

Pioneering FPSO territories

BW Offshore, Keppel Shipyard and Petrobras celebrate the naming of BW Pioneer.

In 2007, Petrobras America Inc selected BW Offshore for the conversion and operation of an FPSO (floating production storage and offloading unit) for the Cascade & Chinook fields in the US Gulf of Mexico. Fast forward to 2009, and the conversion is nearing completion as BW Offshore officially named BW Pioneer at Keppel Shipyard in Singapore on 26 October.

Celebrating the milestone with BW Offshore were 250 guests, including suppliers, media and partners from Petrobras and Keppel Shipyard. The lady sponsor was Mrs Adriana Maria Acciolly Zelada, wife of Mr Jorge Zelada, Chief International Officer, Petrobras. BW Pioneer will be the first FPSO for the hurricane-prone US Gulf of Mexico, and is on track to arrive in US waters in January 2010 and begin operations in the first half of 2010. The vessel is on a five-year fixed lease with three one-year extension options for Petrobras America.

BW Offshore's technology division APL provided BW Pioneer with an internal disconnectable Submerged Turret Production (STP) mooring system. This is the world's leading disconnectable turret system with an unparalleled track record of more than 1,500 disconnect/connect operations. The turret mooring system goes down 2600 metres, by far the deepest for any FPSO.

BW Pioneer also has safety features to withstand environmental loads from forces of nature including wind, waves, and temperature. In the event of an approaching hurricane, the APL STP technology on the FPSO can be disconnected so she can move on her own propulsion for sheltered waters with minimum disruption to operations.

All these facts and firsts have attracted attention not only from the offshore oil and gas industry but also from the media. The entire conversion of BW Pioneer has been documented by the National Geographic Society, and will be broadcast in a future episode of the series 'Mega Structures on the National Geographic Channel'.

BW Offshore CEO Carl Arnet says: "Being the first contractor to place an FPSO in the US Gulf of Mexico gives BW Offshore a seal of quality and strengthens our



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position and track record as a leader. The high level of quality and safety achieved on this project are the result of our strong partnership with Keppel Shipyard. I am confident that BW Pioneer will set the standard for FPSOs operating in the US Gulf of Mexico."

For those who worked on the project, the naming was an emotional and rewarding occasion. Construction Manager Tom Ringstad called it a "significant milestone" while one of BW Pioneer's Offshore Installation Managers (OIM), Jarle Kristiansen, says: "It will be good finally to get her sailing, and I am really looking forward to sail her to the US GoM and begin operations."

BW Offshore is present in both the US and Mexican portions of the Gulf of Mexico, in the Tupi field offshore Brazil with BW Cidade de São Vicente, and recently was awarded the Letter of Intent for a joint venture on the Brazilian Papa Terra field in 2012. ●

Turn to page 6 to find out more about how BW Pioneer Project Manager Rolf Normann led the conversion.

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- 01 **DIGNITARIES** Ship sponsor Mrs Adriana Maria Accioly Zelada (with flowers) and key representatives from BW Offshore, Petrobras and Keppel Shipyard.
- 02 **BW OFFSHORE'S TOP MANAGEMENT GROUP** From left: VP APL Erik Svendsen, VP Corporate Elisabeth Barstad Dehlie, VP Projects David Sverre, VP Technology Tom Arne Kristiansen, CEO Carl Arnet.
- 03 **BW PIONEER PROJECT TEAM** From left: Project manager Rolf Normann, Construction Manager Tom Ringstad and Offshore Installation Manager (OIM) Jarle Kristiansen.
- 04 **STRONG PARTNERSHIP** BW Offshore CEO Carl Arnet (1st from left), Keppel Offshore & Marine CEO Tong Chong Heong (3rd from left) and Petrobras Chief International Officer Jorge Zelada (3rd from right).

Behind the scenes

BW Pioneer has lived up to its name, from being the first FPSO in the US Gulf of Mexico to setting records for deep-water turret technology. Project manager Rolf Normann tells World Horizon what it was like to lead the conversion project.

WHAT IS KEY WHEN MANAGING A PROJECT OF THIS SCALE?

The success of a conversion project boils down to having the best project team in place and achieving the right balance of quality, safety, cost and time. To be on top of one or two of these elements is not really a big problem, but when we have to ensure we meet all the criteria and keep trade-offs to a minimum, it starts to get challenging.

WHAT MAKES A GOOD PROJECT MANAGER?

I believe a good project manager primarily needs to attract good people and keep them motivated. Secondly, he or she needs to have a fair understanding of most issues so that it makes it possible to understand, discuss and analyse problems quickly.

