



ValSim

AGIFORS

Airline Operations

Value Simulator Research Update

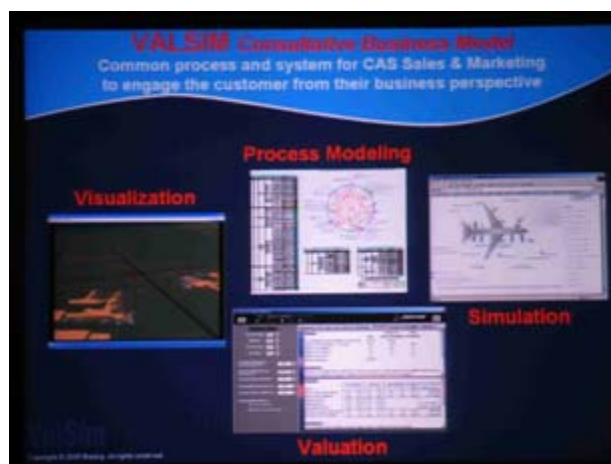
May 2005

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Michael Irrgang

System Overview

- Visualization
- Simulation
- Quantification
 - What-If Solution Set



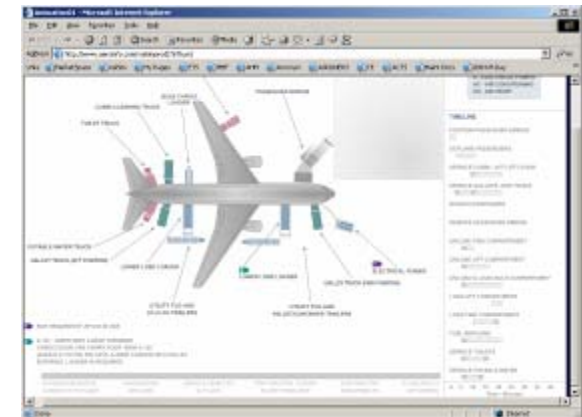
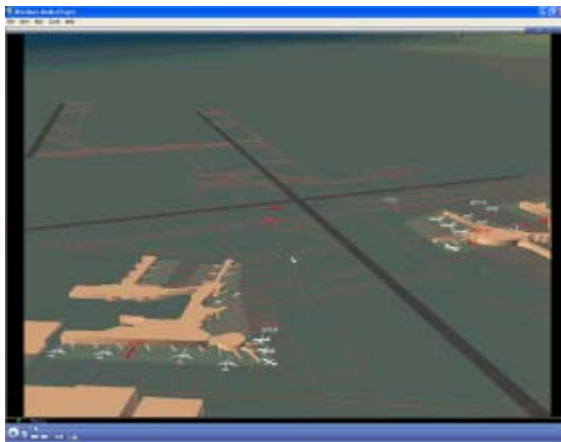
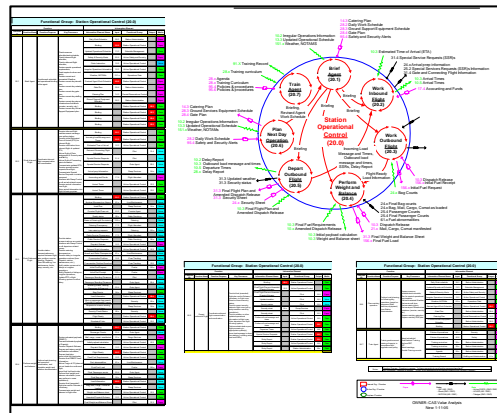
ValSim Working Together

