

**BEFORE THE
FEDERAL AVIATION ADMINISTRATION
DEPARTMENT OF TRANSPORTATION**

**CONGESTION AND DELAY
REDUCTION AT CHICAGO O'HARE
INTERNATIONAL AIRPORT**

Docket No. FAA-2005-20704

**COMMENTS OF THE UNITED STATES
DEPARTMENT OF JUSTICE**

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May 24, 2005

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I. Summary

The Federal Aviation Administration (“FAA”) has requested comments on proposed rules to alleviate persistent flight delays due to over-scheduling at Chicago O’Hare International Airport (“O’Hare”).¹ The Department of Justice (“DOJ”) has consistently supported the goal of finding an effective and comprehensive solution that both addresses the problem of airport congestion efficiently and encourages competition at congested airports.² The DOJ urges the FAA to use this opportunity to adopt as fully as possible market-based solutions to the congestion problem and specifically supports the adoption of an auction mechanism for allocating capacity at O’Hare.

Congestion and delay problems at O’Hare have effects beyond O’Hare; delays that start

¹Notice of Proposed Rules, Congestion and Delay Reduction at Chicago O’Hare International Airport. 70 Fed. Reg. 15520 (March 25, 2005) (hereinafter “Notice”).

²*See*, Comments of the United States Department of Justice, Notice of Alternative Policy Options for Managing Capacity at LaGuardia Airport and Proposed Extension of Lottery Allocation, June 20, 2002 (hereinafter “DOJ LGA slot comments”).

at O'Hare can quickly create a ripple effect throughout the country. The FAA recognized the severity of the problem and convened a meeting of all carriers serving O'Hare in the summer of 2004. That meeting resulted in an order limiting arrivals to 88 per hour during most hours of the day. The proposed rules would extend that limitation on arrivals into 2008.

The current rules, however, have resulted in an inefficient use of the airport's limited operating capacity and have failed to encourage efficient new entry and competition at O'Hare. Rather than continuing a system of administratively-set allocations, the DOJ recommends that the FAA adopt market-based rules for allocating arrival capacity as soon as possible (obtaining any necessary authority), and in any event, before 2008.

These comments are organized as follows: Section II discusses the history of the administrative slot allocation system, including the recent experience of congestion at O'Hare and LaGuardia when slot constraints were relaxed. Section III examines why a secondary market for slots has not to date resulted in an efficient allocation of scarce takeoff and landing capacity. Section IV discusses the specific proposals in the Notice, focusing primarily on the option of an auction or congestion pricing mechanism. The DOJ favors such a market-based mechanism as the best long-term solution for allocating scarce takeoff and landing capacity at O'Hare and elsewhere.

II. Background

Slots, or rights to take-off or land at a particular time, were first utilized in 1969, and until recently were imposed to allocate capacity at four major airports: New York's LaGuardia, New York's Kennedy, O'Hare, and Washington's Reagan National. Slots have always been apportioned administratively by the FAA, largely to incumbent carriers based on existing

service. The airlines with service at O'Hare in 1969 still have most of the slots at that airport. In 1985, the FAA created a buy/sell market for slots, which was expected to lead to a more efficient allocation of these scarce resources. Instead, the FAA found that it was rare for more than a few slots to be available in the secondary market at any given time. Only when an existing carrier exited the airport, as when Eastern and TWA went out of business, were large groups of slots available for sale. Due to the sporadic availability of slots, entrants (or incumbents seeking to expand service) often found it difficult to acquire sufficient slots to establish a viable service pattern in a city pair.

On two occasions, the FAA and Congress responded to this difficulty by selectively relaxing the slot constraints at various airports. Both experiments failed, however, because they were unaccompanied by any mechanism, other than costly congestion, for limiting service to the airport. In 2000, Congress lifted slot controls at LaGuardia for smaller regional jets. The resulting rush of new flights led to major congestion problems at LaGuardia until the FAA restored administrative controls to limit arrivals and departures. At O'Hare, Congress mandated the lifting of all slot restrictions entirely in July 2002. In response, the two hub carriers, American Airlines and United Airlines, promptly over-scheduled the airport.

Some of the congestion at O'Hare stems from the airlines' move to regional jets, which may inefficiently use O'Hare's limited capacity. An examination of data from a representative day in December 2004 shows that regional jets accounted for 44% of operations, but only 24% of seating capacity.³ This disparity between operations and seating capacity arises because

³ Analysis of data from the Official Airline Guide for domestic U.S. flights arriving at O'Hare on December 1, 2004.

regional jet operations at O’Hare average only 56 seats, compared to 140 seats on the average domestic jet flight. While there are certainly some advantages to using regional jets, use of these planes at already congested airports such as O’Hare involves a potentially high opportunity cost – their use precludes service by larger planes carrying larger numbers of passengers.

