

Opening the Strait

Trials aimed at improving safety in the Torres Strait may soon contribute to better productivity, writes David Sexton

SUCCESSFUL TRIALS INVOLVING under-keel clearance technology are now allowing deeper-draught ships to pass through the Torres Strait.

For the past three decades the limit prescribed by the regulator has been set at 12.2 metres, noting this stretch of water carries a high risk of grounding owing to complicated tides, strong currents and a hard, rocky bottom.

AMSA's validated Under-Keel Clearance Management System (UKCMS) in the Torres Strait has been in operation since December 2011. The mandatory requirement to use the UKCMS for vessels with a draught more than 8 metres, yet not exceeding 12.2 metres was included in the update of Marine Order 54 (coastal pilotage) (MO54) that came into effect on 1 July 2014.

The UKCMS is used, on average, five times a day by coastal pilots to assist with navigational safety decisions

required for deep-draught vessels transiting through Torres Strait.

"AMSA has identified the potential to carefully increase the current regulated maximum draught limit of 12.2 metres when and where environmental conditions permit," the regulator told *Daily Cargo News*.

"To ensure any decision to increase the regulated maximum draught limit is made safely, AMSA has authorised a staged trial to investigate the possibility of increasing the regulated maximum allowable draught in the region."

The trial has been run as a close collaboration between OMC International (which provides the software and hosts the UKCMS on AMSA's behalf) and owners of specifically targeted bulk and container vessels.

According to AMSA, the trial involves collecting real-world GPS-based vessel motion data over four separate stages of multiple transits.

Each stage uses vessels with incrementally increasing draughts over the 12.2-metre limit.

"To date, four stages of the trial have been successfully and safely completed using bulk vessels with AMSA now collecting further trial data at draughts of up to 12.5 metres," AMSA stated.

"It is intended that targeted container vessels will contribute to the trial shortly.

"It is intended that upon completion of the trials and final assessments, recommendations will be made to endorse possible long-term changes to the existing draught regime for the benefit of industry without incurring any additional navigational risk."

OMC chief executive Peter O'Brien and general manager product design Chris Hens were on the Gold Coast recently where they discussed the trials as part of the NAV18 Navigation Safety Symposium.

They explained how the Straits were a shipping bottleneck, something difficult to overcome, given its environmental sensitivity meant dredging was not an option.

"Up until the last 18 months, no (larger) vessels have been able to transit through Torres Strait at draughts of greater than 12.2 metres," Mr O'Brien said.

Rio Tinto ships bauxite from Weipa down to Gladstone and every extra centimetre in draught is said to be worth an extra 80 tonnes of bauxite to the big miner.

"With the right information there are opportunities to go deeper than 12.2 metres," Mr O'Brien said.

"It has been quite a significant bottleneck."

"AMSA's priority was safety. They were clear the system was put in to enhance safety," he said.

"But it was always recognised in the goodness of time they would look to see if they could take some of the productivity benefits from a dynamic approach."

RECENT TRIALS

Mr O'Brien noted that there were four stages of testing for the new system, and each stage there were three measurements.

"The first stage was three vessels with a draught of 12.3 metres (10cm deeper than had ever been allowed). For these vessels, our engineers measured the UKC and compared with what the system was saying," he told DCN.

There is environmental benefit in that there are 10 fewer ships that could ground

The Straits are also of interest to container ships looking to sail down the east coast of Australia and to New Zealand, as well as some tanker vessels.

Mr O'Brien said back in 2009 they were asked to put in a DUKC variation – the DUKC-N that was commissioned in 2011.

Further tests involved Rio Tinto vessels with draughts of 12.4 metres and 12.5 metres.

Maximum draught trials occurred in January and February this year, one ship with a draught of 12.8 metres and another at 12.7 metres.

Rio Tinto was allowed for a three-month period to have its ships transit the Strait at 12.3 metres.

This cap (for Rio Tinto) was later lifted to 12.4 metres and then 12.5 metres.

An extra 30cm in draught means Rio Tinto can move close to an additional 2500 tonnes extra bauxite per ship.

Rio typically makes about 200 shipments through the Strait every year, but extra draught means more bauxite can be loaded and thus reduce these number of shipments overall.

"That is worth a lot of money and there is environmental benefit in that there are 10 fewer ships that could ground," Mr O'Brien said.

A spokesman for Rio Tinto said their first priority was safety and environmental protection, so the staged implementation was carefully monitored and checked as the trials progressed.

The Rio Tinto spokesman said the trials added other benefits such as improved productivity, meaning less ships and fuel required to move bauxite volumes required for the Gladstone refineries.

"Rio Tinto has fully supported this project since the start, working in collaboration with AMSA and OMC," the spokesman said. "It is great to see this project has the potential to benefit other industries too and ultimately improve in/out bound shipping costs for Australian businesses using container liners."

Shipping Australia chief executive Rod Nairn said the trials in the Strait were "a great development that has been an ongoing initiative between AMSA and the Australian Hydrographic Office for more than a decade".

"The implementation of the under-keel management system has been a great success, improving safety and protection of the environment," Mr Nairn said.

"Quite rightly the first aim was improved safety, but now that the system has been operating and has proven reliable, it is good to see that the cargo and trade benefits of the system are now being realised.

"The outcome is either to reduce the number of ships required to carry a predetermined cargo or increase the cargo carried at a net benefit to the environment in terms of tonnes per kilo of CO2 produced and greater productivity. It's a real 'win/win'." ■

New technology may boost maritime productivity in the Torres Strait