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# AIRLINE DEREGULATION

# Barriers to Entry Continue to Limit Competition in Several Key Domestic Markets

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**United States**
**General Accounting Office**
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**Resources, Community, and**
**Economic Development Division**

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The Honorable Larry Pressler
Chairman, Committee on Commerce,
Science, and Transportation
United States Senate

Dear Mr. Chairman:

Earlier this year, in a report prepared at your request, we reported that, overall, airfares have decreased and service has improved since the deregulation of the airline industry in 1978.[1] A key factor contributing to this trend has been the increased competition spurred by the entry of (1) new airlines into the industry and (2) established airlines into new markets. Nevertheless, we also found that a number of airports, primarily in the Southeast and upper Midwest, have not experienced such entry and therefore have not experienced the lower fares and improved service that deregulation has brought to the rest of the nation.

Our April 1996 report was the latest in a series of studies over the past decade in which we have examined competition in the deregulated airline industry.[2] In August 1990, we reported that several operating and marketing practices, such as incumbent airlines leasing airport gates under long-term, exclusive-use terms, had begun to restrict entry to an extent not fully anticipated by the Congress when it deregulated the industry.[3] In 1991, we reported that many of these barriers to entry contributed to higher fares.[4] Concerned about our finding earlier this year that some communities have not shared in the economic benefits of deregulation, you asked us to update our work on barriers to entry. Specifically, you asked us to determine if barriers still exist that prevent airlines—particularly those airlines that started after deregulation—from serving new markets and, if so, how these barriers have affected airfares and service.

[1] Airline Deregulation: Changes in Airfares, Service, and Safety at Small, Medium-Sized, and Large Communities (GAO/RCED-96-79, Apr. 19, 1996).

[2] These products are listed at the end of this report.

[3] Airline Competition: Industry Operating and Marketing Practices Limit Market Entry (GAO/RCED-90-147, Aug. 29, 1990).

[4] Airline Competition: Effects of Airline Market Concentration and Barriers to Entry on Airfares (GAO/RCED-91-101, Apr. 26, 1991).

## Results in Brief

Barriers to entry persist in the airline industry. Access to airports continues to be impeded by (1) federal limits on takeoff and landing slots at the major airports in Chicago, New York, and Washington;[5] (2) long-term, exclusive-use gate leases; and (3) "perimeter rules" prohibiting flights at New York's LaGuardia and Washington's National airports that exceed a certain distance. While these operating barriers can potentially affect any airline, they primarily affect airlines that were started after deregulation. The newer airlines are affected the most because the established carriers hold nearly all of the slots, are usually the beneficiaries of exclusive-use gate leases, and have their hubs located close enough to LaGuardia and National that their operations are not limited by perimeter rules. These barriers particularly impede the entry of newer airlines into key markets in the East and upper Midwest because several airports in those regions have leased most of their gates to one airline.

Even where airport access is not a problem, airlines sometimes choose not to enter new markets because certain strategies of the established airlines make it extremely difficult for other carriers to attract traffic. These marketing strategies include bonus commissions paid to travel agents, frequent flier plans, airline ownership of the computer reservation systems used by travel agents, and code-sharing partnerships with commuter carriers.[6] Taken together, these marketing strategies deter new as well as established airlines from entering those markets where an established airline is dominant. As a result, competition suffers, leading to higher airfares. The effect of these strategies tends to be the greatest—and fares the highest—in markets where the dominant carrier's position is protected by operating barriers. On the other hand, measuring the effects of barriers to entry on the quality of service is more difficult. While barriers reduce the number of competing service options, consumers receive benefits in other ways, such as free frequent flier trips.

## Background

Before 1978, the Civil Aeronautics Board controlled the number of markets that established airlines could enter and prevented new airlines from forming. Concerned that these practices had caused fares to be too

[5]To minimize flight delays, the Federal Aviation Administration limits the number of operations (takeoffs and landings) that can occur during certain periods of the day at four congested airports—O'Hare in Chicago, National in Washington, D.C., and Kennedy and LaGuardia in New York. The authority to conduct a single operation during these periods at these four airports is commonly referred to as a "slot."

[6]Code-sharing is the practice whereby one airline lists another airline's flights as its own in computer reservation systems.

high and inhibited the industry's growth, the Congress passed the Airline Deregulation Act of 1978. The act phased out federal control of domestic air service and relied on market forces to decide fares and levels of service.

Since deregulation, established airlines have expanded into many new markets and numerous new airlines have started up. Many of these new airlines began operations shortly after deregulation and have since failed; some established carriers, such as Eastern and Pan Am, also failed. Nevertheless, a few airlines that were formed during this period still operate, including America West, Midwest Express, and Southwest.[7] The majority of the airlines that have started service since deregulation, however, have come into being in the past few years, primarily as the result of a growing economy and large supplies of less-expensive used airplanes and available pilots. As a result, their cost structures tend to be lower than those of the established airlines. In general, the 38 airlines that have started up since deregulation, and which operated during 1995, are much smaller in terms of the number of passengers, the size of their fleets, and their financial resources than the 10 established carriers, which include the 7 largest airlines—American, Continental, Delta, Northwest, TWA, United, and USAir. (See app. I.)

## Operating Barriers Continue to Block the Entry of New Competitors in Eastern and Upper Midwestern Markets

Operating barriers still limit entry at a number of important airports, and in some cases they have grown worse since our report in 1990. For example, a few established airlines have further increased their control over takeoff and landing slots at the slot-controlled airports in Chicago, New York, and Washington. As a result, little new entry has occurred at these airports. Opportunities for establishing new or expanded service also continue to be limited at other airports by long-term, exclusive-use gate leases that prevent nonincumbents from securing the necessary airport facilities on equal terms with the incumbent airlines. While such arrangements exist at many airports across the country, their predominance at several important airports in the East and upper Midwest exacerbates the negative impact of slots on competition in those regions.

[7]Although Southwest started in 1971, it provided air service only within Texas. The airline did not provide interstate service until after deregulation.

## Control of Slots by a Few Airlines Greatly Deters Entry at Key Airports in Chicago, New York, and Washington

To reduce congestion during peak traffic periods, FAA has since 1969 set limits on the number of takeoffs and landings that can occur at four key airports—O'Hare, National, Kennedy, and LaGuardia. By allowing new airlines to form and established airlines to enter new markets, deregulation increased the demand for access to these airports. Such increased demand complicated FAA's efforts to allocate takeoff and landing slots equitably among the airlines. As a result, to minimize the government's role in the allocation of slots, the Department of Transportation (DOT) amended its rules in 1985 to allow airlines to buy and sell them to one another.

Under this "Buy/Sell Rule," DOT allocated slots to the holders of record as of December 16, 1985—that is, the incumbents' allocations were "grandfathered." Emphasizing that it still owned the slots, however, DOT randomly assigned each slot a priority number and reserved the right to withdraw slots from the incumbents at any time. In addition, to mitigate the anticompetitive effects of grandfathering, DOT retained about 5 percent of the slots at O'Hare, National, and LaGuardia and in early 1986 distributed them in a random lottery to airlines having few or no slots at those airports.[8]

In 1986, we expressed concern that allowing airlines to buy and sell slots would reduce competition.[9] By the early 1990s, we found that a few carriers had increased their control of slots to such an extent that they could limit access to routes beginning or ending at any of the slot-controlled airports—airports that are crucial to establishing new service in the heavily traveled eastern and midwestern markets.[10] We also reported that while the lottery was successful in placing slots in the hands of some entrants and smaller incumbents, the effect on entry over the long term was disappointing, in part because many of the lottery winners subsequently went out of business or merged with an established carrier.

