DESIGN WAVES

OFFSHORE SHIP DESIGNERS

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# More work, less money

The offshore support market is busier than it has been for a long time. High oil prices drive investment offshore, and the renewable sector creates new offshore service needs. There is a lot of demand for new vessels. But at the same time there is less finance available and fuel costs are high and getting higher. The result is a market demand for offshore service vessels which are very effective, but also less costly to build and operate. Standard designs should be less costly than thought through designs for specific tasks. But they are much more costly to build and operate as they rely on a larger hull and simple lines. A specific tailored design will deliver all the operational tasks required on a smaller, less capital intensive hull and with lower fuel costs and emissions.

That is where designers like OSD are able to deliver benefits to both owners and yards in this market. With low overheads, diversified skills and high technology software, they can produce the tailored designs which owners need at the costs normally associated with off the peg designs from larger integrated design firms.

Today the offshore services market is driven by increased demand from renewable energy projects, oil and gas in deeper and more difficult waters, longer transits to floating units, fuel costs and increasingly, environmental concerns and the need to reduce emissions.

Renewables work within tight budgets, driven by government action, so service solutions for constructing and maintaining offshore wind and current farms must be cost effective and as small as possible.

Deeper and more difficult waters call for vessels which can be very fuel efficient for long transits, yet also be efficient for long periods on site, and able to deliver multi-role capabilities specific to the job. No-one wants to send two OSVs a long way to a site when one can do both jobs.


Seismic support vessel IMT952 for Bourbon offshore

Fuel costs and environmental pressures go hand in hand. The pressure is on to reduce fuel usage, which cuts costs and reduces emissions. That is hard to achieve with older designs, as effort needs to be put into hull form and machinery choices to suit each task. All these factors push in one direction, towards smaller hulls which are cheaper to build with flexible hybrid power plants which are as efficient as possible in a variety of roles.

These are OSD's strengths. Compact flexible vessels with simple yet effective power plants and multi-role capability. All designed and engineered at a cost tailored to the needs of the owner and yard.

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## Welcome

to this issue of DESIGN WAVES, the regular newsletter of Offshore Ship Designers (OSD).

Offshore Ship Designers is a global one-stop resource delivering naval architecture and marine engineering expertise to the shipping and offshore industries. Our experienced global workforce provides high-quality feasibility studies and conceptual and detailed designs for tugs and harbour craft, dredgers, ferries, yachts and offshore support vessels of all types such as PSV's, SSBV's, AHTS, field support, tanker-assist and survey/ROV support vessels. Our key strengths are a strong knowledge base, a commitment to environmentally friendly technology and –most important of all– our independence. OSD is based in IJmuiden, The Netherlands, and has offices in Montrose, Appledore, York, Shanghai and Singapore.

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# Right skills, right place, right time

Neil Patterson

OSD-IMT, the UK arm of the OSD group, is growing. It is growing because it has the right skills the market needs, in the right place, and at the right cost. To make sure it stays that way, it is not just growing, but changing and adapting so it will always be the way its clients need it. "We are shaping OSD-IMT for the future," explains Neil Patterson, managing director. "Our success has always been because we have been flexible and able to tailor what we do exactly to the needs of each client, but do that cost-effectively. Clients get a made to fit vessel at a standard design cost. That's great in the current market, where every penny counts for owners. However we also have to ensure our skills base and personnel mix is right so we can continue to react in this way."

OSD-IMT is putting in place two new Technical Managers, Andrew Alexander in Montrose and Anthony Gray at the Appledore office in Bideford, and expanding its core staff. "We work from three offices in Montrose, York and Bideford which developed because there we could find clusters of design and shipbuilding experience," explains Patterson. "The shipbuilding industries in those areas have changed forever. The steel cutting has gone to cheaper labour countries. But we retain a strong and experienced skills base in vessel design and engineering. We have been able to meld that experience with the technological skills of younger naval architects, and by using the latest in software, also manage drawings and information better across offices. What we are doing now is ensuring our clients still have access to the deep experience of our older naval architects and engineers, while facilitating the future of the company by developing our younger staff."

Andrew Alexander is a naval architect trained at Glasgow University with strong shipyard experience in the UK and in the Netherlands. "I joined OSD for the chance to get back into pure ship design", he says.

Anthony Gray is a naval architect who has worked in UK shipyards and with fast cats in Australia. "I wanted the focus on commercial design we get here," he explains. "And in this new role I can free up Geoff Dean and some of our senior people to deploy their experience. That's the strength of this office, we have structural engineering, estimating and engineering problem solving from experts who know the realities of shipyards. I can help channel that expertise for clients, and facilitate its transfer to myself and our newer staff, both here and in our global network."

Last word to Neil Patterson. "Designing the right structure for a low cost but highly efficient company is as tricky as fitting everything the owner needs into a small capital efficient hull. But we are doing it, for our owners, for our yards and for our staff."

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Andrew Alexander

Anthony Gray

# Compact wind farm tug

Offshore Ship Designers is designing a new compact but powerful AHT offshore support vessel for Netherlands-based Neptune Marine Service BV. The key to the design is that although the vessel will have the capabilities of much larger tugs and offshore support vessels, its smaller size reduces both capital outlay and on-going operational costs.

Michiel Wijsmuller, managing director of OSD, says, "Size certainly matters, especially when it is related to costs. What wind farm operators need is compact but versatile vessels, and the offshore sector needs vessels that are less expensive to operate but equally capable. The answer in both cases is to find a way to squeeze more out of a smaller platform, and that is what this new design does."

