



# Sailing away

**The market for crane transportation by submersible vessels has almost disappeared. But Peter van Schie discovers the transportation of container cranes is still buoyant.**

In the past, heavy lifting operator Dockwise from the Netherlands was recognised as a 'brand' for the shipment of fully erect cranes. The company moved container cranes to destinations all over the world using their semi-submersible heavy transport vessels. Their unique forklift method, using the vessel's outriggers to lift the container crane from the quay and relocating it, made it the fastest and easiest operation, even at the most difficult locations. In a nutshell, the operations are very simple. By 'reversing' the transport vessel against the quay the outriggers 'hang' over the quay. By submerging the ship the outriggers are lowered in a position that will enable the crane to 'roll' on to the vessel. After the crane is on-board the vessel, water is pumped out of the ballast tanks giving the ship greater buoyancy and moving the outriggers off the ground – hence, the vessel is ready to sail. This unique method has been the trademark of Dockwise for many years and has helped the company to build a reputation for the transportation of fully erect container cranes. But the transportation of fully erect cranes comes at a cost, with high insurance premiums, maintenance and operations costs all contributing to make it an expensive option especially when added on to the purchase price of a container crane. With a continued increase in competition in the container crane market one of the largest container crane manufacturers (with a huge share of the market), decided to purchase bulk carriers and convert them to heavy transport

vessels - with similar forklift operations - for the transportation of their cranes. As a result Dockwise saw its market share drop and although the company is still active in the shipment of cranes (although in smaller numbers) it was forced to diversify into other markets.

## Transportation considerations

But the container crane market has moved on and the need for the transportation of cranes continues. In fact, crane movements have doubled since 2006, and more exotic destinations have appeared on the destination list including Brazil, Peru, Chile, Vietnam, Egypt, Algeria and Mexico. Singapore-based Portek, a company specialising in port engineering, as well as operating several container terminals of its own, suggest seven steps to evaluate the transportation of a crane:

- Survey crane structure, loading and discharge locations
- Select vessel; determine best load and unload methods
- Complete finite element analysis of crane structure and bracing
- Design stowage plan
- Strengthen crane structure, lashing, loading and sea-fastening
- Sea voyage
- Unlash, discharge, and re-commission crane

"Selecting the right one (method of transportation) involves factoring in vessel availability, time available, distance to be travelled, restrictions at ports at both ends of the journey, crane dimensions, and expected weather en route," says Larry Lam, Chairman and Managing Director of Portek. Similar evaluations are coming from engineering consultants Liftech Consultants, USA, who includes vessel type,

orientation of the crane on the vessel, boom position and assembly state. On the engineering side the company include loading and offloading the crane, checking the wharf structure, voyage forces and bracing, reviewing the delivered crane for damage and proper bracing removal. "Ship selection also needs careful consideration," adds Lam. "For sea journeys there are four options. Firstly, there is the tug and barge combination, which gives a large cargo area, is relatively economical, but comparatively slow. Secondly, using a forklift vessel offers fast quayside gantry crane load and unload, but with low vessel availability. Or thirdly, employ a semi-submersible self-propelled vessel offering fast lift or skid on and off, high cruising speed, but also with low availability. Lastly, there is the option of hiring a ship with onboard heavy lift cranes, which can load or unload anywhere, but once again there is a relatively limited selection." The tug and barge combination (some call it the 'towed' option) may be preferred for short voyages. According to Erik Soderberg, Principal at Liftech Consultants: "Towed vessels are used exclusively to relocate cranes within the US due to the Jones Act, which mandates that goods shipped between US Ports be transported on US ships with US crews," Soderberg adds. Another disadvantage of using the towed option is the inability to inspect the cranes during transport and make repairs at sea. The other options are better known as the 'self-propelled' option and will be most advantageous in several ways. The ships are faster, better at avoiding rough seas, less bracing is required and there is the option of inspection and repair during the transportation. Last but not least, depending on which transportation method is chosen, the cost implications have to be carefully considered. ■