Since the early 1990s, a few established carriers have continued to build upon the favorable positions they inherited as a result of grandfathering

[8]Kennedy airport was not included in the lottery because DOT considered its slots already to be distributed equitably among the airlines, thereby ensuring adequate competition.

[9]Airline Takeoff and Landing Slots: Department of Transportation's Slot Allocation Rule (GAO/RCED-86-92, Jan. 31, 1986).

[10]Airline Competition: Industry Operating and Marketing Practices Limit Market Entry (GAO/RCED-91-13, Aug. 29, 1990) and Airline Competition: Effects of Airline Market Concentration and Barriers to Entry on Airfares (GAO/RCED-91-101, Apr. 26, 1991).

(see table 1). By contrast, the share held by the airlines that started after deregulation has remained low.

**Table 1: Percentage of Domestic Air Carrier Slots Held by Selected Groups in 1986, 1991, and 1996**

| | Percentage held | | |
|---|---|---|---|
| **Airport/holding entity** | **1/1/86** | **1/1/91** | **6/17/96** |
| **O'Hare** | | | |
| American and United | 66 | 83 | 87 |
| Other established airlines | 28 | 13 | 9 |
| Financial institutions | 0 | 3 | 2 |
| Post-deregulation airlines | 6 | 1 | 1 |
| **Kennedy** | | | |
| Shawmut Bank, American, and Delta | 43 | 60 | 75 |
| Other established airlines | 49 | 18 | 13 |
| Other financial institutions | 0 | 19 | 6 |
| Post-deregulation airlines | 9 | 3 | 7 |
| **LaGuardia** | | | |
| American, Delta, and USAir | 27 | 43 | 64 |
| Other established airlines | 58 | 39 | 14 |
| Financial institutions | 0 | 7 | 20 |
| Post-deregulation airlines | 15 | 12 | 2 |
| **National** | | | |
| American, Delta, and USAir | 25 | 43 | 59 |
| Other established airlines | 58 | 42 | 20 |
| Financial institutions | 0 | 7 | 19 |
| Post-deregulation airlines | 17 | 8 | 3 |

Note 1: Numbers may not add to 100 percent due to rounding.

Note 2: Several airlines that held slots have gone bankrupt, and in part as a result of the bankruptcy proceedings, some financial institutions have acquired slots. At Kennedy, for example, Shawmut Bank holds the slots operated by TWA. Similarly, in addition to purchasing slots, the incumbent airlines have built up their slot holdings as a result of the bankruptcies of other airlines as well as through mergers with other airlines.

Source: GAO's analysis of data from FAA's Slot Administration Office.

Because the number of slots is largely fixed and the holding of those slots is concentrated among a few established carriers, a seller's market has emerged, and slots have become very expensive. FAA officials and numerous airline representatives told us that the price of a slot has risen sharply over the last decade; they estimated that the price now exceeds $2 million for a peak-period slot and $500,000 for an off-peak slot.

Moreover, in order to mount competitive service in a market, an airline generally needs about six slots, with at least three slots falling during the peak periods so that the airline can offer a flight schedule that is attractive to business travelers. As a result, for the airlines that started after deregulation, the cost of purchasing the slots necessary to compete effectively may be prohibitive.

Even if financing can be arranged, buying slots is extremely difficult for newer airlines because the established carriers rarely sell their slots, and when they do, the buyer is usually an airline that already holds a large number of slots at the airport. United Airlines' director of domestic schedules told us, for example, that the airline has not sold a slot at O'Hare in the past 4 years. Likewise, the airline last sold slots at LaGuardia and National in 1993. In the latter two sales, the purchaser was USAir—already a major holder of slots at LaGuardia and National (see table 1). Nevertheless, the airlines that hold most of the slots at the four airports stressed to us that in building upon their grandfathered positions, they have invested a large amount of money buying additional slots and financing the development and expansion of those airports. Both the chief executive officer (CEO) and the president of American Airlines emphasized to us, for example, that American and United have invested hundreds of millions of dollars in financing the development and expansion of Chicago's O'Hare Airport.

The major holders of slots also noted that, as an alternative to buying slots, an airline can lease them from another airline. However, leasing places a nonowner at a competitive disadvantage for two reasons. First, because the established airlines obtained most of their slots directly from FAA in 1986 at no cost, the nonincumbent incurs a cost that the established carrier has never incurred.[11] Second, leases are sometimes for only a short period of time. Under the use-or-lose provision of the Buy/Sell Rule, airlines must use a slot at least 80 percent of the time or it will be revoked by FAA. Hence, to meet this requirement and still protect their slots, the incumbent airlines lease unused slots to other airlines, but only on a short-term basis. At our request, FAA reviewed the leases that were in effect as of July 15, 1996, and found that about 10 percent were for less than 30 days and that another 12 percent were for between 31 and 89 days. While a carrier already operating at an airport may be able to add flights using slots leased for a short term, a new entrant can generally not justify

[11]In addition, because airlines are allowed to treat slots as private assets, even though they are a public good, several established airlines have used them as collateral in securing loans.

the costs of starting new service if its only access to an airport could be terminated on short notice by a potential competitor.

In our August 1990 report, we suggested several options that could open up the slot market and promote entry. These included (1) replacing the Buy/Sell Rule with a system in which DOT leases slots to the airlines or (2) retaining the Buy/Sell Rule but periodically withdrawing a portion of slots from each carrier and reallocating them by lottery. Many representatives of post-deregulation airlines and airport and government officials that we interviewed—including the manager of FAA's Airspace and Air Traffic Law Branch as well as airport officials in Chicago and New York—expressed skepticism that the Buy/Sell Rule was working as intended and commented that the options we have suggested are still valid. In 1994, for example, the Port Authority of New York & New Jersey reiterated to DOT its support for a periodic slot lottery:

> "As a means to improve access for new air carrier entrants, we have previously proposed a modest withdrawal of air carrier slots, not to exceed 3 percent on an annual basis, for reallocation to new entrants and small incumbents by lottery. . . . the FAA is urged to consider this option which would improve the competitive environment, but would not seriously compromise existing operations."

## Congressional Efforts to Spur Entry at Slot-Controlled Airports Have Had Limited Success

Recognizing the need for new entry at the slot-controlled airports, in 1994 the Congress directed DOT to (1) study whether slot controls were still needed and (2) grant exemptions from those controls—in effect, issue new slots—for new entrants seeking to serve either O'Hare, LaGuardia, or Kennedy when DOT "finds it to be in the public interest and the circumstances to be exceptional."[12] In part, the Congress was responding to the National Commission to Ensure a Strong Competitive Airline Industry, which in 1993 recommended that the slot controls be reviewed "with the aim of either removing these artificial limits or raising them to the highest practical level consistent with safety requirements."[13]

In its congressionally directed study, DOT found that eliminating slots would not affect safety and would result in increased competition, thereby

[12]FAA Reauthorization Act of 1994 (P.L. 103-305, sec. 206). The number of flights at National Airport is further limited by federal law to address local concerns about noise. As a result of these additional limits, the Congress chose not to extend DOT's exemption authority to include National.

