

Weather in the Cockpit

A safety and operational breakthrough!



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Weather in the Cockpit



- A game changer!
 - ▶ Updates while airborne via data-link
 - Situational Awareness - no longer limited to the preflight weather briefing
 - Graphical updates while airborne
 - Much more effective than voice or textual updates via Flight Watch or Dispatch



■ Why work on Meteorological Data Link Standards?

- ▶ Market forces have already created weather data link systems
 - Will these existing data links get us where we want to go?
- ▶ The process to approve new weather products for use on data links systems is cumbersome
 - Weather science has advanced to the point where there are many new weather products
- ▶ New data links standards can spur innovation by streamlining the operational approval process

Examples of Meteorology data link applications:

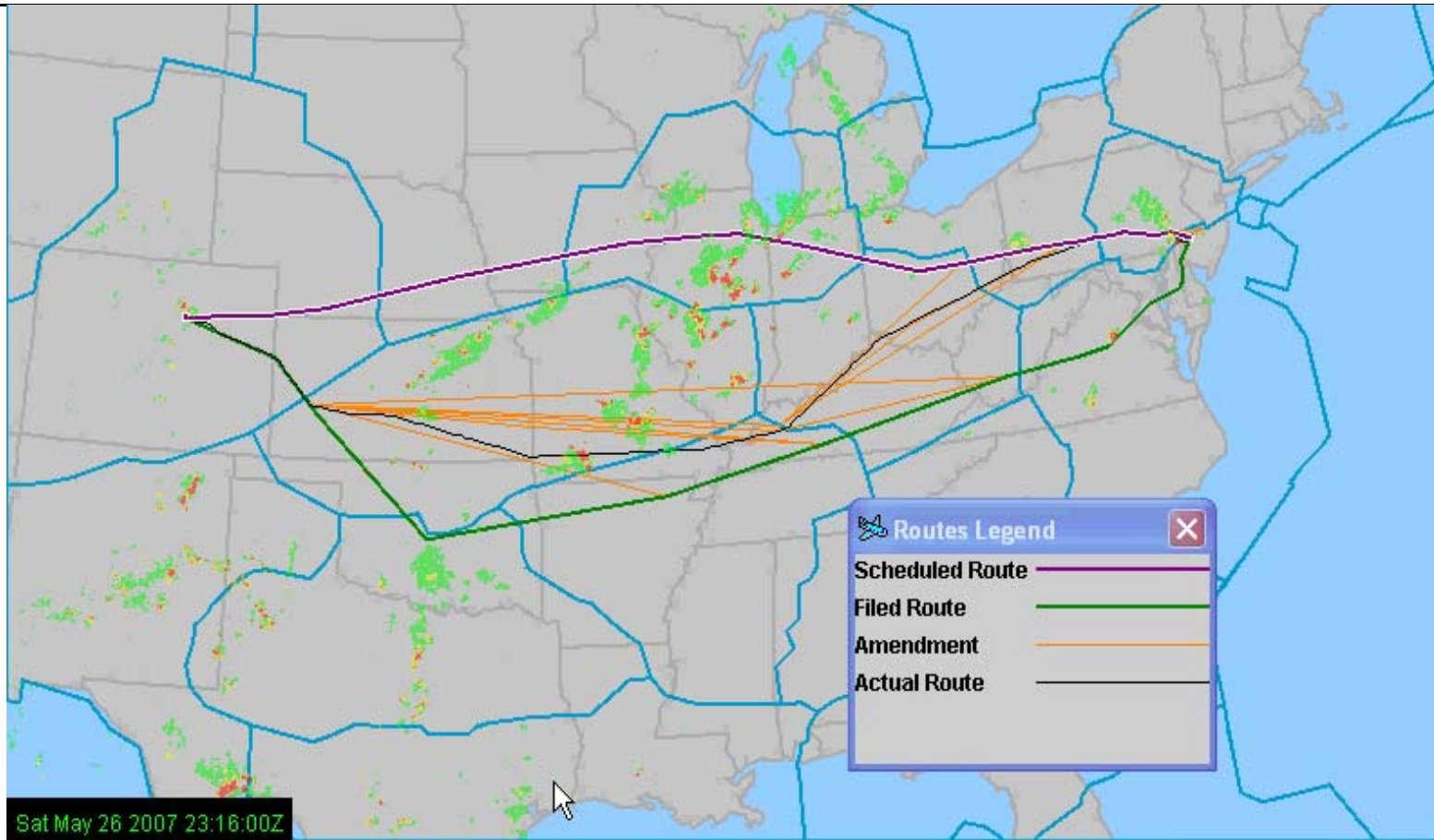


- Strategic decisions to deviate around convective weather (efficiency):
 - ▶ EFB displays with long range convective weather
 - ▶ Allows for strategic decisions with our dispatchers
 - ▶ Gives pilots a better tool to advocate for a more efficient solution
- Turbulence avoidance (safety):
 - ▶ Graphical Turbulence Guidance
 - ▶ Turbulence Remote Sensing
 - NCAR's NEXRAD Turbulence Detection Algorithm
 - ▶ Oceanic Cloud top uplinks

