



National Transportation Safety Board

**Office of Marine Safety
Washington, D.C. 20594-2000
December 13, 2016**

**ATTACHMENT 20 to the METEOROLOGY GROUP FACTUAL REPORT
DCA16MM001**

Applied Weather Technology, Inc., brochure for BVS version 7.

*Submitted by: Mike Richards
NTSB, AS-30*



BVS™ 7

On-board Voyage Optimization System

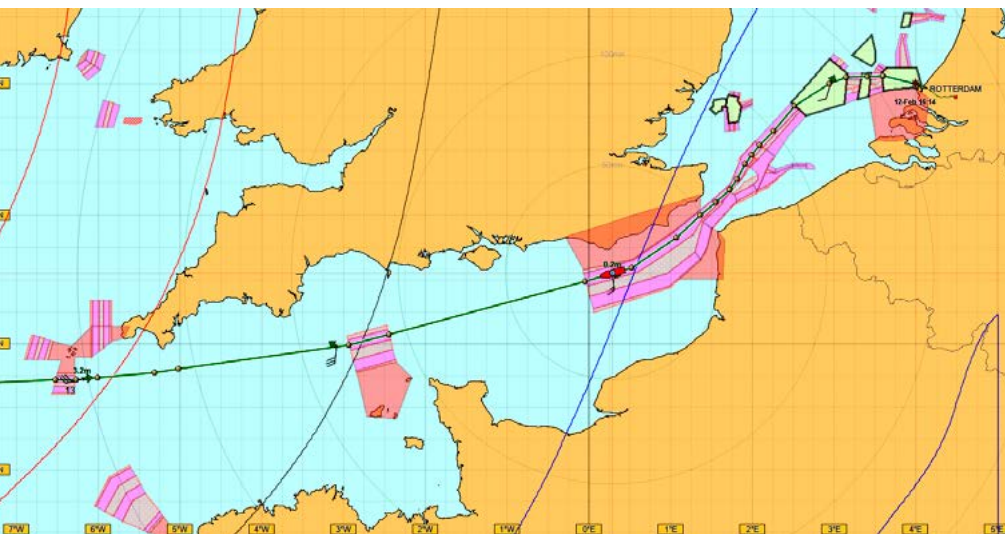
AWT's Bon Voyage System (BVS) is a graphical marine voyage optimization system that provides on-board and around-the-clock weather-routing information. This sophisticated yet user-friendly system is both comprehensive and cost effective, making it an indispensable route planning tool.

Voyage Optimization - Calculate Least Time, Fuel or Cost

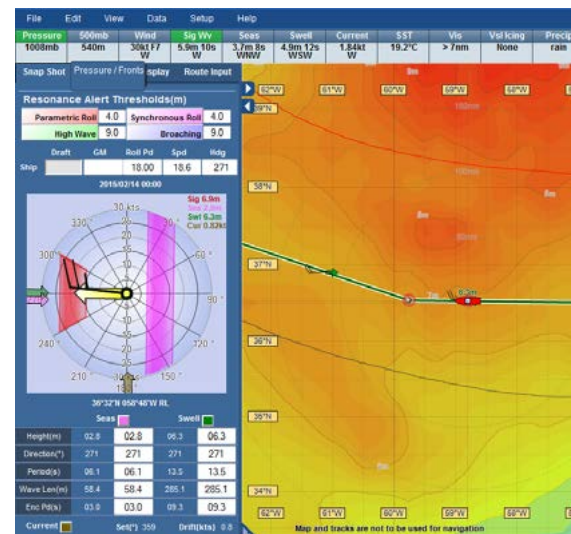
Using your on-board computer, BVS 7 provides the most recent weather and ocean data to the ship by broadband or email communications in a highly compressed format to minimize communication costs. This data is then used to generate color-enhanced maps and graphics that allow the ship's captain to easily view and interpret potential problem areas in advance.

"BVS is a helpful tool in route planning and in enhancing ship's safety by avoiding bad weather conditions. And in the midst of fluctuating oil prices, BVS 7 is a big aid in saving bunkers."

*Capt. Chou Chi Tang,
U-Ming Marine Transport Corporation*



BVS 7 will optimize through traffic separation schemes



BVS 7 advises on when and where severe motions might occur

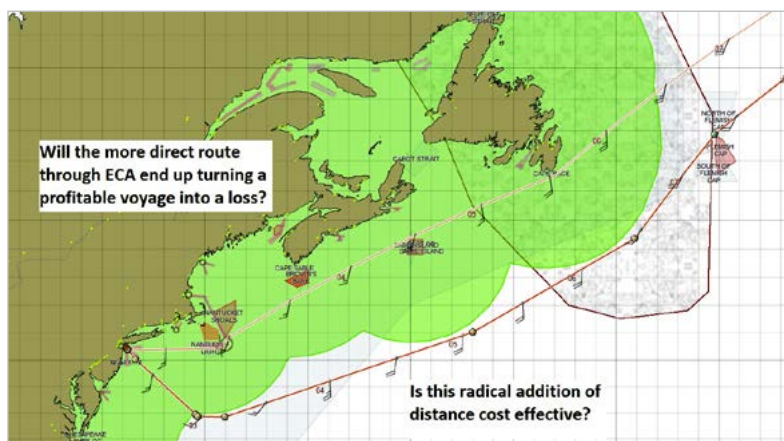
BVS 7 Now Integrated with UKHO's ADMIRALTY e-Navigator and ChartCo's Passage Manager

BVS 7 now has the capability of interchanging track waypoints with the ADMIRALTY e-Navigator and ChartCo's Passage Manager™. This new capability makes passage planning much easier. Users can now employ the BVS system to strategically optimize a voyage then seamlessly display the track in e-Navigator or Passage Manager to validate that a vessel has all the required charts and nautical publications on board and up-to-date. Once the track has been processed in e-Navigator or Passage Manager, it can be passed to the onboard ECDIS system to confirm that the track is navigationally safe.

Key Features

Benefits

Multiple Route Comparisons	Easily compare time, fuel, safety and costs for multiple tracks
High-resolution Data	See more accurate optimizations and ETA's
Resonance Alerts	Improves safety and helps to avoid damage from severe motions
Rogue Wave Forecasts	Minimizes the potential of encountering dangerous waves
Dual Speed Optimization	Maximizes cost savings by adjusting speeds when sailing in ECA areas
Optimization with Traffic Separation Schemes	Improves safety while having fewer edits when the track is moved to ECDIS
Dynamic Ship Specific Consumption Curves	Estimates precise fuel consumption and cost estimates
Pirate Attack Information	Provides up-to-date information of pirate attack locations
Data Delivery via Broadband	Receive more data for a lower cost
HYCOM Currents with Tidal Streams	Provides accurate time and speed estimates
Port Vicinity Forecasts	Ensures proper planning in port
Integrated with ChartCo Passage Manager and UKHO e-Navigator	Easily move tracks in and out of ECDIS systems
Integrated with KVH IP-MobileCast™ ForecastLink™	Reduces costs by delivering automated data downloads for one low monthly fee



Least cost routing with regard to ECA area

	UTC	17z	18z	Nov 05 08z	09z	12z	18z	Nov 07 00z	08z	12z	18z	Nov 08 00z	08z	12z
Weather	[Weather icons]													
Precipitation	[Precipitation icons]													
Air Temperature	[Air Temperature data]													
Humidity	[Humidity data]													
Wind	[Wind data]													
Sea	[Sea data]													
Swells	[Swells data]													
Significant / Maximum Waves	[Significant / Maximum Waves data]													
Current	[Current data]													

Port Vicinity Forecast