[13]A Report to the President: Change, Challenge, and Competition, The National Commission to Ensure a Strong Competitive Airline Industry (Aug. 1993).

lowering fares and expanding air service options for consumers.[14] DOT estimated that the annual net benefit to consumers from lower fares and new service—after accounting for the costs to air travelers of increased delays—would be $626 million at O'Hare, $89 million at LaGuardia, $26 million at National, and $7 million at Kennedy. Nevertheless, it concluded that eliminating slots would not be in the public interest because the projected benefits to consumers would be outweighed by the negative impacts on the incumbent airlines in terms of flight delays and reduced profits "when the fare premium presently charged at three of the four airports (O'Hare, LaGuardia, and National) is lost due to increased competition."

The Congress's direction to DOT that the agency grant exemptions from the slot controls to new entrants when DOT finds it to be in the public interest and the circumstances to be exceptional has resulted in little new entry. Few new entries have occurred because DOT has interpreted the "exceptional circumstances" criterion narrowly and has rejected applications to provide service in those markets already receiving nonstop service. As of October 1996, DOT had rejected two of the four requests that it received, despite the competitive benefits for consumers that would result from allowing a nonincumbent to challenge an incumbent's monopoly in a market.

In rejecting a request by Western Pacific in 1995 for four slots to start service between Colorado Springs and O'Hare, for example, DOT emphasized that United Airlines already provided nonstop service. Because of this existing service, the agency concluded that exceptional circumstances did not exist. DOT officials told us that, in their view, Chicago's Midway Airport provided Western Pacific an adequate alternative to O'Hare. Western Pacific's CEO told us that the airline strongly disagrees with DOT and has petitioned the agency to reconsider its decision.

DOT also rejected a bid by Spirit Airlines in 1995 to fly between Detroit and LaGuardia because Northwest already provided nonstop service. DOT explained as follows:

> "We have interpreted the intent of Congress narrowly because of the exceptional circumstances criterion. If Congress had intended that a less restrictive allocation process be established, it would have mandated that the grant of exemptions be based only on a public interest finding. . . . While we recognize that Congress did not explicitly mandate

[14]Report to the Congress: A Study of the High Density Rule, DOT (May 1995).

that exceptional circumstances be applied only in situations where no nonstop service presently existed, it is clear from the legislative background that the lack of nonstop service in larger markets was clearly on the minds of several supporters with regard to the exemption provisions."[15]

In our review of the legislative history, however, we found no congressional guidance on the interpretation of the exceptional circumstances criterion. Moreover, by selecting a very narrow interpretation, DOT has discouraged entry, according to senior management at many airlines that started after deregulation. They told us that DOT's narrow interpretation of the exceptional circumstances criterion discouraged them from applying for slots. Many noted, for example, that they would not "waste the time" applying to DOT for slots in markets where an incumbent carrier already provided nonstop service. They suggested that competition could be substantially increased in some markets if the Congress revised the exemption criteria so that applications resulting in substantial competitive benefits are allowed. Officials from both the Chicago Department of Aviation and the Port Authority of New York & New Jersey stated that they strongly supported such a move.

## Long-Term, Exclusive-Use Gate Leases Also Continue to Hinder Airline Entry

In 1990, our survey of the 66 largest U.S. airports revealed that 85 percent of their gates were leased to established airlines under long-term, exclusive-use leases. At some airports, every gate was under an exclusive-use lease. We concluded that such leases limited entry because, in order to gain access to the airport, a nonincumbent would generally have to sublease gates from the incumbent airlines—often at less preferable times and at a higher cost than the incumbent pays on the master lease. Since then, some airports, such as Los Angeles International, have sought to regain more control of their facilities by signing less restrictive, shorter-term leases when the exclusive-use leases expire.

Nevertheless, senior management at many airlines that started after deregulation told us that long-term, exclusive-use gate leases continue to be a barrier to entry. They identified six airports in particular where this occurs: Charlotte, Cincinnati, Detroit, Minneapolis, Newark, and Pittsburgh. As table 2 shows, the vast majority of gates at each airport are exclusively leased, usually to one established airline. As a result, according to executives at many airlines that started after deregulation, it is extremely difficult to gain competitive access to these airports.

[15]Order Denying Request for Exemption, Application of Spirit Airlines, Inc., DOT (OST-95-265, Aug. 24, 1995).

Table 2: Airports Where Post-Deregulation Airlines Reported Difficulty Gaining Competitive Access to Gates, and the Leasing Arrangements at Those Airports

| Airport | Total number of jet gates | Gates under exclusive-use leases | Major lease holder and date of lease expirations |
|---|---|---|---|
| Charlotte | 48 | 43 | 34 gates leased to USAir until 2007 |
| Cincinnati | 67 | 67 | 50 gates leased to Delta with 9 leases expiring in 2015 and 41 expiring in 2023 |
| Detroit | 86 | 76 | 64 gates leased to Northwest until the end of 2008, with all but 10 under exclusive-use terms |
| Minneapolis | 65 | 65 | 49 gates leased to Northwest with 16 leases already having expired and now on month-to-month basis, and remainder expiring at various times ranging from the end of 1997 to 2015 |
| Newark | 94 | 79 | 43 gates leased to Continental until 2013, 36 gates leased to the other established airlines until 2018, and 15 gates reserved primarily for international use |
| Pittsburgh | 75 | 66 | 50 gates leased to USAir until 2018 |

Source: GAO's presentation of the airports' data.

The airports in Detroit, Newark, and Minneapolis were most frequently cited by the airlines that started after deregulation as having competition limited by constraints in gaining access to gates. Officials at these three airports expressed their strong support of efforts by nonincumbents to obtain gates. Officials at Detroit and Newark told us that several low-fare airlines currently sublease gates from incumbent carriers at their airports. Moreover, acknowledging that competition has been very limited at his airport, the director of the Minneapolis airport indicated that the airport authority attempted in 1991 to take control of one gate left vacant by the bankruptcy of Midway Airlines so that it could lease it to nonincumbents on an as-needed basis. However, Northwest Airlines was successful in gaining control of the gate. The federal courts held that Northwest could be assigned the gate by the bankruptcy trustee, despite the objections of the airport commission.[16] The airport director also told us that Northwest's leases on 16 gates have expired and that he has notified the airline of the airport authority's right to reclaim the gates on a month's notice to accommodate a new entrant. He also noted that over the next several years, the airport will build 6 to 12 new gates, of which 3 to 5 will be held for lease to nonincumbents.

[16] Matter of Midway Airlines, Inc., 6 F.3d 492 (7th Cir. 1993).

Where nonincumbents have gained access to airports by subleasing gates, the access has generally come at less preferable times or at a high cost. The low-fare airline JetTrain, for example, was initially able to secure access to gates at Newark only by subleasing gates from United at times that usually did not conflict with United's schedule. Effectively, this situation has meant that JetTrain has often been compelled to operate at inconvenient, off-peak times, or even not at all. In addition, JetTrain subsequently attempted to lease at least three additional gates from United. Before JetTrain could arrange the financing it needed, however, another established carrier subleased the gates from United. According to JetTrain's vice president of marketing and planning, the uncertainties associated with adequate access to gates has seriously affected the airline's ability to grow and compete at Newark. In other cases, airlines that started after deregulation have subleased gates as part of a broader, more costly arrangement with an established carrier. The CEO of Vanguard Airlines noted, for example, that the airline subleases a gate from TWA in Minneapolis. In turn, TWA performs maintenance for Vanguard's aircraft.

