

# Passenger Trip Delays: 2007 Statistics

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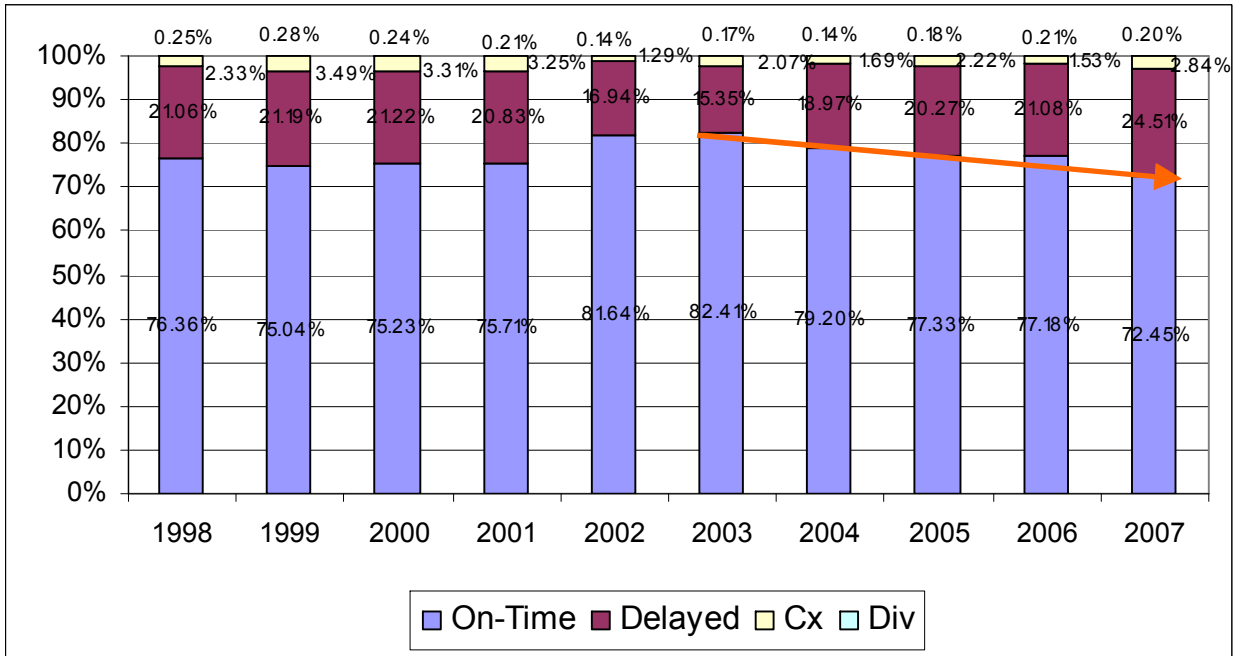
## Acknowledgements

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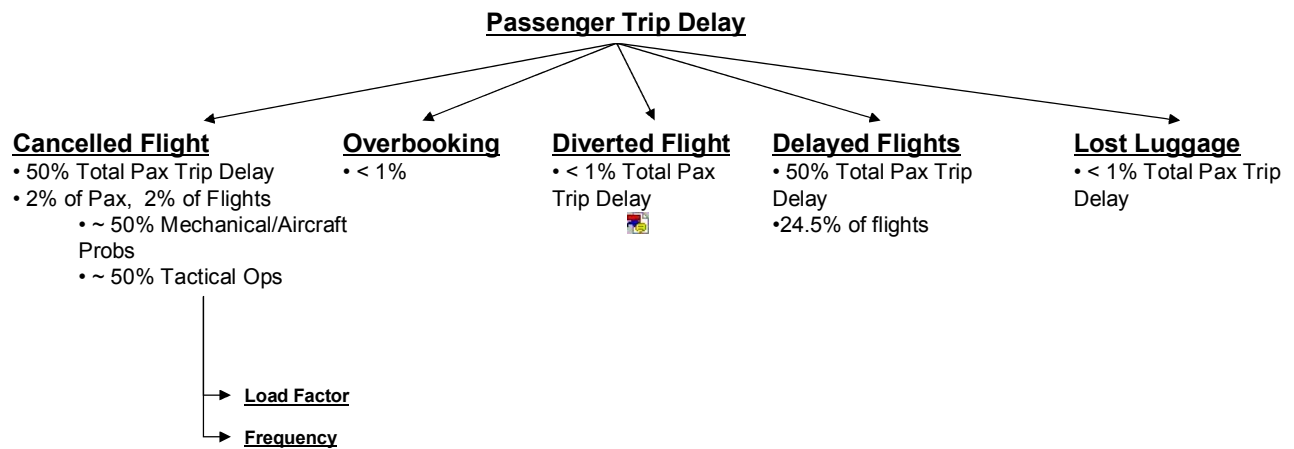
# Transportation Metrics

