



## **World Maritime Day 2015**

### **Maritime Education and Training**

#### **Background paper**

#### **The importance of maritime education and training**

Today, we live in a society supported by a global economy, which simply could not function if it were not for shipping. Shipping serves global trade by carrying huge quantities of cargo, all over the world, cost-effectively, cleanly and safely.

Establishing a sustainable maritime transportation sector is essential to the development and growth of the world's economy.

Despite the current global economic downturn, demand for shipping services over time will continue to rise. Today, international trade has evolved to the point where almost no nation can be fully self-sufficient. Every country is involved, at one level or another, in the process of selling what it produces and acquiring what it lacks: none can be dependent only on its domestic resources. Shipping has always provided the only really cost-effective method of bulk transport over any great distance, and the development of shipping and the establishment of a global system of trade are inextricably linked.

But if the world depends on a safe, secure and efficient shipping industry, the shipping industry, in turn, is dependent on an adequate supply of seafarers to operate the ships that carry the essential cargoes we all rely on.

But this supply of manpower is by no means guaranteed. A shortfall of seafarer recruits, below the number required to sustain the industry, has long been predicted. And, while we have yet to see that shortfall materialize in such a way as to harm the industry, the warning signs are there for all to see.

Currently, more than 1.5 million people are employed as seafarers. If the global economy continues to grow, more highly trained and qualified seafarers will be needed. Related activities such as shipbuilding, ship repair and ship recycling will also have growing requirements for manpower resources.

If the global fleet increases in size by 70% between now and 2030 (as has been widely predicted, based on the growth trend of the last five decades), the current number of 500,000 officers needs to be increased to 850,000. If half the existing officers retire by 2030, that means 600,000 new officers will need to be recruited and trained from now. This equates to an annual requirement for officers in the order of some 40,000.

This is a real challenge. Clearly, further effort must be made to bring new generations into seafaring as a profession. Seafaring must be seen to appeal to new generations as a rewarding and fulfilling career.

Are those responsible for the recruitment, education and training of seafarers prepared for it? Are they ready to meet this predicted demand? Is the capacity there? Are the standards sufficiently high?

These are among the questions IMO has put in the spotlight of its World Maritime Day theme this year.

### **Factors influencing maritime education and training**

So what is needed from maritime education and training? What qualities must it embody to satisfy current and future demand?

Shipping today is a highly technical professional discipline. It demands considerable skill, knowledge and expertise – attributes that simply cannot all be learned through work experience or on-the-job learning. Effective standards of training are the bedrock of a safe, secure and clean shipping industry.

And, as a truly international industry, shipping needs a global network of specialist education and training establishments to ensure a consistent stream of high-calibre recruits.

Given the enormous responsibility carried by those who serve aboard ships, especially in view of the size and complexity of today's vessels, it requires a very special kind of person to

take up the challenge of a seafaring career. And, although the global economic downturn may have reduced short-term demand for shipping services to a certain extent, the underlying requirement for new seafarers still remains.

Education and training are often viewed together, as if these two words describe the same thing. But it can be argued there is a clear difference – although both are equally important. ‘Training’ is the process by which people acquire the skills, techniques and knowledge they require to perform their roles and carry out their jobs. But ‘education’ is a far richer concept, embracing a broader understanding of the context in which knowledge and skills, once acquired, are applied.

Today, more than ever, seafaring is a job that demands highly trained and qualified personnel: people who have the courage, strength and determination to spend long periods of time away from home; and the professional competence and wherewithal to respond to the hazards and challenges that the sea and the weather might throw at them.

Modern ships are designed and built to the highest technical standards. The emphasis must, therefore, increasingly be on ensuring that standards of manning and operation are equally high, and it falls to the major providers of maritime training and education to play the leading role in this.

At the same time, a number of factors are combining to make ships themselves more complex and sophisticated than ever before. Environmental pressures, the need to operate at optimum efficiency in difficult economic times and the quest for sustainable development, are all factors which raise the bar with respect to the skill levels of seagoing personnel.

The modern ship's officer needs to be far more than a navigator or an engineer, and the modern ship's crewman needs to be far more than a manual labourer. A modern ship is a highly technical workplace operating on the tight margins of commercial viability – which means that, as well as a highly-advanced technical skillset, shipboard staff now also need to be fully conversant with management and communication skills, IT knowledge, budget handling and so on.

All of which places special demands on maritime education and training. As a pre-requisite, it must be of high and consistent quality, throughout the world. It also needs to be skills-based, competence-based and to utilize the latest technology – simulators reflecting modern ships and up-to-date bridge layouts, for example.

And the concept of maritime education and training needs to go beyond seafaring. Like the industry itself, maritime education needs broad coverage: naval architecture, marine engineering, maritime law and many other fields all need specialist training.

