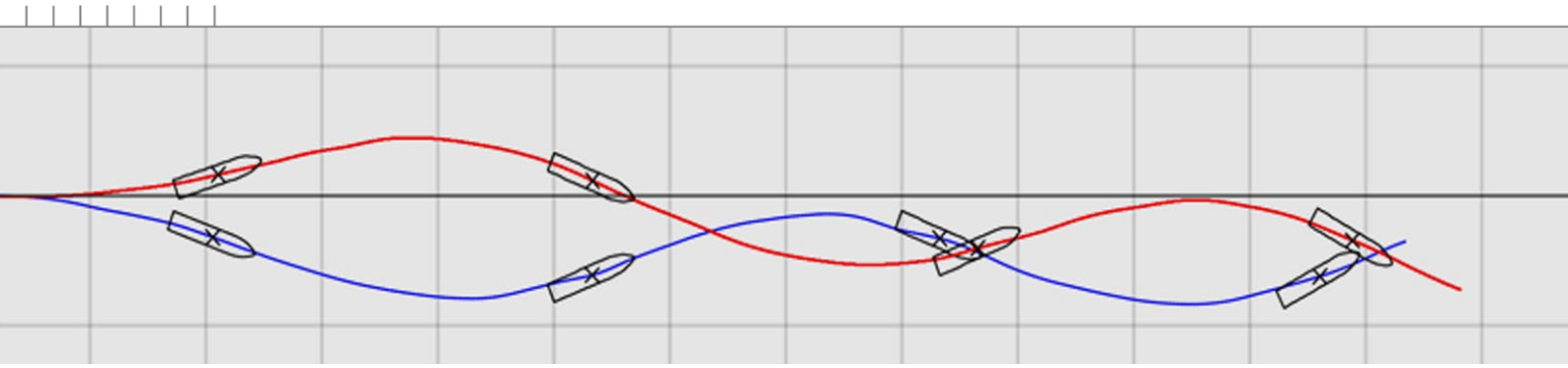


IMO Manoeuvring trials

Manoeuvrability is essential for safe navigation and operation of all ships. Requirements and regulations as to the manoeuvre capacity have been issued by International Maritime Organization (IMO) and adopted by the national regulatory authorities. Assessment of manoeuvring capacity starts with a prediction in the design stage and it can be measured with a ship model. But the manoeuvrability always has to be confirmed with full scale tests in order to comply with the IMO requirements.

Services:

- Verification of manoeuvring criteria
- Manoeuvring booklet
- Pilot card
- Wheelhouse poster
- Research of manoeuvring characteristics in off-design conditions
- Comparison of performance before and after modifications

Background

MARIN offers a unique full scale consulting and monitoring service, and has gained considerable experience in a broad field of ship types over the years (e.g. cruise ships, container ships, bulk carriers, navy vessels, working vessels, etc.).

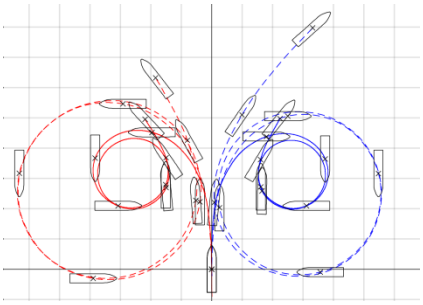
Onboard verification

Since final assessment of manoeuvring capacity has to be conducted with sea trials, the MARIN Performance at Sea group operates an advanced sea trial measurement system. This system combines accurate sensor techniques with modern data acquisition software which enables onboard processing and presentation of the full scale trial results directly after the trials.

