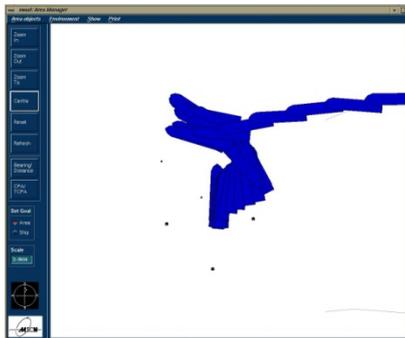


### Shiphandling Training for Masters

## Palermo Sea Buoy Terminal

On behalf of ESSO Italiana MARIN's Nautical Centre MSCN conducted a shiphandling training for Masters. The training focuses on a specific operation during which a 12,000 DWT tanker conducts arrival and departure manoeuvres at the Palermo Sea Buoy Terminal. This terminal is located on the northern coast of Sicily, about 4 cables off the coast and 3 nautical miles east of Palermo.



Example of a typical arrival manoeuvre

### Environment

Based on the environmental situation an admittance policy is in force stating the maximum allowed conditions for the manoeuvres at the Sea Buoy Terminal. The training programme provides training value for these critical situations as well as for unforeseen events like line breaking and wind gusting. The main wind directions are from West to North-West and from East, with associated waves up to 1.0 m Hs. At the location the current runs east, with a maximum of 0.8 knots.

### Modelling

Specific ship models, fitting the real ships as much as possible, were developed for this project. All line handling and anchoring is modelled in accordance with the characteristics that apply in reality for these circumstances.

The database of the area contains the terminal and mooring buoys, the hinterland and purposely-defined wind, current, wave and depth fields. Tugs may be called upon for assistance during the manoeuvres, however, under normal operation they are not needed.

### Strategy

The ship approaches the terminal from the East at a distance of approximately 220 metres north of the eastern mooring buoy. At this position the starboard anchor is dropped and the vessel continues on the same course. The port anchor is dropped 220 metres north of the western buoy. At this location the vessel is practically stopped. It starts moving astern towards the mooring buoys. The moment the vessel is close enough, floating mooring lines are brought out from the stern to the mooring buoys. These lines are used to pull the vessel further into its final position. Basically, the entire manoeuvre is conducted without any assistance of tugs.



Palermo scenery, full-mission simulator

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