Representatives from other airlines that started after deregulation told us that they strongly prefer not to sublease gates because the established airlines typically insist that the sublessee use the established airlines' ground personnel, which artificially raises costs and may reduce efficiency. The CEO of Southwest Airlines told us that this was a key factor in his decision not to serve Minneapolis. In part because airlines that sublease tend to operate at a competitive disadvantage, new entries that depended on subleasing gates have had mixed results. For example, JetTrain recently decided to exit Newark completely, and Vanguard recently stopped serving one of the two markets that it was serving from Minneapolis.

Established airlines, on the other hand, stressed to us that they have made substantial investments in the development of these airports. Northwest Airlines' senior vice president for corporate affairs commented, for example, that without established airlines' investments, many airport expansion projects that benefit new and established airlines alike would not be possible. He and executives at other established airlines stated that signing long-term, exclusive-use gate leases is a key element in their decisions to help finance airport expansion projects. Similarly, several airport directors noted that it would have been difficult to sell the revenue bonds needed to finance development and expansion at their airports without a clear, long-term financial commitment from at least one established airline.

In our 1990 report, we noted that the development, maintenance, and expansion of airport facilities is essentially a local responsibility. We further noted, however, that most airports are operated under restrictions tied to the receipt of federal grants from FAA. We suggested that one way to alleviate the barrier created by exclusive-use leases would be for FAA to add a grant restriction that ensured that some gates at an airport would be available to nonincumbents. During our current review, several airline and airport representatives suggested that a more feasible alternative would be for FAA, when disbursing grant monies for airport improvements, to give priority for grants to those airports that do not lease the vast majority of their gates to one airline under long-term, exclusive-use terms or that at least set aside some "entrepreneurial" gates to attract new entrants. Officials in FAA's Airports Financial Assistance Division told us that they do not consider airports' gate-leasing arrangements when making grant decisions.

## Air Travel in the East and Upper Midwest Is Most Affected by Slot Controls and Lack of Access to Gates

Overall, the 10 airports where competition among airlines is limited by slots and exclusive-use gate leases accounted for approximately 115 million (22 percent) of the 516 million scheduled airline passenger enplanements last year. Moreover, because each of these constrained airports is located in either the East or upper Midwest (see fig. 1), the barriers to entry presented by slots and exclusive-use gate leases disproportionately affect air travel in those regions.

Figure 1: Airports Identified as Having Limited Entry Due to Slot Controls and Exclusive-Use Gate Leases

## Special Rules at LaGuardia and National and Emerging Capacity Constraints Elsewhere Exacerbate Barriers' Impacts

Entry at LaGuardia and National, besides being limited by slots, is further limited by rules that prohibit incoming and outgoing flights that exceed a certain distance. These are commonly known as "perimeter rules." At LaGuardia, under a rule established by the Port Authority, nonstop flights exceeding 1,500 miles are prohibited. At National, federal law limits the number of hourly operations and prohibits nonstop flights exceeding 1,250 miles.[17]

[17]The Metropolitan Washington Airports Act of 1986 (P.L. 99-591, sec. 60). The rule is also included in federal regulations (14 C.F.R. sec. 93.253).

The perimeter rules are designed to promote Kennedy and Dulles airports, respectively, as the designated long-haul airports for the New York and Washington metropolitan areas. The practical effect, however, is to limit entry and exacerbate the impact of slots. Specifically, the rules keep the second largest airline started after deregulation—America West—from serving LaGuardia and National via nonstop flights from its hub in Phoenix. By contrast, all of the seven largest established carriers are able to serve those airports nonstop from their main hubs because of the hubs' proximity to LaGuardia and National. While acknowledging that the perimeter rule at National may put America West at a competitive disadvantage, the CEO and general manager of the Metropolitan Washington Airports Authority expressed concern that completely eliminating the perimeter rule would, among other things, negatively affect air service to smaller communities in the Northeast because the major slot holders at National would likely shift much of their service to more profitable long-haul routes.

Finally, numerous airline representatives expressed concern that growing capacity constraints at several other airports, particularly in the East and upper Midwest, are exacerbating the impacts of the barriers to entry that we have identified. Two airports in particular—Boston's Logan and Chicago's Midway—were frequently cited. Several airlines noted that their ability to start or expand services in the East was constrained by the congestion and limited facilities at Logan. Likewise, numerous airlines that started after deregulation told us that, along with gates, available counter and office space at Midway Airport was becoming increasingly scarce, thereby limiting their ability to serve new markets. The Chicago Department of Aviation agreed with their assessment. The department's marketing director noted that the demand for space, particularly by low-fare airlines, was so great at Midway that airlines must now meet a minimum threshold of six daily flights before the department will lease facilities to them. As a result, the extent to which Midway Airport can serve as an alternative for airlines that are unable to obtain slots at O'Hare is becoming increasingly limited.

## Entry Also Continues to Be Limited by the Combination of Several Airline Marketing Practices

The marketing strategies that airlines developed following deregulation have created strong loyalties among passengers and travel agents and have greatly increased the cost of competing airlines' entry into new markets. Two strategies in particular, booking incentives for travel agents and frequent flier plans, are targeted at business flyers and encourage them to use the dominant carrier in each market. Because business travelers represent the most profitable segment of the industry, airlines in many

cases have chosen not to enter, or quickly exit, markets where they do not believe they can overcome these barriers and attract a sufficient amount of business traffic.

## Booking Incentives for Travel Agents Limit Competition for Business Traffic

Business passengers represent the most lucrative segment of the domestic airline market. Many established airlines with whom we spoke, for example, estimated that passengers traveling on business represented less than 40 percent of their traffic but accounted for between 50 and 70 percent of their revenues. Because about 90 percent of business travel is booked through travel agencies, airlines strive to influence the agencies' booking patterns. For established carriers, such efforts typically include the payment to travel agencies of special bonus commissions—frequently referred to as overrides—as a reward for booking a targeted proportion of passengers on their airline.

While any airline can offer travel agencies these payments, established carriers can make more effective use of this technique than the smaller airlines because the extra commissions are often based on the total volume of business that an agency books for the airline. Moreover, according to many travel agencies and airlines that started after deregulation, most established carriers have greater resources available to purchase and analyze the data generated by the computer reservation systems (CRS) that travel agents use to book flights. As a result, the established carriers can more easily monitor travel agents' booking patterns and target their commission programs accordingly. The CEO of one established airline noted, however, that the CRS data are available to any airline that wishes to purchase them and is willing to invest the resources necessary to analyze the data.

Concerned about the potential anticompetitive effects of overrides, the Justice Department opened an investigation in 1994 to determine if their use constitutes an antitrust violation—either the monopolization of a relevant market or agreements in unreasonable restraint of trade. As part of its investigation, the Justice Department collected industrywide data on airline bookings and override payments. However, the Department's analysis of the data was unable to show that dominant carriers had been able to use overrides to create a disadvantage for smaller carriers or to prevent entry into domestic airline markets. The Justice Department therefore closed its antitrust investigation in October 1996.

Even if the payment of overrides does not violate the antitrust laws, the practice does discourage entry. Numerous airlines that started after deregulation told us that they have discontinued certain routes because the major travel agency in each market would book passengers only on the dominant carrier, from which the agency receives overrides. For example, Southwest Airlines' executive vice president of corporate services, vice president of marketing, and general counsel stated that the impact of overrides offered by Northwest on travel agents' booking patterns was a key factor in Southwest's decision to exit the Detroit-Indianapolis market.

