TAKING FAST CREW VESSELS TO A NEXT LEVEL

THIS YEAR’S INTRODUCTION OF THE FCS 7011 OPENS UP NEW MARINE ACCESS MARKETS.

TNO

RESEARCH ON SEASICKNESS

Working to improve performance, comfort, health and safety at sea.
From an interview with Alan Pirie, Senior Marine Specialist at leading industry analyst IHS Markit, on what the future holds for the PSV sector.

No let-up in oversupply
The current situation is that there are plenty of PSVs still on shipyards’ order books, despite the fact that next to no new orders have been placed in recent months. According to IHS Markit’s Marinebase, there are 170 PSVs on order or in build. A significant number of these are in the Far East, and so this region in particular will see plenty of new tonnage entering the market over the next couple of years. This will only add to the oversupply currently seen in the worldwide PSV/OSV market.

Day rates to remain soft
It is unlikely that there will be an increase in average day rates in 2017, despite slightly increasing demand. The main reason for this being the current oversupply of tonnage in the market, and the fact that there are around 300 PSVs and AHTS vessels in the global order book, plus over 900 OSVs currently laid up around the world.

Day rate improvements would be dependent on a significant and sustained surge in demand, although even if this was to take place it would take some time for the supply/demand balance to move in favour of vessel owners as opposed to chartering companies. Any increase in demand would potentially see vessels coming out of lay-up, causing more competition for term fixtures between owners, and so putting downward pressure on day rates once again. For this reason it is expected that a recovery in day rates cannot be expected anytime soon.

Large PSVs likely to recover first
According to IHS Markit’s Global Supply Vessel Forecast (GSVF), the sector with the best visible future demand is the large PSV (4,000 deadweight+) sector. Large PSVs with ample deck space and large storage capacity are sought after by chartering companies due to their ability to work in deep water and harsh environments. Vessel owners know this, however, and have ordered a large number of vessels in this class over the last few years. Therefore utilisation in this sector may still be low despite large demand, due to the large number of this size and type of vessel currently being built. Few very large AHTS vessels are currently on order, so there will be smaller growth demand in this sector but perhaps a better rebound. Large scale scrapping/selling out of the AHTS market by companies like Maersk Supply Service is also having a positive impact on this market.

Aquaculture and Walk-to-Work vessels look promising
The Walk-to-Work sector is one area worth watching, and we have seen some charters agreed, although not in great numbers. Aquaculture is another growth area, and some Norwegian OSV companies have also been able to utilise their PSVs in the fish farming sector by modifying them so that they can be used for salmon de-lousing work. Somewhat morbidly, many vessels have also been hired to help support efforts relating to the Mediterranean refugee crisis, in which increasing numbers of desperate people are attempting to leave war-torn countries such as Libya and Syria to reach Europe. In the process, many are taking life threatening risks to cross dangerous seas in order to achieve a better life. Some OSVs have used their rescue capabilities to save the lives of stricken men, women and children.

Further operator consolidation likely
We have already seen some consolidation in the PSV sector. In Europe, Solstad took over Rem Offshore, before the merger of Solstad, Farstad and Deep Sea Supply took place. This has resulted in one of the biggest OSV companies in the world being created, and its strength in numbers may help the company gain some more negotiating power with charterers. How successful this merger will be remains to be seen, but it is fair to say that many senior players within the industry had been calling for more mergers and consolidation in the OSV sector for some time prior to this deal going through. We have seen several other Norwegian players going through financial restructuring in a bid to remain afloat during the current downturn, and it is not impossible that further consolidation will be seen this year.
SMST – A VALUED PARTNER IN OFFSHORE SYSTEMS

Recent successes for SMST in this sector include the access bridge -XL. Its SMST TAB-XL has a maximum length of 46.5 metres and is equipped with a programmable emergency lift-off system as well as extensive additional safety systems. Its advanced design includes a lifting system that has accumulators for active tip force reduction. The bridge is operated by the ship's own crew, who are trained on board. This type of TAB is designed for long-term connections as personnel and equipment shuttle between the accommodation vessel and their place of work.

