

IAMU Paper - September 2009

## Development of Standards for Maritime English – The EU Leonardo MarTEL Project

Reza Ziarati (TUDEV/Piri Reis University, Turkey), Heikki Koivisto (University of Satakunta, Finland) and Janusz Uriasz (University of Szczecin)

### Abstract

This paper reports on the progress of the EU funded Leonardo project MarTEL which concerns the development of a set of standards for Maritime English for application in Merchant Navy education and training programmes for cadet officers and officers of various types and ranks. The standards are based on transfer of innovation from existing English language standards and maritime English model courses such as International Maritime Organisation's (IMO) Model course 3.17 and the IMO's SMCP (Standard Maritime Communication Phrases, 2001). Recent reviews by several IMO member countries had identified that 'there is a compelling need to promote a high level of working maritime English language skills' for merchant navy officers.

The standards were developed at three different levels referred to as Phases 1, 2 and 3. Phase 1 standard applies to level of Maritime English proficiency required for entry onto Merchant Navy cadet officer programmes for both Deck cadet officers and Marine Engineering cadets officers. Phase 2 is in two parts, Part 1 concerns the standard of Maritime English competency for Deck Officers of Watch and Part 2 relates to competency level for Marine Engineering Officers. Phase 3 is for Senior Officers and again sub-divided into two part, Parts 1 and 2, one for senior Deck officers and one for senior Marine Engineering officers.

Each standard has its own set of study guidelines and underpinned by a comprehensive study unit. While the guidelines are to prepare the candidates for a test at given level (Phase), the Study Unit is a knowledge-base of content for each phase.

All phases include active skills i.e. Speaking, Listening and Writing. The content for standard is based on active learning and on maritime terminology and usage with less emphasis on grammar. All standards for Cadet, Officer and Senior Officer Levels (Phases) will have different weights on different skills and different proficiency requirements at different ranks and duties

### Introduction

The reason for instigating the project was that there are no international or European standards for Maritime English. Review of the arguments from the recent IMO meetings (IMO MSC, 2006) considering MSC 82/15/2 and MSC 82/15/3 had identified that 'there is a compelling need to promote a high level of working maritime English language skills'. Several EU member states have invited STW sub-committee to consider how the requirements in the STCW-Code can be strengthened in this connection. It was noted that deficiencies in Maritime English causes accidents (Ziarati, et al 2009) and therefore needs to be seriously taught (Loginovsky, 2002) in the basic and the main training of all Chapters of the STCW Code of practice. It is interesting to note that both of the above issues were also the findings of an IMarEST paper and report (Ziarati, 2006; Ziarati, 2007). This Project therefore is a maritime language competency assessment project for the language certification of the following target groups: i) young people aged 17/18 years old wishing to enter the Merchant Navy as ratings, ii) those embarking on a career as Merchant Navy officers, iii) those intending to hold senior posts as a Chief

Mate/Master/Captain and as a Second/Chief Engineers, and iv) those who are working at ports with different degree of seniority including pilots.

The main aim of the project is to develop a series of Maritime English language standards incorporating also the IMO's SMCP, at three different standards: i) Foundation – Elementary and Intermediate - Advanced, ii) Officer – Deck and Engineering, and iii) Senior Officers – Deck and Engineering, also senior officers at port and pilots. The standards are being piloted in several partner sites. The other partner countries with experience in developing and testing of maritime English have been encouraged to join the project team.

## **Partnership**

The partnership is composed of major education and training centres in seven EU member states supported by their awarding, accrediting and certification authorities. The proposal instigator was the representative of IMarEST at recent IMO MSC (2006) and at the same time a member of a Turkish national delegation at the event. Three of the partners are involved in Leonardo proposed projects concerning e-learning (E-GMDSS) and three are involved in another Leonardo project (SOS, 2005) concerning the development and implementation of an integrated programme of education and training for merchant navy cadets and officers. The project team has been working in conjunction with the EU funded MarEng project and was developed jointly with several industrial and commercial organisations in partner countries. There are eight active and many silent partners and two are major awarding and validating bodies.