Measurement system

For high quality data and rapid analysis of the results, a dedicated measurement system is installed onboard to record the following parameters continuously and synchronously:

- Position, Speed, Heading and Course over ground (D-PGS)
- Rate of turn (motion sensor)
- Roll angle (motion sensor)
- Rudder angle / thruster angle / pod angle
- RPM, torque and power on propeller shaft(s)
- Relative wind speed and direction



Related products:

- Sea trial acceptance tests
- Speed/power trials
- Propeller cavitation observations
- Noise & vibration measurements
- MARIN consultancy

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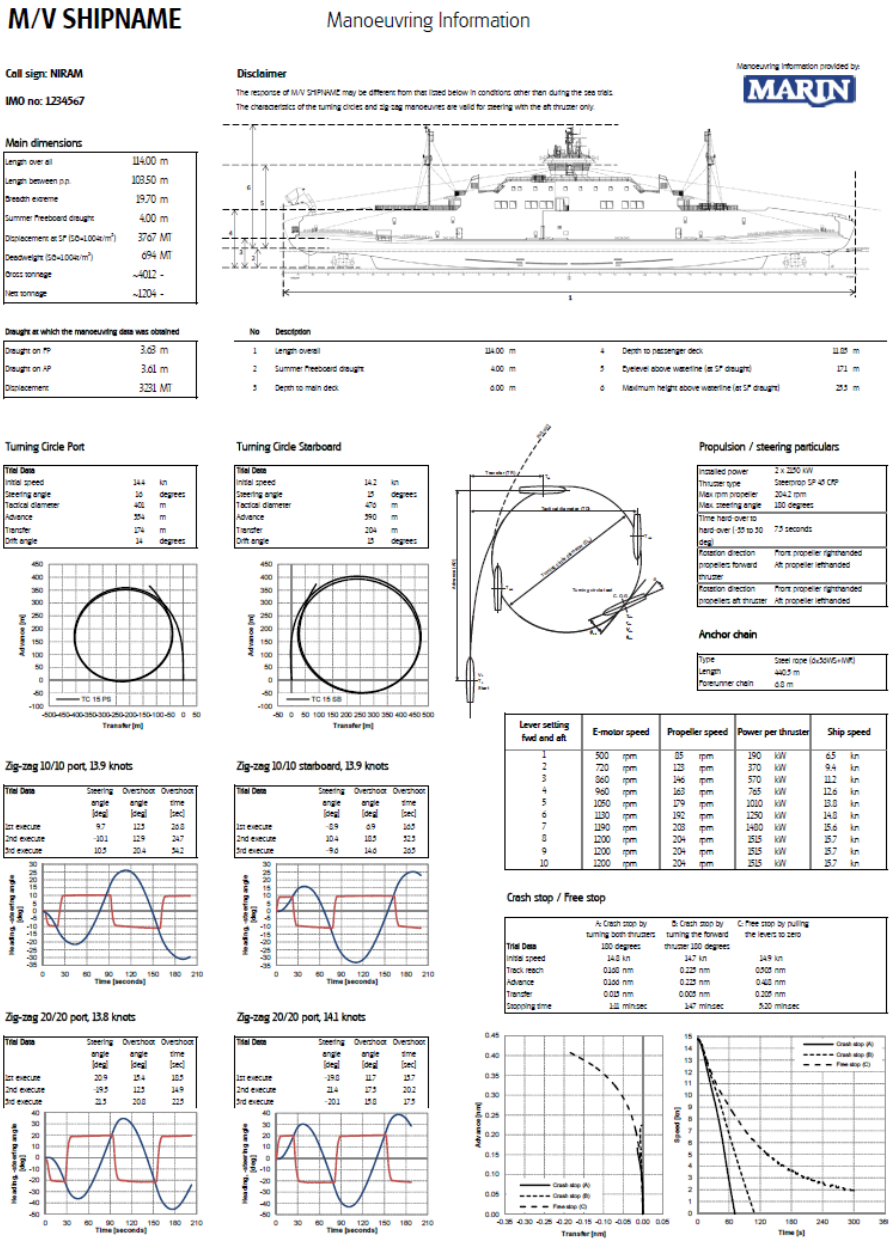
All signals are synchronized and logged in one data acquisition computer. During the trials the data acquisition computer gives real-time graphics of all main parameters during the trial (sailed track, heading, rudder angle, rate of turn, shaft power, etc.).

Results

Results of the trials are used to provide the manoeuvring characteristics in compliance with IMO or other reference criteria. The deliverables comprise a detailed report, pilot card and/or wheelhouse poster.



Example of a wheelhouse poster