In recent years Damen has identified marine access to offshore installations as a market with strong potential growth. Its range of fast crew supply vessels (FCS) has been highly successful, but the end users are keen to extend the range of seafarer conditions in which they can operate so as to achieve cost-savings compared to the aviation alternative. A key part of achieving this is the ability to move personnel and their equipment from the FCS to the installation quickly and safely in high-energy sea-states, and SMST is bringing its expertise in motion-compensated TAB systems to the project.

Damen FCS 7011

Together the two companies are working on solutions for Damen’s largest FCS yet, the long-distance 70-metre FCS 7011 which will be able to carry up to 150 passengers at speeds of up to 40 knots in exceptional comfort. The interior layout and furnishings can be configured to the needs of each client. Similar to a plane, different classes from first with large, fully-reclining seats, to a rather more basic economy can be configured, or a simpler, one-size-fits-all approach using any seating option the customer chooses. Whatever the format, large windows will give plenty of natural light and there will be space to move around. However, the 7011 is a far more complex vessel than it appears at first sight, and is the product of an extensive R&D programme that looked at every aspect of performance and design.

The FCS 7011 hull form is already designed to eliminate slamming and minimise acceleration, and for all-round good seakeeping, but new features can still be a problem on longer passages in deep sea conditions. So the entire interior layout was analysed and measures recommended regarding the positioning of the seats and the introduction of elements such as artificial horizon. The investigation regarding the minimisation of rolling when alongside a platform concluded that the installation of a gyroscope in the hull would be the most effective solution. Already in use in other mid-size vessels, this will be among the first in the FCS sector.

Marine access is of course a major element on all crew transfer vessels, and the FCS 7011 will offer the option of a motion-compensating system (a gangway) on the aft deck. Surprisingly there was nothing available in the market for a vessel of this size and so Damen is therefore working with two leading gangway suppliers to come up with solutions to offer to customers. SMST, a sister company of Huisman, is playing an integral part in a number of projects with various departments within the Damen organisation, while Ampelmann and Damen have together developed an innovative design tool. The software integrates all the major elements of the vessel such as the design and the gyroscope together with other factors including the position of the gangway. This enables the design team to gauge the impact of different gangway solutions on how the vessel moves when they are deployed, and make any necessary adjustments. The use of frog baskets will be an alternative transfer option.

Damen has a long and successful history of working with leading maritime research organisations including MARIN, TNO and Delft University, Damen undertook detailed studies of seasickness mitigation, anti-rolling measures and marine access workability. 2017 sees Damen taking its already extensive range of Fast Crew Supply (FCS) vessels to a whole new level. This year’s introduction of the FCS 7011 brings a new long-distance class capable of servicing large platforms over 100 nautical miles from port. Its size and capacity will enable it to exchange large volumes of personnel quickly and efficiently and in a very broad weather window.
Frames has been offering its services to the international oil and gas market for just over 30 years. Over that time, the company’s product portfolio has evolved considerably to specialise in separation, treatment and control systems.

“By keeping close contact with the industry and listening to our clients’ changing needs, we have developed with the market over the last three decades,” begins Edwin Welsink, Sales Manager at Frames. “This new includes oil, gas, and water treatment – with a focus on product handling between the well and the pipeline. Today we act as a knowledge centre to solve problems for our clients.”

**Dedicated maintenance**

The establishment of the company’s service and maintenance department is a pertinent example of this. “In response to client requirements, we established Frames Energy Services about 15 years ago to include an after-sales scope for offshore operators. These service and maintenance operations have typically been accomplished by helicopter flights which, however, do not always offer the most appropriate solution. What’s more, an operator has to invest a lot of OPEX in construction and development of a helicopter deck.” Due to these various factors, and because of the low oil price causing even tougher conditions, the concept of performing maintenance activities with a dedicated vessel was investigated.

This was the trigger for Frames and Damen to team up to create an appropriate solution. While the two companies have previously worked together on the Petrojet 1 lift project at Damen Shipyards Rotterdam (where Frames was responsible for all new topside equipment skids and modules, and the rehabilitation of hydraulic and chemical injection systems), this idea calls on Frames’ shipbuilding, rather than ship-repair, skills.