Rarely, if ever, has maritime training and education been more important to the industry, and to the world, than it is now.

### **IMO and the human element**

From IMO's perspective, the Organization can point to a long and wide-ranging involvement in the human element of shipping. Maritime education and training are an important part of IMO's mandate and work.

The basic requirements for seafarer training, certification and watchkeeping on an international level are contained in IMO's International Convention on Standards of Training, Certification and Watchkeeping for Seafarers – known as the STCW Convention. It was adopted in 1978 as the first internationally-agreed Convention to address the issue of minimum standards of competence for seafarers. In 1995, the STCW Convention was completely revised and updated to clarify the standards of competence required and provide effective mechanisms for enforcement of its provisions.

A further, comprehensive review of the STCW Convention and the STCW Code commenced in January 2006, and culminated in a conference of Parties to the STCW Convention which was held in Manila, Philippines, in 2010. This conference adopted a significant number of amendments to the STCW Convention and STCW Code, referred to as the Manila amendments. The Manila amendments, which entered into force on 1 January 2012, will ensure enhanced standards of training for seafarers are in place now, and for years to come – although much remains to be done by Parties to ensure effective implementation before the end of the transition period on 1 January 2017.

But the skills and competence of seafarers, and the human element ashore, can only be adequately underpinned, updated and maintained through effective maritime education and training.

To help implement the STCW Convention, and to facilitate access to the knowledge and skills demanded by increasingly sophisticated maritime technology, IMO has designed a series of model courses on various topics. Each includes a course framework detailing the

scope, objective, entry standards, and other information about the course, a suggested timetable, a detailed teaching syllabus including the learning objectives that should have been achieved when the course has been completed by students, guidance notes for the instructor and a summary of how students should be evaluated.

Looking at the wider spectrum, IMO's Integrated Technical Cooperation Programme (ITCP) provides a capacity-building framework to assist developing countries to enhance the skills and proficiencies needed for effective compliance with IMO conventions and instruments.

ITCP embodies the multi-layered nature of maritime education and training through skills-based training events and the sharing of technical knowledge; technical advisory services, through national and regional ITCP training events and workshops, provide short upgrading courses based typically on IMO Model Courses.

This is complemented by IMO's global maritime training institutions the World Maritime University (WMU) and the IMO International Maritime Law Institute (IMLI), which help maintain a flow of high-level managers, policymakers and other key personnel into the maritime professions and maritime administration.

IMO is unique among UN agencies to have two affiliated educational institutions. Many graduates they have produced now hold positions of responsibility and influence within the maritime community. Indeed, 2015 has been a defining year for the World Maritime University, with a move into expanded, state-of-the-art premises within its home city of Malmö. It has also been the subject of a very significant funding pledge from the Nippon Foundation.

Both WMU and IMLI remain cornerstones of IMO's capacity-building strategy, underpinning global standards and quality of maritime training. Both provide students with privileged access to, and understanding of, the operation and decisions of IMO.

### **The maritime industries as a career choice**

Looking ahead over the next few years, the need for shipping to navigate through difficult economic times and improve even further on its already excellent environmental and safety records will drive increasing demand for seafarers not just in terms of quantity but also in terms of their skill, competence and professionalism.

Ship designers and engineers are developing design innovations to meet new challenges and these are making the seafarer's working environment more sophisticated and more demanding. In terms of energy efficiency, for example, propeller technology continues to evolve; hull features such as ducts, bulbs and fins are all being actively explored with excellent results; and aerodynamic superstructures are also increasingly utilized.

On the machinery side, engineers are far more willing than ever before to consider alternatives to the conventional solutions; thus we see increasing use of diesel electric propulsion, electronic engine controls, waste-heat recovery and alternative fuels such as LNG. Even highly unconventional technologies, such as kites and rotors, are now attracting serious interest.

On the safety side, ships' bridges have long been electronic workspaces but ever more sophisticated levels of integration are now the order of the day; and the same principle can be applied to cargo management, particularly where the 'just-in-time' delivery concept is concerned.

When you add all of this to challenges presented by, for example, the opening up of Arctic waters to more general cargo traffic; the increasing demand for special-purpose ships for wind farm construction; the march of oil and gas exploration into ever-more inhospitable areas; as well as the need for innovative design solutions to meet other regulatory imperatives such as the requirement for ballast water management, and to design ships for safe recycling, it is impossible to avoid the conclusion that these are exciting times to be entering the maritime world.

Seafarers provide a vital service to an industry that contributes significantly to global and sustainable development and prosperity by carrying the world's commerce safely, securely, efficiently and at a fraction of the environmental impact and cost of other modes of transport. It is incredible to think that the global population of more than 7 billion people relies so heavily on around 1.5 million seafarers – a staggering ratio.

