

New Panamax Turning Basin Study

Introduction

This analysis was carried out in October and November by Northport Ltd using their bridge simulator onsite at the port facility. The purpose of this study is to understand the requirements for swinging the ship off berth 4 and 5 and verifying if there is adequate space in the proposed turning basin.

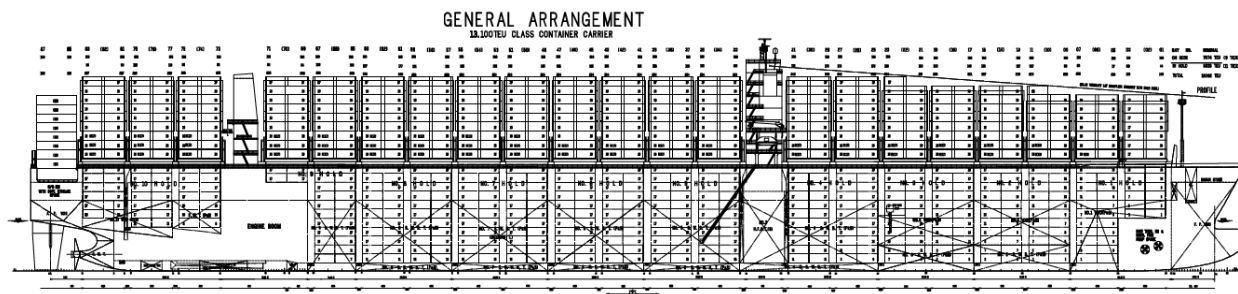
Design Ship

Model based on the Maersk Edinburgh in a loaded condition (13.5m) was used Maersk Edinburgh is a 366m Containership. She is fitted with 2 bowthrusters. The simulated design ship was tested in the Marsden simulation area (Marsden 5A) using the latest tidal data provided by Metocean. Wind speed for the investigation was 15 knots gusting 20 knots and tidal streams were within one hour of high water to maintain sufficient underkeel clearance.

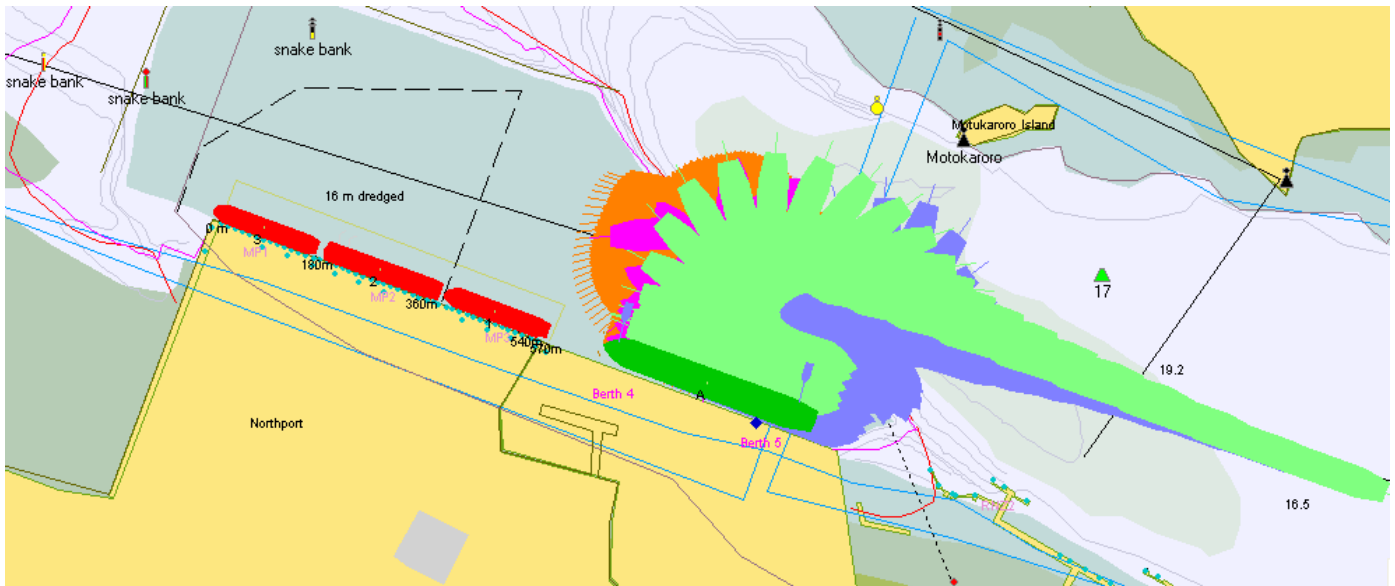
Simulations

Run Number	Maneuver	Tide HW	Wind	Comment	Tugs
001	Arrival SST	HW -0.2	SW 15-20	Swung easily in the Basin. Tugs and bowthruuster to ¾ power	2 x RT 85
002	Arrival SST	HW -02	NE 15-20	Swung easily in the Basin. Tugs and bowthruuster to ¾ power	2 x RT85
003	Depart PST	HW	SW 15-20	Swung easily in the Basin. Tugs and bowthruuster to ¾ power	2 x RT85
003	Depart PST	HW	NE 15-20	Swung easily in the Basin. Tugs and bowthruuster to ¾ power	2 x RT85

General Arrangement



Swept Path



Conclusions

1. For the turning basin it was assumed wind speeds are limited to 15-20 knots and tides are HW slack
2. Adequate space exists off Berths 4 and 5 to swing safely the 366m containership so it can go in or depart from those berths
3. The vessel was swung using $\frac{3}{4}$ power on tugs and thrusters.
4. Tugs were assumed to be Rotor tugs RT85s at 85 ton bollard pull.

References

1. ABS Vessel_Maneuverability_Guide_e-Feb17.pdf
2. IMPA 2014 Conference Paper The-manoeuvrability-of-very-large-and-ultra-large-container-carrierpanama-2014
3. Rapport Safe Handling ULCS version 2_0
4. Maneuvering-committee Wuxi 2017