Addressing the skills and training shortages in the shipping industry

SINGAPORE October 2016

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It goes without saying that training is important. Training enables the shipping industry to prepare the crew that the sector requires for safe and efficient operation and maintenance. Take Emma Maersk as an example – a complex ship, which could be considered as one of the greatest investments for Maersk when it comes to automation. The technical complexities far outweigh many ships previously sailing at sea. There are of course always newer vessels which are bigger and more complex so providing the right people to maintain and run these vessels is vital to keeping goods moving around the world.

The technical development of ships has shifted over the last few decades with changes in technology and equipment.

- Have we really changed our industry training to match?
- Do we train new crew in a way that will allow them to operate ships safely, efficiently and legally?

Whilst there is a trend that more shore-based staff (including technical third parties) are being utilised to carry out more ship maintenance tasks, are we training on-board crew to be able to manage plant and equipment effectively? Some may suggest that the maritime sector is creating operators and not maintainers – is this what is required?

Identifying what it is we are training crew today for, is key and along with an understanding of what the latest best-practice cadet should look like, it’s important to stress that the shipping industry needs to recognise what it actually requires and have a top down approach to engage with education providers.

Before STCW, crew sailed on National Flags which provided the flexibility of being able to change education requirements to suit the changing requirements. Making changes to education and training is trickier today than it has been in the past, as international recognition is required which can take years.

The maritime sector is unique in how it trains new talent taking up a shipping career – other industries don’t take on raw recruits as early as 17 or 18 years old. Is the shipping sector getting the best talent at the right stage, or are we making it too difficult by having too broader expectation of what we need? UK graduates earn an average starting salary of between GBP16,000 and 19,0001. TESCO, a large UK retailer, takes graduates and then trains them into managers suited for their organisation. Is this something that the maritime sector can learn from?

There is rarely a job that can be considered as being ‘for life’ but there has been a general view that the maritime sector needs to promote itself in a way to attract new talent2. Can the industry do more to showcase how a shipping can be both an attractive and rewarding career? Perhaps there is a way of providing a ‘10 year career plan’ so that the industry can obtain, develop and keep a steady flow of talent coming into the sector. Some talent may stay, some may leave, some may come ashore, but overall, perhaps we need to think about how some ‘senior managers’ could come ashore in 10 years’ time with all of the relevant attributes that the sector needs.

This document is set to discuss the above questions and has sought the opinions of the shipping sector across South East Asia to address the burgeoning skills gap and training requirements within the shipping industry.

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1 https://www.graduate-jobs.com/gco/Booklet/graduate-salary-salaries.jsp

In producing this report, we have been greatly assisted by the many individuals and businesses who contributed to both the survey and subsequent round table discussion. The 350 plus organisations who responded to the survey gave us a scalable and valuable insight into current industry thoughts. The industry leaders who attended the round table added much to this and shared their own practical experiences and recommendations for addressing the skills and training shortages within the shipping industry. We are most grateful to them all.

**The Skills Gap Roundtable Panel**
The following organisations and individuals took part in the Skills Gap roundtable on the 10th October 2016 at the British Chamber of Commerce in Singapore.