## **Contact and Level**

The contents of standards are based on active learning and on maritime terminology and usage with less emphasis on grammar. The Foundation test at advanced level will benchmark the well-known English qualification standards TOEFL 500 and IALTS 5.5 in terms of testing methods rather than their contents, ii) The Officer standards will be based on TOEFL 550 and IALTS 6.0 standards but content will be primarily based on Navigation English and Marine Engineering English. These standards focus on all skills but with less emphasis on grammar, iii) The senior officers standards will be equivalent to TOEFL 550-600 or IALTS 6.5-6.6. For the senior officers in charge of vessels over 3000 GRT, the standard includes a section on language requirements for these vessels and the term Unlimited will be added to the end of the qualification designation. All standards for Officer and Senior Officer Levels will have different weights on different skills and different proficiency requirements at different ranks and duties. For example, a Chief Engineer should be competent on comprehension (especially reading) and writing but a more moderate level of speaking may be tolerated. New vocational qualifications are being developed with major national and European awarding and accrediting bodies, hence the new qualifications are expected to be recognised Europe-wide. The main intangible outcome is that, the standards and their associated study guidelines and units, will provide an opportunity for many companies particularly smaller ones to become involved particularly taking advantage of learning materials and the intended e-learning and e-assessment and facilities for self-learning and self-assessment. Impact is expected to be substantial as the project responds to a European and international acknowledgment of the problem which this project intends to address at source and through lifelong learning. There are many organisations including awarding, accrediting and licensing bodies that are interested in the project.

## **Justification**

Shipping is perhaps the most international of the entire world's great industries and some of the most dangerous. Safety of life at sea, the marine environment and over 80% of the world's trade depends on the professionalism and competence of seafarers. It has been reported that the over 80% of accident and incidents are due to human error According to (IMO 2005). One of the main causes of accidents and incidents are due to poor standards of maritime English. The language of the sea is Maritime English and many ships, and to a lesser extent, ports, are manned by multinational crews. Hence, good communication in Maritime English is essential for creation and maintenance of effective working environments and safety of the crew, and generally safety at sea and at ports. There are many reports and papers (MCA –MSC 82/15/02 and MSC 82/15/03) identifying poor communication as one of the most significant factors in accidents at sea and at ports. There is only one Leonardo project viz., English for Dockworkers (E/02/B/F/LA\_115852, 2002), which has tried to address the communication problems in dockyards through the development of training materials for self-learning in English language. A list of the all the Leonardo projects in maritime fields is presented in the reference section at the end of this paper.

The importance of skills in English Language competency was highlighted at the recent IMO Maritime Safety Committee (IMO MSC 82, 2006). Papers presented by the Turkish and UK delegates clearly stated that language competency is a problem. The papers led to discussions at the Human Element Working Group (HEWG) when it was reported that many seafarers have problems in expressing themselves in English and in using maritime terminologies. It was agreed that STCW Convention had to be revised in this connection and IMO's maritime English course model's (based on SMCP) minimum requirements is no longer acceptable. The inadequacy of Maritime English standards has been a major contributory factor in causes of accidents, some involving loss of life, large numbers of injuries and extensive financial loss (Deniz Ticarti, 2006; MAIB, 2006).

This paper is in line with Loginovsky (2002) which reports on the significance of English as the working language of the international shipping industry and that the overall performance and safety of the international fleet depends on the skill to apply it correctly. He states that the ability of a non-native speaker to have a good command in Maritime English is very much influenced by the ability to think in it in the frame work of the maritime profession. He concludes that to make the teaching and learning processes more effective, it is required to power up the thought activity of a seafarer using English. This proposal has taken note of the recent papers at the IMO MSC event (2006) and recommendations of several international papers (Ziarati, 2006; Loginovsky, 2002) concerning lack of standards or and appropriate underpinning knowledge and skill for maritime English.

There are severe shortages of personnel with sea going experience (Ziarati, 2003; Pourzanjani et al, 2002, Schroder et al, 2004). This is expected to get worse (IER, 2005 report sponsored by ISF and BIMCO). The shortage ranges from some 30000 (IER, 2003) seafarers to over 100000 (Urkmez, 2005). This is anticipated to lead to an overlook of deficiency in competence by shipping companies desperately seeking seafarers to man their vessels.

