UK capabilities in the Maritime sector

BUSINESS IS GREAT
BRITAIN & NORTHERN IRELAND

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ASV

Specialism:
Unmanned and Autonomous Marine Systems

Founded: 1998
Headquarters: Portsmouth
www.asvglobal.com

UK-based ASV is a world leader in the research and development of unmanned marine technology. The company designs, constructs and operates unmanned surface vehicles (USVs) for use in a wide range of industries.

Innovating with unmanned surface marine vehicles

ASV has successfully delivered over 50 different unmanned surface vehicles (USVs) to global oil and gas, environmental, security and defence sectors.

As a world leader in the research and development of USVs, the company was selected to develop a long endurance marine USV for oceanographic data collection. The UK Government-funded programmes included major research partners and support from funding bodies such as the National Oceanography Centre (NOC) and its parent body the Natural Environment Research Council (NERC). The resulting C-Enduro has a 90-day sea endurance, enabled by its unique three-pillar power structure using mainly renewable energy.

ASV's C-Worker range of multi-use offshore USVs has been developed to conduct subsea positioning, surveying and environmental monitoring. By applying unique unmanned technology, the C-Worker can be used to reduce cost and risk to manned oil and gas operations at sea.

The company also develops vehicles for the security and defence sectors, including the C-Target. These highly manoeuvrable, ultra-realistic, high speed marine target drones are currently in operation all over the world, helping naval personnel train to combat the threat of fast inshore attack craft (FIAC) and evaluate new weapon systems and doctrines.

50

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Global

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Southampton Marine and Maritime Institute

Specialism: Maritime research
Founded: 2012
Headquarters: Southampton
www.southampton.ac.uk/smmi

The Southampton Marine and Maritime Institute (SMMI) has a 60-year history of industrial research, and has forged strategic partnerships with leading organisations and businesses, including some of the most respected global engineering and research names.

Economic growth through groundbreaking collaborations

In response to the challenges arising from deep-sea engineering, SMMI has established a joint laboratory with A*STAR's Institute of High Performance Computing in Singapore. The academic collaboration between the institute and its partner organisation **brings new knowledge to the maritime industry. It also creates great opportunities for increased growth and sustainability.**

In addition to its research and consultancy, SMMI offers a range of high quality training opportunities. These include formal degree programmes at undergraduate, masters and PhD levels, as well as bespoke short courses for specific professions, including maritime lawyers.

SMMI can offer many collaboration opportunities, ranging from student placements to bespoke consultancy and from joint research projects to major strategic initiatives.

No.1

The SMMI is the world's largest interdisciplinary marine and maritime institute

1,000

Over 1,000 academics at SMMI are working with industry and government to tackle major global challenges

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QinetiQ

Specialism: Defence Technology
Founded: 2001

Headquarters: Farnborough
www.qinetiq.com

QinetiQ provides fleets around the world with advice, design, integration, test and evaluation services for naval platforms, systems and equipment. The company has over 600 specialists with expertise spanning naval command, control, intelligence (C4I), naval architecture, marine engineering, stealth materials and naval signature management services.

De-risking maritime systems

Existing radar simulation tools do not provide sufficient target fidelity, while air tracking trials are expensive, time consuming and cannot achieve absolute repeatability.

QinetiQ has developed a new radar simulator enabling improved performance measurement, radar system fault finding and calibration. Early use of QinetiQ's technology to support responsive fault finding in UK Royal Navy warships has demonstrated significant pay-offs.

Radar performance issues have been rapidly identified supporting the delivery of operational capability. QinetiQ's highly portable synthetic target generator supports detailed radar performance measurement and calibration helping to de-risk complex maritime systems and reducing time and cost to achieve ship deployment.

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BMT

Specialism: Design and Engineering
Founded: 1985

Headquarters: Bath
www.bmtdsl.co.uk

With headquarters in the UK, BMT is a leading global design, engineering, science and risk management consultancy which produces complete vessel designs, and provides specialist design support services. These include model testing, computer and voyage simulation, material sciences, fatigue analysis, human factors engineering and cold-climate technology.

Advancing vessel design, test and performance tools

BMT successfully exports its expertise and innovation mainly through strategic yard partnerships in North West Europe and Singapore. The UK company offers design support from initial concept, through detailed design to production on a wide range of vessel designs, including many specialist types.

These range from high-speed passenger ferries, patrol vessels, workboats and offshore wind farm support vessels to yachts and superyachts, landing craft, double hull military support replenishment vessels and submarines.

BMT's innovative products in support of vessel performance include onboard tools for manoeuvring simulation, such as training and rehearsals, cargo arrangement and voyage simulation and planning.

Their investment in market-leading fuel and performance monitoring systems has prompted early adoption by a number of the world's leading owners and charterers of LNG tankers and bulk carrier fleets.

Demand for larger and faster mono-hull crew boats in oil and gas offers opportunities for BMT to broaden the adoption of its new, fuel-efficient designs.

