not resolve the issues prior to July 1, 1988, that it issue an injunction preventing the implementation of the PACE fee structure pending the outcome of the DOT investigation. *Id.* at 161.

⁹⁶ Airline Deregulation Act of 1978, P.L. 95-504 § 105(b)(1), 92 Stat 1705 (1978) (codified as amended at 49 U.S.C. § 41713(b)(3) (2000) (stating that “Nothing in ... this section shall be construed to limit the authority of any State or political subdivision thereof or any interstate agency or other political agency of two or more States as the owner or operator of an airport served by any air carrier certificated by the Board to exercise its proprietary powers and rights.”).

⁹⁷ *Id.* at 162 (citing *Wardair Canada, Inc. v. Florida Department of Revenue*, 477 U.S. 1 (1986); *Western Airlines, Inc. v. Port Authority of New York and New Jersey*, 817 F.2d 222 (2d Cir. 1987); and *Midway Airlines, Inc. v. County of Westchester*, 584 F.Supp. 436 (S.D.N.Y.1984)

⁹⁸ *Id.* (citing *Evansville—Vanderburgh Airport Authority District v. Delta Airlines, Inc.*, 405 U.S. 707, 713, 717 (1972); *American Airlines, Inc. v. Massachusetts Port Authority*, 560 F.2d 1036, 1039 (1st Cir. 1977)).

enhance economic and operating efficiency” and, therefore, are not discriminatory.⁹⁹ As a result of the district court’s ruling, the PACE fee structure went into effect on July 1, 1988.

Litigation then shifted to the DOT, who appointed an Administrative Law Judge (ALJ) to recommend a decision based on the evidence submitted. The ALJ concluded that the PACE fees were: (1) in violation of Massport’s grant assurances as they were not “fair and reasonable;” (2) unjustly discriminatory, and were in violation of various federal statutes,¹⁰⁰ and thereby invasive of the DOT’s authority and; (3) preempted by federal law.¹⁰¹ In addition, to these major findings, the ALJ also held that Hanscom Field cannot be considered an alternative to Logan International because it “lacks the connecting opportunities that are otherwise available at Logan.”¹⁰² On appeal to the Secretary of Transportation, the Secretary affirmed and adopted the ALJ’s recommendations; however, the Secretary indicated that the ALJ “overstated the extent of the preemptive role of the federal government in the control of airport access and access to the national air transportation system.”¹⁰³ According to the Secretary, “it is ... within an airport proprietor’s authority to impose reasonable [nondiscriminatory,] landing fees or other user fees, even if such fees may result in a decline in usage by a class of user or other indirect effects on users.”¹⁰⁴ Moreover, “[w]hile an airport sponsor has wide latitude in recovering costs and using fees to improve the efficient use of airport facilities, the FAA is vested with the authority to control, regulate and manage air traffic.”¹⁰⁵ As a result of the Secretary’s decision, Massport suspended the PACE fee on December 27, 1988, pending the outcome of its appeal.

Both the district court’s decision and the Secretary’s affirmation of the ALJ’s findings were appealed to the First Circuit Court of Appeals. The appeals court divided its analysis by statutory provision. First, the court addressed the allegations that the fees were unreasonable and in violation of section 511 of the Airport and Airway Improvement Act of 1982. The court affirmed the Secretary’s determination that the fees were unreasonable on agency deference grounds, concluding that the record firmly supports the Secretary’s conclusions and that the issue is “definitely an area of expertise primarily reserved to the Secretary’s discretion, and not to be second-guessed by appellate courts....”¹⁰⁶

Next, the court reviewed the findings of both the district court and the Secretary with respect to the Federal Anti-Head Tax Act. The district court had found the fees to be reasonable, thus not in violation, while the ALJ and ultimately the Secretary had concluded that the fee was not a head-tax or its equivalent, thus the statute was not implicated. The appeals court upheld both holdings, though it utilized the rationale provided by the Secretary, concluding that Massport’s fee structure was “outside the scope of [the act], as not being ... ‘a charge ... on persons traveling in air commerce,’ nor is it a levy ‘on the carriage of persons’ so traveling, ‘on the sale of air transportation,’ or ‘on the gross receipts derived therefrom.’”¹⁰⁷

⁹⁹ *Id.* at 162.

