The Role of Congestion Management in Aviation

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Summary of Topics

- What is Congestion Management and When Should it be Used?
- Goals of Congestion Management
- Current & Prospective use of Congestion Management
What Is Congestion Management?

The application of either administrative or market based mechanisms imposed by the government to balance operations at capacity constrained airports when:

- Market forces are unable to properly respond,
- Demand for access at an airport persistently exceeds available airport supply and,
- Capacity cannot be increased in the near term to meet demand
# Congestion Management Alternatives

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Goals of Congestion Management

★ Mitigate Airport (and NAS) Congestion and Delay

★ Support Efficient Allocation and Utilization of Resource

★ Encourage Airline Competition

★ Promote Greater Passenger Throughput
Current and Prospective Examples of Congestion Management

Current
- HDR
- O’Hare Order
  - LaGuardia
  - JFK
  - Reagan National

Future
- O’Hare Proposed Rule
- LaGuardia post-HDR
Order caps scheduled hourly arrivals to 88/hour from 7:00 a.m. to 9:00 p.m.

Temporary delay reduction measure while engaged in rulemaking
Main Features of NPRM:

- Maintain operational cap of 88 arrivals per hour
- Preferences for new entrants and limited incumbents
- Blind buy/sell and leasing
- Seeks Comment on Minimum Usage Requirement
- Sunset Rule on April 6, 2008

*Phase I of the O’Hare Modernization Program (OMP) is projected to be completed by the end of 2007.
HDR At LaGuardia Airport

High Density Rule and AIR-21 Provisions to expire January 1, 2007

Post-HDR the “Do Nothing” approach is not a viable option

Extending the HDR is not a preferred alternative:
✓ Mitigate Airport Congestion & Delay
✗ Efficient Allocation & Utilization of Resource
✗ Encourage Airline Competition
✗ Maximize Passenger Throughput

The Role of Congestion Management in Aviation
Alternatives for LaGuardia Airport After Expiration of the HDR

- Administrative Rule
- Auctions
- Congestion Pricing
Administrative Options
Up-Gauging of Aircraft

Features

- Operational cap established by FAA Benchmark Report or other FAA measures.

- Slots would be subject to usage requirement based on aircraft size.

- A baseline number of slots could be allocated to all carriers to ensure continuity of service. Baseline slots would *not* be subject to the usage requirement.

- Slots could have finite lives so they would be periodically withdrawn and reallocated, which would encourage new entry and provide access to the airport.

- Blind secondary market.
Sample of Research Results on Up-Gauging of Aircraft

NEXTOR researched impact of moderate upgauging using TAAM simulation. 12% to 25% of RJs were replaced with larger aircraft, such as B737s.

Moderate Upgauging does not lead to increased delays.

Upgauging could raise passenger throughput at LaGuardia by 3-4 million passengers per year.

Moderate Upgauging could be accommodated under current gate configuration at LGA.
Market Based Mechanisms
Auction of Landing and Takeoff Rights

Features

- Operational Cap established by FAA Benchmark Report or other FAA measures.
- Simultaneous auction in which airlines can bid on multiple slots.
- Vouchers could be used to recognize air carrier investments.
- Auctions could be phased in over time to provide a smooth transitional period.
Primary NEXTOR Research Results on Auctioning Landing and Takeoff Rights

Software can be developed & used to address the difficult problem of selling slots simultaneously at LaGuardia.

Benefits include:
- Operations would be capped, which ensures a certain level of congestion.
- Likely to generate significant revenue which could be used for capacity expansion projects.
- Encourages efficient utilization of the airport.

Main Constraint: Implementation requires legislation.
**Market Based Mechanisms**

**Congestion Pricing**

**Features**

- Congestion fees would be set during the most congested periods of the day.

- While there would not be an operational cap, a target level of operations would be established at the airport and congestion fees would be set at a level that influences carriers to schedule operations up to the target level.

- Congestion fees would change as necessary in order to achieve the target level of operations.
NEXTOR Results Suggest that Congestion Pricing Leads to Upgauging

![Bar chart showing the comparison between 2005 Average Seats per Operation and Congestion Pricing Seats per Operation. The chart indicates similar levels of operations between the two categories.](chart.png)
Questions