Faced with the problem of congestion at O’Hare, the FAA responded by convincing United and American to roll back some of their flights voluntarily in 2004. This scheduling reduction, however, was offset by the addition of flights by other carriers at the airport, leading to no net reduction in congestion. The Administrator called a “delay reduction meeting” of all carriers serving O’Hare in the summer of 2004. The meeting resulted in an order, effective November 1, 2004, that limited arrivals to 88 per hour during peak hours, and effectively prohibited entry at O’Hare without FAA permission. The current Notice would extend these administrative restrictions until 2008.

III. Problems With The Secondary Slot Market

To evaluate the current proposals, it is critical to understand why the slot buy/sell market did not result in an efficient allocation of slots at O’Hare. No matter how slots are distributed (including a government giveaway to market incumbents), under well-accepted economic theory, as long as a secondary market exists and transaction costs are low, slots should be bought and sold until each finds its highest valued use.⁴ In practice, however, the slot market previously attempted at O’Hare and LaGuardia did not result in an efficient allocation among incumbents, nor did it facilitate competitive entry in the constrained airports. The secondary market never

⁴*See, e.g.*, Ronald Coase, The Problem of Social Cost, 3 J. Law & Econ. 1 (1960). “Highest valued use” for the carriers, however, might translate into market power on particular routes. Any distribution of slots must be subject to vigilant antitrust oversight.

became sufficiently liquid to achieve these results, for several reasons.

A. Transparency

Transparency in the market for slots is one reason the secondary market never became sufficiently liquid. Transparency means that the identity of buyers and sellers is widely known. Transparency in the secondary slot market permits strategic purchases by incumbents to prevent new entry. An incumbent carrier probably would never knowingly sell to an entrant that was likely to compete against it, given that such a sale would likely decrease the slot holder's profitability. More importantly, a potential entrant would have equal difficulty buying from other slot holders. Such slot holders, if approached by the potential entrant, would have every incentive at that point to seek out the threatened incumbent and solicit a better offer. Because the rents from limiting competition almost always exceed the more competitive rents an entrant would earn, the threatened incumbent should be willing to outbid the entrant, even if it would use the slots in an economically less efficient manner. Strategically purchasing available slots can be an effective entry deterrent, especially since multiple slot holdings required for significant entry rarely come up for sale.

Similarly, slot leases are transparent because the leasing process necessarily involves the identity of lessors and potential lessees being disclosed, and thus have the same problems associated with a transparent buy/sell rule. Although slot leasing is fairly common, those leases come with provisions that allow the lease holder to terminate the lease on relatively short notice. Leasing is therefore a substantially more risky and thus inferior means of entering a market. A new entrant understandably may be reluctant to incur the cost of beginning new service to Chicago if its lease could be pulled at any moment by an incumbent.

B. Market Power

Another reason the secondary slot market never became sufficiently liquid is that the FAA's initial allocation of slots at O'Hare gave the bulk of all slots to two carriers, American and United. This allocation gave those carriers much larger market shares in slots than any other carrier could obtain, and effectively created market power for these two carriers. Both of these carriers developed hubbing operations out of Chicago O'Hare, and any slot they sold would have almost certainly be used to compete with them on some route. Therefore, neither AA nor UA were willing to sell slots to potential competitors, making the bulk of O'Hare slots unavailable to others.⁵

C. Uncertainty of Duration and Value

Another obstacle to creating a liquid market in slots is the repeated use of temporary administrative allocation mechanisms that do not create long-term property rights. Under each of the FAA's administrative allocation systems, the award of a slot has been a temporary right, exercisable only until the system changes again. That right has become quasi-permanent in practice, but anyone interested in buying a slot takes the risk that the system may change in a way that reduces the expected value of the property conveyed. The uncertainty about the time period over which the right can be exercised, therefore, makes it difficult for buyers and sellers with different views about the likely duration of that time period to agree on price. In addition, by periodically giving away slots, Congress and the FAA have contributed to the uncertainty about slot value. The result is that fewer slot transactions occur, and the market is less liquid

⁵Although Chicago is also served by Midway Airport, that airport is at or near capacity.

