

COAL TO THE WORLD, GROWTH TO THE NATION



OMC Executive Director Dr Terry O'Brien (centre) with Victorian Trade and Investment Minister Philip Dalidakis and the Governor of Victoria, the Hon. Linda Dessau after winning a Governor of Victoria Export Award on September 14. OMC won the Business Services Award for "outstanding international success in the professional business services including

....Engineering....". Dr O'Brien said this prestigious award was "a fitting win" for OMC because the company's DUKC® technology is recognised as the global standard in UKC management and OMC continues to be awarded contracts due to its extensive experience and unmatched expertise in this field

FEATURE

In September 2018 the first-ever African Regional Conference of the International Association of Ports and Harbors (IAPH) was held in Abuja, Nigeria and attendees included the President of Nigeria, the World Bank and the African regional Vice President. Ports were described as strategic national assets and synergy and collaboration were sought from those present for more effective and efficient port operations and shipping activities.

A key question raised was 'How adequate is Africa's port infrastructure in response to contemporary trends of increasing ship size and cargo volumes?'

This is an issue that many ports around the world, not just on the African continent, are trying to address because their ability to remain competitive on the global stage significantly affects their economies.

As ports race to be ready for bigger ships, they are also under enormous pressure to make smart investment decisions that will increase productivity.

Ports are strategic national assets. The pan-African ports agenda under the World Ports Sustainability Program outlines priority actions on infrastructure operations and governance.

Like Australia, Africa has an extensive ocean coastline parts of which are exposed to severe swells generating significant wave-induced ship motions in port approach channels and at berths. Both continents also have a strong coal, iron ore and mineral export industries.

OMC International Executive Director Dr Terry O'Brien, who pioneered real-time DUKC® technology to allow the shipping of more cargo, more safely, more often, said his company's main effort to introduce DUKC® systems to African ports has been at Richards Bay, one of the largest coal ports in the world, and at Durban, a large container port, both on the east coast of South Africa.

Richards Bay opened in 1976 exporting around 12mt /annum, celebrated its 40th Anniversary in 2016 and in 2017 exported 99.2 million tonnes in 2000 vessel movements, with 86.6% to Asia. In February 2018 the port was the winner of the prestigious Global Ports Forum in Dubai.



Richards Bay Coal Terminal

Dr O'Brien has been a visitor to South Africa over many years, beginning with a three-month sabbatical leave from the University of Melbourne in 1983 which he spent on ship motion modelling research at the CSIR hydraulics laboratory in Stellenbosch. Following the establishment of OMC in 1987 and his pioneering work in the installation of the first Dynamic Under Keel Clearance (DUKC®) system at Hay Point coal terminal in 1993 and at the iron ore ports of Port Hedland and Dampier in 1995, he has visited South Africa on many occasions with a view to promote the contribution which DUKC® systems could make to more safe and efficient port operations in South Africa.

Dr O'Brien has long believed that the African port market is similar to that in Australia with a strong emphasis on bulk mineral exports. He believes that the experience of personnel at ports such as Port Hedland (the world's largest bulk export port) where DUKC® has already delivered record export tonnages and throughputs could help many African ports increase their productivity.

However, a major barrier to the involvement of non-African consultants is the requirement of government bodies such as Transnet for the use of local technology and their strict requirement that they partner with a local company, which OMC is now attempting to do.



Durban Container Terminal Pier 2 North Quay looking East

OMC's customised DUKC® systems are installed in 30 ports around the world, including most Australian ports, as well as in important waterways such as Torres Strait (a vital shipping route for the Asia-Pacific region) and also in Canada's St Lawrence River (one of the world's busiest inland waterways) from Montreal to Quebec City. They have yet to be installed in any African ports but have the potential to contribute to operational efficiency, capacity building and most importantly to safety.

In ports where DUKC® technology is already in operation, it can optimise the amount of dredging required for new channels or to maintain existing channels. For example, New Zealand's Lyttelton Port Company (LPC) announced in August this year that DUKC® had significantly reduced by more than 40% the volume of dredging required, based on industry guidelines, to update the port's entrance channel. The decision to adopt the DUKC® system has allowed LPC to reduce the volume required for Stage 1 of the deepening project by more than 40% compared with initial estimates, which were based on standard industry guidelines.

OMC's business offerings also include the integration of its latest web-based DUKC® Series 5 technology with its Dynamic Port Capacity Model (DPCM®) which enables ports and port users to make more informed investment decisions such as the optimisation of high spot dredging and the number of tugs or pilots needed, or the impact of shore-side developments on port throughput. Installed at Port Hedland, it has enabled Pilbara Ports Authority (PPA) to increase the predicted capacity of the Inner Harbour by 16%. This maximised throughput, or sweating of the assets, has deferred the need for a \$20 billion Outer Harbour Development.

The DPCM® could be a useful tool for the cost-effective management of a congested container port like Durban.

The emergency response capability of DUKC® is critical because groundings can and do happen. The Port of Richards Bay, for example, had for 37 years been shipping coal out without incident until August 2013 when the coal carrier mv Smart grounded while in the port departure channel and broke into two sections in heavy seas.

A key question remains: Can African ports be made ready to safely handle bigger ships and cargo volumes and can proven UKC management technology be introduced to assist in this challenging mission?

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