



Optimize weather routing with next-level support from expert route analysts

To manage costs, meet KPIs, and maintain safety, many shipping companies rely on weather-optimized routing. However, more benefits are possible — especially in marginal conditions — with the help of expert advice from route analysts.

While safety-focused, severe weather routing decisions tend to be clear-cut, the most effective route is often in the margins and less apparent. Typical route optimization doesn't come down to one specific moment.

Remko Vermeer, a DTN route analyst, explained, "It's a continuous process. All the little improvements that we try to make when routing vessels are small optimizations. Together, they can add up to large, significant savings that make it worth considering having your vessels routed with the support of route analysts."



Expert interpretations

The continual monitoring of weather events and the unique understanding of long-term trends is critical to accurate routing advice — especially during changeable seasons, such as winter in the North Atlantic.

Vermeer explained, "Having an accurate long-term perspective helps us communicate the likely impact of changeable conditions, such as those that occur during wintertime in the northern hemisphere."

Their detailed knowledge helps the route analysts interpret the data to provide valuable routing advice. "I think our experience in routing contributes," he said. "We can explain to our clients why they should deviate from the traditional routes, which are usually based on climatic averages."

With extreme weather events becoming increasingly common, those climatic averages alone aren't as reliable for supporting targeted decisions — especially since they can create significant safety, environmental, and financial impacts.

The latest weather data

Routing guidance can change during a voyage, as short-term forecasts are more accurate than long-term ones.

Vermeer shared the typical scenario for the nine-day forecast. The route analysts consider the first five days of the data to be reliable. The last four are most likely to be less accurate. As new short-term forecasts are available, they will review the information and adjust their routing guidance as necessary.

To address the more changeable long-term forecasts, Vermeer explained masters make assumptions beyond the nine days. "We know that the optimum route calculation that has come from our software will use average climatic data, which can greatly influence the entire route," he said. "As short-term forecast data is released, we must review the route based on our expertise."

The most appropriate route

In theory, it may seem logical to route vessels for the shortest distance between two points. However, longer routes that avoid adverse conditions can help reduce fuel consumption and costs — in addition to safety risks.

A master mariner will calculate the optimum route for a particular vessel on a specific voyage. That's where the in-depth knowledge of the seas provides a real advantage. For example, conditions across the Pacific, between the Panama Canal and Asia, mean that the shortest route is not always the way to go. "In fact, going south along a longer route improves the arrival time and the economics of the voyage," explained Vermeer.

Safety is always priority one

No matter the client or the season, safety is always a top priority. Insights from the route analysts allow ships to take alternative routes before conditions threaten crew safety or vessel performance. Hurricanes and tropical depressions can greatly impact the safety and efficiency of shipping routes. But vessels can typically route around severe weather. It's arguably the less dangerous conditions that pose more significant threats.

Vermeer explained, "In the wintertime, we're not affected by hurricanes in the northern hemisphere. It's not an issue. But wintertime comes with its unique challenges with a continuous flow of deep depressions and large areas of stormy weather that can affect many vessels."

A hurricane poses a considerable threat if a vessel ends up in the storm. But as Vermeer stresses, the extreme severity of a hurricane means ships will route around and give the weather front a wide berth. The real challenge comes when balancing safety and efficiency during marginal weather that is not easy to predict or avoid. This is where the advice of experienced route analysts makes the difference.



New advanced RouteGuard advice

DTN route analysts provide expert recommendations through RouteGuard, our weather routing service, which harnesses advanced optimization logic to provide spatially enhanced voyage insights.

Recently, we added these innovative capabilities:

- A unique, optimal speed routing algorithm – helps protect voyage profitability by allowing our analysts to find the most cost-efficient route for a voyage – without negatively impacting safety or navigability. It uses advanced optimization logic to provide the best route based on overall costs or total metric tons of fuel; if a strict ETA is not required, it will use the vessel's entire speed range.
- Expanded route advice formats – provides crews on-ship with actionable route advice data they can readily use, backed by the latest science. The information comes in several easily accessible formats, including initial and daily route advice PDFs, route RTZ files, or route CSV files.
- Vessel-specific performance models – ensures more precise route recommendations by incorporating a customer's own in-house or third-party developed models. This further optimizes voyage calculations based on the vessel's latest performance.

Clients have the final decision

Once the route analysts provide their insights, it's ultimately up to the client to decide how they want to route their vessel. It's not unusual for shipping companies to seek the shortest, fastest routes.

Vermeer explains that this is perfectly reasonable. However, the route analysts are committed to ensuring vessels remain within their safety limits.

"On one hand, we represent our clients who want us to deliver efficiency as much as possible," he said. "And on the other hand, we are providing a service to the ship captains who must prioritize keeping their crews, vessel, and cargo out of harm's way."

Daily updates mean clients always have the latest insights available for their routing decisions. The route analysts' personalized guidance is designed to help captains and crews better anticipate and respond to the conditions ahead.

Get more details on these enhancements.

The algorithm helps DTN experts provide the most cost-efficient, safe, and navigable route – potentially boosting voyage profitability.

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