“Damen exerts at the construction and development of vessels – and Frames Services specializes in servicing offshore installations. If you bring these two parts together, you have the potential to create a maintenance vessel that can be used by operators for offshore maintenance duties. It is a cooperation that can offer real benefits to offshore operators.”

**Crucial industry feedback**

How far have Frames and Damen progressed with this idea? “It is still in the development phase,” he says, “We presented the idea at a ‘lunch and learn’ session with all the major players from the oil and gas market. Hearing back from the industry was a real learning moment.”

After sharing the concept to key operators, Mr Welsink is enthusiastic about the response. “This is a concept that can save money – there is definite potential for future development. And a number of operators have even enquired about the possibility of a vessel that can stay at sea for longer periods of time, thus enabling maintenance tasks to be carried out at more than one offshore installation. Furthermore, the reaction that we hear from EBN (Energie Beheer Nederland), the company that invests in the gas and oil market on behalf of the Dutch State, is also positive. They also see the potential in terms of cost savings and improving safety.”

**Equipment and personnel supply**

Looking forward, Damen and Frames intend to schedule meetings with individual operators to understand more about their detailed requirements and specifications. “With our equipment and personnel, we estimate that we can currently meet about 80% or 90% of their requirements, but we really want to include the remaining 10% or 20% too.” With so much potential, and with a cooperation combining Damen’s shipbuilding knowledge with Frames’ service experience, the oil and gas industry will be watching closely to see how this maintenance vessel idea develops in the future.

**Evolution of offshore cranes**

Over the next few years, Damen expects the changes in wind turbine technology to drive increasing demand for larger offshore wind turbine installation cranes, as operators order larger vessels fitted with bigger cranes in the 2000-3000 SW range. Also, the company anticipates that move towards floating installations, and in time even floating turbines, will bring completely different logistical challenges. In particular, the need for motion compensated equipment and cranes. This will probably be between 5 and 10 years before floating installations become common, but they will certainly gain more traction during the intervening period. For decommissioning, a new generation of more efficient lifting appliances will also be required to remove offshore structures quickly and safely. In the years ahead, demand is expected to come primarily from Europe, but also significant potential in Asia and the Americas.

With costs under pressure everywhere, Huisman is always working on innovations that can increase the efficiency and productivity of its cranes, and so help its customers compete more effectively. Sometimes the simplest replacement of an old crane with a new model can make a big difference. Jack-up operators, for example, require the lightest possible cranes so as to maximise the variable payload of their vessels. By replacing the crane on an existing vessel for a more advanced, lightweight equivalent that can lift the same load or even more, Huisman can extend the economic life of the total asset.

However, the company is also currently working on a range of innovations that it expects to bring to market in the coming years. While the underlying principles of craneage remain unchanged – that is, the use of weight and steel structures to lift other weights, there is always potential to improve the various components. Huisman is looking to develop new designs and technologies in areas that include winches, ropes and motion compensation.

**Growth potential**

Over the years, Damen and Huisman have cooperated in a wide range of projects. Among those going on today is a programme looking at the crane needs of Damen’s clients as the offshore industry heads into a new phase of extended low oil prices. In the short to medium term, Huisman has identified two market segments that it believes offer the most potential for its crane division in the new economic environment: offshore wind and decommissioning. It sees offshore wind as attractive because of its increasing competitiveness and rising profitability, which even now is driving in increasing amounts of investment.

These improvements are the result of increasing economies of scale as both the individual turbines and the fields themselves are getting larger. This brings new opportunities for Huisman. The existing installation and maintenance assets are rapidly becoming too small to install the new generation of wind turbines. This requires new technology, and there is certainly the possibility that a major change in the way wind turbines are installed could occur in the near future and bring with it a wave of investment. In the meantime, there is still plenty of space for the incremental improvement of existing systems which in itself falls into demand.

The decommissioning of redundant offshore structures, particularly in the North Sea, has long been recognised as a market with great potential, but the exact timing of when it will begin in earnest remains uncertain. However, Huisman perceives that activity in this area has been increasing recently and that investments in the necessary vessels and equipment are being made. Notable examples include the Sleipner and Pioneering Spirit, built by Heerema and Allseas respectively. Many other players are also now considering capex investments in this sector.