Value Simulator

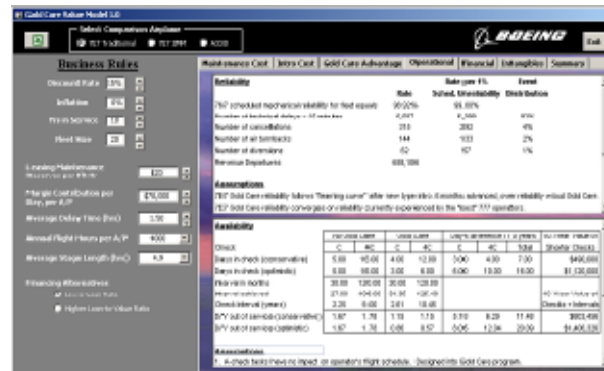
Aviation Process Model

Visualization

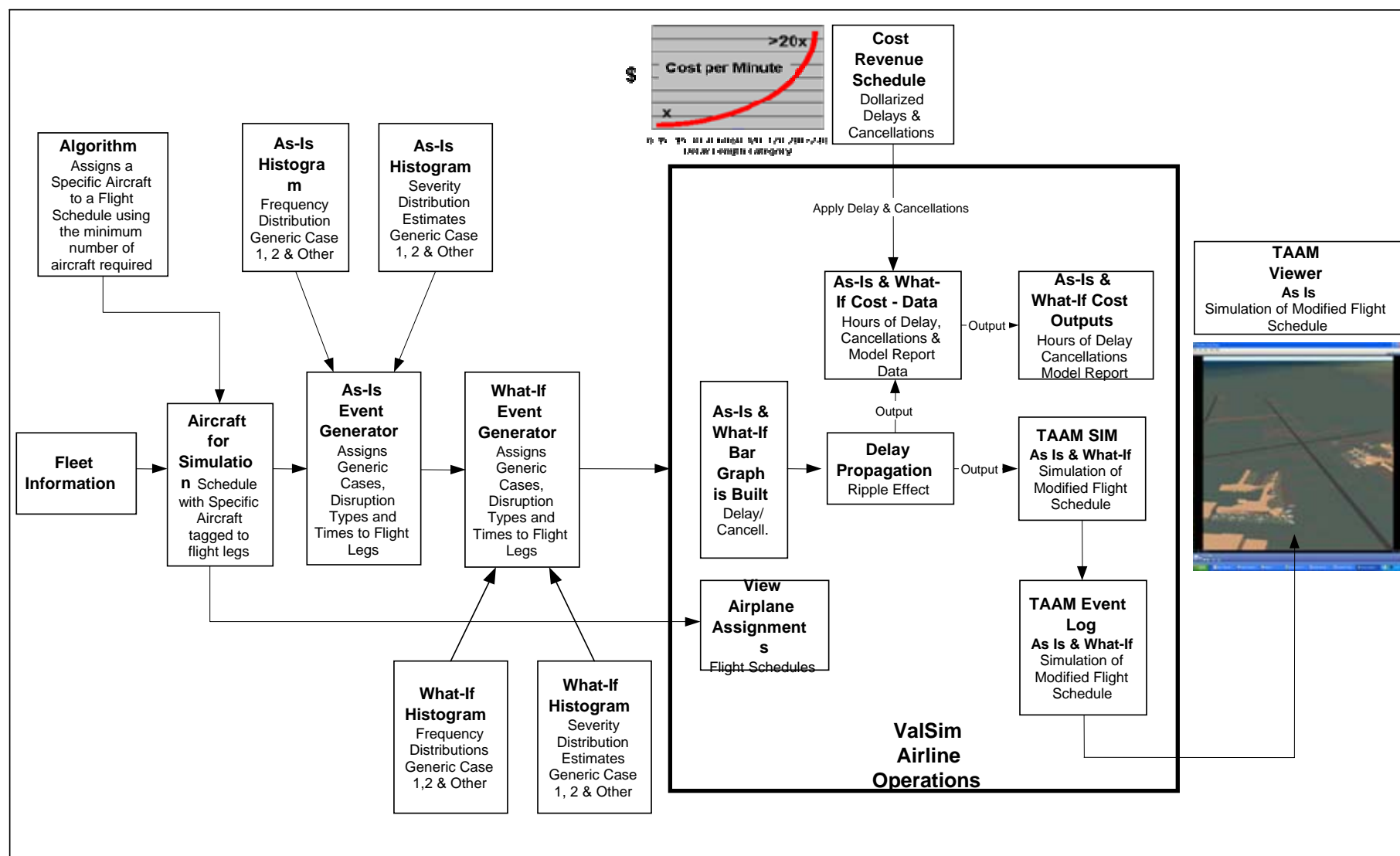
Simulation



Integrated Valuation



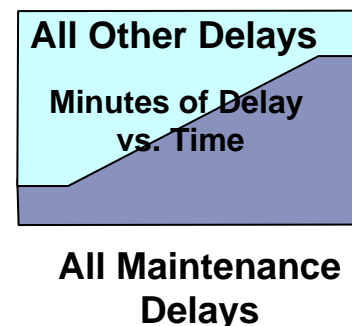
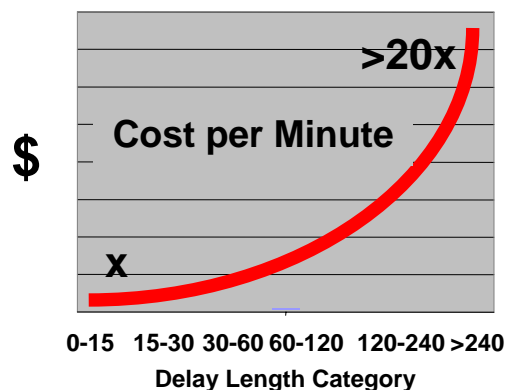
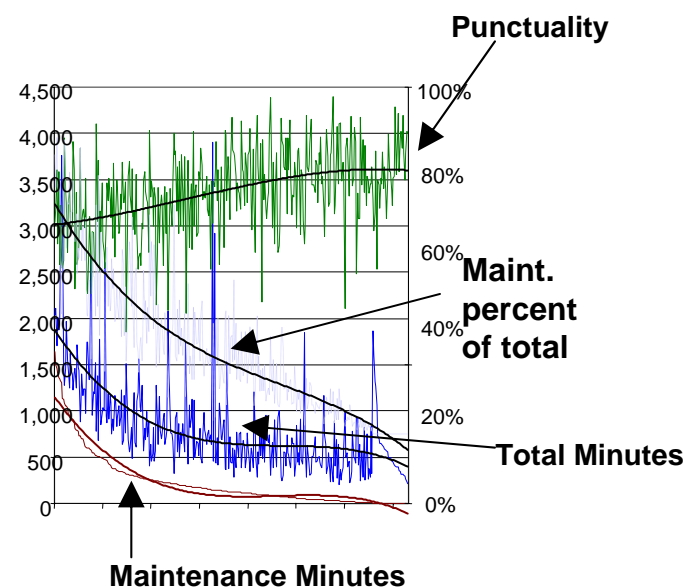
Air Carrier Operations – Overview