¹⁰⁰ The statutes specifically cited were sections 307 and 105 of the Federal Aviation Act of 1958. *Id.*

¹⁰¹ *Id.* at 163.

¹⁰² *Id.*

¹⁰³ *Id.* at 165.

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ *Id.* at 170 (citing *Chevron U.S.A. v. Natural Resources Defense Council*, 467 U.S. 837, 844 (1984); *McInnis v. Weinberger*, 530 F.2d 55, 63 (1st Cir. 1976)).

¹⁰⁷ *Id.* at 170 (citing 49 U.S.C. App. § 1513 (1988) re-codified as amended at 49 U.S.C. § 40116 (2000)).

Finally, the appeals court addressed the preemption issues raised by sections 105 and 307 of the Federal Aviation Act of 1958 as amended. On this issue the district court and the Secretary had disagreed, with the court finding the fees reasonable and hence not preempted, while the Secretary found them to be unreasonable and, therefore, preempted by federal law. The appeals court ultimately concluded that the district court erred “not only in its decision, but also in not deferring to the Secretary’s primary jurisdiction over this controversy as was requested by the DOT in its last minute amicus intercession.” Relying on the doctrine of “primary jurisdiction” the court held that in cases such as these “[w]hen there is a basis for judicial action, independent of agency proceedings, courts may route the threshold decisions as to certain issues to the agency charged with primary responsibility for governmental supervision or control of the particular industry or activity involved.”¹⁰⁸ In other words, the district court should have deferred its judgment until after the FAA and the Secretary had investigated and completed their administrative review. Turning to the merits of the Secretary’s decision, the court concluded that Massport’s fee structure was an impermissible interference with air navigation and, therefore, preempted by federal law.¹⁰⁹ Having decided the case on statutory grounds, the court declined to address the constitutional issues raised by the Commerce Clause or the Fourteenth Amendment.¹¹⁰

Based on these two cases it is difficult to discern precisely where the courts are with respect to airport imposed pricing mechanisms intended to relieve congestion. At one level it seems that perhaps the different results reached turned on the availability and feasibility of alternative landing sites for the smaller general aviation planes that were adversely affected by both pricing schemes. In the case of New York and Teterboro, the court found that to be a viable alternative, whereas with respect to Boston and Hanscom the ALJ was not persuaded that the alternative location was reasonable. Resting on this distinction, however, appears to oversimplify many of the complex issues that the court and the ALJ dealt with in the Massport case. The development of aviation law and addition of new statutes in the 20 years between the two cases appeared to play an integral role in the difference between the results. Currently, the law remains nearly identical to what it was in *Massport*, thereby making it unlikely that another attempt by a local airport authority to impose a similar pricing scheme without the FAA’s express approval would succeed. Admittedly, this analysis appears to render the fees at LaGuardia *sui generis*;¹¹¹ however, such a conclusion appears to be a reasonable way to reconcile what on their face seem to be two irreconcilable judicial decisions. That said, it does not appear to be *per se* impossible for local airport authorities to take action. It may be that a fee structure could be developed that imposes fees—designed to reduce congestion—that are reasonable, non-discriminatory, and based on the airport’s historical operating costs. Assuming such a fee structure could be developed, it appears possible that it may not be in violation of either federal law or FAA regulations.

¹⁰⁸ *Id.* at 171 (citing *Port of Boston Marine Terminal Ass’n v. Rederiaktiebolaget Transatlantic*, 400 U.S. 62, 68 (1970); see also *United States v. Western Pacific R. Co.*, 352 U.S. 59, 63-65 (1956); *Far Eastern Conf. v. United States*, 342 U.S. 570, 573-75 (1952)).

¹⁰⁹ *Id.* at 175 (stating that “the actions of Massport under its new landing fee scheme are even more clearly prohibited by this provision as an interference with air navigation”).

