

Issue 4 - 2012

# The Cruel Sea

'Pacific Graveyard' prompts new safety development

Your last chance to enter the IBJ Awards 2012 - see pages 84-87

# Ensuring maximum safety

Prompted by a 'graveyard of the Pacific' study, Melbourne-based OMC International has unveiled a new safety product

**O**MC International (OMC) announced in July that its new safety product OMC iHeave - a ship motion measurement instrument - was developed as part of a DUKC desktop study now finalised for North America's 'graveyard of the Pacific'. Executive Director Dr Terry O'Brien OAM said his maritime engineering firm delivered the final report to the Columbia River Bar Pilots (CRBP) on Friday 20th July.

Dr O'Brien said the research project, commissioned by CRBP with funding from the Oregon Department of Transportation, aimed to investigate the commercial and safety benefits of installing a DUKC (Dynamic Under Keel Clearance) system at the Columbia River Bar.



Picture by Captain Robert Johnson, Columbia River Bar Pilots

This treacherous entrance to North America's Columbia River, which flows into the Pacific Ocean, is known as the 'Graveyard of the Pacific' because it has claimed about 2,000 ships and 700 lives since 1792. "I am optimistic that this desktop study will be followed by the commissioning of a customised DUKC system for the Columbia River Bar because our technology will ensure maximum safety for large vessels moving through this challenging waterway," he said. Dr O'Brien said this North American project was the original prompt for OMC's engineers to develop, and then commercialise, OMC iHeave "Accessing the bow and transferring DGPS equipment by helicopter during winter at the Columbia River Bar was regarded as too dangerous and would have prevented us from measuring the very ship motions the pilots were most concerned about so a group of our engineers chose to

develop OMC iHeave as a practical approach to assist the pilots gather vital ship motion data for a wide array of ships in this very challenging environment," he said.

Dr O'Brien said OMC iHeave which gives results of similar accuracy to a full DGPS set-up, was developed in-house by a team of engineers led by the Head of the Research Department Dr Giles Lesser. This light-weight self-contained unit, which is about the size of a shoebox, is normally carried onboard by marine pilots and can be set up on the ship's bridge within two minutes. It can continuously monitor ship movements during the entire transit, and directly measure all six degrees of ship motions in waves - in all weather conditions - from just one internal location on the ship's bridge.

Dr Lesser said OMC's traditional measurement techniques of setting up multiple DGPS instruments, outside on a ship's bow and bridge wings, could be dangerous for engineers to mount, or even impossible in some weather conditions, such as on open sea voyages when ships pass near cyclonic swells. "With OMC input, the Columbia River Bar Pilots themselves easily set up and operated OMC iHeave to accurately measure the wave response of 24 ships crossing the Columbia River Bar under moderate to high swell conditions in just four months between November 2011 and March 2012, which is a huge achievement," he said. "From North America, these pilots electronically submitted their recorded data to OMC's Melbourne office and OMC engineers then sent back a short report on the ship motions of each vessel. "OMC iHeave was designed specifically for use by pilots to allow them to gather hard data on ship motions under the conditions that are of concern to them. For those ports, or pilots, where wave response is a concern for UKC, they now have the option of using OMC iHeave to find out just how risky their transits really are"

"I believe that the Columbia River Bar Pilots will find these study results useful in refining their procedures for managing UKC at the Columbia River Bar. It would not have been possible to gather the quantity and quality of data that was achieved over the winter without the development of the iHeave device. "As the wave response of vessels, by its very nature, depends on the waves the ships are exposed to, measuring the relatively uncommon, large wave response is challenging because it doesn't happen very often, and it is very expensive or impractical to have engineers and equipment on standby to 'catch' interesting events. Also, when the waves are large it can be dangerous or impossible for extra personnel and bulky equipment to be transferred to and from the ships to be measured." ■