Research Findings

Maintenance Delays Increase Other Delays

- Most non-Maintenance delays are less than an hour
 - Average 20-30 minutes in all our test cases
- Most Maintenance delays are greater than an hour
 - Mean in short-haul carriers is 45-70 min., long-haul 75-120
- As Maintenance Delays Increase, All Delays Increase

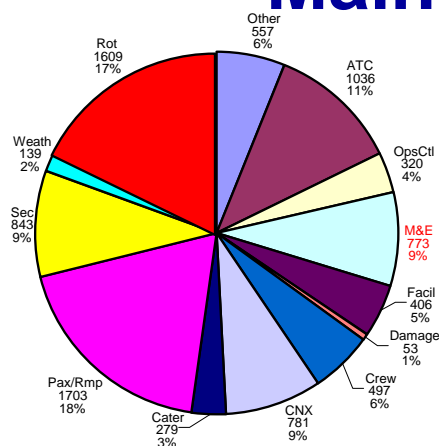


Research Findings

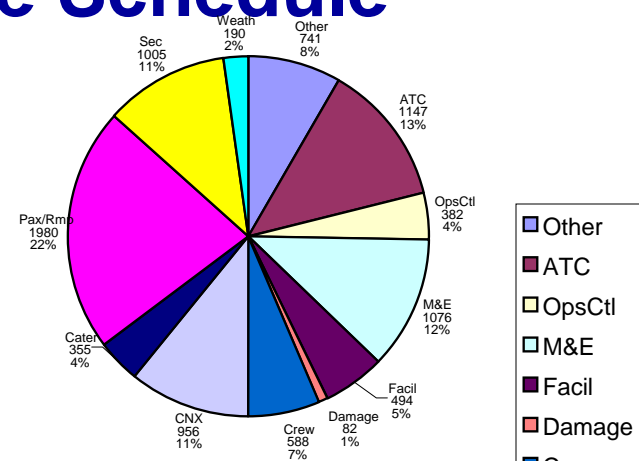
How Should We Look at Airline Delays?

Maintaining the Airline Schedule

Raw Delay Events



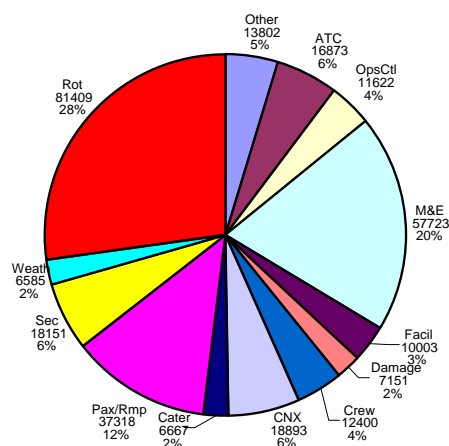
Delay Events with all Consequential Delays allocated



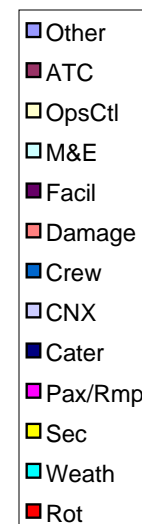
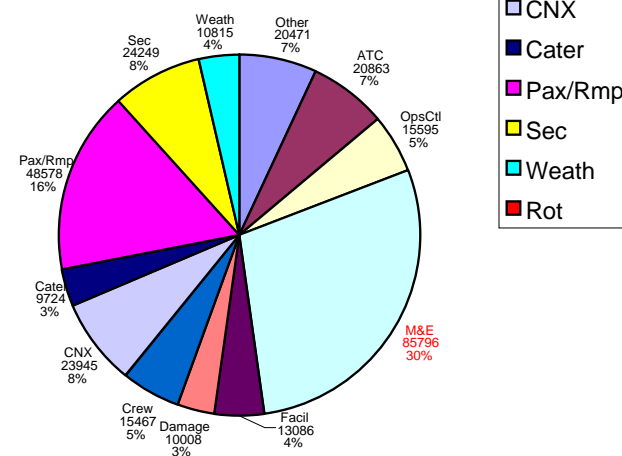
Example: Maintenance goes from 9% of events ...

... to 30% of minutes

Raw Delay Minutes



Delay Minutes with all Consequential Delays allocated





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