Many of the airlines that started after deregulation noted that the influence of overrides in a particular market is now a critical factor for them in determining whether to enter a market, especially those markets that have a relatively large proportion of higher fare-paying business traffic. For example, Midwest Express, which targets the business travel market, stated that the overrides offered by Northwest in large part caused it to exit the Milwaukee-Detroit market in 1991. Also, the senior vice president of marketing for Midwest Express maintained that the overrides offered by American and United forced the airline to discontinue service in 1995 between Rockford, Illinois (via Milwaukee), and Boston, LaGuardia, Newark, Philadelphia, and Washington National. In testimony for the Justice Department, Midwest Express' national sales manager described the impact of overrides on the airline's decision to enter new markets:

"Because of our experiences in the Detroit-Milwaukee and Rockford-East Coast markets, when we consider entering a market we first establish that we will not be foreclosed from a substantial share of the market by the large important travel agencies. For example, we recently analyzed the feasibility of expanding to Omaha, Nebraska. As part of our analysis, we included an investigation of the Omaha travel agency market and determined that one travel agency sold approximately 62 percent of the airline tickets sold in Omaha. We believed that it was critical to our entry decision and ultimate success in the city to determine whether this agency was willing to promote and sell Midwest Express service to their customers. In fact, we did not provide service to Omaha until we met with this dominant travel agency and received some assurances that we would receive their support."

Similarly, Air South, a low-fare airline headquartered in Columbia, South Carolina, exited several southeastern markets because it was not attracting a sufficient amount of business traffic. Concerned that overrides were the cause of its inability to attract business travelers, the airline in 1995 hired a private consultant to test the extent to which agents might have been steering traffic away from Air South. The consultant found that

agents in some cities dominated by one airline often did not provide Air South's competing flight options in response to anonymous inquiries, even though those options were listed in CRSs. In Miami, for example, travel agents did not initially inform callers of available Air South flights 56 percent of the time, and even after the lowest fare was requested, the agents did not mention Air South 30 percent of the time. Instead, the agents frequently recommended flights by American Airlines, the largest carrier in Miami. Both the CEO and the president of American Airlines emphasized to us that such agreements are standard marketing tools that any airline can offer. Moreover, American Airlines' CEO noted that it was simply good business practice for an airline to encourage travel agents to steer traffic to it.

Representatives of several airlines that started after deregulation told us that, in their view, the importance of overrides to travel agencies has increased as a result of the initiative by most established airlines in 1995 to lower base commissions from 10 percent to 8 percent and to cap the total amount of base commission that they will pay. Many travel agencies we interviewed confirmed this view. The CEO of Frontier Airlines told us that the increasing importance of overrides to travel agents led earlier this year to Frontier's exiting all four of the markets in North Dakota that it was serving. Before exiting those markets, Frontier wrote DOT:

> "With the cap on travel agent commissions, incentive overrides have become dearly important to travel agents. One of our competitors in North Dakota is telling agents they can only receive overrides if they book more than 90 percent of their flights on it. How can we compete when 90 percent of travel agent customers are steered away from us?"

The existence of overrides also tends to limit the entry of established carriers into new markets. Senior executives at one major travel agency told us, for example, that when one established airline attempted to enter a number of markets dominated by another established airline, the nonincumbent complained that agents were not booking passengers on its flights in those markets. The travel agency, which has override agreements with both carriers, told the nonincumbent that it could not "support" it in those markets because it also had an override agreement with the incumbent carrier and that those were key markets for the incumbent. As a result, according to the travel agency's senior management, the nonincumbent later pulled out of those markets.

Our discussions with representatives of 9 of the 10 largest U.S. travel agencies, which in 1995 accounted for over one-third of all ticket sales by

travel agents, generally confirmed the importance of overrides.[18] (App. II lists these 10 agencies and the percentage of their sales resulting from business travel.) According to all of these agencies, several other factors have more of an impact on booking decisions than overrides. These factors include consumers' desire to obtain the lowest available fare and to accumulate frequent flier miles, scheduling convenience, and pre-existing contracts between individual businesses and particular airlines. Nevertheless, most estimated that about 25 percent of the time, the customer defers to the travel agent, and in these cases overrides tend to be the "tie-breaker." Most agencies with whom we spoke termed overrides "very important." Representatives of one agency noted that because of the commission caps imposed by most of the established airlines, its entire profit last year was the result of overrides.

In our August 1990 report, we expressed concern that overrides had the potential to influence a larger proportion of airline bookings than the proportion estimated by travel agencies. We cited, for example, a 1987 travel industry study which found that 51 percent of the travel agents who were surveyed chose a particular airline because of overrides at least some of the time.[19] However, we concluded that, short of an outright ban on overrides, few policy options existed that would mitigate overrides' negative impact on new entry.

## Frequent Flier Plans Have Increased Business Passengers' Loyalty to Established Airlines

Since their inception in the early 1980s, frequent flier plans have become an increasingly effective tool to encourage customers' loyalty to particular airlines. Under these plans, passengers qualify for awards by flying a certain number of miles with the sponsoring airline. Thus, business passengers who travel frequently have a greater incentive to fly that particular airline continuously in order to build miles that may later be used for free trips. The director of advertising and promotions at one established carrier estimated that of the 20 million members of that airline's frequent flier plan, nearly 1 million fly more than 25,000 miles a year, and 25,000 members fly more than 100,000 miles a year. While emphasizing that other factors, such as the convenience of an airline's flight schedule, are more important determinants in attracting the business traveler, he characterized the frequent flier plan as "the icing on the cake" in ensuring that the customers who travel the most, and who usually pay the highest fares, fly on that airline. Recognizing the effectiveness of

[18] The nation's second largest travel agency, Carlson Wagonlit, declined to meet with us to discuss the topic of overrides. Carlson is headquartered in Minneapolis.

[19] The 1987 Travel Agency Market (July 1988).

frequent flier plans, the established airlines have made it easier for passengers to accumulate miles. They now often award miles, for example, for each dollar that a passenger spends when using a particular credit card or for each night's stay at a particular hotel chain.

The increasing use of frequent flier plans exacerbates the impact of overrides and further solidifies the dominant carrier's position in a market. As with overrides, however, we have reported that few policy options exist, short of an outright ban, that would mitigate the impact on entry of frequent flier plans. The travel agencies with whom we spoke noted that business travelers often request to fly only on the airline with which they have a frequent flier plan. They also noted that they work with corporations to ensure that the travel contracts that those companies have with the airlines will satisfy the employees' desire to accumulate miles on the major airline in a particular market as well as accommodate the agency's override agreement with that airline. As a result, entry by new and established airlines alike into a market dominated by one carrier is very difficult.

## Other Marketing Strategies Further Strengthen Incumbents' Position and Thwart Entry

Other marketing strategies that we examined in 1990 also continue to present barriers to entry. Code-sharing agreements between airlines and commuter carriers, for example, work to eliminate potential competitors by foreclosing connecting traffic from new airlines that do not have such agreements. As a result, code-sharing allows an incumbent to strengthen its position at a hub even further. In August 1990, we reported that the airlines' ownership of the four CRSs—Apollo, Sabre, System One, and Worldspan—raises the costs for potential entrants.[20] Agents tend to prefer the airline whose CRS they use, which limits the available market for the new entrant. In addition, ownership affords established airlines more timely access to the booking data generated by the CRS, which allows them to better monitor the booking patterns of travel agents.