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<thead>
<tr>
<th>Company</th>
<th>Name</th>
<th>Designation</th>
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<tbody>
<tr>
<td>ASP Ship Management Singapore Pte Ltd</td>
<td>Capt Robert Walker</td>
<td>General Manager</td>
</tr>
<tr>
<td>Bernhard Schulte Shipmanagement (Singapore) Pte Ltd</td>
<td>Mr Robert Maxwell (Chair)</td>
<td>Managing Director</td>
</tr>
<tr>
<td>BP Shipping Ltd</td>
<td>Mr Sunil Parashar</td>
<td>Cadet &amp; Training Manager</td>
</tr>
<tr>
<td>Institute of Marine Engineering, Science &amp; Technology (IMarEST)</td>
<td>Mr David Kelly</td>
<td>Director, Asia Pacific</td>
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<tr>
<td>Maritime and Port Authority of Singapore (MPA)</td>
<td>Mr Tan Suan Jow</td>
<td>Director of Shipping</td>
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<tr>
<td>Maritime and Port Authority of Singapore (MPA)</td>
<td>Capt I G Sangameswar</td>
<td>Senior Assistant Director (Training Standards)</td>
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<tr>
<td>Maritime and Port Authority of Singapore (MPA)</td>
<td>Mr Mun Wei Jun</td>
<td>Assistant Manager International Division</td>
</tr>
<tr>
<td>Maritime and Port Authority of Singapore (MPA)</td>
<td>Mr Ang Shao Jie</td>
<td>Assistant Manager, Seafarers Management Department</td>
</tr>
<tr>
<td>Masterbulk Ship Management Pte Ltd</td>
<td>Mr Kevin Grant Leach-Smith</td>
<td>Vice President Operations</td>
</tr>
<tr>
<td>Norstar Ship Management Pte Ltd</td>
<td>Mr Christopher Kirton</td>
<td>Managing Director</td>
</tr>
<tr>
<td>Pacific International Lines (Pte) Ltd</td>
<td>Mr R S Minhas</td>
<td>General Manager</td>
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<tr>
<td>Singapore Maritime Academy Singapore Polytechnic</td>
<td>Mr Foo Nan Cho</td>
<td>Deputy Director</td>
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<tr>
<td>Singapore Maritime Officers’ Union (SMOU)</td>
<td>Capt Robin Foo</td>
<td>President</td>
</tr>
<tr>
<td>Singapore (Nantong) International Maritime Institute</td>
<td>Capt John Liew</td>
<td>Senior Lecturer</td>
</tr>
<tr>
<td>Singhai Marine Services</td>
<td>Mr Terence Zhaowei</td>
<td>Managing Director</td>
</tr>
<tr>
<td>Singhai Marine Services</td>
<td>Mr Johnny Sim</td>
<td>Business Development Director</td>
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<tr>
<td>Union Marine Management Services Pte Ltd</td>
<td>Mr Vinay Gupta</td>
<td>Managing Director</td>
</tr>
<tr>
<td>Wavelink Maritime Institute Pte Ltd</td>
<td>Capt Ken Yeow Kok Kean</td>
<td>Executive Director</td>
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The following recommendations are the key elements that the roundtable participants as being key to supporting an industry.

<table>
<thead>
<tr>
<th>Area</th>
<th>Recommendation</th>
<th>Responsibility</th>
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<tbody>
<tr>
<td>Communication / Senior Management</td>
<td>Industry needs to communicate more effectively with training establishments so that there is a clear understanding of what industry actually needs</td>
<td>Shipping Companies</td>
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<tr>
<td>Communication / Senior Management</td>
<td>Industry-wide commitment from senior management to understand and support the next generation of marine professionals in an industry that is constantly seeing technological advancements and regulation</td>
<td>Shipping Companies</td>
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<tr>
<td>Recruitment</td>
<td>Use the graduate pool to train cadets</td>
<td>Shipping Companies / Academia</td>
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<tr>
<td>Training</td>
<td>Review modern requirements of training and what skills are actually required</td>
<td>Shipping Companies / Training Providers</td>
</tr>
<tr>
<td>Training</td>
<td>Provide a method of making sure that newly-qualified cadets and ships staff use the knowledge (and enhance it) so that they are constantly developing</td>
<td>Shipping Companies / Professional Bodies / Training Providers</td>
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<tr>
<td>Training</td>
<td>Soft-skill training to support the transition from sea to shore, as well as supporting those working ashore to have a broader set of management enhanced skills</td>
<td>Shipping Companies / Professional Bodies</td>
</tr>
<tr>
<td>Training</td>
<td>Look at who is doing the training and make sure that they are good educators</td>
<td>Training Providers</td>
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<tr>
<td>Recognition and Professional Development</td>
<td>Align STCW CoC’s with levels of international professional qualifications (such as Chartered Status) for the sector to support the on-going learning and development of the sector, whilst providing recognition</td>
<td>Professional Bodies</td>
</tr>
<tr>
<td>Professional Development</td>
<td>Provide a method of implementing a mentoring programme to support knowledge transfer</td>
<td>Professional Bodies / Shipping Companies</td>
</tr>
<tr>
<td>Marketing and Promotion</td>
<td>Promote the benefits of joining the shipping industry, linking the opportunities available both at sea and ashore</td>
<td>Industry / Professional Bodies / Training Providers / Government</td>
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<tr>
<td>Marketing and Promotion</td>
<td>Create a ten year career map to support the available roles</td>
<td>Industry / Professional Bodies / Government</td>
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Taking the results from an industry survey and providing the qualitative feedback from the focussed roundtable created a number of discussion points. These are summarised below, with the overarching recommendation highlighted on the previous page.

Are newly qualified crew competent?
The key area that started the discussion was to obtain the views of whether industry considered newly qualified crews to demonstrate competency in their roles on board vessels. Cumulatively, only 23.5% of survey respondents agreed that newly qualified ship engineers are competent to manage plant on-board whilst a similar 24% said newly qualified deck officers are competent to manage their required processes and tasks on-board vessels.

