

# Oz system put to the test in 'graveyard of the Pacific'

Rhiannon Zanetic

MELBOURNE-headquartered maritime engineering company OMC International has announced that it has won its first North American contract.

OMC was commissioned by the Columbia River Bar Pilots and the Oregon Department of Transportation to carry out a desktop study investigating the commercial and safety benefits of installing a Dynamic Underwater Keel Clearance (DUKC) system at Portland.

DUKC is a system that monitors tides, waves and channel symmetry. A ship agent enters ship data into the system and that data is then combined with marine data. The system can then determine how the ship will respond to prevailing conditions and work out the amount of under keel clearance that a ship will require.

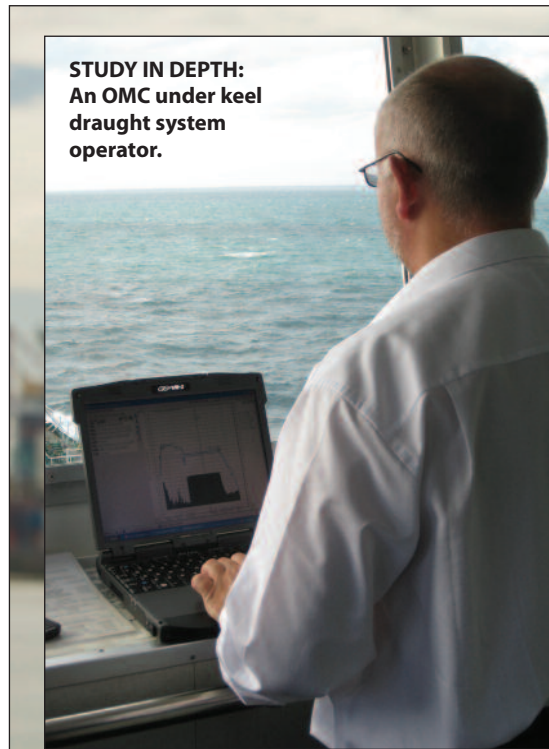
The system is based around 24-hour predictions. The closer the vessel is to the time of sailing, the more accurate the prediction.

According to OMC's founder, Dr Terry O'Brien, the system can enable large vessels to load more cargo and/or sail with wider tidal windows.

"It is so accurate that, under extreme weather conditions, a 250,000 tonne carrier could negotiate a channel within a metre's clearance to the seabed," he said.

Benefits of using the system, as claimed by OMC, include improved safety margins, greater cargo loading because of the larger draughts and increased departure/arrival windows for vessels.

The system was developed by Dr O'Brien in 1993, when completing a consultancy project for Hay Point in North Queensland. He had been commissioned to do a study on the port's static under-keel clearance rule to determine if it was too conservative –



**STUDY IN DEPTH:**  
An OMC under keel draught system operator.



**LEAP OF FAITH:** Dr Terry O'Brien originally developed the system for Hay Point.

or not conservative enough.

The study spurred him to consider a tool that would work in real time to enable greater efficiency. Hay Point took a "leap of faith" and, 17 years later, OMC says that 60,000 successful transits have been made using the system.

OMC International has installed its DUKC systems at 13 Australian and four international ports since 1993.

These include Melbourne, Port Kembla and Brisbane, and the Bremerhaven/Wasser in

north-west Germany and Lisbon in Portugal.

No port using the system has reported a grounding incident to date.

Under the new North American contract, the Columbia River Bar waterway in Oregon, North America (locally dubbed the "Graveyard of the Pacific") will be assessed.

The waterway has claimed 2000 ships and over 700 lives since 1792, according to the Oregon Parks and Recreation Department.

If the study gives positive results then the DUKC system will be installed.

It is claimed by OMC that the Columbia River Bar waterway has similar complexities to Melbourne's Port Phillip Bay.

According to Dr O'Brien: "It [Columbia River Bar] is known as a dangerous crossing for ships of all sizes, particularly when very strong river currents collide with massive ocean waves, because the wind direction and ocean swell can

sometimes change from calm to life threatening in as little as five minutes."

He added that the alternative to dynamic systems, static rules, are "coming to the end of their usefulness because they have dramatically failed at some ports".

The potential problem with a static rule is claimed to be highlighted in the tanker groundings that occurred in New Zealand. Two tankers bringing crude oil from the Middle East grounded within

three months of each other in a channel, on a shoal.

Prior to this no groundings had occurred in 30 years of operation.

OMC conducted a study that, according to the company, showed that had a DUKC been in operation the two incidents would not have occurred.

OMC said the system would have advised that these sailings not take place on those days because of inadequate under keel clearance. OMC's system has since been installed.

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Lloyd's List DCN will report on the key sea-freight transport matters in South Australia including trends in imports and exports, along with a range of issues such as port access, direct sea services, trade flows-equipment imbalance, port congestion and increasing transport and logistics support for the sector. We will also look at the ongoing challenges for the industry, and the state as a whole.

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