- *Raison d'être* of the air transportation system is to haul passengers and cargo
- Passenger Trip Delays  should be the top level metric
  - Not flight delays
- Bratu & Barnhart (2005) showed Flights delays  $\neq$  Passenger Delays

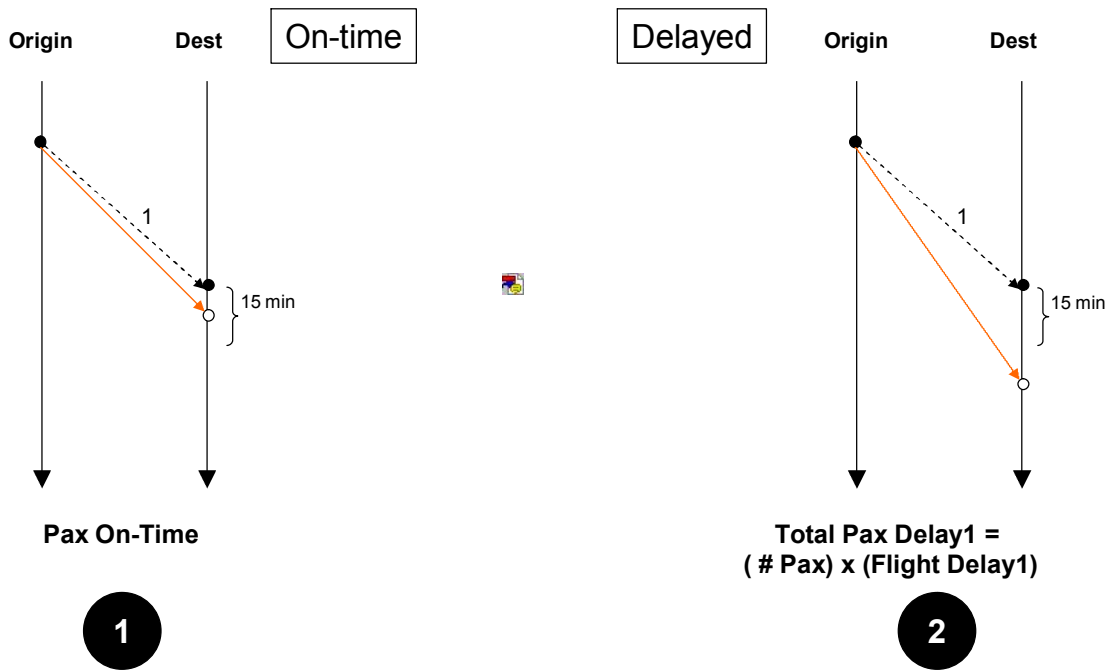
# Flight Delay Trends, but What about Passengers?



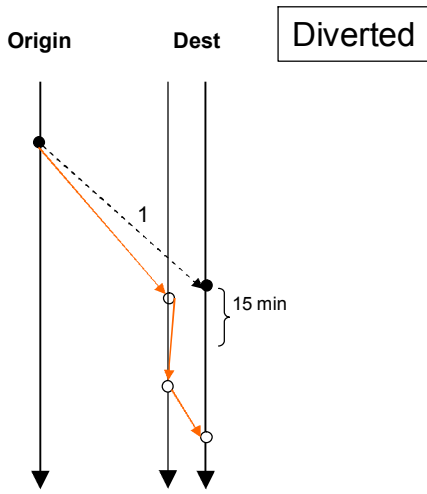
# Factors Contributing to Pax Flight Delays



# Pax Trip Delay Factors



# Pax Trip Delay Factors

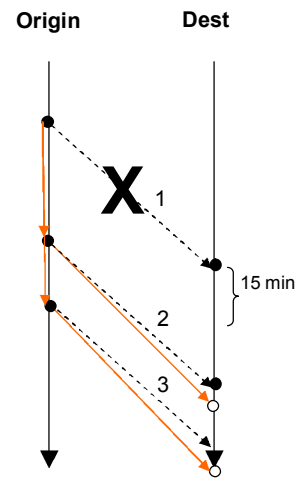


Diverted

$$\text{Total Pax Delay1} = (\# \text{ Pax}) \times (\text{Flight Delay1} + \text{TurnAround1-2} + \text{Flight Time2})$$

