

Making the switch to ASDs

Serco Denholm Marine Services Ltd has a 15-year PFI contract valued at up to £1bn with the UK Ministry of Defence to deliver a wide range of marine services to the Royal Navy in the UK and elsewhere. The contract covers an extensive range of services including towage, and key to the contract is the procurement of 31 new vessels to replace retiring tonnage. One of the greatest training challenges is the introduction of both ASD and ATD tugs that will require existing tug crews in the ports to adapt to a new propulsion technology and adopt modern manning and operational performance standards.

At the *ITS 2008 Conference* in Singapore, Capt Arie Nygh, managing director, SeaWays Consultants Pty Ltd, Australia and a specialist in omni-directional tug training, met Capt Andy Crawford, chief marine superintendent for Serco Denholm, and the foundations were laid for an extraordinary programme



of training for the masters of the new vessels.

Here, Dawn Gorman speaks to Nygh, Crawford and two of the masters involved about the training process, and the reasons behind the switch to ASDs.

In the early weeks of the year, Arie Nygh undertook the omni-directional tug training of four training masters for Serco. Only one of the men had driven an ASD before.

“Normally, I wouldn’t train anyone to be a training master who hasn’t had extensive previous experience of driving an ASD. One had been driving an ASD for some 11 years, but the others were a master of a bunker ship, the master of a Voith tug and someone who has been driving a desk in SERCO’s office for 10 years.”

Each trainee was given an equal amount of time at the controls, and interestingly, in timed, non-subjective competency circuit assessments at the end of the course, they all came within one minute of each other and achieved the same standard. The achievement is a notable display of Nygh’s skill as an instructor, although he remains modest about the results.

“There was varying work to do with them all – the experienced ASD tugmaster had to have his bad habits reprogrammed, and the others had to learn new skills.”

It became apparent that there was plenty of scope for teaching old (sea)dogs new tricks.

“Some tugmasters who had been driving the ASDs for 15 years came along at the end of the training and remarked that they didn’t know tugs could do manoeuvres like the new trainees were achieving.”

Dave Ferrier was the trainee with 10 years’ ASD experience. He said the main thing he learned was about levels of control.

He said: “Before the training, I was just looking out of the window and reacting to what I saw, but Arie taught me to think and plan in advance, and to anticipate.

“His whole philosophy is great, he challenges you, takes you right to your limits, but it’s all done in achievable stages and you never move on to the next one until you are ready.”

Fellow trainee Steve Sandy had operated a Voith Schneider tug for 10 years, and said he found driving ASDs completely different.

“All I took with me was wind and tide – apart from that I had to start right back at the very beginning, with handling and characteristics. It’s like getting into a racing car without ever having had driving lessons.”

Three Chief Admiralty pilots were put on tugs at the end of the training to enable the newly-trained trainers to start to teach them to drive ASD tugs.

Nygh said: “They were used as a check for the training components, and after three days, those pilots were driving tugs to a high basic standard. It was both interesting and rewarding for me to see that phase of the process working. The new trainers were exceptional, certainly a credit to both Serco and themselves.”

Sandy said: “The training is really hard, it’s a stressful, full-on course, but Arie is an amazing teacher. He works by embedding everything in to your subconscious, and it’s only when you start using his techniques to teach others that you realise that you have absorbed everything.”

The trainers will train the remainder of the Serco’s 45 tugmasters over the next 12 months, all of whom will have a final competency check by SeaWays before going solo on the new Damen ASD and ATD tugs. When *IT&S* spoke to Ferrier and Sandy, the pair had just successfully taken two trainees through their competency check.

Nygh offers two sorts of training consultancy – either he goes in and does all the training and competency checking, or he puts the SeaWays Tugmaster Training Program in place and trains the company’s trainers to implement it and then ensures



Steve Sandy is here training his chief pilot, Tony Bannister, in the Clyde on one of Serco’s older ASD tugs the day after he qualified as a SeaWays training master.

‘Crews must end up with confidence and competence in equal measure’

Capt Andy Crawford tells *IT&S* about the factors involved in Serco’s move to ASDs.

