

## Shock & Dynamics Engineer

Shock and Dynamics Engineers ensure that the platform, and all its equipment, can withstand suitable levels of shock caused by underwater explosions – for a ship this could be from torpedoes and mines, and for a submarine it could also be depth charges. All equipment has to be protected using shock mounts – letting it move prevents it from breaking – and there's a huge amount of equipment inside a submarine. In addition we analyse dynamic loads due to vibrations, assist with shock testing, and provide technical assistance throughout the business. Wherever a problem is too technical for anyone else, we get called in!

The role would see you analysing equipment response to shock loading, assessing and improving the design of modular structures, calculating dynamic loads caused by various sources, and other technical challenges. As well as basic theories, we make extensive use of FE modelling and other computer-based tools, and are currently striving to extend our capabilities in the field of Fluid-Structure Interaction using Abaqus software.

Survivability of our products is an essential requirement of the customer. The Shock and Dynamics group plays a key role in designing our ships and submarines to be some of the most robust vehicles in the world. The department spans all projects in the business, offering a varied array of work. At present the main projects are the 'Astute' class nuclear-powered submarine which is about to enter service, and the future 'Successor' submarine now in the design stage.

Suitable applicants should have an interest in dynamics, a sound mathematical ability, and possess strong analytical skills to solve technical problems. A high motivation level to develop knowledge and continually learn new skills is important, and an amount of creativity and innovation would be a great asset. Academic requirements are minimum 2:1 degree in an Engineering, Science, or Mathematics discipline.

Successful applicants will be rewarded with the 2-year GDF, after which they will enter the department as a Senior Engineer. Placements on the GDF (nominally 3 months) can be undertaken within any department in the Submarine Solutions business, giving the graduate full control over their development, with occasional opportunities in other businesses and companies around the UK.

After completing the GDF, on-the-job development is tailored to gain technical ability, including professional training in FEA and other subjects. We are fully accredited with the IMechE and encourage professional development, providing mentors for guidance towards attaining Chartered Engineer status. Progression can be made to Principal Engineer after gaining CEng, and then on to Consultant Engineer.