The Neptune contract is for the basic and detailed design of a 44 m AHT offshore support vessel which will be used for anchor handling, ocean towage and wind farm construction support duties. The 70 tonne BP vessel is designed for worldwide operation, high reliability and low maintenance costs. There is accommodation for 22 persons. Two main

propellers with nozzles and three transverse thrusters will give the vessel DP-1 station keeping ability. The detailed design will be ready by October and the vessel is intended to enter service in the second half of 2012.

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# RIPPLES

What else is making waves in the industry

### MSV Sea trials in China

The OSD-designed multipurpose MSV Unisvitzer Songkhla has undergone sea trials. One of four 75 tonne BP Utility Offshore Tugs designed by OSD for Svitzer. She was built at Qingdao Qianjin Shipyard, China.

### OSD Shanghai gets the job done

OSD Shanghai is providing technical support for the building of a barge at JOC Shipbuilding Industry Co. Furthermore OSD Shanghai has delivered the production design to East Star Shipyard for a 59.25 m Subsea Support Vessel.

### Conversion drawings

OSD-IMT has been tasked by Dales Engineering Ltd, Aberdeen to design and develop the upgrade conversion production drawings for the Farstad-owned UT 755 multi-role 67 m PSV Far Scotia. The new design will provide upgraded existing and new additional accommodation, ROV equipment and associated seating, new A-frame and associated winches/seating, new deck cranes and associated column/stiffening, new workboat and associated davit and seating.


### Azistern tugs for POET

POET (Pacific Offshore Engineering & Trading Pte Ltd) has ordered two Azistern 30/60 fuel-efficient tugs to be designed by OSD. With a 60 tonne BP on a 30 m hull they will be compact but powerful tugs deploying all the environmental advantages of a highly efficient hull shape.

# OSD to design Boskalis cable laying vessel

Samsung and Boskalis-SMIT Engineering have chosen OSD-IMT to develop the basic design, detailed design and production drawings for a 99 m cable laying vessel.

Neil Patterson, managing director of OSD-IMT, says, "This project illustrates perfectly the strengths of the OSD group. We can bring strong offshore engineering experience in the UK to bear on the basic design, and work with our Shanghai office to develop the yard drawings. It is a unique new vessel and we will carry out the model testing programme, noise and vibration analysis and impact and damaged stability analysis in addition to developing the design."

The vessel combines a large, obstruction free main deck with ample accommodation facilities, allowing for multiple future configuration possibilities. In the current cable laying configuration, the deck has a cable loading capacity of 5,000 tonnes.

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# Seismic support/chase vessel series for Bourbon

OSD has been chosen to design a series of six new fuel-efficient seismic support/chase vessels ordered by French offshore major Bourbon to be built at Dubai's Grandweld Shipyards. The 53 m vessels will have a fuel efficient hybrid propulsion system delivering a flexible economic solution for the varied conditions required to support seismic survey vessels including transit speed, slow speed escort and support work and a high degree of manoeuvrability. The vessels will be used to support the fleet of CGGVeritas seismic survey vessels operating all over the world.

Operational requirements of the design include: Transfer of liquids, stores, cargo and crew to and from the mother ship. Accompanying the mother ship when conducting seismic operations. Towing of the mother ship when conducting seismic operations. Retrieval of streamer cables. Key features of the hybrid propulsion system are:

- Two main marine diesel propulsion engines, two controllable pitch propellers in nozzles, two main gearboxes each with a PTI electric propulsion motor and three diesel driven generating sets, and two electrically driven bow tunnel thrusters.
- Diesel-mechanical mode using main engines only used for the transit operation.
- Diesel-electrical mode with main engines declutched using PTI propulsion motors powered by the gensets for chase and slow speed operation.
- Boost mode with main engines and PTI propulsion motors (powered by the gensets) engaged used for towing operation.
- Automatic push button selection between the different propulsion modes.

Main particulars are length 53.8 m, beam 13.0 m, depth 5.8 m, load draft 4.8 m, cargo fuel capacity 850 cu m, marine gas oil fuel 260 cu m, potable water 100 cu m, refrigerated and dry storage capability as well as space on deck for stowage of stores containers.

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# Designed for life

Stephen Brooke cares a lot about getting engineering detail right. Which is good for OSD's clients. He recently joined OSD in IJmuiden as Project Engineer and he says; "This opportunity at OSD gives me the chance to pre-empt potential engineering shortcomings at the design stage that otherwise have to be solved during construction. I'm going to make my skills to do this an integral part of the way we go about designing workboats that are a cut above the rest."

Stephen's remit is to design general engine room and ventilation arrangements, and provide schematics and calculations. "The calculations to support the drawings are vital," he says. "Close relations with the suppliers and yards are imperative to get all the components to fit properly and within the constraints of the rules and regulations." It is a role fitted to someone who cares about detail, and Stephen brings to it a lifetime of experience, first as a seagoing engineer, then fourteen years helping design major yachts for leading Dutch yards. "You are always fighting for space in yacht designs," he explains. "The interior and aesthetics is what matters most to the owner. So I am very happy to come to OSD where the clients want functionality above all. It gives me a chance to use my experience to design the best engineering solutions, not ones which look nice but are inaccessible and impractical." Stephen has lived in the Netherlands for many years and his wife and two children are happy there. He likes the fact that he has a rugby club close by, where he used to play but now only supports. "I originally come from Namibia," he says. "Diamond mining and desert country. It's a tough, simple place. And in a way that is the philosophy I want to bring to workboat design."

Stephen Brooke

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## Delivery of IMT955L VOS Vigilant


The field-support vessel VOS Vigilant is the penultimate in a series of ten IMT955L vessels constructed for Vroon at the Astilleros Zamakona Shipyard, Pasaia Spain. She will join Vroon's extensive fleet of modern vessels providing a range of emergency response and cargo support to the offshore industry.

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