### **Specific Aims**

This proposal aims to address major problems relating to competency in maritime English for the well-being of seafarers and those working in the shipping and maritime industries including ports. The problem is addressed at its very roots, that is, helping to improve the language competency of those wishing to embark on a career in the Merchant Navy as rating and officers in partner countries at three key stages: 17/18 years old, 21/22 years old and 23+ through an integrated and interrelated standardised assessment system catering for all classes of seafarer as outlined in the abstract summary. The project is concerned with the establishment of standards of Maritime English for all

classes of seafarers and for those working at ports. The standards are expected to be recognised by international professional bodies and the licensing authorities. To ensure these developments are implemented effectively work is being carried out:

- develop supporting training programmes for the standards by formation of pilot groups in one of the partner countries and run these and validate them in other partner countries,
- establish a network of transnational partners to support the development of the project, to surpass the minimum standard of maritime English set by IMO,
- design a programme for the trainers and assessors development, and their certification, for application of the standards and subsequent tests, as well as for the internal assessment and verification process, in line with European vocational qualifications for Assessors and Verifiers,
- facilitate secondment of trainers and assessors to partners' establishments on short assignments in order to familiarise the trainers and assessors with the necessary skills and good practice,
- form a committee to monitor the progress and make the necessary changes when required, applying a **quality manual** developed for this project, and to
- develop bridges for maritime personnel, through these standards so that they can take advantage of other programmes, some leading to higher vocational qualifications.

All tests for officer and senior officer levels will have weight on different skills. The officers are expected to reach certain levels of proficiency and competency at given ranks/duties by their companies or potential employers.

### Transfer of Innovation

The current practice in many non-English speaking European member countries as well as countries outside Europe is that institutions involved with education of seafarers provide either short course programmes in English for industry or develop six months to one year English preparation programme for cadet officers prior to commencement of the main education programme. Every year thousands of cadet officers come to the UK, through various schemes and pathways, and enrol on various merchant navy education and training programmes for different classes of seafarers. For instance, in some colleges these cadets are sent on 6-months general English course prior to the admission onto merchant navy programmes. In Turkey, for example, generally all officer cadets undergo one year of English preparation. Review of the arrangements for other European countries for training of English seafarers clearly indicates that there are no standards of competence, for maritime English and the actual period of education and training in English language is also different in different countries for given class of seafarer. Often these programmes irrespective of type or level, particularly those concerning cadet officers, are not related to the vocation of seafaring and are grammar based (TOEFL, IALTS, etc). This proposal will establish standards for all classes of seafarers. The UK partners and the silent partners (see [www.mardeu.co.uk](http://www.mardeu.co.uk)) would also benefit immensely by standardising the English tests for each and every class of seafarer so that thousands of overseas students coming to the UK (who incidentally in many cases will eventually work for European based shipping companies) would achieve a common standard in English competency prior to commencing their main programme of study and training.

The establishment of standards would help partners to set up test centres offering a valuable operation at their own institution benefiting professionally from such an undertaking. One innovative aspect of the project is that two standards will be offered at elementary and intermediate/advance levels which could be used for industrial updating of existing seafarers employed in ship operation companies at the elementary and intermediate/advance levels.

One other innovative feature is that the standards are skill based, and each standard is being provided with a sample study unit. The unit of study is an attempt to provide the necessary learning and training support for candidates aiming for a particular merchant navy qualification, and hence, is set at a given standard of maritime English.

## **Target Group**

This project is a maritime language competency assessment programme for the language certification of main target groups outlined earlier in the paper.

The language preparation programmes in EU member states for education and training of seafarers is not standardised, neither in terms of level or duration of study. For cadet officers, the initial English preparation programme, the duration could range from one to two years, and the examination standards are often set at a local level. Some institutions use standards such as TOEFL and IALTS which are not designed for students following a vocational programme. There are many cases where IMO requirements are integrated within a degree programme at a university. Again in many cases, the examination is not based on European or international standards, and if standards are applied these are of the type mentioned earlier. In all cases reviewed, the English programmes use a similar classical approach for all classes of seafarers. Hence, the existing arrangements do not differentiate between the language skills requirement of different classes of seafarers. Furthermore, the level of competency varies significantly in across institutions in a given country and this even more inconsistent across the EU. In the majority of cases English preparation programmes are grammar based in order to satisfy the need of standards such as TOEFL and IALTS. This the project, a distinction has been made between the English requirements, say for a deck officer of watch and that needed for an engineering officer of watch. The standards are also underpinned by a sample unit of study to encourage vocational reference and ensure the programmes that support these standards focus on skills as well as grammar. The unit of study for each class of seafarer would also set the scene for maintenance of standards in the future and act as a guideline for development of training/learning/testing material.

