



Celebrity Silhouette passing Leer Bridge



Advanced training for Ems River passage

Report outlines an advanced training programme that has been set up to help pilots tackle the challenges of the Ems River in Germany.

Meyer Werft is one of the world's most successful builders of large cruise ships. Located on the narrow and winding River Ems, vessels have to make a passage from Papenburg to Emden or Eemshaven after completion. Cruise ships start their journey sailing astern to enable the pilots to have a better orientation; looking from the port bridge wing astern along the superstructure. The vessels leave the yard harbour through a narrow lock therefore ship/lock interactions play an important role. During the passage vessels pass two narrow bridges (at Weener and Leer), a storm surge barrier "Emssperwerk", then turn into the Emden harbour mouth and proceed sailing ahead to Eemshaven. All these manoeuvres have been trained upfront at MARIN

The training programme was set up through a close cooperation between MARIN, Meyer Werft, the EMS Pilot Association and the German Ministry of Transport. This training gives the pilots the opportunity to familiarise themselves with the specific characteristics of each vessel, and to practice all aspects of the manoeuvre assisted by advanced navigation systems. So far, the programme has

incorporated 28 vessels starting with the ORIANA (1994) to the CELEBRITY SILHOUETTE (June 2011).

Special attention to safety Special attention is given to human performance because of the important safety aspects of the journey. Physiological measurements, combined with both objective and subjective responses, are used to identify workload, performance and how strenuous the situation is.

Manoeuvres are also optimised and tested in the simulator to improve safety and efficiency. An example of an improved manoeuvre is turning in the ebb current at Emden harbour entrance instead of turning in front of Delfzijl. Using the current gradient in the harbour mouth and the bow and stern tug, the pivot point of the vessel is kept under control, even without using the ship's own power.

The approach to Eemshaven is optimised to enter in high cross current. By using bow thrusters and main propulsion the set to cross current is reduced to enable a smaller path width when entering at low speed. ▢

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