



In May, 2006 BT Selected OutStart to Deliver a Learning Content Management Platform to the Royal Navy. The contract represents a major Learning Content Management Solution deployment as part of the Defence Learning Portal (DLP) - Europe's largest learning system.

The first use of Evolution LCMS is in support of the RN's Type 45 Training Continuum. This article authored by the RN describes this initiative and discusses the use of their LCMS (Evolution LCMS).

THE TYPE 45 TRAINING CONTINUUM

By Lieutenant Commander Simon Lees

Training for the Type 45 Destroyer is a jigsaw puzzle made out of jelly that has yet to set. It draws in multiple industry players across Europe and the USA, it is driven by over 15 separate Training Needs Analysis (TNA) supported by numerous Defence and RN policies and incorporates the latest training technologies. This article first describes the complexities of creating a first of class crew training package as the programme for the ship build is constantly being revised, when the new RN manning structures are still being developed, all at a time when the maintenance and operating routines of the ship's equipment have yet to be defined. The article then exposes some of the challenges of creating the far more important steady state training (SST) solution, which must withstand the rigours of continuously cycling through eight ships companies on 100 new training courses over the next 36 years.

The SST solution needs to provide greater efficiencies than have been achieved hitherto, utilising a blend of traditional and synthetic training media, incorporating the first ever utilisation of the new Defence Learning Portal's (DLP) Learning Content Management System (LCMS).

First of Class Training.

First of Class (FoC) training has four main facets, legacy equipment training, New to Service (NTS) equipment training, PAAMS training and pre requisite training. The easy bit is legacy equipment, such as the 4.5" Mk 8 mod1 gun, where the RN has an existing training solution and the T45 throughput requirements just need to be factored into the planning of future courses.

The second element is the NTS equipment being provided by the ship builder's Prime Contract Office (PCO), BAE Systems. The PCO has been awarded a contract to provide training for the FoC crew via its sub contractors. This contract covers over 8500 training days, of which more than 4000 are either alongside the ship when it is alongside or in the Portsmouth area, to try and minimise the huge T&S budget impact and increase Harmony. Despite this drive for localised training, there will still be the odd example where trainees will need to be sent to factories home and abroad, for example to

Raytheon in Germany for navigation system training. The challenge when courses are provided at the sub contractors site is to influence the contractors use of appropriate media – PowerPoint might be cheap and easy for them, however we would prefer them to also utilise equipment on the factory floor, which they may consider potentially risky. With a series of one off courses, there is little point in complaining about inadequate training after the event. Therefore a series of mechanisms have been put in place to incrementally accept the training prior to delivery, including design reviews and a pre release delivery of courseware to RN experts in advance of the courses.

The third tenant of FoC training is covered under the tri-national contract with UKAMS for operators and trainers of the Principle Anti Air Missile System (PAAMS). As the PAAMS programme and the ship programme veer and haul, so the delicate management of training facilities in Holland (R1046, the Long Range Radar), the Isle of Wight (R1045, the Multi Function Radar – aka Sampson), Chelmsford (C2), France (munition) and on board (Vertical Launch System (VLS)) can tax the most patient of IPT Project Managers.

The final element of FoC training falls back to the RN. Whilst it may be obvious that Sub contractors for NTS and PAAMS courses will only provide training on their own equipment, less immediately obvious is that, in many instances, pre requisite training will be needed to bring the trainees up to speed on the new technologies involved in these new equipments and systems. For example, an understanding of phased array technology is needed prior to understanding Radar 1045. It therefore falls to the Maritime Warfare School (MWS) and HMS Sultan to generate such courses in advance of the contractor courses, some of which have to start before the end of 2006.

Steady State Training – training equipment and media production

SST will be delivered by the RN within the MWS and HMS Sultan .

The underpinning of the T45 SST requirement is the Training Needs analysis that advocated synthetic training media solutions for the majority of training needs.

Traditionally, particularly for maintainer training, the training media has been big chunks of real equipment (known as Government Furnished Equipment – GFE) installed in HMS Collingwood and HMS Sultan. However, having visited ITSEC in Florida, the NRTA training policy makers and TNA analysts were made aware of emerging training developments abroad and recognised the benefits of synthetic training solutions that produced more effective and repeatable training whilst, at the same time, reduced the training time.

The TNAs for T45 identified that the ships' systems would be more reliable than in previous platforms and, therefore, the maintainers could suffer from significant skill fade. Providing some of the training content at sea would combat this. This is possible because most synthetic media (video clips, photographs, 3D graphics, emulations, text, tests etc) can be easily reused. It is also linked to the electronic technical manuals (to drive down costs) and is being provisioned in multiple locations – including at sea. Thus, the case for a significant part of the training solutions to be synthetic becomes irrefutable.

Notwithstanding that, for some of the didactic/physical skill elements, maintainers still

need “hands on” training using either real equipment or having access to a physical part task trainer. Therefore the T45 solutions will be a blend of training media types, matched to meet the needs identified by the SMEs.

For Warfare Operators, blended training solutions are not new as HMS Dryad and the Warspite building within the MWS are littered with media appropriate to the need. For T45, the operations room elements of Warfare Operator Training have been included within the new Maritime Composite Training System (MCTS) project that encompasses all surface ships, thus avoiding a T45 stove-piped solution and ensuring coherency of war fighting training across the surface fleet.

The Maritime Training Support (MTS) IPT who are procuring MCTS have also been tasked to provide the media for Warfare Operator training outwith the ops room, which includes navigation, METOC, upper deck weapons etc.