Shipping is a vibrant industry, which thrives on creativity and innovation. It provides rewarding, stimulating and long-term career prospects. Today's ships are high-value assets and should therefore be entrusted to professionals of a similarly high quality. Seafaring is a viable career choice for people of the highest calibre.

And, beyond seafaring, the broader marine industries as a whole have a great deal to offer. It is, of course, very beneficial that many of the skills now needed for a job at sea are also highly transferable to a continuing career ashore. Indeed, there now seems to be a greater awareness that, after a seagoing career in a responsible and demanding job, there are many opportunities ashore in related industries that rely on the skills and knowledge of those with seafaring expertise, and this is certainly a cause for encouragement.

Many former professional seafarers are now serving in governmental departments, or are superintendents and managers in shipping companies, or perhaps working as maritime pilots or VTS operators or in rescue coordination centres. You can find them throughout the industry and in all parts of the world.

There is, therefore, a challenge for trainers and employers to ensure that the necessary skills are developed and practised for the future well-being of the shipping industry as a whole.

Shipping provides a wonderful career – exciting, rewarding and fulfilling. And not only a satisfying and worthwhile career choice in itself, it can also open the doors to a great variety of related jobs ashore, jobs for which experience at sea provides an excellent grounding.

### **Emphasis on seafarers**

At the 2010 Diplomatic Conference of Parties to the STCW Convention in Manila, IMO Member States unanimously agreed that the unique contribution made by seafarers from all over the world to international seaborne trade, the world economy and civil society as a whole, should be marked with a 'Day of the Seafarer', to be celebrated on 25 June of each year. The date chosen was that on which the STCW revisions were adopted and it acknowledges their significance for the maritime community and, especially, those of its members who serve on board ships.

This also reflects IMO's aim to place seafarers at the forefront of global awareness, to ensure that they receive the thanks, recognition and working standards that they truly deserve. Each year, IMO runs a social media campaign to promote the Day of the Seafarer, which reaches millions of people, worldwide.

For 2015, the theme for the Day of the Seafarer has been A Career at Sea, chosen to enhance and amplify the messages of the World Maritime Day theme of Maritime Education and Training. In 2015, IMO also launched the IMO Maritime Ambassadors Scheme, designed to engage, inspire and call upon young people to consider careers at sea or in the

maritime industries. The goal is to reach new target audiences and inspire a new generation of maritime experts and seafarers.

## **Conclusion**

Several factors make it pertinent and timely for IMO to focus its attention on the wider spectrum of maritime education and training this year, in particular its adequacy and quality.

These include the predicted manpower shortage throughout the maritime industries, which must be addressed now; the next BIMCO/ISF manpower survey, which is due this year; the Manila amendments to the STCW Convention nearing the end of their phase-in period; the campus expansion and confirmation of new strategic directions at the World Maritime University.

And while implementation of IMO measures is, ultimately, the responsibility of the Member States (supported by the industry), on a day-to-day basis, effective implementation of IMO measures often comes down to the seafarers themselves. Working at the 'sharp end' of shipping, it is the seafarers who have the responsibility to put into practice what the various guidelines, codes and recommendations specify; and the key to this lies in education and training.

The value of good education and training cannot be overstated. Time spent learning is never time wasted; and, in the maritime world, the need for high-quality, well-educated people at all levels and in all sectors is as great as it has ever been.

The global maritime and education network is vital for the continued supply of well-trained and highly-qualified people required to fuel and sustain the shipping industry as it adapts to serve the needs of a growing global population.

Individual establishments must look to become centres of excellence, embracing the cutting edge of maritime science and technology and marine information technology as well as the more traditional skills of shipbuilding and engineering, through developing teaching and research-orientated faculties, for all facets of the maritime industry.

It is no exaggeration to say that the safety and security of life at sea, protection of the marine environment and over 90% of the world's trade depends on the professionalism and competence – which equates to the education and training – of seafarers.



Looking ahead, the human element in shipping will be seen as increasingly important, not just for the commercial success of shipping companies but also as the industry moves towards ever higher standards of safety, environmental impact and sustainability. It is the seafarers who will translate the new objectives in this area into solid actions. It is on seafarers that the industry, and all those who it serves, will depend on for success in this respect, too.

All of which makes the importance of training and education for the ships' crews of today and tomorrow greater than ever before. And it is in recognition of this growing importance that IMO selected "Maritime Education and Training" as the theme for this year's World Maritime Day.

Members of the younger generations rely on training and education establishments to help them develop their knowledge base and skillsets within their chosen career paths. By so doing, they equip themselves to face the new challenges and increasing demands that will inevitably come their way. Maritime education and training, quite literally, holds the future of shipping in its hands.

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