than it would be absent the uncertainty.⁶

IV. Proposals in The Notice

The FAA requests comments on four main proposals with regard to congestion at O'Hare. In summary, the Notice requests comments regarding whether:

1. The FAA should do nothing, and allow the August 2004 order to expire;
2. The FAA should extend the August 2004 order or renegotiate with the carriers for long-term voluntary schedule reductions;
3. The FAA should develop market-based solutions for dealing with congestion at O'Hare; or
4. The FAA should implement interim rules that would extend the current order until 2008, provide some rules for a secondary market, and give limited preference to new entrants and limited incumbents.⁷

We discuss each of these proposals below, explaining why the Department of Justice believes the best solution is for the FAA to seek authority to implement market-based solutions to congestion at the earliest possible opportunity.

A. DOJ Advocates Moving to a Market-Based System

To a great extent, the problems described above are inherent in any administrative

⁶The interaction between the lack of liquidity in the marketplace and the uncertain nature of the property right being transferred may also make existing slot holders less willing to sell slots. For existing slot holders, the value of a slot includes not only the current value of operating a slot at the slot-constrained airport, but also the option to change their operational pattern in the future by adding flights ("option value"). To avoid paying a high price to get back into an airport later, slot holders may prefer to hang onto their slots if they are unconvinced that they can buy back into the airport later at a reasonable price. Although in theory someone could pay for acquiring this additional option value as well, the uncertainty surrounding the future of slots make such a transaction more risky, and thus sales may simply not take place.

⁷Notice.

allocation of slots. These problems will not be fixed by incremental changes such as adding a blind buy/sell rule as suggested in the Notice, but only by a more comprehensive market-based approach. Accordingly, the FAA should consider accelerating the development of alternative market-based solutions, as described in Option 3.

In designing a market-based system, the FAA should keep two objectives in mind. First, the system must establish a mechanism that sets prices for scarce airport resources that reflects both supply of and demand for those resources. This price should replace existing regulatory fee structures that encourage carriers to use scarce airport capacity inefficiently, in particular, by scheduling too many smaller planes. Second, the system should promote competition by enabling scarce capacity to be more easily transferred among carriers, and by preventing it from being locked up in ways that allow the exercise of market power. There needs to be a liquid enough market in slots to permit new carriers to enter an airport rapidly and on a large enough scale to efficiently serve routes in competition with large incumbents.

Two possible market-based approaches for allocating scarce airport capacity are suggested in the Notice: auctions and congestion pricing. Both approaches have the potential to be far superior to the proposed administrative system. Each approach has strengths and weaknesses, as outlined below, but in this particular case, an auction format seems preferable.

1. Slot Auction

A slot auction would allocate scarce arrival authorizations through a periodic open bidding mechanism. The FAA has good information about the O'Hare's capacity for arrivals and departures, and can set a maximum quantity relatively precisely. An auction would determine the price for arrival authorizations at a particular time, for an airplane of any size or

type.

At most airports, including O'Hare, airlines pay weight-based fees for landing. The consequence of the weight-based fee structure is that a small regional jet, which causes just as much airspace congestion as the largest 737, pays a much lower landing fee than the much larger plane. Airlines thus do not face a price that reflects the fact that airspace is a scarce input. If airlines were charged a flat landing fee based upon demand at particular times of day, regardless of the size or type of plane, smaller aircraft such as regional jets would appropriately have to bear a higher per-passenger cost for using an airport's scarce landing capacity than they do now. Regional jets would continue to be part of the airport's mix of aircraft, of course, but at the margin where airlines are choosing between larger jets and regional jets, larger jets operating slightly less frequently will become a more attractive option than scheduling multiple trips on regional jets. The result would be an increase in passenger throughput at capacity-constrained airports.

A well-designed slot auction would both assign prices to allocate efficiently scarce airport resources, and limit the maintenance or accumulation of market power by individual carriers. Such goals require careful attention to the details of auction design. For instance, the auction should limit informational feedback during the auction itself. Bidders might know the aggregate level of demand and supply of all arrival authorizations in each time period, but not be permitted to know the identity of the other bidders. This practice is fairly typical at auctions, and it is designed both to limit collusion among bidders and to prevent particular types of strategic bidding. Although more information clearly allows more informed bidding on the part of bidders in ways that can be efficient, full knowledge of which airlines are bidding for which slots

in an auction could encourage incumbent airlines to attempt to foreclose entry by particularly strong competitors. In this case, the government's interest in preserving competition among carriers should take priority over bidders' desires to have complete information about rival bids.