Longer range weather – beyond the airborne weather radar

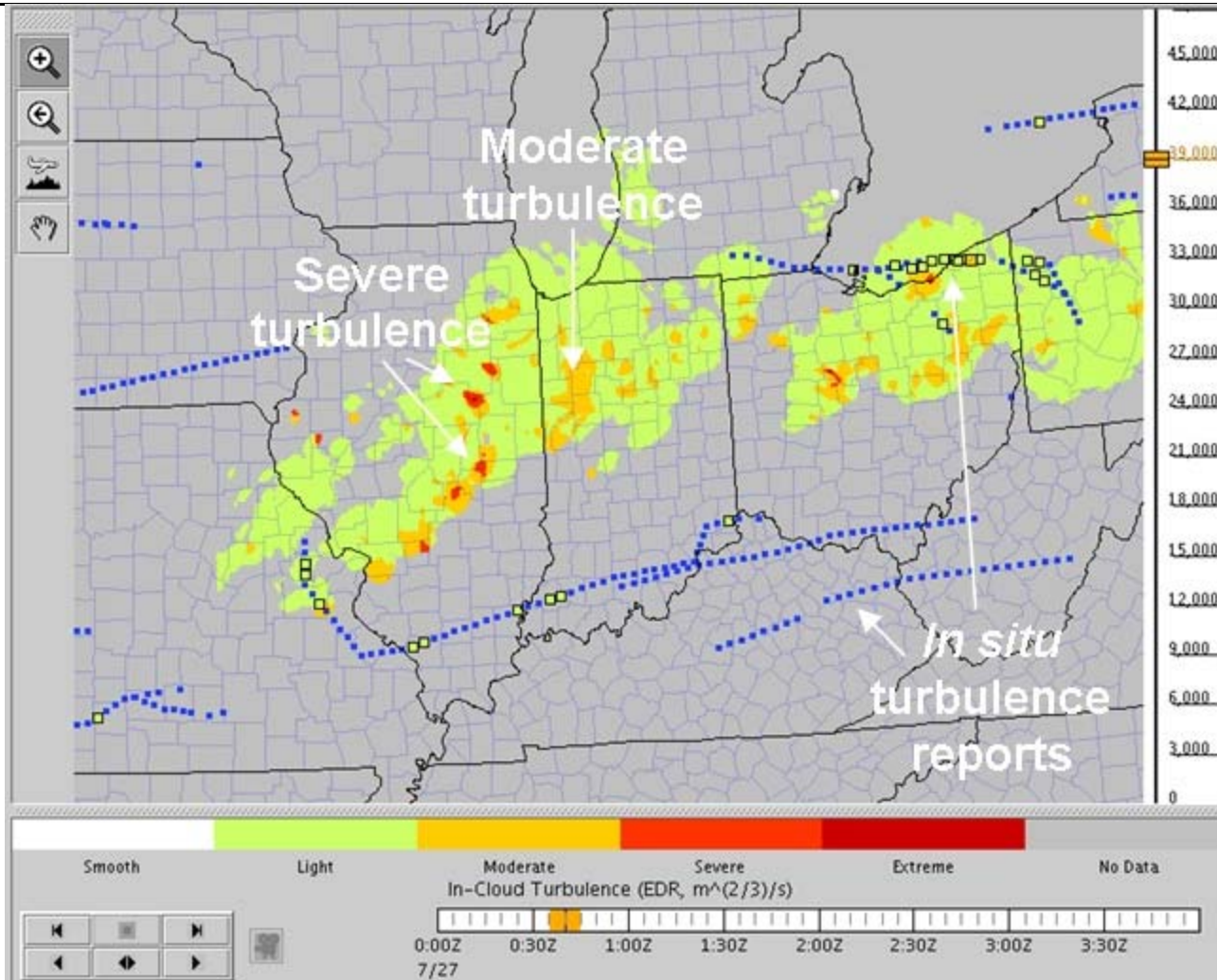


An Example of convective weather reroute savings

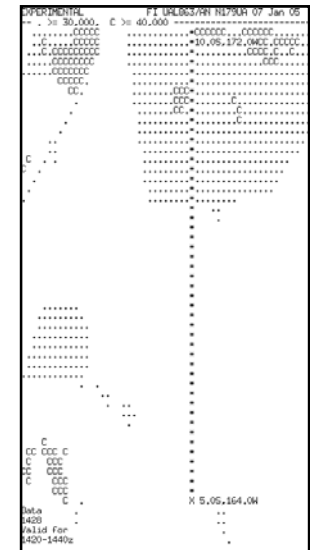
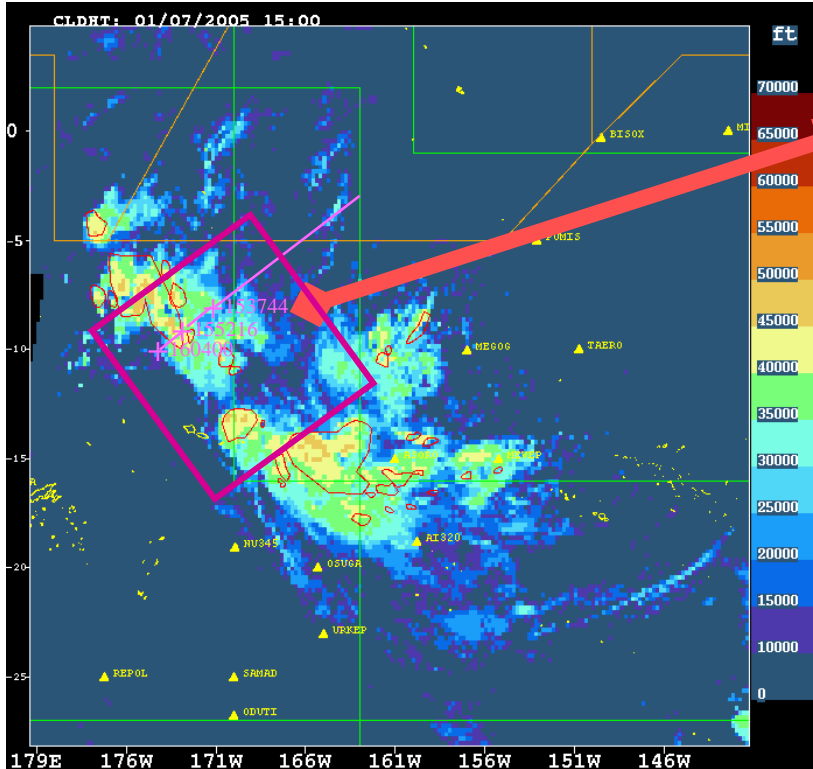


- Flight plan time = 3:45
- Actual flight time = 3:20

Turbulence remote sensing: in-cloud turbulence



Oceanic cloud top uplinks:



Both Display formats available with EFB

Current ACARS display

Conclusions



- New weather products are on the horizon that have the potential to improve operational efficiency and increase safety
- Weather data link standards are needed to spur the development of these new products and reduce the time for them to become operational data link products

Thank You!



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