The panels’ view was similar, but highlighted that the industry is not communicating well enough with training centres to highlight what the sector requires from newly-qualified engineers and deck officers.

ADDRESSING THE SKILLS SHORTAGE IN THE SHIPPING INDUSTRY

<table>
<thead>
<tr>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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<tbody>
<tr>
<td>19.35%</td>
<td>4.15%</td>
<td>32.26%</td>
<td>5.53%</td>
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Newly qualified ship engineers are competent to manage plant on-board

<table>
<thead>
<tr>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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<tr>
<td>42%</td>
<td>3.5%</td>
<td>27%</td>
<td>7%</td>
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Newly qualified deck officers are competent to manage their required processes and tasks on-board
Are we expecting too much from newly qualified engineers and deck officers?

With ships built in early 1980s automation was basic by today’s standards and machinery was considered more simplistic to maintain.

Those on-board vessels were trained to be able to manage this, but with the complexity and ongoing development of new technologies, it’s considered hard to keep up with modern requirements. The survey highlighted that only around 20% of those asked said that they felt new crew ability was of a high standard. This was somewhat disagreed with by the panel who suggested that those going through their cadetships are broadly considered to be better than the yester-generation – they are perhaps just not given the right opportunities to shine. Because of the technologies which the industry buys are more complex to operate and maintain than in the past, there is an increasing requirement to seek support from shore-based technical staff, often working for the manufactures themselves, to provide assistance with maintenance. This is a shift away from the traditional on-board roles that many of the senior industry figures have had to adapt to.

There was widespread sympathy for ship’s crew – as an increase in regulation creates more paperwork and processes, sometimes the time to focus on the actual job in hand can be hard to balance.

Furthermore, it was commented that from an operator’s perspective, the reliance on using third party technicians (i.e. those working for plant and machinery manufacturers) means the training for their staff needs to be as important as it is for ship operators to train their crew.

Additionally, there was a plea for industry to “commit from a high level to support the next generation of those coming into the sector”. On-going incremental training was seen as an approach that can support the good base knowledge that cadets have, with a tailored approach to working with differing and expanding technologies, whilst maintaining the regulatory paperwork to keep ships operational. This was backed up by the survey with around 70% of respondents confirming there are clear gaps in knowledge when cadets graduate.

LESS THAN 40% OF THOSE SURVEYED SAID THAT CADETS WERE NOT CONSIDERED AS BEING “OVEN-READY”
Are we recruiting the right ‘type’ of cadet?

One of the discussion points focussed on who the industry recruits and at what age. It was highlighted that in the UK, the large retailer TESCO, takes graduates and then trains them into managers suited for their organisation. Is this something that the maritime sector can learn from? The survey highlighted that just over 47% agreed that this could be a good route for the sector to take, with 22% unsure and 30% disagreeing. By taking TESCO as an example, they recruit graduates and put them on a firm career development plan which provides a route to them becoming a ‘manager’. It was discussed that this could be a way of providing a route from sea to shore, whilst attracting a different type of talent into the sector.

What about STCW – does the standard fit industry requirements?

One size doesn’t fit all, and it’s impossible to create a standard that suits everyone within the sector, with the right base knowledge, to suit the differing types of ship and ship operators. Whilst the survey highlighted that 46% agreed that STCW is fit for the 21st Century, only 25% disagreed.

STCW was broadly seen as a solution to create a level-playing field for the industry which allowed for tailoring to suit vessel types and operators approaches. It would simply be impossible to train the next generation of marine professionals with ALL of the skills that industry requires. Opinion also added that industry should be more prevalent in explaining what it needs to those that set the curriculum and develop programmes going forward. However, there is a view that STCW, whilst providing a base level of learning, has historically actually brought the overall standard of those going through their training down. But, there is no quick solution to this, because the skills required to operate and maintain the modern ships require very different skills from those required to operate and maintain a sixteen year old Japanese chemical tanker, or ten year old South Korean bulk carrier. This was backed up by the comment that if you always train what you’ve done, you’ll only get what you’ve got.

Ships that are now coming off the production line inevitably have lots of modern parts with modern plant and equipment. The group highlighted that it is pointless in that case to look for a good 3rd engineer (who is competent to support a pump or auxiliary engine overhaul) because the industry requires someone who can effectively and efficiently monitor and record and evaluate the equipment so that they are aware when things start to go wrong.