For Damen, Huisman’s ability to develop new technology that will not only address the needs of emerging new sectors but also extend the working lives of existing assets, is immensely valuable. It assists Damen in its mission to provide its customers with the vessels that they require to take on the new tasks demanded of them, in a cost-effective way. Sometimes the simple replacement of an old crane with a new model can make a big difference. Jack-up operators, for example, require the lightest possible cranes so as to maximise the variable payload of their vessels. By replacing the crane on an existing vessel for a more advanced, lightweight equivalent that can lift the same load or even more, Huisman can extend the economic life of the total asset.
Allianz Middle East Ship Management is headquartered in Abu Dhabi, United Arab Emirates and specializes in marine transportation services for the offshore oil & gas and construction industry.

MCS, which is a Scottish based company, actively operates an international fleet of tugs and workboats in a wide range of sectors that includes dredging support, marine construction and crew transfer operations. MCS is well established in the North Sea and has also been operating in the Middle East for more than 10 years.

“Allianz Middle East Ship Management has been managing MCS vessels in the region for the last 3 years. But, in the autumn of last year, we intensified our cooperation by opting to invest in our own vessels,” says Ahmed T. Khalil, the founder and General Manager of Allianz Middle East Ship Management.

“Given the regional experience of both our companies, we identified that operators are looking for reliable crew transfer vessels, with economic fuel consumption.”

Mr Khalil emphasises: “Clients are not looking for the cheapest option - meaning that it is crucial to provide quality, safe, and stable vessels in the offshore industry in order to serve our clients to their required standards - but they also want faster vessels with higher fuel efficiency.”

MCS has significant experience in operating Damen vessels. In addition to the Fast Crew Supplier 2610, MCS currently operates eight Damen units in the North Sea. This led MCS and AME to choose Damen and its FCS 2610 for their first joint venture vessel. MCS Allianz Venus entered service in November last year, just days after it was delivered.

Damen’s FCS 2610 has already proven its capabilities in the North Sea. The vessel operates at 25 knots and provides safe and swift passenger and cargo transfers. The vessel is renowned for its seakeeping ability, which makes it much more comfortable for passengers, ensuring that offshore personnel reach their destination fit and ready for work. The vessel was available direct from stock, hence Damen was able to ensure a rapid delivery, even with a few adaptations to make it client compliant for the Abu Dhabi oil and gas fields.

Alternative to helicopter transfers

The most significant modification was made to the passenger accommodation, which was increased to 50 persons.

With a capacity for 50, the FCS 2610 is a cost effective and safe way to carry out crew transfer operations and it represents a viable alternative to helicopter transfers.

“Given the current challenges in the industry, companies are looking to obtain cost efficiencies and helicopter transfers are very expensive. We believe the FCS provides a better alternative for those seeking to reduce their helicopter costs,” adds Mr Khalil.

The MCS Allianz Venus has a 90 m² deck space, which provides ample space to accommodate two, 20-foot containers. The outfitting also included upgrading the 5-man crew accommodation to allow for extended offshore duties.

Modifications also took place to ensure the vessel could cope with the soaring temperatures in the region.

A second MCS-Allianz FCS 2610 is due to arrive on April 21 and this vessel will also be deployed immediately on a 1-year contract.

Allianz Marine Services LLC and its sister company, Allianz Middle East Ship Management LLC operates more than 60 vessels in the UAE, Qatar, Egypt, India and soon in Saudi Arabia and Kuwait. The company achieved a turnover of over US $ 100 million in 2016.

Mr Khalil is certain there will be more opportunities in the oil and gas market given the current economic challenges, with companies looking to consolidate and make cost savings that benefit their business.
SEASICKNESS

WORKING TO IMPROVE PERFORMANCE, COMFORT, HEALTH AND SAFETY AT SEA

TNO, the Netherlands Organisation for applied scientific research, has performed extensive research on the subject of seasickness over the years. With the subsequent understanding of its causes and effects, Professor Dr Jelte Bos discusses the impact of seasickness on the maritime sector.