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Houlder

Specialism: Design and Engineering
Founded: 1987

Headquarters: London
www.houlderltd.com

Houlder provides design, engineering, test and analysis, and project management expertise to clients in the offshore renewables, oil and gas and maritime industries.

Improving efficiency with hydraulic arms

Houlder was contracted to lead the design, fabrication, installation and testing of a pair of gripper arms to be used on a wind farm turbine installation vessel. Houlder managed the project from initial concept design through to installation with the support and involvement of its client, MPIC and MPI Vessel Management.

The result was **a pair of 200 tonne hydraulic arms. These were designed against DNV Classification Rules and fully checked using finite element analysis, before being built into the installation vessel's stern.**

Due to the size of the arms, a significant amount of testing and commissioning of the equipment was undertaken on board as opposed to in a factory. Controlled from a single console located on deck, both arms provide the horizontal restraint required to keep the piles vertical while they are being driven. When stowed, they are mechanically and manually latched at main deck level, allowing the vessel to safely transit and the hydraulic system to be powered down.

The arms have improved the efficiency of wind farm installations and overall productivity.

650

The arms are required to keep 650 tonne, 65m long offshore wind turbine piles in place during installation in up to 40m of water.

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PSM

Specialism: Engineering & Design
Founded: 2012

Headquarters: Sussex
www.psmmarine.com

PSM provides comprehensive marine instrumentation and monitoring solutions. They specialise in delivering advanced marine instrumentation, including tank gauging, operational monitoring and remote supervision.

Improving accuracy and lowering costs with a tank gauging system

PSM was commissioned by a Middle Eastern shipyard to devise a tank gauging solution that could be used across a range of ship and tank types. To meet demanding regulations, the solution had to meet 20 level measurement applications that required correction for vessel trim and list.

PSM specified installing its smart hydrostatic level transmitters alongside solid-state inclinometers. The monitoring technology incorporated PSM's Remote Function Module (RFM), providing connections and Windows-based software using standard Modbus data communication.

The low-cost PSM Modbus communications solution and use of Windows allowed for multiple monitoring stations across several PCs. Tanks could be displayed and controlled from multiple points around the vessel, and this also allowed for redundancy in case of PC failure.

Shipboard operation was via PSM's TankView software, which was configured to meet the exact requirements of the shipbuilder's operating procedures, with an accessible, user-friendly operator interface.

The result was a system with greater functionality and performance, at a lower cost than the Middle Eastern shipyard had previously been able to achieve.

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Kelvin Hughes

Specialism: Navigation & Surveillance
Founded: 1946

Headquarters: Essex
www.kelvinhughes.com

Kelvin Hughes is a world-leading provider of advanced navigational and surveillance capabilities and International Maritime Organisation compliance. Although founded in 1946, the UK company has a proud heritage dating back over 250 years to Lord Kelvin, a prolific inventor and one of the world's greatest scientists.

Supplying the world with charts, navigational data, radar and surveillance systems

Kelvin Hughes provides everything required to operate safely at sea. They have the detection capabilities of a military grade system bringing affordable and low cost of ownership solid state navigation and situational awareness radar to the maritime market.

Their SharpEye™ radar provides enhanced capabilities to the bridge officer, ensuring a safer ship and safer seas. The technology has allowed many specialist maritime applications to evolve, from improving the productivity of fishing boats to providing a vessel traffic service (VTS) capability onboard a floating production, storage and offloading (FPSO) vessel.

PassageManager from ChartCo, is an intuitive software and graphical interface that allows product catalogues and vessel outfits to be displayed together with any correction status. Using this information, a comprehensive passage plan can be created, saved and printed.

No.1

Kelvin Hughes is the largest global distributor of navigational charts, publications and data delivery services

30

Kelvin Hughes designs and supplies radar navigation and surveillance systems to the global commercial shipping fleet and 30 of the world's navies

1st

They were the first to develop a navigation radar that omitted a magnetron

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Teignbridge Propellers International

Specialism: Marine Propellers
Founded: 1974
Headquarters: Devon
www.teignbridge.co.uk

Established in 1974, Teignbridge Propellers is one of Europe's largest manufacturers of quality marine propellers and sterngear. The UK company designs, engineers and manufactures high quality performance propellers, sterngear and marine engineering products.

Improving thrust and efficiency with an innovative propeller design

Teignbridge supplies many of the world's leading boat builders in the leisure, commercial and super yacht sectors. Worldwide customer support is provided from Teignbridge UK, Teignbridge Dubai and a global network of agents.

With an onsite foundry and 85 employees based at the largest purpose built sterngear facility in the UK, Teignbridge has the capability to manufacture propellers up to 2.55m in diameter and complete shaft lines up to 400mm in diameter.

The company is constantly innovating, and has developed its high performance C-FOIL propeller design. Independent computer modelling and comparative sea trials have shown that **this groundbreaking design generates approximately 10% more thrust and a 12% increase in efficiency over standard propeller designs**, providing the operator with an improvement in performance and fuel economy.