The requirement to procure training equipment for ME and WE maintainers remains with the T45IPT, who has placed a Training Media Enabling Contract (TMEC) with the PCO. A limited but effective “look-see” technology demonstrator example was delivered for the chilled water plant and seems to have been well received by stakeholders. An early quick-win for this concept is the Platform Management System (PMS) synthetic trainer that is currently in build and utilises the ships PMS operational software. This means that the training solution will not only be available in the MWS and HMS Sultan, but also on board the ships to rehearse machinery control, breakdown drills and action damage control activities. The United States equivalent of Flag Officer Sea Training already use this facility on ships to put their teams through their paces, being able to build complex and integrated scenarios to further develop operational effectiveness.

Steady State Training – the role of the T45 training Unit

The T45TU is a team of 23 personnel, consisting of an almost equal mix of RN and Flagship staff, sited in an open plan office on the top floor of Atlantic Building, HMS Collingwood. The team has been cherry picked for the significant task ahead of them. Whilst all are subject matter experts (SMEs) on legacy equipment in their own ME/WE/Warfare fields, they very quickly needed to become subject matter experts in both the T45 equipment/systems and in training design. They are now finding out that this is actually just the tip of the iceberg, as much more is required of the team.

Picking up on the TMEC, the bulk of the maintainer training equipment media is in the process of having the requirements articulated (driven by the TNAs). This work is being carried out jointly by the PCO and the MWS T45 Training unit (T45 TU). Their initial task has been to jointly develop thousands of meaningful training media requirement specifications; a complex job that demands a very specific skill set. Having written a requirement statement, the developers then need to review it to see how it might be interpreted /misinterpreted by industry. Thereafter, tenders will be invited, bids received and evaluated, contracts negotiated and eventually awarded, allowing full media production to begin. The enormous upfront effort will pay dividends when the team subsequently support the PCO in conducting the technical evaluations on industries bid responses.

The team is currently preparing to conduct the training design phase of its work. Rather than using the traditional tools to do TD work, (Microsoft Word, Excel etc), the T45TU will be one of the first major users of the new Defence Learning Portal (DLP). The DLP is an application suite which resides on the Restricted LAN Interface (RLI) and has a Learning Content Management System (LCMS) for creating training course content and a Learning Management System (LMS) for students and instructors to access the courses (See RNE Autumn 2005). The plan is to use the LCMS as a data repository source for all electronic content that may be applicable to T45, which is likely to include the 60,000+ interactive data modules that are being created under the technical documentation contract (ie BR's, that will be on laptops rather than blue ring binders on the T45).

As the team design their courses, they will need to provide storyboards of lessons to industry so that they can develop the complex elements of the training media in consultation with the TU SMEs. A significant proportion of the synthetic media should be able to be dragged and dropped straight into the LCMS once it has been developed. Much of this work is ground breaking, T45 will be the first defence project to use the LCMS and will be maximising the utility of its toolsets and perhaps changing the processes involved in course design for the future. It is fair to say that whilst on each step of the path to T45 training solution, all stakeholders have been actively engaged. It is also fair to say that where stakeholders have been unavailable to support activities, or incapable of making a timely decision, T45 have had to drive forward with the best information available at the time. All parties are determined to learn from the Apache experience of having an equipment capability available but no trained manpower to operate and maintain it.

As long as we remember that, for the next two years, we are only baby sitting courses that will eventually belong to the functional groups, and start ensuring that the personnel within those groups buy into the process, we shouldn't go too far wrong. Whilst the functional groups and Fleet have been involved at some level throughout, including the requirements setting, that hearts and minds work begins in earnest early/mid 2006 when we have a clear idea what industry proposes to provide as media to meet our requirements.

For trainees, the synthetic solutions will give them different ways to access course material. When initially trained they will be taught in the MWS and HMS Sultan in a Computer Aided Instruction (CAI) style. Subsequently, they will be able to access the course content as Computer Based Training (CBT) wherever they have RLI connectivity. This will include the Waterfront Training and Education Centres (WTEC) and on board the ship. When the trainee is either learning or revisiting this course alone, each module will look and feel slightly different as, to make up for the lack of instructor, the content will be enhanced to offer options for extra information and far greater interactivity.

Meanwhile, the infrastructure to support all of this must be defined. How many technology-based training classrooms do we need? Where should they be sited? What is the space requirement for physical part task trainers and GFE? Who will support the

training equipment through life?, What is the maintenance policy? Who gets the support contract? What is the through life management plan for technology refresh? Is there a requirement for a new building? Do we need planning permission for emitting radars? What are the Health and Safety implications? Will we need to find extra instructors? What new skill sets should the instructional staff have and, if so, How are they going to acquire them?

The good news is that there is a body of interested stakeholders who form the T45 Training Interface Committee to ask these questions. The bodies on the ground who get to address them are the T45 Training Unit and the T45IPT desk officer for training, Lieutenant Commander Matt Solly. The fact that there is a feasible plan should mean that the whole puzzle falls neatly into place in time for that November 2007 Ready for Training Date.

The entire T45 project is challenging and exciting, within it the T45TU team are buzzing. The work is fast moving and complex. It is high profile and we can't afford - literally - to get it wrong. We have to gently manage the expectations of those who think it will deliver more than we believe it will, at the same time as pacifying those who think it won't be fit for purpose. There are risks aplenty, but we manage and mitigate them with the help of experts from the IPT and NRTA. From a personal viewpoint, I work in an environment which shows off not only the RN and our Flagship partners, but also the civil service (IPT) and industry (PCO) all at their very best. This project will succeed and I will be proud to have been part of it.