In non-English speaking countries, many seafarers, especially at below officer levels, have serious problems with English language. To this end, two of the standards of the foundation standards (elementary and intermediate/advanced) can be used to target this particular group. The standards are designed so that industry could use them to assess the competence of their employees at particular standards under development.

## **Potential Users**

Potential users will be lower and upper secondary school leavers, 'lycee/lise' cadets, young unemployed and all those employed in the water transportation industries (all ratings, officers and above, deck as well as engineering) as well as all education and training centres concerned with the formation of Merchant Navy personnel.

As mentioned earlier there is no standardised maritime English testing system in Europe and the level of English competence among merchant navy officers is inconsistent. The experience of running merchant navy officer programmes by the partners has indicated major language deficiencies and inconsistency. This has been acknowledged by the many EU member state delegations to IMO. Poor comprehension has been a major cause of accidents and incidents at sea and ports as reported in several European accident analysis reports (Deinz Ticarati, 2005) and several IMO's accident analysis reports.

As mentioned in the previous section, one of the main reasons for the standards is so that shipping companies and organisations could use them to assess the competence of their employees at a particular standard. To this end, all personnel working in the maritime industry could benefit from these standards as MarTEL provides specific tests for specific vocational requirements for different ranks of seafarers.

Every year thousands of cadets enrol on various education and training programmes to follow a career in merchant navy. The largest user group are the cadet officers studying/training to become an officer of watch either as a Deck officer or an Engineering officer. The second most preferred location is the UK. The advanced foundation tests could be used to standardise the level of competency for both engineering and deck cadet officers before enrolling on their main programme. The tests are being designed to ensure that, if successful, the cadets have reached the required level of competency for progression onto the main programme of study and later as officer of watch. Once an officer, they can take advantage of the tests designed for senior officer for progression to higher ranks, working at sea or at ports.

### **European Dimension**

The intention of standardising and harmonising the process of testing for maritime English language competency cannot happen without active support from representatives of education and training providers, from several EU member countries spread across the Europe. The experience of various partners in maritime education and training and most of them in English language training would provide an added value to the existing efforts in partner countries. The fact that the standards and the study units that underpinned them can also be used as a means of self-learning and self-assessment would provide an added value which also widens the demand for the standard in the intended target groups. The partnership intends to seriously support the development of e-learning and e-assessment which has been assigned to two leading partners involved in such developments. This is expected to increase the existing interest in the project and its dissemination. The partnership is convinced that the plans to link the e-platforms (or one single integrated one) to the website and Internet portals holding the test materials would substantially enhance the possibility of wider audience within the stated target groups. This project would not have been possible without the support from the Leonardo programme. This programme has motivated the partners to come together in a worthy cause and innovatively transfer the existing knowledge and know-how, being developed simultaneously with other current Leonardo projects (SOS [www.maredu.co.uk](http://www.maredu.co.uk) and [www.egmdss.com](http://www.egmdss.com) E-GMDSS).

The Project introduces standardisation, hence consistency and harmonisation, in assessment of English language competency for different classes of seafarers ranging from cadets officers to captains or chief engineers and for those wishing to enter the merchant navy. The project also addresses the language training needs of ship operating companies in the sector. This would create an opportunity for changes at national and European/international levels for introduction of new strategies to streamline maritime language training and assessment, and this is expected to lead to changes to the existing policies and practices at national and European levels.

The intended work will help the partners to develop a stated strategy for integrated language testing and training particularly for three distinctive groups of users.

The maritime English language standards and the study units aim to obtain common levels of consistency of competency for those working or intending to work as a qualified officer in the merchant navy in partner countries, and ultimately within the EU, thus aiming to achieve harmonisation in practice, and consequently introducing a novel approach in Maritime English testing and training for

learners and trainers at both national and European levels. EU's recent adaptation of "investment in people" and "investment in quality" is two policies that the project is supporting. The EU strategy relating to both policies is based on consolidating a culture of risk prevention, and on combining a variety of tools, with standardised training and awareness, being the most important ones. A review of the available statistics (EUROSTAT, 2004) clearly indicates that the preventive approach set out in Community Directives has neither been fully understood and/or taken on board by various players, nor applied effectively (NORAY, 1999). However, the UNISCE's seven priorities have been taken into account particularly with regard to priorities 1, 2, 3, 4 and 6.