3

Cancelled or Overbooked

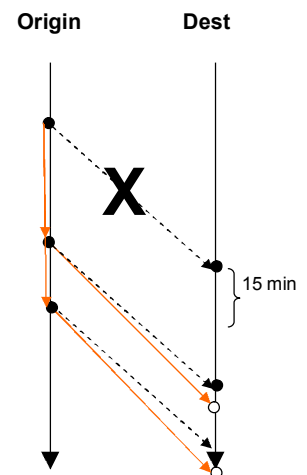
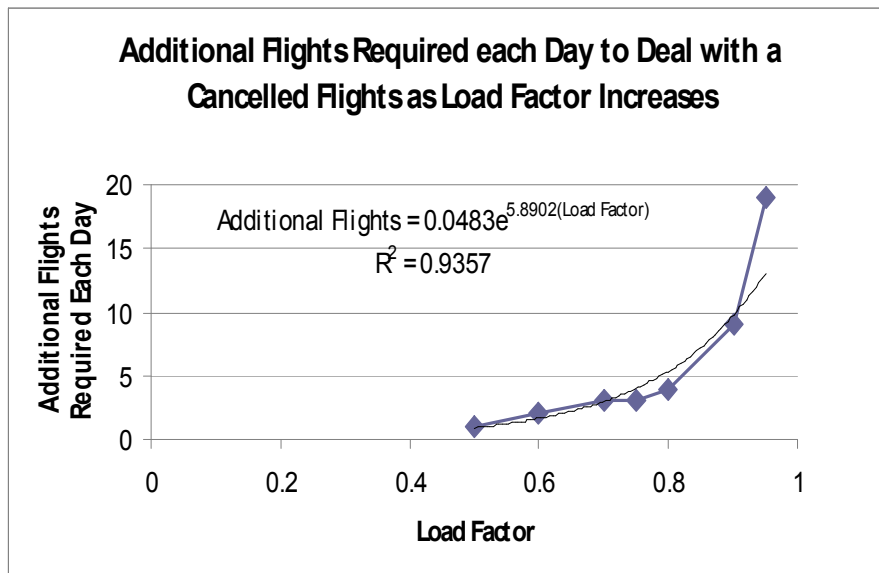


$$\text{Total Pax Delay1} = (\# \text{ Pax2}) \times (\text{Flight Arrival2}) + (\# \text{ Pax3}) \times (\text{Flight Arrival3})$$

Note: Same airline until 15 hours delay

4

# Pax Trip Delay due to Cancelled Flights



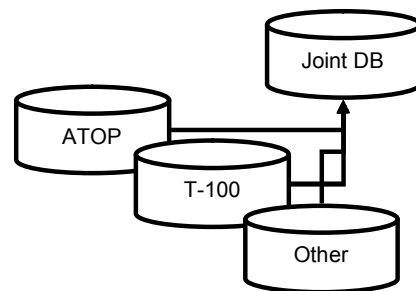
**Total Pax Delay1 =**  
 (# Pax2) x (Flight Arrival2) +  
 (#Pax3) x (Flight Arrival3)