Using the term ‘sickness’ is a bit of a misnomer because the symptoms are not the result of a sickness. They are the normal reaction to abnormal conditions, to which almost all people suffer from to a certain degree,” states Professor Bos. “And it is important to note that symptoms are not all in nothing. The signs are gradual – starting with sweating, dizziness, burping, salivation or headaches. This can be followed by nausea and eventually vomiting. “This can be followed by nausea and eventually vomiting.”

That dreaded feeling

Crucially, for offshore and maritime personnel, this unpleasant feeling – when people become nauseous or sick from movement – is very promising, accuracy is paramount, says Professor Bos. “Even a delay as small as 200 milliseconds between the actual movement and the visual display can actually make things worse instead of better.”

Visual link

“While there is no single solution to cancel seasickness because it is caused by numerous aspects, TNO has data from 30 years of own research and more from others, particularly incited by naval operations during WWI. This gives us a better understanding about how ship movements influence seasickness,” and this is the connection between TNO and Damen.” We are working with Damen in an advisory role. I hope to be in close contact with the company so that, in an interactive process, we can decide on what can be done to reduce levels of seasickness in the future.”

How important has the maintenance and repair of the Subsea 7 fleet been in the current situation?

In an industry downturn you are very conscious of cost constraints and budgets. However, when you operate a fleet of vessels, you have a requirement to keep them in the best condition you possibly can. They have to be kept in class, fully serviceable and up-to-date to stay competitive. What’s more, it would be a rare event if a particular vessel would not have to be modiﬁed in some way or another to make it project-speciﬁc.

How has Subsea 7 been affected by the current situation facing the offshore industry?

I think that, in general, we have probably suffered the same as anybody else in the industry has. Unfortunately, this has always been part and parcel of the offshore sector – this is a cyclic industry. The important point is that we have ‘right-sized’ the company for the future.

So is Subsea 7 ready for market recovery?

We still have lots of expertise and experience within the company, so we are well-positioned to cope with the upturn when it gets back in full swing. Yes, we have seen a lot of charter vessels leave our fleet, as well as one or two of our older vessels, but at the same time we have brought six new vessels into service during this period. These new assets have made us stronger and more capable than we were before the downturn.

How much does technology contribute to this preparedness?

As well as being an installation contractor, we have extensive in-house engineering. We develop subsea technologies on a daily basis. We are absolutely at the forefront of subsea technology and that is where we intend to remain. This also entails cooperation with other leading players. With Hulman, for example, on the subject of crane design.

How important has Damen Shiprepair & Conversion been involved with this?

Absolutely. We have extensive lift capacity within the fleet. Seven Borealis, for example, has a 5,000 tonne lifting capacity, and our new heavy construction vessel, Seven Arctic, can lift 1,000 tonnes. This is backed up by our joint venture company, Seaway Heavy Lifting with the Stanislav Yudin and Oleg Strashnov and their respective lifting capacities of 2,500 and 5,000 tonnes. And, with more than twenty projects completed to date, our experience in decommissioning subsea elements is growing all the time.

Looking forward towards the emerging decommissioning market, would you say that Subsea 7 already has its foot in the door in terms of experience and equipment? Absolutely. We have extensive HL capacity within the fleet. Seven Borealis, for example, has a 5,000 tonne lifting capacity, and our new heavy construction vessel, Seven Arctic, can lift 1,000 tonnes. This is backed up by our joint venture company, Seaway Heavy Lifting with the Stanislav Yudin and Oleg Strashnov and their respective lifting capacities of 2,500 and 5,000 tonnes. And, with more than twenty projects completed to date, our experience in decommissioning subsea elements is growing all the time.

And finally, the question that is on everybody’s minds. When is the market going to recover? There is a consensus within the industry that we’ve hit the bottom of the cycle. And while it is not unbounded, there is certainly more optimism in the offshore sector than there was a year ago. We believe 2016 will represent the low point of the cycle for project investments and will see a gradual recovery in projects sanctioned in 2017 and a positive trend thereafter. Subsea Umbilicals, Riser and Flowlines (SURF) awards to the market are expected to follow as more projects are sanctioned, with construction activity offshore typically commencing 12 to 18 months after a project is awarded.
DAMEN OFFSHORE NEWS

DAMEN REACHES OUT TO MARKET FOR FEEDBACK IN DECOMMISSIONING

Damen Offshore has performed an internal analysis of the potential vessel needs of the offshore decommissioning industry in the years ahead, in recognition of the fact that a wide range of complex activities will need to be executed by such vessels. These will range from site-surveys, plug and abandonment, and cleaning to heavy lifting and site remediation. The analysis has shown that many of these activities will require vessel types that are closely related and/or complementary to vessels already within the Damen portfolio.

