National Transportation Safety Board

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

ATTACHMENT 24 to the METEOROLOGY GROUP FACTUAL REPORT
DCA16MM001

Information provided by Applied Weather Technology, Inc., on May 26, 2016, to Coast Guard to clarify testimony provided on May 18, 2016, during Coast Guard's second Marine Board of Inquiry hearing.

Once a BVS weather file is emailed to a user, AWT cannot determine whether or how the file is used. The NTSB believes that references to BVS weather file "delivery" and "download" times in Attachment 24 are intended to identify the nominal times for AWT to email the BVS weather files to El Faro.

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MARINE BOARD OF INVESTIGATION REPORT: AWT CLARIFICATION

Executive Summary

This document serves to provide additional clarification to the AWT testimony given to the Marine Board of Investigation on May 18, 2016 regarding the S/S El Faro.

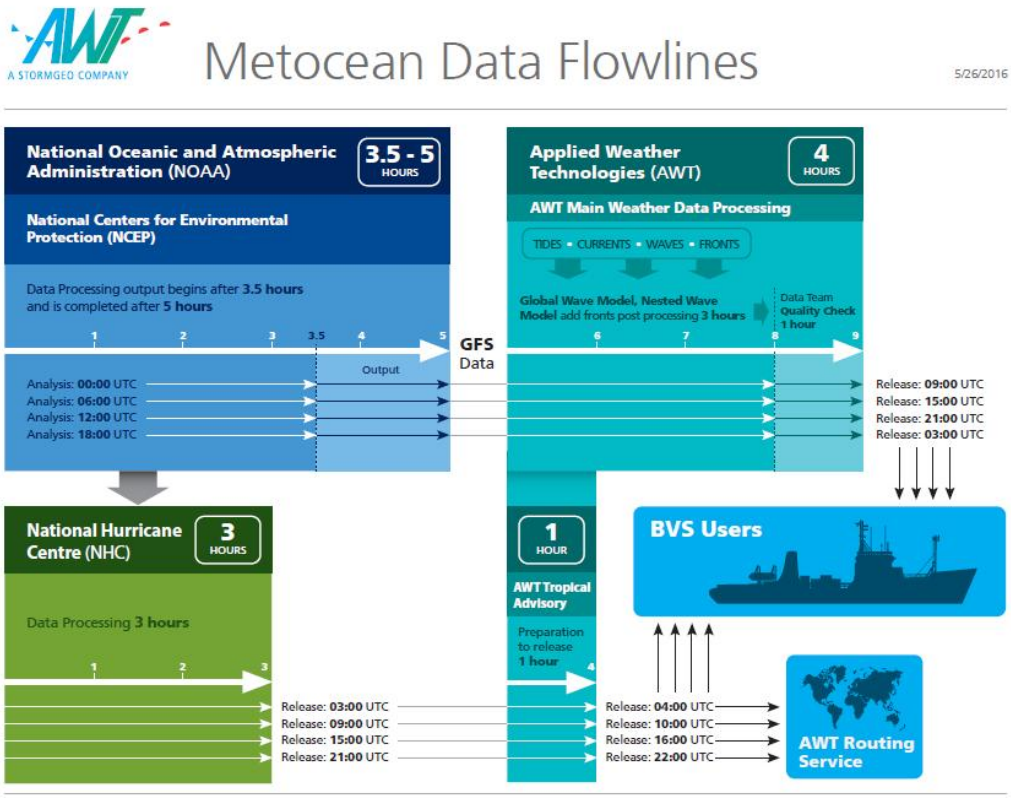
First, it addresses the AWT data flow process and provides specific information to address perceived delays. As shown in Figure 1 and explained in detail, the data was delivered in line with normal data processing times, as quickly as it reasonably could have been.

Second, it addresses the National Hurricane Center storm track that did not update with the Bon Voyage System's 30/0900Z download. AWT's data team have identified and made adjustments to the internal processing of tropical cyclones going forward to verify these forecasts have been updated. It is important to note that although the NHC storm track did not update with the 30/0900Z data feed, [redacted]

Third, although AWT was not providing weather routing services we have reconstructed the ship's track based on AIS position reports and provided the exact BVS data that was provided to the ship with each download. It shows that [redacted]

AWT Standard Met-Ocean Data Processing

Figure 1



The global GFS model processing from the National Centers for Environmental Prediction (NCEP) takes approximately 5 hours for the NCEP to complete. AWT then adds fronts, tides, currents, modifies the winds and pressure around all cyclones and runs the WaveWatch III wave model. This AWT process takes approximately 3 hours and then AWT's Data Team spend approximately one hour quality controlling the data before release to internal and external clients.

For example, the NCEP 00:00 UTC analysis run will finish processing the forecast around 05:00 UTC and then it is made fully available to AWT. AWT then merges the pressure and winds from the 03:00 UTC tropical forecast from the National Hurricane Center (NHC), adds fronts, currents, tides and then runs the wave model. This process takes approximately 3 hours and then AWT's Data Team quality checks the output and makes it available to clients within one hour. The total time spent processing including the NCEP (5 hours) and AWT (4 hours) processing times to final output is approximately 9 hours. This is believed to be consistent with the standards in the industry. There was no unusual or untoward delay in AWT's provision of wind and wave data to the El Faro.

Hurricane forecasts from the National Hurricane Center (NHC) take approximately 3 hours in processing time before they are made available to the public. From there AWT does some

internal processing and disseminates the forecast one hour after receipt from the NHC. The ships crew can configure their BVS schedule so the latest forecasts can be automatically delivered to the vessel.

[redacted]

[redacted]

NHC Storm Track

In the post-accident analysis it was discovered that the NHC storm track for Joaquin did not update with the BVS 30/0900Z download. Adjustments have been made on the AWT internal processing of tropical cyclones so AWT's Data Team can in the future easily verify that the forecasts have properly updated.

[redacted]

[redacted]

BVS Analysis

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Additional Clarification

It should be noted that AWT provides the ships with the ability to select the BVS data download option to receive tropical updates. This automatically delivers the latest bulletin and storm track to the vessel one hour after this information is available from the NHC. In this case the ship could have also done an immediate download at any time that would have provided the latest information on Joaquin. However, neither option was used by the ship during this voyage.

AWT provides shore assisted routing services for thousands of vessels every month on a global scale. The vessel did not subscribe to this service. AWT's routing policy around tropical cyclones is to clear each system by a minimum of the maximum gale radius plus 50nm. A wider margin is occasionally recommended in cases where the confidence in the forecast is low.

Submitted May 26, 2016