A report (British Shipping, 1999) particularly refers to the importance of quality maritime skills particularly in communication, and securing seafaring employment in the UK with several references to the importance of improving safety at sea. There have been many publications by northern European countries including Norway. For example a report by NTNU (1999) in Norway identifies the importance of improving the quality of education and training particularly relating to the importance of communication. A paper presented at the World Maritime Technology conference (Ziarati, 2006) specifically identifies the second most contributory factor in accidents and incidents to be related to the lack of competency in verbal and written communication particularly in maritime English.

The proposal addresses the recent decisions made by the European Council e.g. Official Journal (EU/L145/40EN, 2003) requiring new members and applicant countries such as Turkey to complete alignment with EU maritime legislation in safety and non-safety areas and to improve maritime safety. The country has to ensure effective implementation of transport legislation, particularly as regards to maritime safety.

## **ICT and Online Platform**

ITC platforms will be built on previous development work carried out under Factory of the Future (C4FF) project which was funded by National and various European programmes including EUREKA. The project director for Factory of the Future is a member of the partnership and has agreed to take a leading role in the co-ordination of ICT developments. The outcome of the current E-GMDSS (2006-2008) funded by the Leonardo programme is being taken into consideration. The e-learning platform being developed by the E-GMDSS has several interesting features which can be included and expanded for application in the project. Each partner has now access to a tele-conferencing facility hence the project management and co-ordination has been highly effective.

A website has been established [www.maritime-tests.org](http://www.maritime-tests.org) for the partners to interact and publish their interim results and report on the progress of the project. Each standard and its unit of study will have its own CD/DVD for use in the classroom and in the simulators. The CDs/DVDs will be made available to partner institutions and other education and training institutions within the European Union. Learners will be introduced to computer based networks linked to the internet giving them access to e-learning packages containing the appropriate standard and its associated unit of study. The e-platform will also be available to enable trainees to learn by themselves and self-assess themselves. The e-learning/assessment platform(s) will be made available to the education and training providers within the partnership.

Object oriented software packages using CDs or DVDs will be developed to respond to the need for easy use of technical information related to the subject of the training unit and the associated standard. The software will provide a means of accessing a range of data on major databases through the Internet.

There are several methods of developing e-learning platforms. The methods and methodologies developed by SPIN (EGMDSS, 2006-2008) will be taken into serious consideration. Existing computer software interfaces developed by C4FF will be considered for interaction with existing databases. C4FF is also involved with British Government Project DTI Technology Programme (IFOR, 2007–2010) developing knowledge based systems for progressive companies in the UK. The generic aspects of this model developed as a result of a PhD programme of study sponsored by C4FF, is being applied in the intended knowledge-based- system for each training module. The following tasks are being finalised:

- a. Website as e-learning platform supported by LMS
- b. Establishing links to search engines
- c. Installing and setting up LMS
- d. Validating e-learning platform
- e. Adding learning material to the platform after each trial
- f. Provision of textual content with pictures
- g. Expanding questions database and provision of e-assessment  
Validating e-assessment

The website as an e-learning platform would serve as a self-learning and a self-assessment tool and as a means of adding learning material and results of standards/tests trials.

## Conclusions

There has been many attempts in to improve the quality and content of the Maritime Education and Training (MET), some very relevant papers in 2002 were Pourzanjani et al (2002), Schröder et al (2002); Zade et al (2002), Loginovsky (2002) followed by Ziarati in 2005 (SOS, 2005), efforts by Gregoric (EGMDSS, 2006) and Ziarati contributions to revise the MET programmes in view of emergence of automated systems on board vessels (SURPASS, 2007) actioning the recommendations of the Pourzanjani et al and Schröder et al and in 1997 taking into consideration of the MarEng (2005) findings and the work of Loginovsky in terms of developing the content and standards for Maritime English.

