



Creating a safe and secure world, together

CASE STUDY

ASTUTE CLASS SUBMARINE TRAINING

At a glance

- › Understanding the sustainability context and people pipeline.
- › Understanding the training requirement and defining the need.
- › Creating, integrating, and delivering the solution.
- › Understanding team behaviours and building in collective training.
- › Measuring and assuring the training output.
- › Innovation and continuous improvement.

Innovation focuses on educational technologies, how they are used in modern daily-life and continuous improvement on the training delivery processes



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Like a jig-saw puzzle, training is made up of a number of pieces which when fitted together correctly create an enduring future training construct, placing the trainee at the centre of the solution.

Where do you start with the training puzzle?

Some will start with the corner pieces to try and create reference points, some start with the technology piece and try and make everything fit around it, and some will begin with the edge pieces to attempt to define a broader scope.

Where do you start when tasked with designing and delivering an end to end training solution for the Royal Navy for its Astute Class Submarines, Babcock's answer was to start with the six pieces it knew fit together.

Sustainability context and the people pipeline

An area of significant challenge to sustainability is engineers, in a period of increasing competition for engineering skills. As part of a sustainable model, personnel employed ashore needed to be in roles that develop knowledge and skills that can then be reinvested at sea.

Manning levels are a key risk enabler across all military operations, in particular to submarine availability, maintaining a Continuous At Sea Deterrent and achieving the transition to a new submarine class.

Understanding the people pipeline required dynamic modelling of the submarine flotilla manpower resources required to deliver the UK's underwater capability from 2018 to 2040.

Training requirement and defining the need

Beginning with identifying people's work related needs, the approach ensured training was delivered effectively so the trainee learned what was important

allowing them to demonstrate competence prior to being assigned to a sea or shore based role. The approach used continual evaluation of the training program to ensure that every training outcome is achieved and sustained.

Compared to traditional approaches, the training developed and innovative media choices made have resulted in significant reduction in skill-fade. The time taken for the at-sea training phase of the Astute Class Submarine Qualification Course has been halved.

Team behaviours and collective training

As well as training individuals to perform their duties, for a submarine crew to work effectively together they need to be trained as a team. Behavioural markers were identified in the soft skills areas of leadership and management, situational awareness, decision making, cooperation and effective communications. Team behavioural markers concentrate on the cognitive and interpersonal skills essential for working effectively in a team.





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This method of team training, often referred to as Crew Resource Management (CRM) and Threat and Error Management (TEM), draws on the experiences of the airline industry and other sectors where human error can have devastating effects.

Training and assessment was then carried out against pre-determined behavioural markers in order to provide an overall grading of the team's performance.

Creating, integrating and delivering the solution

With over 200 separate lessons delivered over a 10 week period the modular design of the course allowed easy identification of weak areas through continual assessment. It also allowed for minor amendments to be quickly identified and implemented. The training environment was developed around a course of 20 students in a classroom using the latest training technologies and methods in an environment conducive to learning.

Part of the solution's success was driven by the use of both Babcock and Royal Navy instructors. This mixed delivery model maintained expert knowledge in Babcock personnel reducing the risk to training delivery outputs. This knowledge was then reinvested in military SQEP and transferred to the operational environment

Measuring results and working with the customer

Progress tests were designed to fit in with the Royal Navy progress monitoring systems, allowing poor performance to be identified and managed at an early stage. The final assessment consisted of an oral board based on the 3D Virtual Environment. This mirrors the final assessment employed on board at the end of the at-sea phase of training before a submariner gains their 'Dolphins'.

The depth of understanding and increased knowledge retention levels gained ashore meant the time taken for Astute Class Submarine Qualification at sea was halved. This was achieved by Babcock working closely with Royal

Navy. The solution achieved a contracted pass rate 99.9% delivering the required knowledge and experience. Feedback from trainees and training assessors was and continues to be very positive with many elements of the training solution being hailed as best practice.

Innovation and continuous improvement

Looking at education today in its broader context, standards and ideas are shifting to include more creativity, online learning, blended and hybrid learning, and collaborative models. There is a wider shift in the landscape of education with a refocus on technology and its implementation in the classroom. Consequently students are being encouraged, by these technological advancements to take a more active role in their own education. Within the Astute Class Training Service the customer expects Babcock to innovate throughout the service period. Innovation focuses on educational technologies and how they are used in everyday modern daily-life, and continuous improvement on the training

delivery processes, constantly evaluating and improving to drive efficiency, effectiveness and flexibility as part of managing change. These improvements embrace the immediate opportunities to enhance on shore training and reduce the at-sea training burden.