4

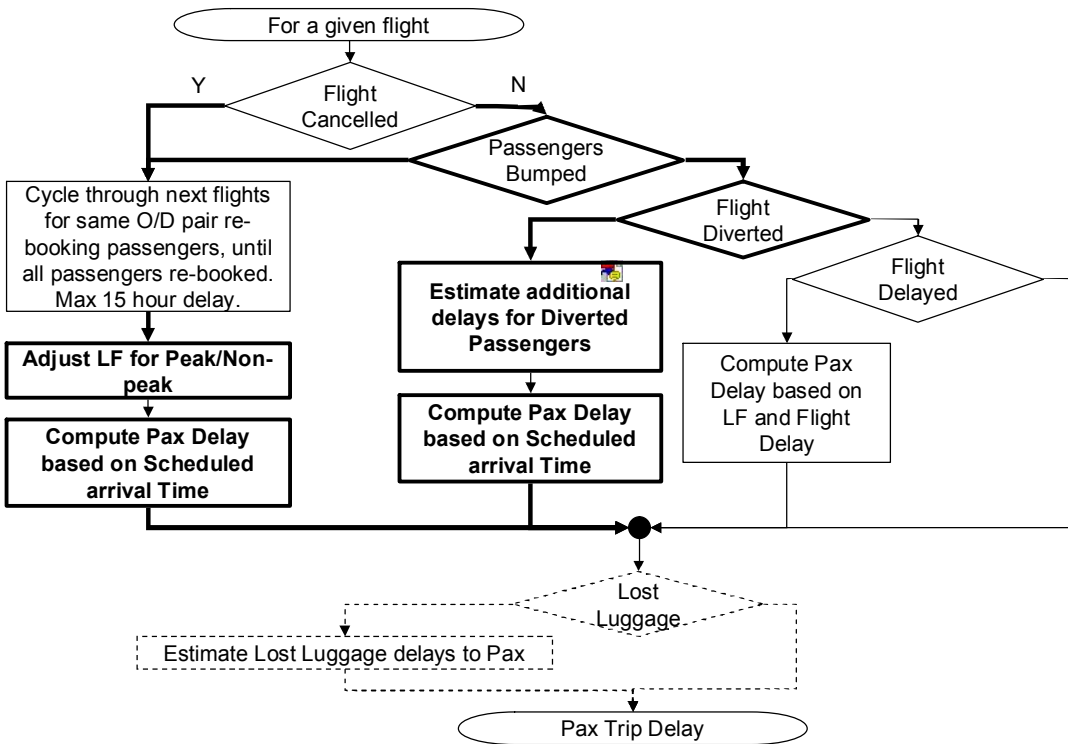


# Data Source

- Bureau of Transportation Statistics
  - Airline Data
    - ATOP, T-100, Secondary Sources
- Secondary sources 🇺🇸
- Merge data-bases
  - Data integrity checks
- Scope
  - 5224 routes between 309 airports