One particular case that was highlighted within the group was a ship that had stopped at sea for over 30 hours to change a piston and cylinder liner – whilst the shore-side staff had commented that they could have fixed a solution in a quarter of the time, the responsibility of the ship operator was to let the engineers on-board the vessel complete the maintenance safely and to a good quality, with no risk to the vessel or crew. In fact with modern machinery with much longer TBO’s the chances of the crew having in depth experience of these jobs is much less, so they WILL take longer than those of us who were used to pulling pistons every 6000 hours. So, whilst STCW creates a generic platform of competence, the onus may need to shift to the ship operators and the training providers to be able to take the base knowledge and tailor it for what the industry requires.

**IF THE INDUSTRY ALWAYS TRAINS AS IT HAS DONE, IT WILL ONLY GET WHAT IT HAS CURRENTLY GOT**
A focus on training

Training to get the correct skills within the operating roles of on-board (and shore-side) personnel is of paramount importance. Certainly, with over 77% of respondents agreeing that plant-specific training courses help to upskill new ships engineers, there is a requirement and a need to maintain good training to provide the skills required. However, nearly 83% of those surveyed agreed that the industry needs to review modern requirements of the skills of ships staff and modernise training to suit.

There is clearly a requirement to increase the communication between the operators and training establishments to outline what is required to provide cadets and more established sea-going professionals with the correct knowledge to carry out their roles.

A firm view, was that “if we don’t use it [knowledge], we lose it” and this was also backed up by a number of views that shipping companies need to make sure that their crew use the knowledge that they have learned to be able to use it when they need it.

Additionally it was commented that buy-in in terms of training needs to come from the senior figures within the operating companies. Furthermore, there was an emphasis put on the need for further soft-skill training, understanding that shore-side roles are ‘people managers’ who need to know that the ship’s crew have the ability to get the job done safely, accurately and efficiently.

Turning to management of vessels, there is a need for those ashore to remain engaged with a firm understanding that the on-board crew are at the centre of ships operation to help them to stay engaged and motivated, by being able to communicate effectively and compassionately.

There was wide-spread understanding amongst the panel who understood the complexities of training cadets and senior officers. Comments were also made about the type of trainer – how does the sector make sure that those providing the training are going to be competent to pass on their knowledge. Additional remarks around how ‘training the trainer’ may be overlooking the opportunity to ‘train the educator’ – (in technical knowledge) a switch to training those who are good at passing on knowledge with the technical skills, rather than training the technical competent on how to teach – as not all trainers are good educators.
We also need to be rewarding the trainers and lecturers – attracting better trainers/educators to provide better education is easily said, but there needs to be a career route and value put forward for trainers so that the industry attracts and retains good talented trainers.

From an industry’s association perspective, it was noted that INTERTANKO have their Tanker Officer Training Scheme (TOTS) which acts as a blue-print for training of those on-board tankers. The emphasis, therefore, for on-board training is of huge importance to the sector, and an area that enables crew to retain and maintain knowledge. There was a call to look at how CPD can be woven into formal training and Certificates of Competency to provide a global quality standard (benchmark) for recognising talent within the sector.

Mentoring on-board vessels

A number of comments highlighted how having mentors on-board vessels would be an excellent way to pass on knowledge and experience to crews. This form of ongoing training can supplement the more formal training that both crew and shore-based staff get in order to inspire and create an environment that enhances knowledge transfer. With the survey highlighting that over 72% of respondents agreed that cadets required more training than anticipated when they go to sea, a mentoring programme to help them to gain that knowledge would supplement the STCW training that they get with the formal company training provided to them. This tripartite approach to learning and development was supported, along with the fact that this activity can support the Continuing Professional Development of crew. It would also act as a way to support the transition from sea to shore-based roles.
Shore-based support – there are quick fixes

The focus of the discussion moved to how operators, managers and owners can support their ships crews because it was viewed that shore side mentality does need to change – ‘we project and assume too much to our sea staff’ and need to give crew time to ‘work things out’. It was highlighted that the issue of measuring the quality of newly-qualified crew starts at shore, with it being viewed that the industry ‘still thinks how it was “when I was at sea”’. A number of companies are addressing this by providing soft-skill training. It is the requirement from senior management to look at how to address these views internally to support the teams that manage vessels.

This was backed up by the survey, with a little over 75% agreeing that transitioning from sea to shore roles requires shipping companies to provide additional training.

Company culture is very important, a sense of belonging, giving opportunities to crew, giving ownership to the master and chief and understanding that shore-side technical teams are only supporting the ship crew as they are not on-board the vessel dealing with the same problems that arise in detail.

Knowledge transfer and Continuing Professional Development (CPD)

Continuing Professional Development (CPD) was widely suggested as being an excellent method of sharing knowledge within the sector, whether that is from sea to shore, or on-board vessels.

