

Conversion of *Combi Dock IV*



OIG Giant I (pictured) and *OIG Giant II* are to be joined by four more vessels by 2013

LLOYD WERFT The recently founded Offshore Installation Group (OIG) aims to serve the oil and gas production market with a fleet of six offshore support vessels (OSVs), the first of which it named *OIG Giant I* (formerly *Blue Giant*). After conversion to an OSV at Lloyd Werft's Bremerhaven shipyard, the former *Combi Dock IV* has become *OIG Giant II* – the second ship in the company's young fleet.

A heavy-lift dock ship owned by the Bremen shipping company Harren & Partner (H&P), the onetime *Combi Dock IV* has now begun operations as an offshore installation and construction vessel for OIG, a joint venture between H&P and Goldman Sachs Capital Partners (GSCP). OIG said its primary focus was on customers in the oil and gas sector, whom it is offering what it describes as the first "one-stop shop" for all services connected with offshore oil and gas field development. To this end, OIG acquired the Norwegian offshore specialists Global Mooring Services (GMS), which had co-founded OIG with H&P. OIG's wide range of services include cable laying, deep-water mooring and offshore installations at depths of up to 2,500m.

Existing know-how

Combi Dock IV was launched in January 2010, the fourth in a series of four heavy-lift dock ships built at the Lloyd Werft shipyard in Bremerhaven between 2007 and 2010. It returned to the yard in August 2011 for conversion to an OSV. Lloyd Werft workers were able to draw on their experience in converting its sister ship,

Combi Dock II. The second in the four-ship series, *Combi Dock II* had been equipped with numerous extras and entered service in the Gulf of Mexico in August 2008 as the oil rig supply ship *Blue Giant*. Today it operates as *OIG Giant I* for OIG.

Conversion work

As with the *Blue Giant* three years ago, a helipad was built on the bow of the future *OIG Giant II*. A further similarity is a seven-deck extension to the forward superstructure, containing cabins, leisure facilities, larders and a water treatment and biological purification plant. The added accommodations are in a single, suspended module, however, not a series of stacked containers as on the *Blue Giant*.

The module has a floor area of 13m x 18m and rises 21m out of the heavy-cargo hold. Made of steel in two sections by WST Weser Stahlbau, which is located opposite Lloyd Werft, it was hoisted on board by the floating crane Enak and fully outfitted by the shipyard. The module accommodates 86 additional personnel and weighs 500 tonnes.

During the conversion, the ship's two forward, heavy-lift cranes from the Switzer-

land-based company Liebherr were considerably lengthened to enable them to reach as far and high as possible. They were also equipped with an anti-heave compensation system and now have a safe working load (SWL) of 2 x 350mt and 1 x 200mt for cargo handling operations in port, as well as a combined SWL of 500mt for subsea installation to a depth of 2,500m. As with *Blue Giant*, *OIG Giant II* boasts a 7.8m x 7.4m moonpool on the starboard side of the loading bay, through which divers and equipment can be lowered into the water. Lloyd Werft also installed six more generators on deck (in addition to the main drive) to ensure sufficient power.

To perform its special tasks well, *OIG Giant II* was equipped with a class 2 dynamic positioning (DP) system. It ensures that the ship maintain its position to the centimetre via GPS, laser systems and hydroacoustic reference systems. Lloyd Werft said the DP system required relocating and enlarging the ship's forward bow thruster and adding a further hydraulically retractable bow thruster aileron. Two stern thrusters were installed as well.

OIG Giant II was retrofitted below her hull with two Azipod thrusters that are also hy-

draulically retractable. They can be turned from the bridge through 360°, providing high manoeuvrability for the 162.3m-long and 25.4m-wide vessel. Their propellers are 3m in diameter and hang 3.3m below the hull bottom.

Immediately after the conversion, *OIG Giant II* began installing three turbines for a tidal power station off the Orkney Islands, near Scotland's northern coast. A total of 90 turbines are to be installed there by 2013.

Offshore Installation Group

OIG Giant I and *OIG Giant II* are the first ships in what Singapore-based OIG plans to expand to a six-vessel fleet by the end of 2013. The remaining four ships, which have yet to be built, will also be of the Combi Dock type developed by H&P and Lloyd Werft especially for the heavy-lift and project market. The newbuilds will be equipped with specialist offshore equipment including a system for laying flex pipes.

This specialist ship type has high-performance cranes, a stern ramp for rolling cargo as well as dock functions for floating cargo. With a total length of nearly 170m and a continuous hold that can be divided horizontally or vertically, it offers maximal stowage for the transport of offshore equipment.

"Because our ships have three times more deck area than that of other providers' ships in the industry, we don't need additional heavy-lift vessels to transport equipment," noted H&P founder Peter Harren in describing OIG's business concept. "On board the ships are bulky cable reels, piping – in short, everything that's needed to extract oil and gas at sea. This saves time and money. What's more, it al-



Combi Dock IV at the Lloyd Werft shipyard. After its conversion, the ship began operations as *OIG Giant II*

lows us to operate in more remote, and deeper, sea regions."

Harren added: "While other ships have to regularly put into an offshore harbour to pick up supplies, OIG's vessels are optimally equipped for installation work far out at sea."

Strategic partnership

To employ the specialist ships effectively, OIG said it utilised the technical expertise of GMS. It pointed out that Jarle Andersen, GMS' founder and the chief operating officer of OIG, contributed to OIG's success partly through his valuable contacts in the offshore installation industry. GMS has a long track record as a reliable service provider in areas including the mooring of

floating production, storage and offloading (FPSO) units, which serve as floating storehouses and refineries for crude oil and natural gas.

OIG's strategic alliance with Norway-based Kongsberg Oil & Gas Technologies gives it the support of another concern in the oil and gas industry. H&P and GSCP furnish OIG's necessary equity capital, with loan financing done on a project-by-project basis. OIG's chief executive officer is Heiko Felderhoff, who was previously managing director of H&P Ship Management, H&P Logistics & Engineering and further subsidiary companies, particularly in the sector for major heavy-lift projects. Felderhoff was also instrumental in developing the Combi Dock series.



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