# Algorithm

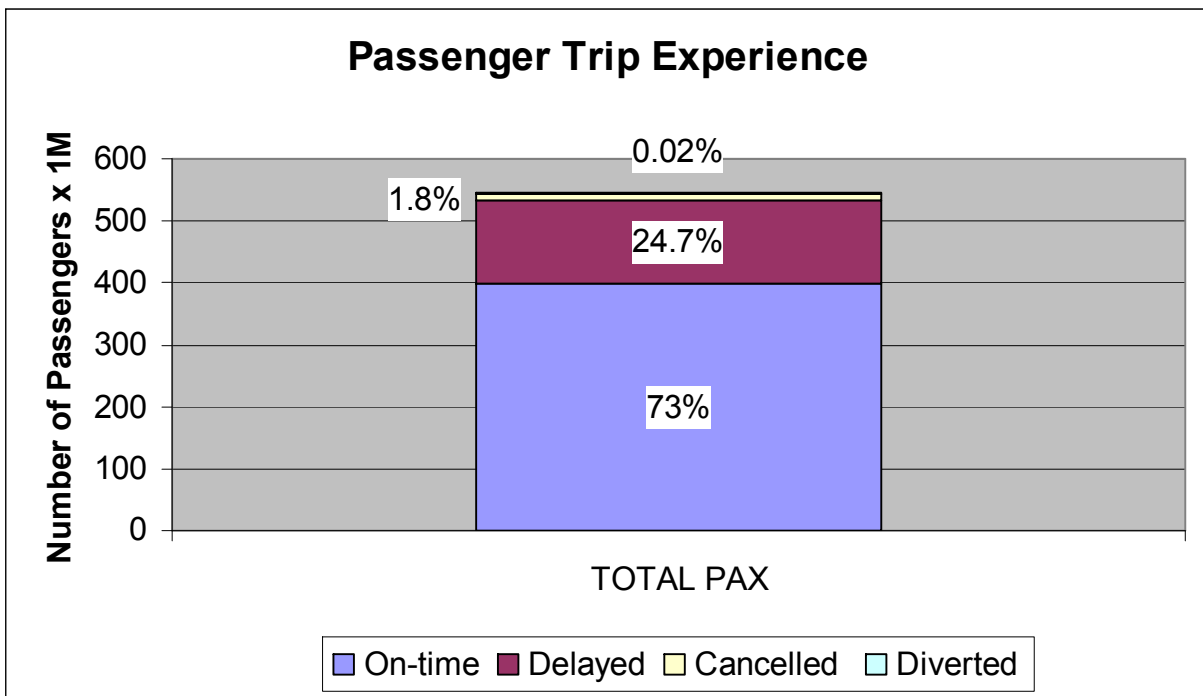


# Passenger Tip Delays: 2007 Statistics (Jan – Oct)

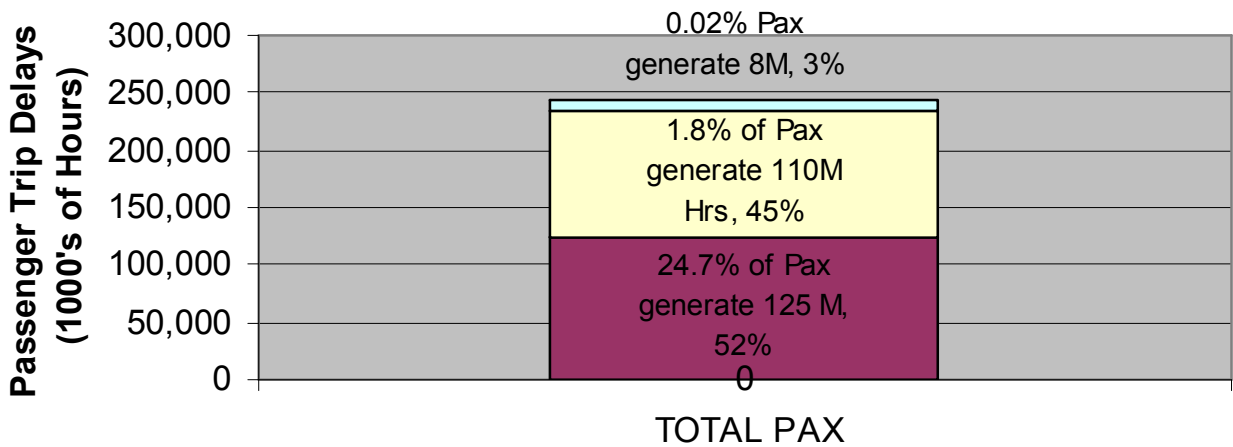
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### Passenger Trip Experience