IT&S: Why Serco has moved from Voith to ASDs

AC: “We proposed changes in capability and new technology in many elements of our proposals for marine support to the MoD where these clearly provided a better technical solution and a more efficient and cost effective solution. An example of this is the phased change of tug propulsion for our harbour tug.

“We are therefore now progressively now moving the current harbour assist tugs in most ports from the existing 22-year-old Voith Schneider tug suite to azimuth propulsion system. This retains and enhances many of the features already present in the existing TUTT fleet such as the ability to conduct indirect towing of large ships (a technique that provides additional power in turning vessels whilst making way).”

IT&S: How many vessels are involved?

AC: “There are 31 new vessels in all – 29 from Damen and two from Adyard, all to be built by the end of 2010: six pilot cutters, three workboats, three twin screw 25bp harbour tugs, four small ASD tugs, two ASD tugs, four ATD tugs, two large multicats, three fuel lighters, one high speed code passenger vessel (OXBOW), one worldwide military training ship and two AHV (being built by Adyard in the Gulf).”

IT&S: Where will these vessels be operating, and what will their duties be?

AC: “This is a partial replacement programme of an overall fleet of 110 marine vessels (from 12m workboats and lighters through to the world wide military support vessel *SD Victoria*) employed in supporting the Royal Navy in the UK Naval Ports and in coastal areas. This includes the maintenance of over 200 navigation buoys and +90 ship

moorings in the UK and Med.

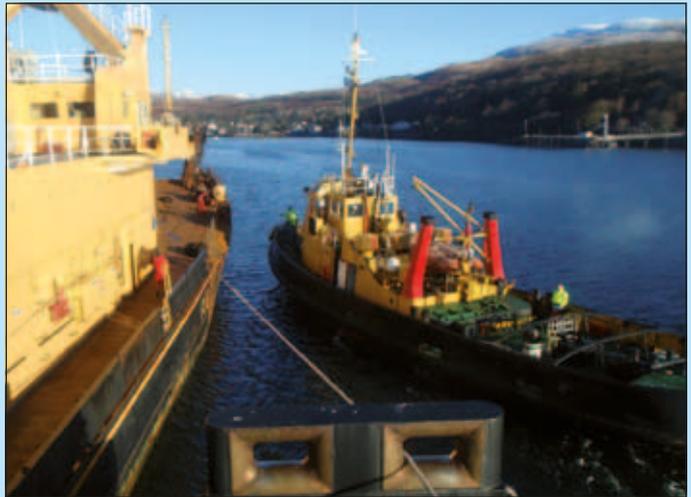
“The vessels and their crews provide essential operational support from harbour movements, passenger services (including operating High Speed Code vessels), lighters, Multicat operations, maintenance of moorings and navigation marks, support to military exercises and training, tank and bilge cleaning.”

IT&S: What are the pitfalls of such a radical change?

AC: “Inevitably, there are a number of challenges involved in the introduction of new vessels, all of which we have anticipated and are addressing, but we don’t regard them as pitfalls. These challenges include managing an effective transition between old and new vessels to ensure an uninterrupted service to the Royal Navy, and ensuring buy in from our customer and our crews on each new type of vessel.”

IT&S: How do you go about changing skill sets?

AC: “Through a structured competency-based training programme that is directly related to the new vessels and their intended range of operations. Crews must end up with confidence and competence in equal measure through such structured training programmes having being given enough time to become familiar with their new vessel and having participated fully in developing safe systems of work on existing tasks through a risk assessed safety case process. This is a complex and intensive



programme that has to be properly geared to the new vessel delivery timetable.”

IT&S: How do you go about getting pilots to be accepting of those changes?

AC: “We consulted with our operational customers in each of the naval ports in order to engage in a professional dialogue to determine the very best solution in tug types and numbers. This has included professional consultation with the Admiralty Pilots based in each Dockyard Port through a design review process.

“Our proposals were also formulated on advice and consultation taken within the towage industry both within the UK and internationally. We visited and appraised tug operations in Vancouver, Canada, Turkey, Australia (Defence Marine Services Pty), the USA and the Netherlands.

“We consulted with internationally recognised designers of modern harbour tugs such as Robert Allan Ltd and Damen which allowed us to become aware of new concepts in tug design such as the Z-TECH tractor tugs being introduced into service in Singapore for operation against high sided, flared merchant ships.