Using this knowledge as a basis for additional research, Damen initially unveiled a concept decommissioning vessel capable of handling structures of up to 1600 tonnes of topside weight. This allows for a vessel class that can handle the majority of decommissioning operations in the foreseeable future while keeping costs within a reasonable limit. The concept also incorporates as many decommissioning functions as possible with a single vessel design. One of the major challenges that emerged during the process was the design of the optimal lifting mechanism, and an innovative conceptual lifting frame was introduced as the solution.

The Damen Offshore department is now working on a Mark 2 design, incorporating improvements such as enhanced seakeeping and stability attributes. This includes moving away from a monohull design, which is only suitable for operations in calm sea-states. Parallel to these developments, work progresses in cooperation with industry partners to develop a simple but effective lifting solution, and a study is currently being conducted to examine the expected operating costs of the new vessel type and ways to minimize them, so as to support the business case for such an investment.

More details of the decommissioning vessel concept will be released in the second quarter of 2017, and thereafter Damen plans to present a complete portfolio of decommissioning vessels, including barges and other support craft as well as the crane vessel, to the marketplace. In the meantime, Damen is eager to enter into dialogue with third parties to further discuss specific vessel needs and gather feedback, so that the best possible decommissioning portfolio can be developed.

A SELECTION OF OUR OFFSHORE PORTFOLIO

DISCOVER THE WHOLE DAMEN PORTFOLIO AT PRODUCTS.DAMEN.COM

Fast Crew Supplier 5009:
The vessel with 240 m² deck area is well equipped for fast, safe and comfortable transfer of crew and cargo. Additionally, the vessel is capable of emergency towage and crane handling functionality. The Sea Axe design offers unprecedented seakeeping characteristics. Besides, this very slender hull shape is very fuel efficient.

Service Operations Vessel:
Designed to provide motion compensated transfers for personnel and equipment, while facilitating optimum logistic flows for carrying out maintenance and repairs for the Offshore Wind industry, as well as for unmanned offshore installations. Well-appointed accommodation for 45 maintenance personnel plus 15 crew.

ONE YEAR OF DAMEN’S AMERICAN OFFICE

Damen’s Area Support North America branch office will soon celebrate its first year of business. Since its official opening on 1 July 2016, the office, located in the heart of Houston’s Energy Corridor, has represented the Damen Shipyards Group’s shipbuilding, ship repair and conversion services, and component parts in the USA and Canada.

“The Houston office promotes a full range of ready-built, standard and custom design vessels as well as the products and services of our ‘License to Build’ programme, in which we offer our ship designs and construction expertise to any shipyard in the USA,” says Jan van Hogerwou, Damen Manager Newbuildings for USA and Canada. Continuing the success of these vessel license agreements (more than 100 Damen vessels have been built in the USA in the past 5 years), the new office supported and enabled the construction of 29 tugs at various USA-based shipyards since opening. “We not only bring our design and engineering capabilities to the table, but we also bring our construction expertise to US shipyards and oil companies operating in the Gulf of Mexico.”

Another event taking place in the geographical scope of the Houston office was the establishment of Damen Shiprepair Curaçao. The newest yard in Damen Shiprepair & Conversion’s portfolio of worldwide yards expands the company’s ship repair activities across the Atlantic. Not only is the yard strategically located on the route to the Panama Canal, it is also outside the Caribbean Hurricane Belt. The more stable weather conditions will allow for optimised planning of the wide variety of vessels visiting the yard. Furthermore, as Curaçao is part of the Kingdom of the Netherlands, the yard can assure clients of smooth logistic connections and fast import of required materials. The relevance to the offshore market can be seen in the potential for offshore operators to reduce their fuel costs and sailing times in comparison with sailing to a European yard for repairs.

Get in touch
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