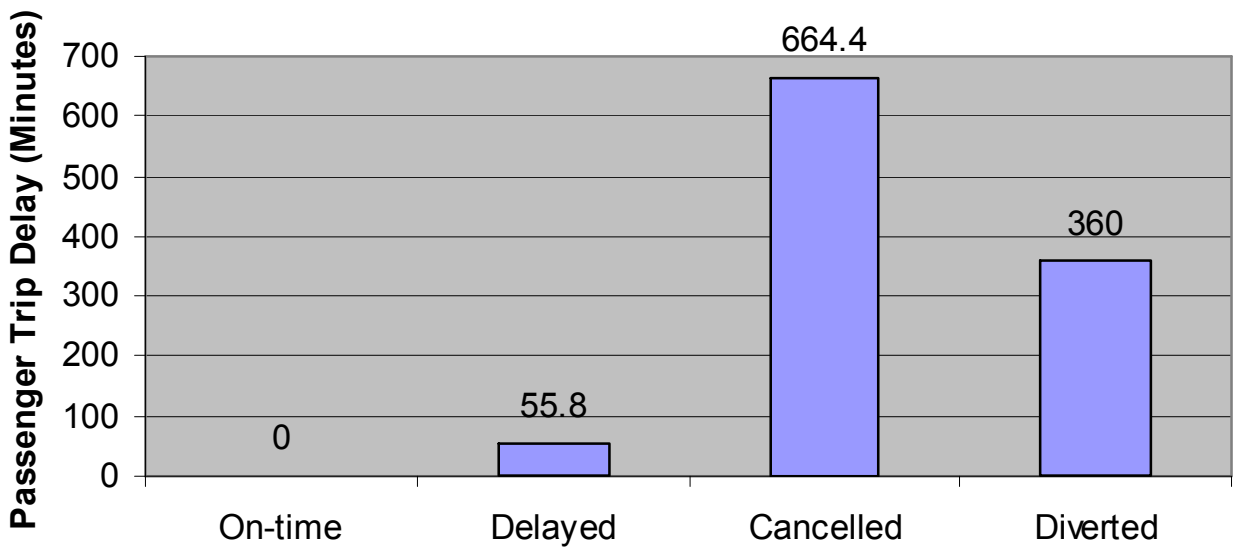


### Passenger Trip Delays



■ On-time 
 ■ Delayed 
 ■ Cancelled 
 ■ Diverted

**Average Passenger Trip Delay by Category**



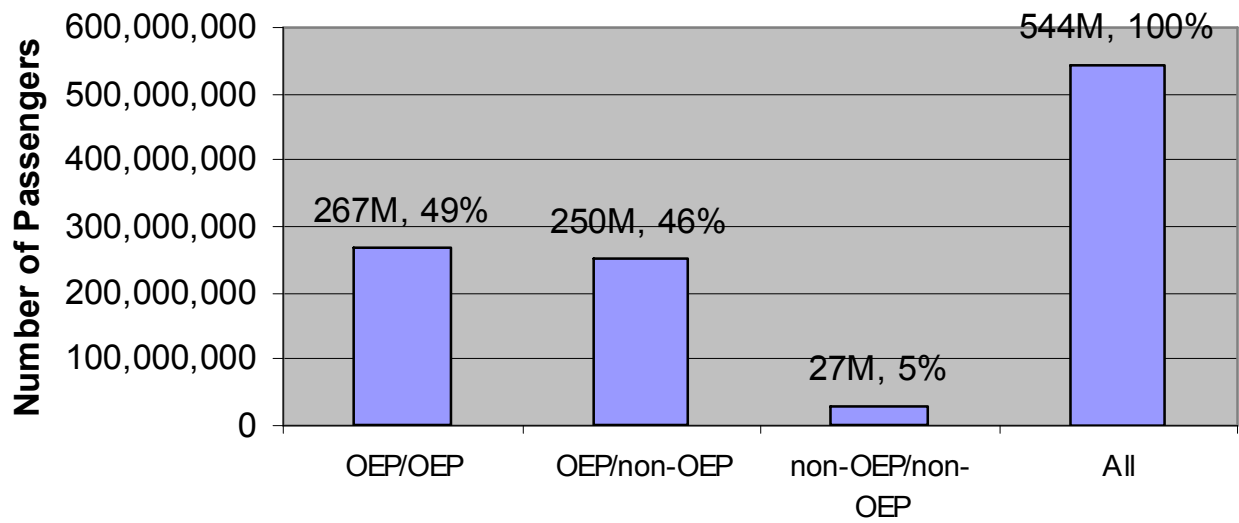
# Passenger Equity:

OEP-to-OEP  
OEP-to-Non-OEP  
Non-OPE-to-Non-OEP

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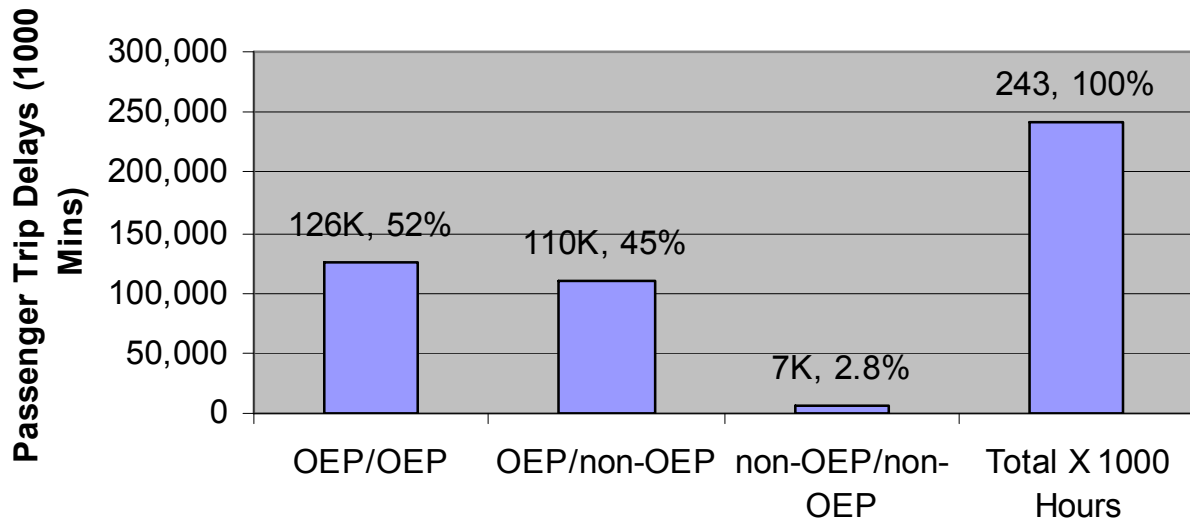


