

OMC's Innovation brings rewards

First installed in 1993, DUKC technology is bringing economic benefits to ports and port users worldwide and helping prevent groundings and environmental disasters

This year has seen OMC International win a major contract to install its Dynamic Under Keel Clearance (DUKC) management system in Rio Tinto's Western Australian Cape Lambert port. The contract also includes an extension of the existing DUKC contract for Rio Tinto shipping operations at the port of Dampier. Cape Lambert is the 21st DUKC installation for this family-owned maritime engineering firm founded in 1987 by Dr Terry O'Brien, who was last month formally presented at Government House with his Medal of the Order of Australia for services to the maritime transport industry.

This also followed news that the Federal Government's Australian Maritime Safety Authority (AMSA) has signed off for a DUKC system to be commissioned for Torres Strait to ensure shipping safety in these environmentally sensitive waters. Dr O'Brien said the latest Rio Tinto contract was significant. DUKC is already in five other WA ports, including channels from Parker Point and East Intercourse Island at the Port of Dampier where it has operated since 1995.

Dr O'Brien, a Melbourne engineer and former academic, is the innovator of his company's DUKC technology which was first installed in Queensland's Hay Point coal terminal in 1993. Over 18 years the system has provided more than US\$10 billion in economic benefits to ports and port users worldwide and helped prevent groundings and environmental disasters. The economic benefits to the exporter can be enormous, given that every extra centimetre of draught (the depth below the waterline) that a large ship can be loaded to means an extra 130 tonnes of cargo. There is also the significant savings which accrue from the earlier vessel sailing times possible under DUKC.

There have since been updated product releases developed in-house by OMC's staff of more than 30 specialists at the Melbourne head office. This team is still led by Dr O'Brien and his maritime engineer son Peter O'Brien, who also manages the company's day to day operations as its Chief Executive Officer. OMC's Perth office has an increasing workload in WA which is in the midst of a resources boom. This includes winning dredging optimisation studies for Anketell Point, Cape Lambert, Oakajee and Port Hedland.

The company is also working with Port Hedland Port Authority (PHPA) to replicate the Port's June 2009 record of five bulk carriers sailing on the one tide. PHPA believes the iron content within this combined shipment of iron ore would be sufficient to build 10 Sydney Harbour bridges. "On average, two to three ships sail on the one tide but as export volumes grow, it would be desirable for this to



increase to four to five ships per tide," Dr O'Brien said.

To this end, PHPA has commissioned OMC to develop and install a DUKC Optimiser program which will look at maximising throughput over a tide cycle, considering the number of vessels.

TAUGHT AT UNIVERSITY

Case study examples of DUKC technology will be taught at Melbourne's Swinburne University of Technology in a move that could see DUKC eventually become a standard education tool for future port engineers, says a Swinburne engineering professor.

Professor Alexander Babanin, from Swinburne's Faculty of Engineering and Industrial Sciences, said this postgraduate port engineering unit, first run last year with the support of Ports Australia, would now be taught every year. "We have had very positive student feedback, particularly to the DUKC case studies," Professor Babanin said. "We believe that this Swinburne course, with input from the maritime industry, is a first for Australia."

The intensive week-long 'Port Access and Navigation' postgraduate study unit was developed by Swinburne in association with Ports Australia and will again be taught by Swinburne academics and industry experts, including OMC Founder and Dr O'Brien OAM.

"Swinburne is very fortunate to have Dr O'Brien address our students," Professor Babanin said. "His company's software navigation technology, which reduces the risk of ship groundings, is set to become a standard education tool for future port engineers."

Port engineers from around Australia and current Swinburne postgraduate students, many from overseas, have enrolled for this course. ■