Avoiding Parametric Roll

With the onset of winter and increased wave and storm activity, some of Weathernews’ clients must take special precautions to avoid parametric rolling. Occurring in head/stern, or near head/stern seas, parametric rolling is an unstable phenomenon which quickly generates large roll angles coupled with significant pitching that can result in extensive damage to vessels and cargo.

Post-Panamax container ships seem to be particularly susceptible to parametric rolling because the vessels tend to feature wide beam and large bow flares in order to carry more containers on deck while at the same time minimizing the resistance with the streamlined underwater hull. However, any size vessel with extensive bow flare and a long, flat stern is susceptible to head/stern-sea parametric rolling given the right combination of wave height, wave period, natural rolling period and speed.

Unfortunately, parametric rolling can occur when masters may be least expecting it and can result in the onset of a significant roll (sometimes up to 40°) at a time when the ship is already pitching quite heavily.

While ship design and other naval architecture advancements are beginning to address the problem, companies operating post-Panamax and other susceptible vessels today need a solution to help them avoid or manage the conditions that could result in parametric roll. “Parametric Roll” continues on page 2

S T O R M W A T C H

Mistral winds are cold, northerly katabatic winds flowing into the Gulf of Lion from the southern coast of France. These winds most commonly occur in the winter and spring months, with possible gale-force events year-round. In the winter, wind speeds can reach over 100 knots off the southern coast of France, and the effects of gale-force Mistral winds can extend into the western and central Mediterranean, creating high sea states throughout the entire region, especially blowing through the Strait of Bonifacio between the islands of Corsica and Sardinia. Mistral winds are considered the most dangerous of all Mediterranean winds because of their high speeds and persistence.

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“Mistrals” (continued from page 11)... In early November of 2004, one such event drew the attention of Weathernews’ team of meteorologists. Weather models had been predicting a Mistrail event for several days, with winds forecast to reach 35-45 knots, which seemed to be appropriate for an event this early in the (winter) season. By late on 11 November 2004, a 1040mb high pressure system just west of France maintained a strong ridge extending from 70°N to 40°W latitude, while two low pressure systems lay to the southeast; one over the Gulf of Sidra (1005mb) and one over the central Saharan region (1020mb). This pattern created a classic set-up for a Mistral event, with north to northeasterly flow of surface winds over central and southern France.

Initially the event unfolded as predicted. However, early on 12 November 2004, the ridge unexpectedly drifted to the east-southwest of France and strengthened, and simultaneously the low over the central Sahara area moved toward the northeast while slowly deepening. As a result, the surface pressure gradient over the south coast of France and the Western Mediterranean Sea shifted from northeast-southwest to an east-west alignment.

The shift resulted in a dramatic increase over the Gulf of Lion which extended southwestward across the Balearic Islands to the coast of Algeria. As a result, winds were estimated at 40-50kts, or about 15% stronger than anticipated in the 12/0000Z forecast. In addition, there was significant convection across the Mediterranean, which very likely contributed to even stronger localized winds.

By 13 November 2004 at 1200Z, the ridge was centered immediately west of Ireland and had a central pressure of 1048mb. At the same time, the African low was centered over Tunisia and had continued to deepen to 978mb. The pressure gradient over the western Mediterranean was nearly north-south and even stronger than the previous day’s forecast. Convection continued right across the southern Mediterranean, and squalls associated with thunderstorms could have perhaps reached 50-60 kts in some areas.

These severe winds are a major threat to shippers, imposing dangerous conditions on crews, cargo, and vessels. Indeed, these recent events grounded and sank several merchant vessels off the port of Algiers. Companies count on Weathernews’ expertise to keep masters of ships that are forced to stay in the port to rest against the severe wind, or routing vessels to safety.}

If you would like more information on how Weathernews can help you avoid Mistrals and other severe weather, contact sales@wni.com or call 415-848-5200 and ask for a sales representative.

Weathernews Expands into London, Paris and Frankfurt

In an effort to better serve local customers throughout Europe, Weathernews has opened its offices into London, U.K.; Paris, France; and Frankfurt, Germany. These new offices supplement the sales and customer support efforts of our other European offices in Amsterdam, Scotland; Hamburg, Germany; Madrid, Spain; Milan, Italy; and Soest, The Netherlands.

LONDON
Complementing our existing operations in Aberdeen, Scotland, Weathernews’ new sales office in London strengthens our business activities to better serve our customers and prospects in the U.K. The new office is situated on the former grounds of the U.K. Patent Office in an area that is famous for being a legal center. By adding a new sales base here, where many major British companies are concentrated, we are better able to provide a speedier response to the support needs of all our customers in the U.K.

PARIS
Opened in August 2004, Weathernews France SAS supports regional customers with solutions tailored to their needs. Located in Paris’ west business district, Weathernews France is a strategic sales base for Weathernews’ development in Europe. Its opening further proves that Weathernews is striving to be closer to its customers and implement local partnerships.

FRANKFURT
Weathernews Germany’s head office relocated to Frankfurt am Main on 1 January 2005, and is assisting the Hamburg office in servicing the German market. The new, modern office is in the heart of Frankfurt’s business district on the 20th floor of the FBC skyscraper.

The office is a center for Weathernews’ full service capacities as the largest private weather company in the world. In conjunction with the new head office in Frankfurt, Weathernews Hamburg will continue to be a center for Ocean, Marine and Off-shore services...

To contact our new offices, please see the back page of this newsletter.

Shipping 2005: CMA Conference & Exhibition

Weathernews will host a booth at Shipping 2005, the Connecticut Maritime Association (CMA) Conference and Exhibition to be held 21, 22, and 23 March 2005 at the Westin Hotel in Stamford, Connecticut. The event is North America’s premier international shipping and trade conference and exposition, which traditionally includes exhibits from over 120 maritime-related companies and organizations. Visit Weathernews in booth #42 to learn more about our Ship Security Alert System, ASAP, and to schedule a private viewing of our new fleet management system.

For more information about the CMA Conference and Exhibition, please visit http://www.shipping2005.com

AMS Annual Meeting, 2005

Weathernews is hosting a booth at the American Meteorological Society (AMS) Annual Meeting held 9-13 January 2005 in San Diego, California. Weathernews is providing Daily Weather Briefings, and displaying our mobile application at Weatherfest on 9 January 2005. Additionally, Jeremy Usher, President and CEO of Weathernews Americas Inc. will speak on 10 January 2005 on the Impact of Weather and Climate on the Business Enterprise.

For more information about the AMS Annual Meeting, please visit http://www.ametsoc.org/MEET/85annual/
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