“Joint training has begun with our tug masters and pilots in order to mitigate the risks of this change in the tug suite in each port location. This currently includes both simulator and practical handling elements.”

the standards are met and maintained via annual competency checks. And he makes no excuses for this degree of thoroughness.

“One thing that is not to be compromised or for sale is the SeaWays standard.”

By putting the training package into a company and licensing its trainers to use it, the company is in effect paying a licensing fee whilst ensuring the standard is maintained.

“I train tug masters to a very high standard and get them to operate on a daily basis well within that standard. This way, the training stretches their comfort zone so they can

deliver a better product under stress and not go into sensory overload as readily under trying circumstances. They have to reach the point where they react automatically, so the training programme is designed to programme their subconscious so they react instinctively the correct and safe way.

“Some of the elements of the training, such as operating on one engine, a tugmaster will only use very occasionally, but they need to maintain that skill set for when it is needed. So we go back to re-set that programming each year.

His mission at Serco has, since the training

programme in Scotland, been extended far beyond what was originally planned, and now covers the company’s entire fleet of around 100 vessels. A five-year contract between Serco and SeaWays was signed on 17th February.

“It is quite an accomplishment, and lays the foundation for the future of Seaways. We have re-written our ASD/ATD training programme to suit their Voith and twin-screw vessels, and we are also putting in place the Seaways’ auditing system, whereby crews will quarterly self-audit to

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ensure standards are being met and SeaWays will verify this via an annual audit of all vessels using the same format. Seamen and mates are also being included in a cut-down version of the training programme. Maintenance, Safety Management System and procedures are also to be incorporated, creating a holistic approach to training and ensure safe operations of a world class standard of best practise.

“At some companies, we find that everyone is doing things in different ways, but best practice is for there to be one agreed way of operating, and our system brings everyone in line and to the same level.”

Nygh and Serco have also been working closely with Transas on their simulator in Portsmouth. Nygh said: “Seaways on-board training is only a part of the Serco training programme. The SeaWays Simulator Training Program on the Transas simulator will assist in ‘softening the tugmasters up’ before they go to Scotland on the actual ASD tugs and then will keep them on the boil afterwards whilst consolidating their new skills until the new tugs arrive from Damen.

“I test drove the simulator for 20 hours to get to know it, and we are in the process of writing a Seaways training programme specifically to work on the Transas simulator. Transas is doing a lot of re-modelling so that it uses the same SeaWays terminology and training exercises as on a real tug when training. This is

a little different to other programmes available at the moment, and will avoid confusion.”

Part of this modelling will include a virtual SeaWays Training Harbour specific to best fit the very structured SeaWays Tugmaster Training Program.

Bruce Mills, general manager, Transas Marine (UK) Ltd, said: “Transas Marine (UK) Limited is delighted to be working with Serco and SeaWays on this important project.

“Parts of the SeaWays training programme have been adapted in order to incorporate the Transas tug training simulator into the project. The state-of-the-art simulator at Transas in Portsmouth has a 210-degree visual system as well as a dedicated ‘Tug Control Pod’ that includes specific ASD tug controls and gauges.

“Over the next two to three months, Transas will be developing a new ASD tug and a Damen 2909 ATD – bringing the total number of tug models in the Transas library to more than 20.

“In addition, considerable development of the ‘Portsmouth Harbour and Approaches’ visual database will create an exercise area that has specific features and functions tailor-made for specialist tug training. SeaWays and Serco will provide extensive input into this development activity and the end result will be a unique tug training simulator that will enhance the training programme offered by SeaWays.”

The comprehensive nature of the training is certain to make other companies sit up



Arie Nygh, left, and Jonathan Brown, MD of Serco, with the five-year contract between Serco, signed on 17th February.

and take note, but Nygh would like to see the issue receive even broader attention. In fact, he is pushing for formal endorsements on a master’s certificate to operate an omni-directional tugboat.

He said: “It is a given that it is impossible for a master to undertake harbour towage and/or escort towage operations on a new generation omni-directional tug without significant specialised training. I believe the time has come for our industry to take this important step, as has previously taken place with endorsements required for oil and gas tankers, passenger ships, high speed ferries, DP vessels and sailing ships.”

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