While these factors still exist and work to further an incumbent's position in a market, they were cited less often by airlines as a barrier to entry than overrides and frequent flier plans. In part, these factors have become less important because DOT has sought to eliminate any bias in the listing of flights on CRS screens that would favor code-sharing flights or a particular airline. In August 1996, it proposed rules to ensure that connecting flights between code-share partners are not listed ahead of other connecting

[20]As of August 1996, American owned 100 percent of the largest CRS (Sabre); United and USAir owned 98 percent of the second largest (Apollo); Delta, Northwest, and TWA owned 95 percent of the third largest (Worldspan); and Continental owned 33 percent of the fourth largest (System One).

flights when the latter have a shorter total elapsed trip time. In addition, the emergence of alternative means of booking flights, such as the Internet, may be lessening the importance of CRSs.

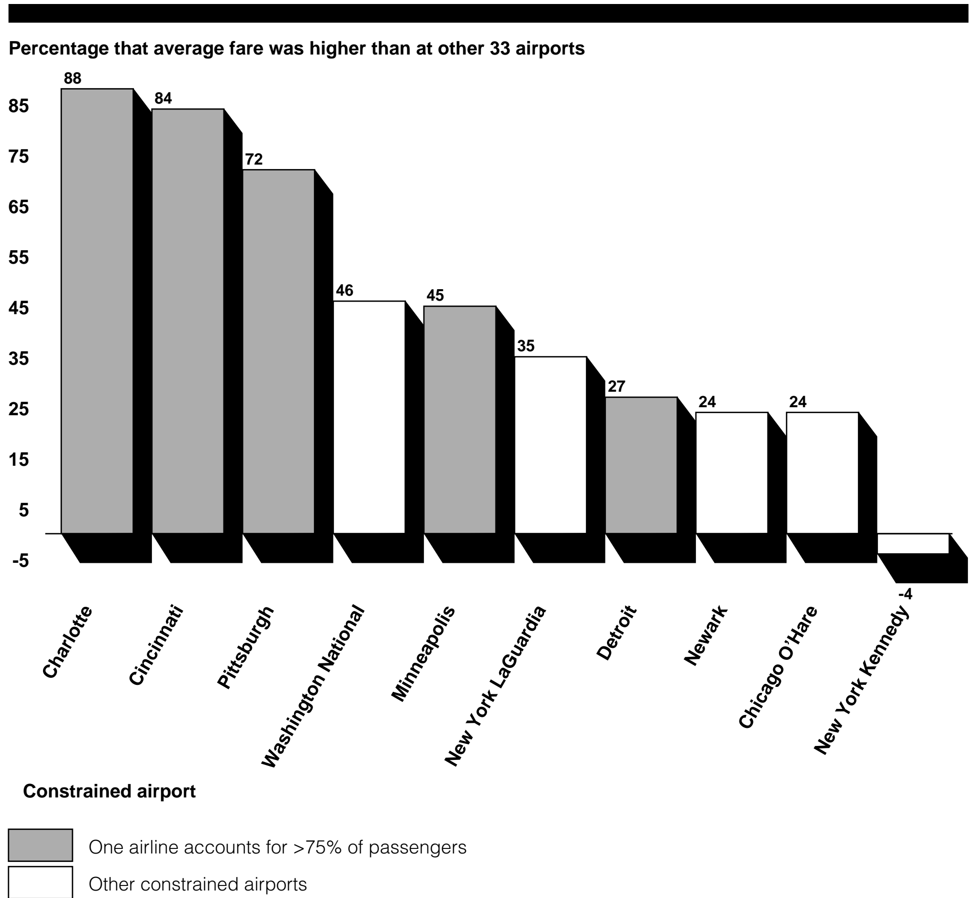
## Barriers to Entry Contribute to Higher Airfares, but Effect on Quality of Service Is More Difficult to Measure

While many factors, such as the relative amounts of business and leisure travel, affect the average airfares at an airport, the markets affected by operating barriers tend to have much higher fares. Forty-three airports comprise FAA's large hub classification. As figure 2 shows, the fares were generally much higher in 1995 at the 10 airports in this group affected by operating barriers than at the other 33 airports. On average, the fares, adjusted for flight distances, were 31 percent higher at the airports having operating barriers.[21] Likewise, fares are higher in markets where one airline accounts for the vast majority of passenger enplanements. By discouraging entry, the airlines' various marketing strategies perpetuate such dominance. Five of the constrained airports shown in figure 2—Cincinnati, Pittsburgh, Charlotte, Minneapolis, and Detroit—also had one carrier in 1995 that accounted for over 75 percent of their enplanements. An analysis by DOT confirms this. In April 1996, the agency reported that in 1995 fares at Cincinnati, Charlotte, Minneapolis, and Pittsburgh were the highest among the nation's largest 60 airports.[22]

[21]Because the data on fares are developed from DOT's statistical sample of tickets, they have a measurable precision, or sampling error. App. III provides the sampling errors for the data provided in this section.

[22]The Low Cost Airline Service Revolution, DOT (Apr. 1996). DOT obtained slightly different results than we did because it combined data for Washington's National and Dulles airports; Newark, LaGuardia, and Kennedy airports; and for Chicago's O'Hare and Midway airports.

Figure 2: Percentage Difference in Fares at Each of the 10 Constrained Airports Compared to Fares at the Other 33 Airports That Make Up FAA's Large Hub Classification, 1995




Source: GAO's analysis of DOT's data.

Measuring the effects of barriers to entry on the quality of service in these markets, however, is more difficult. While barriers to entry reduce the number of airline options available, consumers in these markets receive benefits in other ways. At each of the constrained airports identified above, an established airline has made the airport a key hub in its hub-and-spoke route network. As a result, these airports can offer consumers in those communities nonstop flights to a large number of destinations. Because they are hubs, these airports can also offer consumers in nearby communities convenient one-stop service to those same destinations. In addition, the frequency of flights from a hub is often

substantially higher than could be justified by local traffic because the majority of travelers who fly from a spoke city to a hub travel beyond the hub on another flight to a different spoke destination.

Likewise, the marketing strategies used by incumbents to fortify their positions also produce benefits to consumers. For example, consumers receive free trips as a result of frequent flier plans. In addition, code-sharing partnerships between incumbents and commuter carriers result in shorter layover times on connecting flights and in more frequent flights than could otherwise be supported by local traffic.

## Conclusions

As originally intended, the deregulation of the airline industry has spurred new entry and intense competition in many domestic markets, leading to lower fares and better service for most air travelers. However, the full benefits of deregulation have yet to be realized because of problems with access to certain airports and the cumulative effect of certain marketing strategies employed by the established airlines.

In particular, artificial constraints on entry, in the form of slots, have combined with restrictive gate-leasing arrangements to limit competition at key airports in the East and upper Midwest, contributing to significantly higher fares at these airports. Meanwhile, efforts by the Congress and several airport authorities to spur entry at these airports have achieved little success. The limits on flight distances to and from LaGuardia and National and growing capacity constraints at Chicago's Midway Airport exacerbate the problem and make it clear that in the absence of action to remove or lower these barriers, consumers in these regions will continue to pay higher airfares. However, any action to address these barriers must take into account the substantial investments that established airlines have made in these airports and in developing their service.

In this regard, we identified a number of policy options 6 years ago that DOT could consider to lower these barriers and increase competition. Since then, there has been little progress toward reducing these barriers, and some, such as slots, have grown worse. Therefore, we believe that DOT must now take positive steps to address several of the most serious barriers. In addition, congressional action would be required for two other areas affecting the competitive environment—the standard governing the availability of slots to new entrants and the perimeter rule at Washington National Airport.

