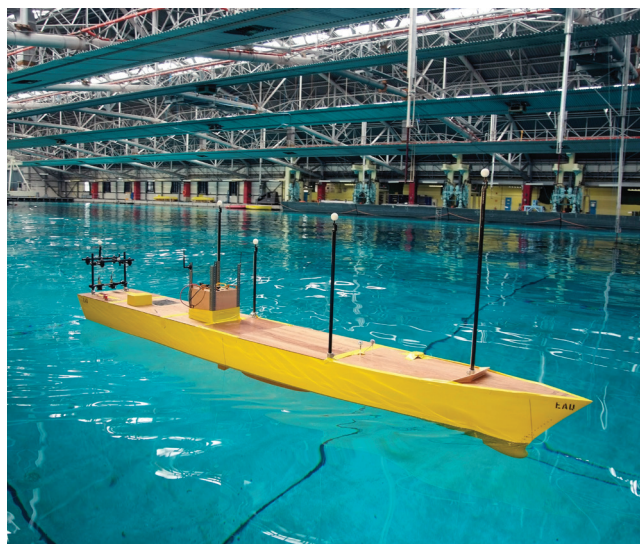


Ocean Basin & Rotating Arm

With a volume of 40,000 tonnes of clear water, QinetiQ's Ocean Basin is one of the largest hydrodynamic facilities in the world.



Dimensions

122m (L) x 61m (W) x 5.5m (D)

Wavemaker

Major upgrade completed in 2014

System is capable of generating regular, long-crested irregular and short-crested waves up to 0.8m in height (with significant heights up to 0.45m)

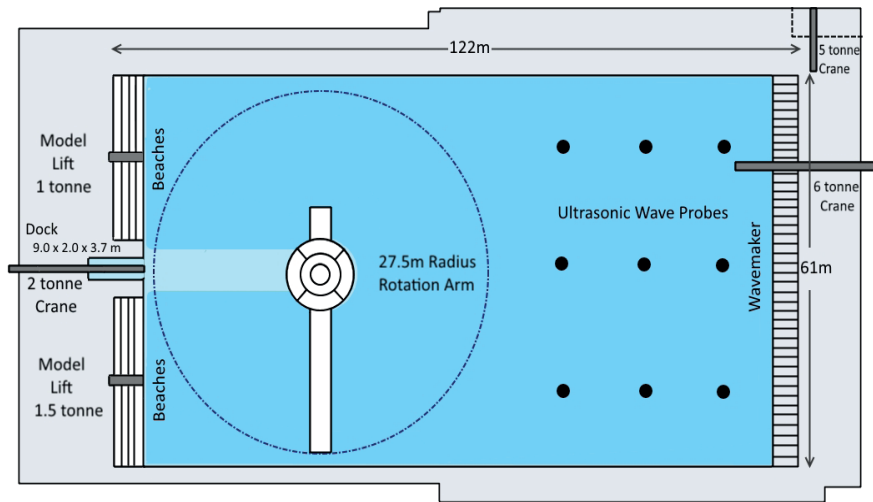
Rotating Arm

Angular speeds between 0.01 rad/s and 0.60 rad/s

Radius variable between 7.5m and 27.5m

Tracking

Facility equipped with state-of-the-art Qualisys™ Motion Capture System



Features

- Large dry dock
- Two model lifts
- Two tonne and six tonne cranes for model/equipment deployment and recovery
- Rigid inflatable boat for model handling and recovery

Free-maneuvring models are controlled remotely using the latest above and underwater wireless technology. Two-way real time communication is possible, allowing feedback of motion parameters for use by autopilot algorithms.



Model of Queen Elizabeth Class aircraft carrier operating in Ocean Basin (image reproduced courtesy of the Ministry of Defence)

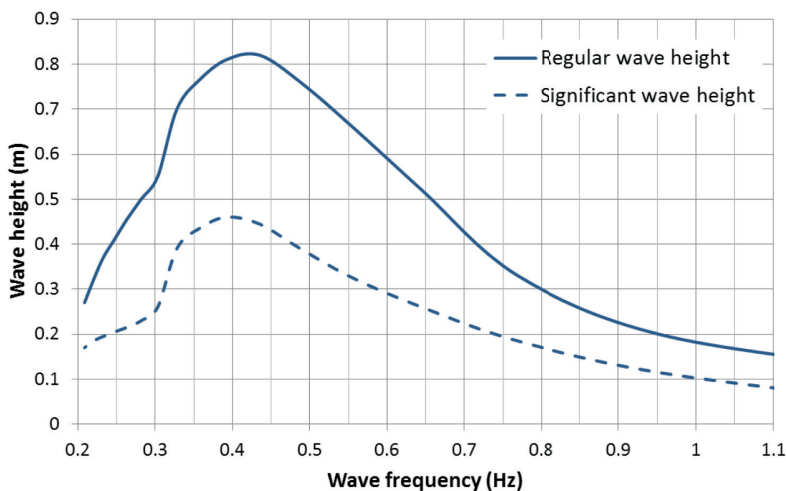
The facility's wavemaker was replaced in 2014 with a new system comprising 122 independently-actuated paddles which are capable of generating:

- Regular waves
- Long-crested irregular waves
- Short-crested irregular waves
- Transient and breaking waves
- User defined spectra

The current performance envelope of the wavemaker is illustrated below.

The facility, equipped with a state-of-the-art motion capture system installed by Qualisys™, is used primarily for constrained and free-maneuvring surface ship and submarine model tests in calm water or waves. Free-maneuvring surface models are fitted with infra-red emitting markers (typically four) and tracked using 16 cameras distributed around the basin. The specification of the Qualisys™ system is:

- Spatial resolution: 0.3 mm
- Relative accuracy: ± 3 mm
- Measuring frequency: 1-100 Hz real-time
- Simultaneous tracking: up to 5 models



The wavemaker performance envelope

Collaborating with QinetiQ

At QinetiQ we bring organisations and people together to provide innovative solutions to real world problems, creating customer advantage.

Working with our partners and customers, we collaborate widely, working in partnership, listening hard and thinking through what customers need. Building trusted partnerships, we are helping customers anticipate and shape future requirements, adding value and future advantage.

www.QinetiQ.com

Copyright QinetiQ Ltd 2018 | OCEAN BASIN

QinetiQ/18/00254

For further information please contact:

Cody Technology Park
Ively Road, Farnborough
Hampshire, GU14 0LX
United Kingdom

+44 (0)1252 392000
customercontact@QinetiQ.com
www.QinetiQ.com