### Number of Passengers on Each Type of Route

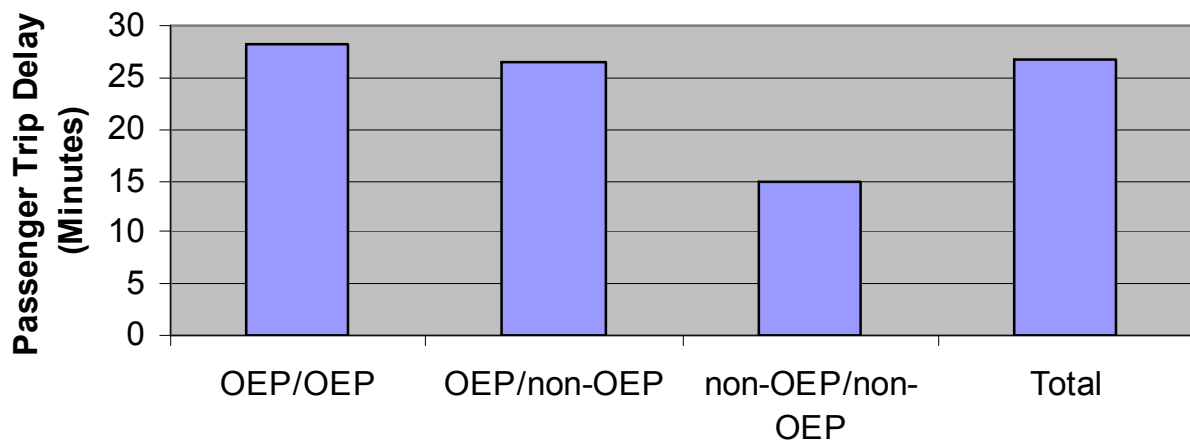




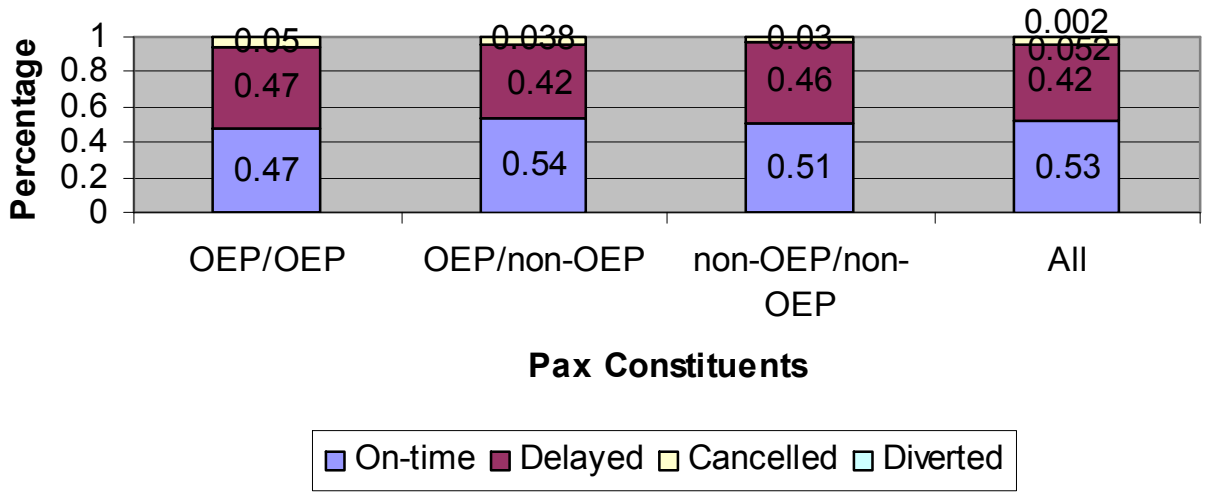
### Total Passenger Trip Delay by Route Type



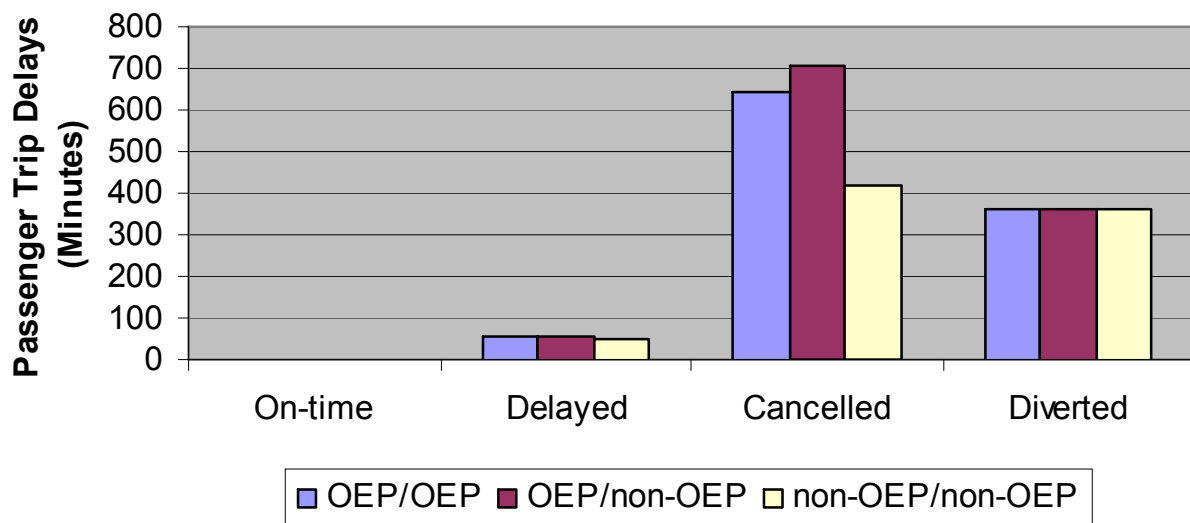
**Average Passenger Trip Delay By Route Type (for all Passengers)**



