Does bigger always mean better?

The vessels used to transport personnel to and from offshore windfarms are getting larger – but more costly to run

by Philip Woodcock*

AS the Seawork 2014 exhibition in the UK ended, the lasting impression was of how large the industry has become. The common denominator among windfarm service vessels (WFSVs) on display was their sheer size. Is this the foretelling of the future or just a snapshot of a maturing industry?

Those in the windfarm service vessel business know that the first seven months of the year have passed in a flurry of major tenders, and that vessels are getting larger and larger.

As the industry matures, there is a need for larger, more comfortable and more powerful vessels, but there are risks to consider when considering a 'one size fits all' solution. With larger vessels comes much higher investment and operating costs, with a new vessel costing as much as a fleet did in 2011.

Large vessels burn more fuel and need larger berths, potentially more or better qualified crew and deeper water in which to operate. If port infrastructure does not keep pace with this demand for growth, the advantages of large vessels will be lost.

Moreover, there is a risk that performance gained in the field will be lost in port because of berth and refuelling congestion. To mitigate this risk, ports need to invest in larger berths and turning areas as well as offshore-standard high pressure refuelling stations so that the large amounts of fuel required by modern vessels can be delivered in a reasonable time. These costs will be passed on to windfarm operators through higher port fees, but if not resolved, they will pay anyhow through excess overtime charges.

Because the majority of larger vessels built to the UK Workboat Code, whether that is MGN 280 or the Brown Code, are still restricted to carrying 12 passengers, this means that the cost per passenger carried has increased greatly from the vessels that served Round 1 and 2 windfarms.

Larger vessels are heavier and more difficult to manoeuvre, which brings fenders and turbine impact forces into focus. This trend is seeing new players enter the motion-monitoring market alongside BMO Offshore and A+D. Fenders are still being asked to be 'all things to all boats', having to absorb large amounts of energy, provide good 'stick-ability' on a boat landing and also have good wear characteristics.

As boats get larger, this relationship is more difficult to achieve, as evidenced by the failed fender witnessed by all on one of the Seawork's show boats. Companies like RG Seasite and Fender Innovations are making great efforts to find solutions to these issues.

Offshore Wind Services in the Netherlands will trial the new Fender Innovations 'active fender' on their Damen 2008 vessel *Offshore Waddenzee*. They will see if a mechanical solution can be found for energy absorption so that the fender material can deal with the components of durability and sticking.

Larger boats definitely offer greater passenger comfort and should deliver higher weather availability. However, it was observed that, as the vessels got larger, the spaces available for passengers inside of the accommodation did not increase in the same way.

Vessel designers need to understand that a charterer of a WFSV – unlike that of a multicat or tug – charters the inside of the boat as well as the working deck. Too often, one sees the ratio of accommodation biased heavily towards the owner rather than the charterer. Space to relax, dress and move is what is needed rather than an increase in larger working decks that are rarely used.

As we move further offshore to work on windfarms 'where the passage time exceeds more than one hour', speed and comfort are very important factors.

All of this comes at a higher investment cost and risk to the owner, which, with the higher maintenance costs, gets passed on to the charterer in the form of higher charter rates.

However, for the Round 1 and 2 windfarms in the UK, The Netherlands and Belgium, the life of the smaller windfarm vessels is not over yet. With opportunities to renew propulsion packages and update seats and interiors in modular form, these early vessels can still provide the most cost-effective and practical solution for some windfarms. **OWJ**

Questions have been raised about the ability of fenders on WFSVs to withstand the forces they are subjected to

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Trouble from on high – lifting and dropped object incidents

Objects dropped from wind turbines are significant risks and can cause serious injuries to personnel on vessels servicing them, so they need to be taken seriously

by Philip Woodcock*

An object dropped from a boat landing or transition piece can cause serious injury – or worse

AS the designated person ashore as defined by chapter 4 of the International Safety Management Code (ISM Code) for a company that operates windfarm service vessels (WFSVs), I spend much of my time investigating incidents and accidents that occur in the fleet.

Over the past three years, I have become acutely aware of the risks posed by lifting operations and dropped objects to the crew on WFSVs – the crew are the 'lowest in the food chain' for anything that falls and therefore most at risk.

The deckhand who assists the technicians transferring from the vessel to the boat landing is particularly vulnerable. They have to stand directly under personnel who are climbing. This year alone we have recorded incidents of a ratchet spanner with sockets and a radio falling. The latter bounced on the deck and into the deckhand. The radio incident took place only a matter of a few weeks after a safety flash had been sent to the fleet regarding the dropped ratchet spanner, when awareness by our own personnel should have been heightened.

Dropped objects are a phenomenon that affects not only the offshore wind industry but any industry where people or equipment work or are positioned at height. However, the offshore oil and gas industry has a lot of historical data on this kind of risk.

To raise awareness, organisations such as the International Marine Contractors Association (IMCA) have created lifting guidelines, IMCA M 187, and Safety Pocket Card # 4, which also addresses the issue. The Dropped Object Preventions Scheme (DROPS) was formed by the oil companies following research into a large number of incidents. If the subject is getting such attention from industry, how big is the problem, one may ask? Is there any data on whether this is a real risk?

DROPS started gathering statistics in 2010 and, since then, has recorded 850 incidents, primarily from members in the North Sea area. IMCA, in their 2013 safety statistics, recorded a total of 474 lost-time injuries (LTIs), of which 'struck by moving or falling objects' was the largest category recorded.

This particular category had 111 LTIs or 23 per cent of those reported. The 2013 IMCA statistics were based on 245 reporting companies with a total of 1,301 million man hours. This period saw four of the nine reported fatalities linked directly or indirectly to lifting operations.

To bring added relevance to the offshore wind industry, the G9 group of the nine largest operators of offshore windfarms has recently issued statistics and analysis of safety incidences for the first time. This excellent report covers data reported by its members in 2013 across 35 sites. The data shows 616 reported incidences of which there were zero fatalities and 66 LTIs.

Of the 616 reported incidences, 165 were related to lifting operations, but at this time, it is not possible to determine which of these are linked to dropped objects. Fourteen per cent of the LTIs reported were also related to lifting operations.

In their concluding remarks, the G9 has stated that they will pay more attention to dropped objects in their 2014 data-gathering exercise including getting information on weight and height. This should provide interesting reading. At a recent meeting of the IMCA renewables working group, it was also stated that dropped object awareness will get more attention. To give a practical demonstration of how great the risk is to someone working on the deck of a WFSV of items dropped from a boat landing ladder or transition piece, a DROPS calculator is available at www.dropsonline.org.

For example, an average handheld radio weighs between 300g and 500g. If this fell from a height of 15m, that is, roughly the height of a wind turbine transition piece, the calculator indicates that it would result in a major injury, assuming that the victim is wearing a standard safety helmet.

From the data supplied by G9, it is impossible to determine how many of the 165 lifting incidents related to dropped objects and whether they counted such workday issues as dropped radios, spanners or fall arrest devices. However, a conversation with any experienced WFSV crew member will reveal many anecdotal tales of objects dropped on deck, into the water or caught by a sharp-eyed deckhand.

These are normally described in light-hearted fashion with little understanding of the actual risks involved had they been hit. From this and conversations with the technicians on board, it can be seen that the risks are not fully understood and need to be addressed by industry if serious accidents are to be avoided. OWJ

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