Enhanced Flight Hazards Forecasts

Increase safety and reduce costs with proven accuracy.

One of the major challenges that your organization faces is turbulence. This common, but serious aviation weather phenomenon can threaten crew and passenger safety, as well as damage aircraft. It can also result in any number of financial losses, including medical expenses, worker compensation claims, lost time, unscheduled inspection and repair costs, added fuel bills, and canceled or delayed flights.

The most common result of turbulence is injury to flight attendants, which costs commercial airlines an estimated $9 to $11 million U.S. dollars (USD) per year in various associated expenses. Turbulence-related delays and cancellations cost the industry an additional estimated $1 billion USD annually.

Limited knowledge of the location and severity of turbulence often restricts airlines and aircraft operators from using large blocks of airspace — usually much larger than is necessary. This places undue costs on operators and the traveling public. Traditional turbulence observations have proven to be inadequate to support such decisions. Thus, airline and aircraft operators need better, more timely and reliable information to make critical turbulence-related decisions.

The DTN difference

Our aviation scientists and developers relentlessly work to improve our Enhanced Turbulence Forecasts, delivering best-in-class outlooks and 29 flight levels for optimal vertical flight coverage, especially during climb and descent.

Our patented, high-resolution forecasts easily integrate into flight planning, electronic flight bag, and flight tracking applications with capabilities like:

- NAM and global, 13x13 km hourly, high-resolution model forecasts for up to 36 hours out.
- High-resolution and global rapid update convective turbulence, every 10 minutes.
- ICAO-standard Eddy Dissipation Rate (EDR) scale for turbulence forecasts.
- NASA-based, airfoil-specific icing information.

DTN

Enhanced Flight Hazards Forecasts

To support effective turbulence avoidance, at DTN, we offer the industry's independently proven most accurate turbulence forecasts as part of our enhanced flight hazards forecasts. We effectively predict the time and location of these events with the granularity you need to avoid potential safety and financial implications. We also provide valuable insight into icing and thunderstorm events.

Turbulence forecasts

Our enhanced flight hazards model offers full, state-of-the-art EDR turbulence forecasts. It provides an integrated view of the three types of turbulence: boundary layer, mountain wave, and clear air. Specific EDR values are provided and can be applied to any aircraft's airframe-specific thresholds. They are also specific to 29 flight levels, from FL010 to FL530.

Icing forecasts

Today's icing forecasts are typically one-size-fits-all. This can create a lot of ambiguity regarding when a particular aircraft might be more vulnerable to icing than those forecasts indicate.

Our enhanced flight hazards forecasts include aircraft-specific icing forecasts at nine levels using a universal, objective quantitative metric to calculate aircraft performance loss, which can be applied to ice accumulation for specific airfoils. Categories are based on helicopter and small, medium and large fixed-wing aircraft — allowing you to better view icing conditions in relation to your aircraft. We also provide guidance to help classify specific aircraft into these four categories.

Thunderstorm forecasts

Thunderstorms can create intense turbulence and icing. Avoidance is the best strategy, and accurate forecasts can help.

Our enhanced flight hazards forecasts include thunderstorm outlook for a very precise area and time period. As with our turbulence and icing forecasts, we offer multiple forecast periods to support enhanced planning and following of flights — both before and after departure. We also provide maximum top values that indicate the top-most altitude forecasted for that area of thunderstorms, as well as insight into the intensity of the storms measured in meters-per-second of vertical velocity. Convective turbulence and icing are best correlated to storm updraft speeds or vertical velocity: the higher the updraft velocity, the higher the accompanying turbulence and icing.

4-D Flight Route Alerting

As an additional service, we offer Flight Route Alerting to help you quickly and easily determine if the weather will impact one of your flights. It supports safer operations with better planning and in-flight alerts — allowing your pilots to make changes en route. We monitor your flight routes and up to 25 locations for you, and make safe, cost-effective recommendations based on your preset thresholds and assets.

www.dtn.com