Over 87% of survey respondents said that companies should support professional development of their sea and shore-based staff whilst less than 50% said that CPD was encouraged within the shipping sector.

Emphasis was put onto how professional bodies like the Institute of Marine Engineering, Science and Technology (IMarEST) can do more to promote the benefits of joining a professional association and becoming recognised. Linking back to the requirement for developing training within the sector, the IMarEST highlighted how it has mapped STCW Certificates of Competency with levels of professional registration up to Chartered Status for both the engineers and deck officers. The focus on registration highlighted how one of the stipulations for gaining Chartered status was to demonstrate personal management, skillets necessary to develop other technical staff, along with effective interpersonal skills in communicating technical matters.3

An area that the sector can jointly work on is a unified approach to professional development that provides recognition across both the engineering and deck roles to support this.

3 http://www.engc.org.uk/professional-registration/the-professional-titles/chartered-engineer/
Creating awareness of shipping to inspire the next generation

Maritime transport is essential to the world’s economy as over 90% of the world’s trade is carried by sea and it is, by far, the most cost-effective way to move en masse goods and raw materials around the world.4 Creating awareness of the sector to inspire the next generation of marine professionals is therefore key in being able to fulfill the future talent pipeline. It was agreed that promoting the attractiveness of the sector was key for both industry, academia, associations and governments to support this activity. Whilst there are a number of activities going on from government level (especially within Singapore), it was highlighted that more needs to be done. This was further backed up by the survey which highlighted that only just over 26% of respondents said the maritime industry was good at promoting itself to recruit new talent.

A template career pathway

Whilst the shipping industry is constantly changing, it is now no longer seen as a job for life, and with the number of seafarers quitting increasing every year,6 the group discussed how a career path can be developed. It was suggested that a recommendation of this paper is to create a template career route to help demonstrate the career routes and roles available within the industry. In particular, it was suggested that a ‘ten year career map’ would be beneficial, to help support those looking at embarking on a career at sea to look at their career as a medium time opportunity, rather than a short term (expensive to train and lose talent) or long term (change in social attitudes) in order to attract talent into the sector.

Of those surveyed, less than 19% disagreed with the statement: “the industry provides a good career path”.

75% said more training was needed when moving from sea to shore based roles

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6 http://www.marineinsight.com/life-at-sea/12-main-reasons-seafarers-quit-sea-jobs/
As the report highlights a number of areas that the shipping sector can address in order to inspire and attract the next generation of seafarers, provide a valuable career route that provides an outline of the options and recognition that one can have access too, whilst making some small adjustments to the current way of thinking to try and address the soft-skill development of those at sea, ashore, and about to make the transition. The following recommendations were highlighted:

- Industry needs to communicate more effectively with training establishments so that there is a clear understanding of what industry actually needs
- Industry-wide commitment from senior management to understand and support the next generation of marine professionals in an industry that is constantly seeing technological advancements and regulation
- Use the graduate pool to train cadets
- Review modern requirements of training and what skills are actually required
- Provide a method of making sure that newly-qualified cadets and ships staff use their knowledge (and enhance it) so that they are constantly developing
- Soft-skill training to support the transition from sea to shore, as well as supporting those working ashore to have a broader set of management enhanced skills
- Look at who is doing the training and make sure that they are good educators
- Align STCW CoC’s with levels of international professional qualifications (such as Chartered Status) for the sector to support the on-going learning and development of the sector, whilst providing recognition
- Provide a method of implementing a mentoring programme to support knowledge transfer
- Promote the benefits of joining the shipping industry, linking the opportunities available both at sea and ashore
- Create a ten year career map to support the available roles

Implementing the recommendations above requires engagement and buy-in from industry, legislators, regulators and professional associations. As an impartial organization, the IMarEST will facilitate the continuance of the debate, taking the thought-provoking statements and making them actionable. It will do this by proposing a Special Interest Group (SIG) on Shipping and Shipmanagement. The SIG will assess and prioritize the conclusions from the round table and take steps to address them working with all stakeholders. This will be done by a mixture of further round tables, meetings and online networking/collaboration.

SUPPORT FOR THIS PROJECT

Whilst the IMarEST has acted as a conduit to pull together the views of the wider maritime sector and bring together a panel of shipping companies, regulators, training companies and unions, it is with the financial support of principle sponsor Bernhard Schulte Shipmanagement (Singapore) Pte Ltd and additional sponsor Norstar Shipmanagement. Without their support, this activity would not have been possible and ability to provide a positive discussion to address this key topic has been hugely valuable.