FACTSHEET

The UK maritime industry and Science, Engineering and Technology careers

Marine science, engineering and technology are about future sustainable use of the seas.

Design of ships, boats and other offshore structures is one key area of activity. Every use of the sea needs the range of skills available in marine technology. Qualified marine engineers create propulsion and control systems for ships, oil platforms, underwater and offshore vehicles.

The latest computer methods for monitoring and control are used to ensure efficiency and to minimise environmental impacts. Marine and electronic engineers design sensitive instruments for measuring ocean currents and incorporate them into marine structures that can withstand ocean currents, waves, tides and severe storms.

Underwater remotely operated vehicles (ROVs) offer exciting opportunities in which electronic, hydraulic and mechanical technology come together to create complex robot vehicles capable of many sub-sea tasks. An example is where dynamic positioning (DP) is used to accurately place and track seabed tractors used during the laying and burying of cables and pipelines.

An example of using STEM skills within a maritime industry environment would be to work on a research ship. These ships have onboard facilities to access information supplied by remote sensing equipment, including underwater vehicles and satellites. Advances in hydrographic surveying techniques have enabled highly accurate 3D mapping of the seabed – essential to support projects valued at many millions of pounds. Oceanographers also work on research ships helping to improve our knowledge of how oceans work, and predicting trends to help us to use and conserve the resources of the oceans.

Other professions include naval architects who specialise in the design, construction, conversion, repair, surveying and decommissioning of ships, boats and offshore structures. Offshore engineers design and produce fixed and floating offshore oil production installations. The oil and gas extraction industry employs around 40,000

people on about 200 UK offshore installations, and a further 300,000 people onshore. The number of oil and gas industry technicians has increased in recent years and there is a strong demand for their skills. Opportunities in this industry in the UK are mainly in the north-east of Scotland, north-east England, East Anglia, Humberside and the Liverpool Bay area.

Opportunities at craft, technician and professional level in engineering-related fields also occur in shipbuilding and boatbuilding. Shipbuilding is the business of building large ocean-going vessels usually of steel. The shipbuilding and repair industry employs 25,000 people, and large shipyards in the UK are located in Barrow-in-Furness, Cumbria, on the Clyde, on Tyneside, at Devonport in Plymouth, at Portsmouth, and at Rosyth, Fife. Boatbuilding refers to the constuction of smaller vessels from materials such as wood, steel, aluminium, glass fibre or new composite materials. Boat building and repair companies are largely located in the east of England, the south-west and on the south coast. Design of ships, boats and other offshore structures are key areas of activity in the marine industry.

Career opportunities are also available for marine scientists and engineers within port and harbour authorities, marine civil engineering companies, and ocean equipment manufacturers. Opportunities also arise within universities, research councils, international organisations and environmental pressure groups.

high tide
OPPORTUNITIES ON THE HORIZON