

Passage of the River Ems with Large Cruise Vessels

Meyerwerft is one of the world's most successful builders of large cruise vessels. Situated on the banks of the river Ems, vessels have to make a river passage from Papenburg to Emden or Eemshaven after completion. The vessels start their journey sailing astern to enable a better orientation for the pilots, looking from the Port bridge wing astern along the superstructure. Moreover, by sailing astern propellers and rudders or pods can be kept closer to the centreline of the channel and steering is effectuated by the bow thrusters. The vessels leave the yard harbour through a narrow lock where ship/lock interactions play an important role. The river Ems is relatively narrow, and the first stretch to Leer is also bendy with the railway bridge at Weener as a major obstacle (navigable width: 45 metres). This railway bridge is used for the main railway connection between the North of the Netherlands and the North of Germany. Upstream Emden the vessels pass the 'Emssperwerk', turn in the Emden harbour mouth and proceed sailing ahead to Eemshaven.

Until 1994 the passage of the river Ems was not considered a large problem. Nevertheless, after gaining the contract for the P&O cruise vessel Oriana it was regarded valuable to set up a training for the pilots who are in charge of the actual manoeuvre from Papenburg to Emden or Eemshaven.



Disney Dream passing Leer Bridge

This training was set up in close co-operation between MARIN/ MSCN, Meyerwerft and the German Ministry of Transport. A database of the Ems area was prepared including a detailed bathymetry of the river and a detailed description of the local tide. In order to have sufficient keel clearance passages are scheduled on the tide.

A mathematical manoeuvring model of the first vessel was prepared based on the predicted manoeuvring properties in deep and shallow water.

The passage of the Oriana was executed successfully after two training sessions at MARIN/MSCN. From this moment on a training session was executed for every large new-building completed at Meyerwerft



Turning at Emden

So far this incorporated 26 vessels from Oriana (1994, 1995) to Disney Dream (2010)

In close co-operation with Meyerwerft in 2002 a first trial was executed with a vessel equipped with Azipods. The specific propulsion and manoeuvring characteristics are modelled again for each new vessel and implemented on the simulator. If necessary an update is made of the database. Thus giving the pilots the opportunity to familiarise with the specific characteristics of each vessel, and to practice all aspects of the manoeuvre from Papenburg to Leer.

Until November 2010 all successful passages without any major problems have proven the validity of this approach.

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