Maritime English is a major part of any programme of education and training for cadet officers as well as for those seeking higher qualifications such as chief mate/master and second/chief engineers. The main business of partners as a whole is the provision of merchant navy education programmes, all without exception, having a provision of some form of English preparation and some with additional unit of study for maritime English as part of the English language preparation or within the main vocational programmes. The eight active partners in this consortium as well as the silent partners numbering at the moment over twenty academic, industrial and organisations, all associated with maritime affairs believe that establishing a set of standards for maritime personnel would be highly commendable and without exception they all intend to use it. Every year thousands of cadets take some form of assessment in English language prior to commencing their main programme of education and training. In the UK there are over 4000 cadets enrolled on conventional English programmes and primarily take non-standardised tests. Those entering universities often have to achieve TOEFL 550 or IALTS 6.0 which are not directly relevant to the maritime sector. The partners also believe quality of performance and safety of the European fleet depends on maritime language skills and their correct application. A minor mistake or misunderstanding sometimes could have serious consequences in maritime transportation. An accident could lead to loss of life often with huge financial losses of income as well as subsequent legal and litigation expenditures. In one accident because the officer of watch could not understand what 'wreck ahead' meant led to a major accident.

Partners believe the EU could make a major contribution for non-native speakers to develop a good command of English and help to create an environment so that non-native speakers develop an ability to think in the frame of maritime profession as proposed by Loginovsky (2002). To create a set of standards the maritime profession at the right standard for the right job function would also motivate the trainees to develop an interest for the subject and take their studies more seriously. In an experiment carried out in one of the partner institutions dividing one cohort of students into two, one following a normal English Language training programme and one based on maritime English clearly showed that those on the maritime stream did far better than those on the conventional programme, and also level of motivation of the group and their attendance record were by far better than those on the normal English Language training programme. Both programmes were identical in terms of tuition hours and teaching quality and delivery methods.

Furthermore, it is not an efficient method to have the same English language programme for all classes and types of officers who have different requirements and job functions. Research has shown that the English language requirements of deck officers, for instance, are different to the requirement of the maritime engineering officers (MarTEL, 2007).

## References

1. Ziarati, R., "A report on IMO MSC 82 to IMarEST", for consideration to Technical Affairs Committee, IMarEST news, 2007
2. Ziarati, R., "Safety At Sea – Applying Pareto Analysis", Proceedings of World Maritime Technology Conference (WMTTC 06), Queen Elizabeth Conference Centre, 2006.
3. V A Loginovsky, 'Verbal Communication Failures and Safety at Sea', Vol. 2, No.2, December 2002.
4. IMO (2005), ), cited in [www.imo.org/human element](http://www.imo.org/human%20element) and [www.itu.edu/new/acad/tuzla/safety](http://www.itu.edu/new/acad/tuzla/safety)
5. IMO, 'Casualty Statistics and Investigations – Very Serious and Serious Casualties for the 2001', February 2004.
6. R Ziarati, 'Maritime and Training – A way forward', confidential report to Turkish Maritime Education Foundation, July 2003.
7. IMO, 'sub-committee minutes', 12th session, 2004 (and 13.01.2005, [www.imo.org/human element](http://www.imo.org/human%20element) and [www.itu.edu/new/acad/tuzla/safety](http://www.itu.edu/new/acad/tuzla/safety))
8. R Ziarati, 'Safety On Sea (SOS)', Leonardo Project 2005-2007, No: TR/05/B/P/PP/178 001.
9. NTNU Report, 'Training in risk prevention and vessel safety for the coastal fishing sector', Community Vocational Training Action Programme (1995-1999) NORAY – Contract no. E/99/1/061291/PII.1.1.b/FPI.
10. Pourzanjani et al, 'Maritime Education and Training (MET) in the European Union: How Can Maritime Administrations Support MET', Vol.2, No. 2 IAMU Journal, December 2002.
11. Schröder et al, 'The Thematic Network on Maritime Education, Training Mobility of Seafarers (METNET): The Final Outcomes', Vol. 3, No. 1, June 2002.
12. Zade et al, 2002, 'Maritime Education and Training (MET) in the European Union: How Can Maritime Administrations Support MET', Vol.2, No. 2 IAMU Journal, December 2002.
13. NETOSKAR – 2003, 'A Method for Continuing Development of the Competence of Sea Personnel', Project number: FIN-03-F-PP-1600016
15. NETOSKAR, 2003, 'A Specialist Network for Development of Competence Evaluation Method on STCW 95 Functions at Maritime Sector', Contract No. FIN/03/B/F/PP-160016;
16. Urkmez, S., 2005, 'Seafarer Shortages - Report to the chamber of Shipping'.