Any auction design must allow for sufficient liquidity so that potential entrants are not unnecessarily impeded. Annual auctions of a significant portion of airport arrival capacity, 20% for instance, would help allow for rapid entry when it is efficient.⁸ Such a five-year rotation would provide a concrete duration for the property right, and therefore assist airlines in valuing the slots.

The Federal Communications Commission has been using an auction mechanism to assign spectrum licenses for over ten years. Before the Commission was authorized to conduct auctions, it relied mainly upon comparative hearings and lotteries to select a single licensee from a pool of mutually exclusive applicants for a license. The Commission has stated that spectrum auctions more effectively assign licenses than either comparative hearings or lotteries. The auction approach is intended to award the licenses to those who will use them most effectively.⁹

2. Congestion Pricing

Under a congestion pricing system, the existing slot allocation system would be abolished. To fly into O'Hare at a particular time, an airline would be required to pay only the appropriate congestion fee set for that time. The advantage of congestion pricing is that it is relatively easy to implement. The regulator would set prices for slots at different times and

⁸There is a tradeoff involved in limiting the duration of the property right – it induces some uncertainty in airlines' future plans, in return for keeping avenues of entry open.

⁹See, http://wireless.fcc.gov/auctions/default.htm?job=about_auctions

airlines would set their quantities accordingly. If the prices are initially too low, then the congestion prices can be raised over time to ration demand. As in an auction, a uniform fee for landing at a particular time would reduce the congestion bias caused by the current system of weight-based landing fees.

Congestion pricing has been considered in the past by DOT, and it was tentatively approved in one case. The City of Boston is planning to build a new runway at Logan Airport, and as part of the approval process, DOT required Boston to submit a plan for handling congestion. Massport, the airport authority, has submitted a congestion pricing plan in the event congestion occurs in the future, and DOT has tentatively approved the plan's general methodology to handle any future congestion problems.¹⁰

Congestion pricing has been used for several years to improve the flow of traffic on two highways in Southern California. Highway SR-91 in Orange County, California has four free lanes next to two toll lanes in each direction. There is a pre-determined toll schedule for every hour of the day. The rates vary from \$1.05 for most overnight and pre-dawn hours to \$7.00 for some afternoon rush hour time periods. On Interstate 15 in San Diego, there is a toll schedule for two reversible lanes. The toll varies with the level of congestion on the road and can change as often as every six minutes.¹¹

Although congestion pricing is likely superior to administrative allocation, a drawback to congestion pricing is the regulator's lack of knowledge about what price to set. A regulator may

¹⁰ See letter from D. Bennett to T. Kinsley, June 10, 2004.

¹¹Bradley Flamm and Gregory Rosston, *Traffic Congestion, Congestion Pricing, and the Price of Using California's Freeways*, Policy Brief, Stanford Institute for Economic Policy Research (April 2005).

not have good enough information to allow it to set the right price without frequent experimentation. Even that mechanism may have problems because the necessary feedback for quantity adjustment may be slow. In particular, airlines often advertise service well in advance of beginning it, so as to schedule and make ground facility arrangements efficiently. This, in turn, implies that adjustments based on the changing price of arrival authorizations may be slow. For highly congested airports, the cost of setting the wrong price and getting too much (or too little) airline traffic may be high.

3. Additional Considerations in any Market-Based Mechanism

A switch to a market-based mechanism for allocating arrival authorizations will not by itself achieve the twin goals of reducing congestion and encouraging more competitive outcomes. Entry and expansion of new carriers, a key mechanism for encouraging competitive outcomes, is constrained not only by scarce landing rights, but by the limited availability of ground-based assets such as gates, baggage-handling, and check-in positions. To make any auction for arrival authorizations effective in this environment, the FAA must help ensure that ground-based assets will not be a constraint for new slot owners. A common-use pool of gates, for example, might be one solution to overcome some of the hurdles associated with limited ground-based assets.

The FAA should also be sensitive to the fact that the transfer of ground facilities to slot holders can be disruptive of current operations. Auctioning off only 20% of the airport's capacity at a time, as discussed above, would allow for efficient transfer of needed ground facilities.

B. The FAA Should Not Allow The August 2004 Order to Expire Without Further Action

The Notice seeks comments on whether the FAA should simply allow the current order and arrival limitations expire. That would not be a good outcome. As a hub for two of the country's largest airlines, O'Hare is an important airport for air passengers across the nation. Allowing the order to expire with no plan in place to deal with O'Hare's limited capacity would almost certainly lead to more congestion and significant delays for passengers throughout the country.