## Recommendations

To promote competition in regions that have not experienced lower fares as a result of airline deregulation, we recommend that the Secretary of Transportation:

- create a pool of available slots by periodically withdrawing some slots that were grandfathered to the major incumbents, taking into account the investments made by those airlines at each of the slot-controlled airports, and hold a lottery to distribute them in a fashion that increases competition and
- direct the Administrator, FAA, to make an airport's efforts to have gates available to nonincumbents a factor in FAA's decisions on federal grants to airports.

## Matters for Congressional Consideration

If DOT does not choose to create a slot pool, the Congress may wish to revise the legislative standard governing DOT's granting of additional slots to accommodate new entrants. Specifically, the Congress may want to make the consideration of competitive benefits a key criterion, taking into account the need to balance the benefits of increased competition with the possible costs from increased congestion and communities' concerns about aircraft noise. Finally, the Congress may also wish to grant the Secretary of Transportation the authority to allow exemptions to the perimeter rule at National Airport when the proposed service will substantially increase competition.

## Agency Comments

We provided a copy of a draft of this report to DOT for review and comment. We met with DOT officials, including the Deputy Assistant Secretary for Aviation and International Affairs, the Assistant General Counsel for Aviation Enforcement and Proceedings, and the Director, Office of Aviation and International Economics, who generally agreed with the report. DOT noted that if a slot lottery was held, a number of factors, such as the overall impact on air service at all affected communities, would have to be considered in deciding how to reallocate any slots that are withdrawn. Nevertheless, officials in FAA's Office of the Chief Counsel, including the managers of the Air Space and Air Traffic Law Branch and the Slot Administration Office, stated that such a lottery could be implemented with little administrative difficulty. DOT also suggested several revisions to the wording in our draft report, which we have incorporated where appropriate. DOT chose not to comment on our recommendations or matters for congressional consideration at this time

but noted that it would comment as part of the agency's required response under 31 U.S.C. 720.

## Scope and Methodology

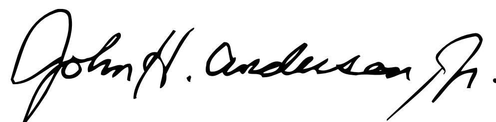
To determine if barriers to entry exist and, if so, the extent to which they prevent airlines from entering new markets, we interviewed the senior management of all 10 established airlines and 26 of the 38 airlines that started after deregulation and that operated in 1995. Taken together, the established airlines and those that started after deregulation that we interviewed accounted for 98.5 percent of the scheduled airline passenger enplanements in 1995. We also interviewed executives of several airlines that began operations in early 1996. In general, these interviews involved the vice presidents of operations and marketing for an airline, and in many cases, the CEO. We also interviewed officials at DOT, FAA, and the Justice Department as well as representatives of 9 of the 10 largest U.S. travel agencies and the 4 CRS vendors. Largely as a result of the issues raised during these discussions, we conducted field work in Atlanta, Georgia; Chicago, Illinois; Columbia, South Carolina; Dallas, Texas; Detroit, Michigan; Minneapolis, Minnesota; New York, New York; and Washington, D.C. (App. III provides additional details on our scope and methodology.)

Our review was conducted from May through October 1996 in accordance with generally accepted government auditing standards.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after the date of this letter. At that time, we will send copies to the Secretary of Transportation; the Administrator, FAA; the Director, Office of Management and Budget; and other interested parties. We will send copies to others upon request.

If you have any questions, please call me at (202) 512-2834. Major contributors to this report are listed in appendix IV.

Sincerely yours,



John H. Anderson, Jr.
Director, Transportation and
Telecommunications Issues

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### Abbreviations

| | |
|---|---|
| CEO | Chief Executive Officer |
| CRS | computer reservation system |
| DOT | Department of Transportation |
| FAA | Federal Aviation Administration |
| GAO | General Accounting Office |

# U.S. Scheduled Passenger Airlines, Their Number of Scheduled Passenger Enplanements, Fleet Size, and Operating Results, 1995

| Airline | Number of passenger enplanements | Number of aircraft | Operating profit or (loss) |
|---|---|---|---|
| **Established** | | | |
| Delta Air Lines | 82,668,192 | 539 | $1,038,427,000 |
| United Airlines | 71,962,701 | 558 | 831,937,000 |
| American Airlines | 71,077,340 | 635 | 967,588,000 |
| USAir | 55,737,601 | 394 | 234,651,000 |
| Northwest Airlines | 44,518,505 | 380 | 910,224,000 |
| Continental Airlines | 33,512,847 | 317 | 238,200,000 |
| TWA | 20,636,726 | 186 | 36,956,000 |
| Alaska Air | 9,795,941 | 74 | 72,424,000 |
| Aloha | 5,102,870 | 15 | (7,962,000) |
| Hawaiian | 4,764,992 | 21 | (602,000) |
| **Total** | **399,777,715** | **3,119** | **$4,321,843,000** |
| **Airlines started after deregulation** | | | |
| **Independent** | | | |
| Southwest Airlines | 50,038,707 | 224 | $308,548,000 |
| America West | 16,697,006 | 93 | 154,733,000 |
| Valujet | 5,137,432 | 51 | 107,676,374 |
| Reno Air | 3,816,289 | 21 | 3,856,946 |
| American Trans Air | 2,358,609 | 46 | 15,212,960 |
| Kiwi Airlines | 1,649,852 | 15 | (757,519) |
| Carnival | 1,527,861 | 22 | 7,292,764 |
| Midwest Express | 1,390,412 | 22 | 30,080,342 |
| Midway | 1,233,511 | 12 | 1,394,000 |
| Air South | 994,658 | 7 | (13,490,782) |
| Markair | 989,608 | 15 | (10,530,869) |
| Tower | 972,817 | 15 | 13,516,436 |
| Vanguard | 778,863 | 8 | (11,405,321) |
| Western Pacific | 731,198 | 15 | (6,851,886) |
| Spirit Air | 623,028 | 7 | 4,466,869 |
| Frontier | 611,257 | 9 | (8,578,064) |
| Casino Express | 205,300 | 2 | (1,647,405) |
| AirTran Airways | 146,633 | 10 | (3,634,008) |
| Grand | 137,830 | 2 | (250,368) |
| Nations Air | 134,822 | 2 | (8,671,225) |
| Tristar | 76,306 | 4 | (6,962,799) |
| Reeve Aleutian | 59,738 | 5 | (2,868,000) |
| Eastwind | 44,365 | 2 | (2,707,441) |

(continued)

| Airline | Number of passenger enplanements | Number of aircraft | Operating profit or (loss) |
|---|---|---|---|
| World | 2,697 | 8 | 10,351,000 |
| Prestige Airways | 1,146 | 4 | (437,804) |
| Great American | 162 | 7 | 4,103,435 |
| MGM Grand | 36 | 6 | (3,889,867) |
| **Total** | **90,360,143** | **634** | **$578,548,768** |
| **Affiliates of established airlines** | | | |
| Simmons | 4,958,927 | 81 | (35,379,863) |
| Horizon Air | 3,629,281 | 65 | 4,323,000 |
| Continental Express | 3,655,730 | 79 | 17,255,799 |
| Atlantic Southeast | 3,066,897 | 84 | 75,875,107 |
| Mesa | 2,143,043 | 175 | 14,569,403 |
| Trans States | 1,725,412 | 53 | 12,584,273 |
| Business Express | 1,637,170 | 63 | (9,823,191) |
| Air Wisconsin | 1,619,807 | 13 | 3,502,076 |
| USAir Shuttle | 1,403,368 | 12 | 17,772,819 |
| Executive Airlines | 1,190,371 | 33 | (7,252,135) |
| UFS | 655,964 | 10 | 2,757,156 |
| **Total** | **25,685,970** | **668** | **$96,184,444** |
| **System total** | **515,823,828** | **4,421** | **$4,996,576,212** |

Note 1: Markair went out of business in late 1995. In addition, several airlines, including JetTrain, Air21, and the new Pan Am, began operations in 1996 and therefore are not listed above.

