



## Idea that “floats your boat”

**Is there a role for floating cranes in an emergency response scenario? World Port Development reports...**

With only a handful of ports around the world capable of accommodating 19,000 TEUs vessels, accessibility is key. Often the approach channel is not deep enough for the vessel to enter the port or the infrastructure is not there and off-loading the containers on to smaller vessels is the only viable option. For example, off-loading containers from smaller container vessels by floating cranes (a simple steel A-frame installed on a self-propelled pontoon) is common practice in Hong Kong as berths are at a premium. But for larger vessels this will not work as the floating cranes are not able to reach the deck. The benefits of a floating crane that could reach the deck and be large enough to off-load the containers of a 19,000 TEU vessel are obvious. Ulrich Malchow at Germany-based Port Feeder Barge uses the argument of emergency response for his floating crane design. “The ever increasing size of container vessels is creating a very special demand for floating cranes able to discharge containers even from grounded 20,000 TEUs vessels,” says Malchow. “It has to be conceded that almost no port is prepared to handle mega carriers. Whereas in aviation it went without saying that the introduction of the A380 went in line with an upgrade of



the emergency equipment at all relevant airports, in shipping, nobody has a solution to effectively lighter a 20,000 TEUs vessel somewhere else than at a container terminal. Such floating equipment is virtually not existent.” Malchow might have a point here as in the case of a grounding quick measures have to be taken to avoid further damages to the vessel as well as damages to the environment (such as an oil spill). Also the commercial damage could be tremendous as a grounded vessel could block the entrance

of a nation’s main ports for weeks without sufficient salvage equipment available. There are certainly a lot of floating heavy lift cranes available worldwide - some even with jack-up capability such as those recently introduced in the European offshore wind farming industry. However their lifting capacity is much too high and their cycling time much too long to quickly discharge thousands of containers necessary to get the stricken vessel afloat again as soon as possible. Heavy lift crane vessels also have a considerable draught which makes it difficult to berth alongside a grounded vessel. The grounding of mega vessel “CSCL Indian Ocean” (19,000 TEUs) on the Elbe River in February 2016 demonstrated that such a risk is real. Only very lucky circumstances have prevented further damage to the vessel, the environment and even to the entire accessibility of the port of Hamburg, Germany. “Nevertheless it took 5 days to get her afloat again - luckily without the need to discharge any containers as suitable equipment was lacking not only along the German coast but also in neighbouring countries,” said Malchow. In fact, what could have happened has already been seen in Belgium. In 2005 the panamax container vessel “Fowairet” ran aground on the Schelde River heading for Antwerp. Although a much smaller vessel it could not be lightered quickly enough and broke, resulting in a considerable oil spill. It took weeks to move her away. According to Malchow, the following criteria have to be fulfilled to ensure successful lighterage operations of mega container vessels;

- shallow draught (for obvious reasons),
- hook height of 60m above the waterline (to grab containers even from the 9th layer on top of the hatch covers),
- an outreach of 30m (half the width of 19,000 TEUs vessels),
- high fulcrum point of outrigger (to ensure full outreach of the beam over the cargo deck)
- automatic spreader (for quick operations).

“All these criteria are matched by the innovative Port Feeder Barge, i.e. a double ended self-propelled and self-sustained container barge. This new type of harbour vessel could play an important role as a meaningful provision for salvage cases of grounded container vessels. Such vessels could be operated commercially throughout the year in container logistics within or around ports and would be at the disposal of emergency agencies in case of any disaster,” said Malchow. [WPD](#)