**Breakdown of Percentage of Passengers for each Passenger Experience on each Type of Route**



### Average Passenger Trip Delays by Category



# Summary

- Avg Passenger Trip Delays = Avg Flight Delays + 34 minutes
  - 95<sup>th</sup>-tile Passenger Trip Delays = 95<sup>th</sup>-tile Flight Delays + 150 minutes
- Total Passenger Trip Delays generated by:
  - 52% flight delays
  - 45% cancelled flight delays
  - 3% diverted flight delays
- non-OEP to non-OEP experience 2X better performance (avg delays)

# Steps to Mitigate Pax Delays (1)

- Honesty in advertising!


**Warning:** the Secretary of the Department of Transportation (DOT) has determined that you are on a flight that has a high probability of a delay in excess of 45 minutes.

# Steps to Mitigate Pax Delays (1)

**Warning:** the Secretary of the Department of Transportation (DOT) has determined that you are on a flight that has a high probability of a delay in excess of 45 minutes.

**Warning:** The Surgeon General has determined that Gambling is bad for your health.

## Steps to Mitigate Pax Delays (2)

- Passenger Bill of Rights
  - Emphasis on:
    - Cancelled Flights
      - Protect passengers against high load factors on subsequent flights 
    - Diverted Flights
    - Overbooked Flights (already strong)
    - Lost Luggage
  - Less than half of cancelled flights can claim cause of weather

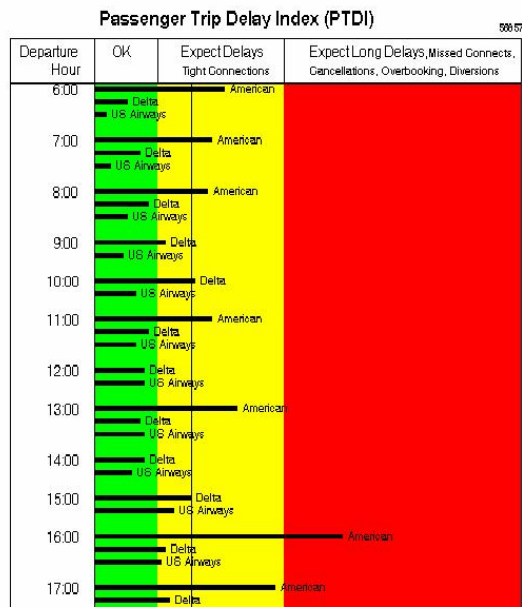


# Steps to Mitigate Pax Delays (3)

Give Passengers Information

[www.GreenFlights.INFO](http://www.GreenFlights.INFO)

- New York-John F Kennedy to Phoenix-Sky Harbor
- New York-John F Kennedy to Pittsburgh International
- New York-John F Kennedy to Portland International
- New York-John F Kennedy to Salt Lake City International
- New York-John F Kennedy to San Diego-Lindbergh Field
- New York-John F Kennedy to San Francisco International
- New York-John F Kennedy to Seattle-Tacoma
- New York-John F Kennedy to St Louis-Lambert
- New York-John F Kennedy to Tampa International
- New York-John F Kennedy to Washington-Dulles
- New York-John F Kennedy to Washington-National
- New York-La Guardia to Atlanta-Hartsfield-Jackson
- New York-La Guardia to Boston-Logan**
- New York-La Guardia to Charlotte-Douglas
- New York-La Guardia to Chicago-Midway
- New York-La Guardia to Chicago-O'Hare
- New York-La Guardia to Cincinnati-Northern Kentucky
- New York-La Guardia to Cleveland-Hopkins
- New York-La Guardia to Dallas-FtWorth
- New York-La Guardia to Denver International
- New York-La Guardia to Detroit-Metropolitan Wayne
- New York-La Guardia to Fort Lauderdale-Hollywood
- New York-La Guardia to Houston-George Bush
- New York-La Guardia to Memphis International
- New York-La Guardia to Miami International
- New York-La Guardia to Minneapolis-St Paul
- New York-La Guardia to Orlando International
- New York-La Guardia to Pittsburgh International
- New York-La Guardia to St Louis-Lambert
- New York-La Guardia to Tampa International
- New York-La Guardia to Washington-Dulles
- New York-La Guardia to Washington-National



# Questions?

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