¹¹⁰ *Id.* at 176 (stating that “in keeping with longstanding precedent that requires us to avoid ruling on constitutional issues when non-constitutional grounds are dispositive, we shall not pass upon the questions raised dealing with alleged independent violations of the Interstate Commerce Clause and the Equal Protection and Due Process Clauses.”).

¹¹¹ Meaning of its own kind/genus or unique in its characteristics. See BLACK’S LAW DICTIONARY, 1448 (7th Ed. 1999).

Potential Legal Issues Should FAA Impose Congestion Pricing

As the previous section indicated, all of the prior attempts at imposing congestion pricing mechanisms have been locally generated by the airport authorities. Neither the FAA nor the DOT have, to date, attempted to develop and impose a congestion pricing scheme on the local authorities. In the event that FAA should decide to make such an attempt, it appears that there are several legal issues that may arise.

First, there appears to be a question of legal authority. Does FAA have the legal authority to impose such a system without a change in the current statutes? Based on a review of the statutes currently in place, it appears that the FAA has a reasonable basis to proceed. While it is true that there is no specific statute that directly provides FAA with such authority, an argument can be made that, by virtue of the agency's statutory mandate with respect to the airspace of the United States, the legal authority exists. Phrased another way, if the FAA characterizes the imposition of a congestion pricing scheme as an "airspace," "air traffic," or "air navigation" means of managing it may be argued that it would fall within the agency's existing authority provided by Congress to "develop plans and policy for the use of the navigable airspace and assign by regulation or order the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace."¹¹² This argument would also appear to be consistent with the Secretary's finding in *Massport* that the "FAA is vested with the authority to control, regulate and manage air traffic."¹¹³ Yet another way of looking at this is potentially through a "negative preemption" type argument.¹¹⁴ In other words, if, as the DOT argued in *Massport*, the local airport authorities are preempted by federal law from imposing unreasonable and/or discriminatory fees—even to reduce congestion—then it stands to reason that the federal government, through the FAA, is the *only* place where such a regulation could originate.

In addition, it should be noted that there appears to be a generally-applicable federal statute that permits the heads of agencies to "prescribe regulations establishing the charge for a service or thing of value provided by the agency."¹¹⁵ The statute requires that each charge "shall be: (1) fair; and (2) based on—(A) the costs to the Government; (B) the value of the service or thing to the recipient; (C) public policy or interest served; and (D) other relevant facts."¹¹⁶ The Supreme Court has held that this authority extends to "only specific charges for specific services to specific individuals or companies."¹¹⁷ Based on the plain language of this statute, it appears possible for the FAA to assert that the "thing of value" provided is access to the national airspace; therefore, imposing fees and charges, provided they meet the requirements of the statute, is arguably permissible. Although it does not appear that this statute has ever been used with respect to fees relating to airspace use, during its existence the Civil Aeronautics Board did use the statute to

¹¹² Department of Transportation Act of 1966, P.L. 89—670, § 6(c)(1), 80 Stat. 938 (1966) (codified as amended at 49 U.S.C. § 40103(b)(1) (2000)).

¹¹³ *Massport*, 883 F.2d at 165.

¹¹⁴ "Negative preemption" occurs in cases where the state and/or local authorities are prohibited from regulating even where the responsible federal agency is silent. *See, e.g.,* Susan J. Stabile, *Preemption of State Law by Federal Law: A Question for Congress or the Courts?*, 40 VILL. L. REV. 1, 6-7 (1995) (citing *Arkansas Elec. Coop. Corp. v. Arkansas Pub. Serv. Comm'n*, 461 U.S. 375, 384 (1983); *Ray v. Atlantic Richfield Co.*, 435 U.S. 151, 178 (1978); *Machinists v. Wisconsin Employment Relations Comm'n*, 427 U.S. 132 (1975)).

¹¹⁵ Independent Offices Appropriation Act of 1952, P.L. 137, § 501, 65 Stat. 268, 290 (1958) (codified as amended at 31 U.S.C. § 9701 (2000)).

