Economic Benefits of Aviation Weather Support

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Measuring the Value

- Aviation is a very high weather impact segment, and it is as a very significant mode of transportation.
  - –There are currently over 730M U.S. passengers annually and growing
  - –The value of U.S. exports transported by air reached an all-time high of $393B in 2010, accounting for 31% of total U.S. export value.

- Significant, measurable improvements in to aviation weather support have been recognized in the following areas:
  - – Advancements within the science of meteorology
  - – Observations
  - – Forecasts
  - – Information Systems
  - – Collaboration and Partnership
  - – Decision Making and Response

Measuring the Value

- Weather forecast formats and contents can be a somewhat unspecific relating to:
  - The location, intensity, and confidence/uncertainty levels
  - The Impacts on specific airport locations and aircraft sizes

- The Industry does not routinely collect data on quantifiable, operational benefits of weather impacts to enable the establishment of a comparative dataset.
  - Most studies provide a static metric at a given time
  - Some collect internal metrics but may not share externally
  - There are no international standards to collect and share information

- The benefits vary on the perspective of the….
  - Passenger
  - Government
  - Airline

Passenger Perspective

- Safety
- On-Time Performance
- Operational Efficiency
- Reliability

Government Perspective

- FAA
  - –Safety
  - –Capacity Improvement
  - –Environmental Impact
  - –Economic Efficiency
  - –Comfort of Passengers

- NOAA/NWS
  - –Balance competing national priorities for weather support
  - –Improve Forecast Accuracy
  - –Reduce Forecast Uncertainty
  - –Improve Observations
  - –Assist with Improved Decision Making
  - –Support a Weather-Ready Nation

* Photos Courtesy of FAA

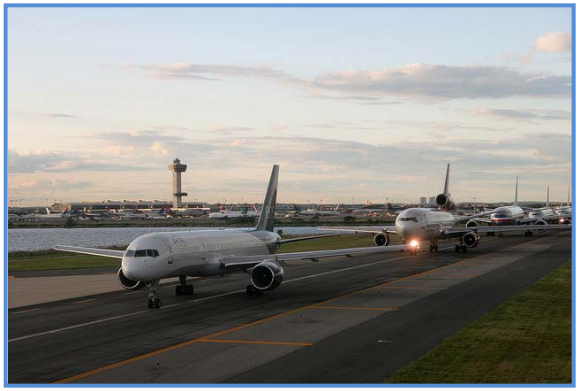
Image credit: Jessica Hill/AP

Airline Perspective

- Airlines are not always able to quantify weather support
  - Quantifying weather delays is fairly easy.
  - Quantifying "avoidable" weather delays is not.

- Most efforts to quantify benefits are not done to an industry standard
  - Fleets are different
  - Service areas are different
  - Route structures are different
  - Schedules are different

- Competitive forces can also inhibit sharing of data



Airline Cost Example

- Average Cost for One Minute of Extra Taxi Time
  - –$35.90/Minute/Aircraft
  - –$4,200.03/Minute for the Fleet
  - –$873,662.40/Year for One Extra Minute of Fleet Taxi Time
- Average Cost for One Minute of Extra Flight Time
  - –$ 96.15/Minute/Aircraft
  - –$11,249.55/Minute for the Fleet
  - –$2,339,906.40/Year for One Extra Minute of Flight Time Fleet wide
- Average Labor Cost** for One Minute Late Into Primary Hub
  - –$711.96/Minute/Aircraft
  - –$83,299.32/Minute for Average Day into Primary Hub
  - –$17,326,258/Year for One Minute Late into Primary Hub

* Courtesy of UPS

** Cost is for Hub Workers Only, does not include Power Consumption, Support Staff, Downstream Impact

Measuring the Value

- Very difficult problem to solve…
- Government agencies need this information to not only measure incremental improvements to new products and enhancements to existing products, but continued funding concerns as well.
- Industry needs this information to help improve customer service levels, operational efficiency and revenue impacts relating to weather information.

Measuring the Value

- How do we measure our improvements without any existing benchmarks?
- What meaningful measurements can be realized that benefit both the “consumer” and “producer” of the information?
- What can we measure easily to get this process started?

Next Steps

- Determine the value and priority?
- Determine who will work this issue…It will require a significant level of coordination on both government and industry side.
- Identify a set of variables which can be easily measured to get the process started.
- Identify what information can be routinely collected from industry….
- How do we get this started?

Possible Approach

- Industry and government work together to define an initial set of key weather variables.
- Each side will then research internal ways to report data for comparison.
- Compare data sets and begin to store and report results.
- Start small and keep incorporating new datasets and results into the process.

Thanks!

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