Note 2: Because the number of aircraft in an airline's fleet frequently changes, we updated, to the extent possible, the number of aircraft to reflect operations in 1996 according to our discussions with airline executives.

Source: DOT Form 41, the Air Transport Association, and GAO's interviews with the airlines' executives.

# The Top 10 U.S. Travel Agencies and the Percentage of Their Bookings That Constitutes Business Travel, 1995

| Travel agency | Headquarters | Total airline sales ($000) | Percentage of sales that are for business travel |
|---|---|---|---|
| American Express | New York, NY | $7,300,000 | 95 |
| Carlson Wagonlit | Minneapolis, MN | 2,426,947 | 74 |
| Rosenbluth | Philadelphia, PA | 1,800,000 | 97 |
| BTI Americas | Northbrook, IL | 1,634,933 | 85 |
| Sato | Arlington, VA | 1,107,141 | 80 |
| Maritz | Fenton, MO | 1,001,000 | 98 |
| WorldTravel Partners | Atlanta, GA | 505,000 | 95 |
| Omega | Fairfax, VA | 413,000 | 75 |
| Travel and Transport | Omaha, NE | 381,000 | 82 |
| Travel One | Mt. Laurel, NJ | 355,000 | 95 |
| **Total for top 10** | | **16,924,021** | |
| **Other 23,668 agencies** | | **44,269,598** | |
| **Total** | | **$61,193,619** | |

Source: "Business Travel Survey," Business Travel News, May 1996, and the Airlines Reporting Corporation.

# Scope and Methodology

During our initial discussions with many airline executives, several barriers to entry, including slots and the lack of competitive access to gates at Detroit, Minneapolis, and Newark, were repeatedly cited. As result of those discussions, we visited several locations to further examine these issues. To the extent possible at each location, we discussed whether barriers to entry existed with representatives of the relevant airlines, airports, major travel agency, and CRS vendor. Specifically, we met with representatives of:

- Delta Air Lines, Valujet Airlines, World Travel Partners, and Worldspan in Atlanta;
- United Airlines and the Chicago Department of Aviation in Chicago;
- Air South in Columbia, South Carolina;
- American Airlines, Southwest Airlines, and Sabre in Dallas;
- Detroit Metropolitan Airport and Detroit City Airport in Detroit;
- Minneapolis/St. Paul International Airport in Minneapolis;
- Tower Air, USAir Shuttle, Kiwi International Airlines, the Port Authority of New York & New Jersey, and American Express Travel in New York; and
- Continental Airlines, Northwest Airlines, TWA, USAir, Apollo, and the Metropolitan Washington Airports Authority in Washington, D.C.

Overall, we interviewed executives at all 10 established airlines and at 26 airlines that started after deregulation and that operated in 1995. Of the 26 airlines, 19 were not affiliates of the established carriers. These airlines were Southwest, America West, Valujet, Reno, American Trans Air, Kiwi, Carnival, Midwest Express, Midway, Air South, Tower, Vanguard, Western Pacific, Spirit, Frontier, AirTran, Tristar, Eastwind, and Prestige Airways. The remaining seven post-deregulation airlines that we interviewed—Simmons, Horizon Air, Continental Express, Atlantic Southeast, Mesa, USAir Shuttle, and Executive Airlines—were affiliates of the established carriers.

In addition, we analyzed DOT's data on fares and service to determine how the barriers that we identified affected the domestic market. To examine the potential effects on fares, we compared yields at the 10 airports affected by operating barriers with yields at the other 33 airports that make up FAA's large hub airport classification. The yields were based on fares from both enplaning and deplaning traffic at the airport. Additionally, any routes that had fewer than 10 passengers per day were eliminated. Because each airport has a different distribution of flight lengths, an overall yield for each airport could be distorted by differences in route

lengths among the airports.[23] Therefore, we made the comparisons within each of nine distance categories, in 250-mile increments, based on the one-way straight-line miles between the origin and destination.

Within each distance category, we compared the yields at each of the 10 constrained airports with the overall yield for the remaining 33 airports and calculated the percentage differences. To obtain a single measure for each of the 10 airports, we averaged the nine calculated percentages for each airport, weighting them by the number of passengers flying in each of the nine distance categories. The resulting percentage differences are therefore adjusted for distance, as well as for the particular passenger distributions at each airport across the distance categories.

Because we analyzed data that were drawn from a statistical sample of tickets purchased, each estimate developed from the sample has a measurable precision, or sampling error. The sampling error is the maximum amount by which the estimate obtained from a statistical sample can be expected to differ from the true universe value. Sampling errors are usually stated at a certain confidence level—in this case, at a 95-percent level. This means that the chances are 19 out of 20 that if we reviewed all tickets purchased, the results would differ from the estimates obtained from our sample by less than the sampling errors of such estimates. Table III.1 provides the sampling errors for the percentages that the fares at each of the 10 constrained airports were higher (or lower, in the case of Kennedy airport) than the other 33 airports that make up FAA's large hub classification.

[23]Because long distance routes have lower yields, an airport with a preponderance of long distance routes would appear less expensive than one with mostly short distance routes.

**Table III.1: Percentage Difference in Fares at Each of the 10 Constrained Airports Compared to Fares at the Other 33 Airports That Make Up FAA's Large Hub Classification, 1995**

| Constrained airport | Percentage difference in fares compared to other large airports, 1995 | Sampling error at 95-percent confidence level (+ or -) |
|---|---:|---:|
| Charlotte | + 87.81 | 1.43 |
| Cincinnati | + 84.47 | 1.60 |
| Pittsburgh | + 72.23 | 1.22 |
| Washington National | + 46.39 | 0.77 |
| Minneapolis | + 45.32 | 0.91 |
| New York LaGuardia | + 34.64 | 0.68 |
| Detroit | + 26.56 | 0.75 |
| Newark | + 24.26 | 0.63 |
| Chicago O'Hare | + 23.76 | 0.58 |
| New York Kennedy | - 4.08 | 0.68 |
| **Overall** | **+ 31.06** | **0.40** |

Source: GAO's analysis of DOT's data.

Finally, we analyzed data provided by FAA's Slot Administration Office on slot holdings at O'Hare, Kennedy, LaGuardia, and National to determine the extent to which the possession of slots had become concentrated among a few incumbent airlines. We also received assistance from a consultant, Mark R. Dayton, who was a Senior Program Officer during the National Research Council's examination in 1991 of trends in fares, service, and safety since deregulation.[24]

[24] Winds of Change: Domestic Air Transport Since Deregulation, National Research Council, Special Report 230 (Washington, D.C., 1991).

# Major Contributors to This Report

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# Related GAO Products


Changes in Airfares, Service, and Safety Since Airline Deregulation (GAO/T-RCED-96-126, Apr. 25, 1996).

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