¹¹⁶ *Id.*

¹¹⁷ *Federal Power Com'n v. New England Power Co.*, 415 U.S. 345, 349 (1974).

impose and modify various filing and licensing fees,¹¹⁸ so its use in the aviation context is not without precedent.

A second question that arises has to do with the idea of reasonableness and non-discrimination in setting airport fees. If one accepts the authority argument that only the FAA can impose a congestion pricing system, it appears to follow then that the restrictions currently in place that prohibit state and local authorities from discriminating and imposing unreasonable fees would not apply, as the pricing scheme would be federally imposed and not locally mandated. Similarly, none of the AIP restrictions on local airport authorities appear to be implicated by an FAA imposed congestion pricing scheme. A more complicated set of questions arise should the FAA decide not to impose congestion pricing directly, but rather to delegate the authority to impose congestion pricing to various local airport authorities. In this situation, it would appear that either FAA would have to waive the restrictions on reasonableness and non-discrimination or simply refuse to enforce the potential violations that may ensue from implementation of its mandate. Based on a plain reading of both the Anti-Head Tax¹¹⁹ and the Airport and Airway Improvement Act of 1982,¹²⁰ neither statute appears to provide the Secretary or the Administrator of the FAA with the authority to grant waivers for states to levy taxes, or from the non-discrimination and reasonableness requirements. In fact, the Airport and Airway Improvement Act of 1982 seems to require that approval be granted “*only if* the Secretary receives written assurances, satisfactory to the Secretary, that ... the airport will be available for public use on reasonable conditions and without unjust discrimination.”¹²¹ Hence, it would appear that should the FAA attempt to delegate its authority over a potential congestion pricing scheme to the local airport authorities, it will first have to seek a statutory change from Congress.

A third question arises with respect to the use of any funds collected from the imposition of a federally mandated congestion pricing scheme. Even if it is accepted that FAA has the legal authority to implement a congestion pricing scheme it does not automatically follow that the FAA or the DOT would be permitted to retain the fees collected. It is a generally accepted principle of federal appropriations law that absent statutory authority to the contrary, the “miscellaneous receipts statute”¹²² requires agencies to deposit funds received for the government into the federal Treasury, otherwise known as the “general fund.” An agency may only retain such moneys it receives if it has statutory authority to do so. According to decisions of the Comptroller General, the “miscellaneous receipts statute” does not apply if there is specific statutory authority for the agency to retain the funds.¹²³ Consequently, absent such specific authority, it would appear that even if the FAA were to delegate congestion pricing authority to the local airport authorities, the money would still be required to go to the Treasury’s “general fund.” This conclusion follows from principles of delegation; namely, that government entities cannot delegate authority that they themselves do not possess.¹²⁴ Hence, if FAA does not possess the authority to keep the fees that it collects from a congestion pricing scheme, it cannot properly delegate the power to keep the fees to a local airport authority. In sum, should it be desired that the funds collected from a congestion pricing mechanism go anywhere but the “general fund,” Congress will have to pass a

¹¹⁸ See *Air Transport Ass’n of America v. C.A.B.*, 732 F.2d 219, 221 (D.C. Cir. 1984).

¹¹⁹ 49 U.S.C. § 40116 (2000).

¹²⁰ 49 U.S.C. § 47107 (2000).

¹²¹ *Id.* at (a)(2) (emphasis added).

¹²² 31 U.S.C. § 3302(b) (2000).

¹²³ See, e.g., 72 Comp. Gen. 164, 165—66 (1993).

¹²⁴ See, e.g., *Northern Pipeline Constr. Co. v. Marathon Pipe Line Co.*, 458 U.S. 50 (1982).

statute authorizing the retention and expenditures of the funds. Similarly, it appears that any expenditures of funds collected will have to be specifically authorized and appropriated by Congress.¹²⁵

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¹²⁵ See 31 U.S.C. § 1341 (2000) (prohibiting the expenditure of federal funds without express authorization by Congress).