C. FAA Should Not Extend the August 2004 Order

Another option proposed in the Notice is for the FAA to extend the August 2004 order limiting arrivals or renegotiate with the airlines for voluntary reductions over a longer term. While this option would be better than doing nothing, it would likely lead to inefficient use of the airport's limited capacity. Under the current order, all slots are effectively priced at zero, regardless of the size of the plane arriving. There is insufficient incentive for a carrier to use an arrival authorization for a 737 instead of a regional jet. Because airlines are not incentivized to move more passengers in the limited airspace at O'Hare, they are using 44% of the airport's operations for regional jets that move only 24% of the aircraft seating capacity.¹² More importantly, continuation of the present order is unlikely to result in any significant new entry, or expansion by smaller incumbents.

¹²Analysis of data from the Official Airline Guide for domestic U.S. flights arriving at O'Hare on December 1, 2004.

D. FAA's Interim Proposal Will Not Solve The Problems At O'Hare

The fourth proposal in the Notice, which would extend the current arrival limitations until 2008 and provide some rules for an aftermarket, would limit congestion, but it has many problems that limit its ability to deal with congestion efficiently and ensure competition at O'Hare.

The FAA appears to recognize that the current buy/sell rule worked poorly, and has suggested an alternative in the Notice. Under the proposal, all sales of "arrival allocations" at O'Hare will be blind, using the FAA as an intermediary.¹³ Although this solution will reduce the problems associated with knowledge of the entrant's identity, the blind buy/sell proposed by the FAA is unlikely to solve the underlying liquidity problem of the buy/sell rule. Thus a blind buy/sell might make it easier for carriers to buy slots when they become available, but the rule is unlikely to make many more slots readily available in the future than they have been in the past.

American and United, the holders of the majority of slots at O'Hare, would still be unlikely to sell slots. The few remaining domestic slots are held by a small number of other domestic carriers that generally use those slots to connect their hubs with Chicago, a city that is a key element of their network. Because this type of slot use probably has a very high value to these carriers, they are also unlikely to sell. Therefore, few if any slot sales at O'Hare would likely occur under the revised set of rules proposed in the Notice.

The FAA also appears to recognize that the initial distribution of slots serves to entrench market power, but its proposed solution is to impose a use-or-lose rule on slots allocated at O'Hare. The FAA justifies this rule by noting that "in the absence of a minimum use

¹³Notice, 15526.

requirement, air carriers who hold the largest positions at O'Hare and hence the most authorizations could hoard existing authorizations to increase the value of their holdings or simply to deprive competitors of greater access to the airport.”¹⁴ This formulation of a solution confuses two different problems: hoarding through lack of use, with hoarding through sub-optimal usage. Although the use-or-lose rule would prohibit a slot from going totally unused, use-or-lose rules are unlikely to prevent the hoarding of slots to deprive competitors of these assets. Despite the implementation of such rules in the past, the “lose” part of the rule has rarely (if ever) been invoked – a carrier can almost always find some use for a slot at a slot- controlled airport that leaves the carrier better off than having the slot be forfeited to a competitor. As long as there are some under-served destinations, and perhaps even if there are not, a carrier would have the incentive to use a slot if losing the slot were the alternative. The presence of a use-or-lose rule, therefore, does nothing to increase liquidity in the market and allow new entry by more efficient carriers.

V. Conclusion

O'Hare is a vital link in the nation's air traffic system. Dealing with congestion at O'Hare in a way that both puts scarce resources to their most efficient use and facilitates competition among airlines is crucial for maximizing the welfare of the traveling public. The congestion that occurred at O'Hare when slot restrictions were lifted was a predictable response by the airlines to market forces. The FAA's response in seeking a temporary administrative remedy may have been a necessary short-term measure, but that short-term measure should not be mistaken for an effective long-term solution to the problems raised by the limited capacity at

¹⁴ Notice, 15528.

O'Hare and other capacity-constrained airports.

The FAA should take concrete steps toward implementing long-term market-based solutions and away from short-term administrative fixes. A periodic anonymous auction would provide a market-based solution that would enable all carriers – both incumbents and entrants – to compete for access based on how efficiently they can use this scarce resource. The time to begin planning such a system is now, and the FAA should make a commitment to such a market-based solution a centerpiece of its policy.

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Respectfully submitted,

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May 24, 2005