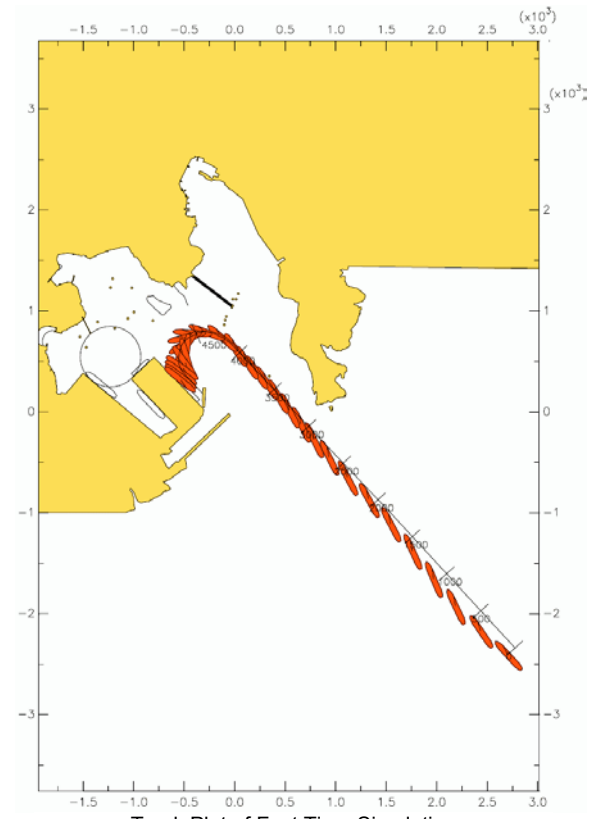


Wave height multiplication factor K for T=9 sec and main wave direction = 150°N



Track Plot of Fast Time Simulation

Wave penetration and navigation study, Malta Freeport

Malta Freeport Terminals Limited is expanding their container terminal capacity by further development of two existing quays. For this Development Project, Malta Freeport Terminals Ltd had to submit an Environmental Impact Assessment to the Malta Environment and Planning Authority. Malta Freeport Terminals Ltd commissioned Svašek Hydraulics to conduct the following studies:

- Wave penetration study
- Current study
- Navigation simulation study

The Maritime Research Institute of the Netherlands (MARIN) participated in this study as a subcontractor to Svašek Hydraulics for the navigation study.

The aim of the HARES wave penetration study was:

- Get good insight on the changes in wave penetration in Marsaxlokk Bay due to the proposed container terminal berth extensions.
- Determine the wave conditions and downtime at the extended quays of Terminal 2 for the present (1 berth) and proposed situation (3 berths).

Therefore the wave penetration for the present situation and the new proposed situation (with extended quays of terminal 1 and 2) has been calculated. The left figure shows for the present situation the wave height multiplication factor K on a scale from 0 to 2. This factor is the ratio between the wave height in the model area (H) and the wave height at the boundary of the model area (H_0), so $K = H/H_0$.

The objective of the navigation study was to determine the safe distances and minimum turning circles of a 382m container vessel using the extended layout of the quays at the Malta Freeport Terminal in Marsaxlokk. The right figure shows a track plot of a container vessel approach the new extended quay of Terminal 2.

Client

Malta Freeport Terminals Ltd.

Location

Malta Freeport, Marsaxlokk Bay, Malta

Date

2007

Services

Wave penetration study (HARES)
Navigation study (Fast Time Simulations)

Svašek Hydraulics

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