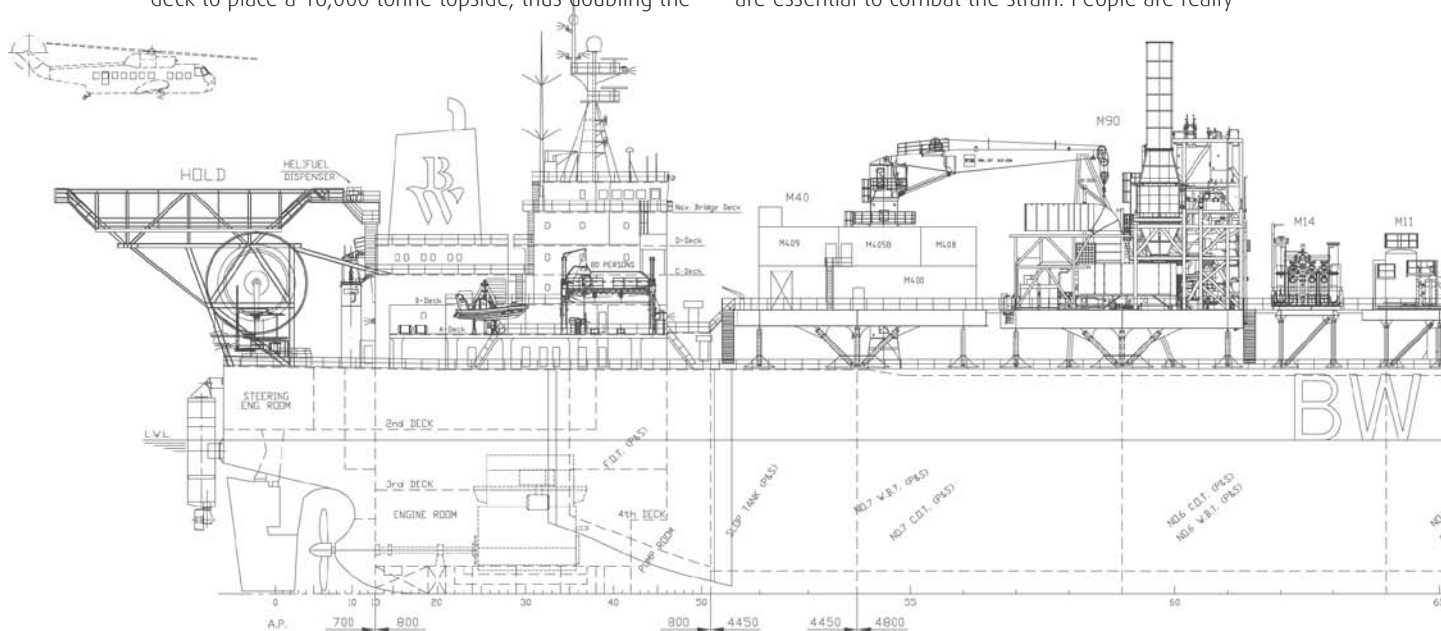
WHAT ARE THE PARTICULAR CHALLENGES OF THIS PROJECT?

BW Pioneer is not an exceptionally big FPSO but the scope of conversion work exceeds anything we have done before. As an example, the number of pipe spools and cables on the BW Pioneer is around 20% to 30% higher than on our other FPSO Yuum K'ak' Naab. It also has fairly congested topsides with a "small" Aframax deck to place a 16,000 tonne topside, thus doubling the

dead weight of the ship to more than 30,000 tonnes. To give some idea of the magnitude of the project, it is useful to mention that we used more than 8 million man hours in total at the yards and at our main contractors. Technically, the turret is probably the most complex area of the ship to work on. However, the bigger challenge in this project is managing the stakeholders. Being in the US meant that we needed to meet all US rules, and since the US does not have prior experience with FPSOs, a number of the rules and agreed practices were actually developed as the project progressed. The US Minerals Management Services, the US Coast Guard, Petrobras America Inc., Det Norske Veritas and BW Offshore were all instrumental in the process. Without the contribution and positive will from each party, it would have been impossible to complete this project.

WHICH PHASES OF THE PROJECT STOOD OUT FOR YOU?

The most critical phases of the project are at the beginning and the end. At the start, fundamental judgment calls need to be made, such as team composition and staffing and contracting strategies. Towards the end, before leaving the shipyard, the timelines are always extremely tight, and this is when focus and high spirits are essential to combat the strain. People are really





Project Manager Rolf Normann and Construction Manager Tom Ringstad.

stretched in this phase and it is easy to start finger pointing and blaming each other if we do not get the expected progress, so it is important that the team is already well bonded by this time. I have yet to see anyone being worn out by too much work alone – as long as you believe in your contribution and receive positive feedback, most people can take on an incredible amount of responsibility and work load.

WHY IS BW OFFSHORE REGARDED SO HIGHLY IN THE PROJECT MANAGEMENT SPHERE?

I would say the key factor in the BW Offshore approach to projects is working with small, highly skilled teams with diverse backgrounds – from both offshore and shipping. Most of us have worked on similar projects before and are experienced enough to know what is needed to ensure a successful completion. Although a

number of people in the core team have not held these positions previously, everyone has proven to be eager, confident and excellent performers. We have put a lot of work into getting the right team in place and ensuring that everyone is confident and secure in their position – I think this helps us get the output we want.

HOW DID YOU FEEL AT THE END?

Some of us have worked almost solely on this project for nearly three years now, including the tender phase, so the completion was very emotional and rewarding, like giving birth, I guess. One colleague aptly described it as the transformation of a caterpillar into a butterfly. I hope and believe that most people on this project will remember it with a smile – as a successful project that was interesting and challenging, and something rather special to be a part of. ●

